federal register

THURSDAY, JANUARY 24, 1974
WASHINGTON, D.C.

Volume 39 ■ Number 17

PART II

DEPARTMENT OF TRANSPORTATION

Hazardous Materials Regulations Board

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CONSOLIDATION OF HAZARDOUS MATERIALS REGULATIONS AND MISCELLANEOUS PROPOSALS

Notice of Proposed Rulemaking

DEPARTMENT OF TRANSPORTATION

Hazardous Materials Regulations Board

[14 CFR Part 103]

[46 CFR Part 146]

[49 CFR Parts 170, 171, 172, 173, 174, 175, 176, 177]

[Docket No. HM-112; Notice No. 73-9]

HAZARDOUS MATERIALS REGULATIONS

Proposed Consolidation

Since the inception of the Department of Transportation, it has been the goal of the Hazardous Materials Regulations Board to make the Department's Hazardous Materials Regulations as uniform and clearly stated as possible. One major difficulty has stood in the way of progress towards this goal: The regulations are found in three different Codes of Federal Regulations according to the mode of transportation involved and much referencing between them exists. Also, the manner of form and presentation of their contents vary and could be improved. In this notice, as a first step, the Board is proposing to consolidate the air, water, and surface transportation Hazardous Materials Regulations of the Department into one volume of the Code of Federal Regulations, 49 CFR Parts 170 to 189. These regulations would not include the bulk regulations of the U.S. Coast Guard for transportation by water. The Board is of the opinion that after this step is taken, the second step of restating the regulations would become more manageable.

This document necessarily encompasses a wide breadth of subject matter, some of which is substantive and much of which is merely editorial. To single out the substantive changes proposed as completely as possible, the Board is going to great lengths in presenting a detailed preamble to facilitate review by the public. Matters of particular interest in the consolidation of the Hazardous Materials Regulations are summarized as follows:

1. The Board is proposing to create four new classifications of hazardous materials to handle the problem of materials which pose a significant hazard when transported by air or water, but do not present such a hazard by surface transportation. These are identified as "Other Regulated Materials".

2. The Board is proposing a new regulatory mechanism to regulate small quantities of hazardous materials considered to pose a significant hazard only when transported in aircraft. These are identified as "Other Regulated Materials, Group D," abbreviated "ORM-D".

3. The Board is proposing to resolve certain issues that remain outstanding from other dockets because these issues relate to matters involved in this proposed consolidation of regulations or to a companion docket published elsewhere in this issue of the FEDERAL REGISTER, Docket HM-103. Some of the Dockets affected by this Notice are: HM-4, 8, 51, 57, 101, 102, and 103.

4. The Board is proposing a new format for the list of hazardous materials presently found in 49 CFR 172.5 which will recognize the recommendations of such organizations as the United Nations Committee of Experts on the Transport of Dangerous Goods and the Dangerous Goods Code of the Intergovernmental Maritime Consultative Organization (IMCO).

5. The Board is proposing to adopt a very large portion of the recommendations of the Interational Air Transport Association Restricted Articles Regulations as also published in C.A.B. No. 82, Official Air Transport Restricted Articles Tariff No. 6-D.

6. The Board is proposing to eliminate exemptions from specification packaging for certain hazardous materials it believes should not be so exempted.

7. The Board is proposing to prohibit certain hazardous materials from being transported on passenger-carrying aircraft which may now be so transported.

8. The Board is proposing to clearly regulate hazardous materials being transported in a passenger rail car in baggage. This is an interim rule making proposal while more complete regulations are under development. The present regulations apply only to rail carriers in baggage service.

9. The Board is proposing to change stowage requirements aboard vessels to align them completely with the International Dangerous Goods Code of IMCO.

10. The Board is proposing to change the present poison classifications from Class A & B poisons to Extremely Toxic and Highly Toxic classifications. This has been the subject of two Advance Notices of Proposed Rulemaking under Docket HM-51.

11. The Board is proposing to change the classification of a limited number of hazardous materials to more clearly reflect the potential hazard they pose in transportation.

12. The Board is proposing to consolidate present Parts 174, 175 and 176 governing carriers by rail into a new Part 174 and update some of the requirements therein.

A specific discussion in more detail follows:

I. GENERAL

The Board recognizes that this document could require an inordinate amount of time to review. Inordinate, in the sense that because of the volume, commenters could conceivably request delay after delay in asking for more time to study the docket. Also, the Board realizes that during the period that this document is under review, it would be confusing to publish too many additional proposed changes. Therefore, the Board has taken these factors into consideration and to assist the public as much as possible in reviewing this document in a timely and efficient manner, it has developed a very detailed preamble. This preamble is designed to set forth in such detail the changes the Board proposes that review by the commenters should be greatly assisted without lengthy and time consuming studies aimed at trying to "discover" what is being changed.

To again facilitate review, this preamble has been divided into various sections representing the major proposed changes and the different parts in the Code of Federal Regulations. In the conclusion is the presentation of a plan on how the Board proposes to change the present arrangement of Parts 170 to 189 in the final amendment to permit better organization of the Hazardous Materials Regulations.

In accordance with section 102 of the National Environmental Policy Act (Pub. L. 91-190, (42 U.S.C. 4321 *et seq.*) the Board has considered the environmental impact of its proposed consolidation of the Department's Hazardous Materials Regulations. Although there are included in the proposed consolidation, some changes in or additions to the substantive requirements of certain existing regulations, the Board is of the opinion that the proposed consolidation, even when viewed cumulatively is not a Federal action that has a significant impact on the environment. The primary purpose of the consolidation is to achieve editorial clarity and uniformity in existing regulations. The substantive changes are basically related to matters of classification, form, and format, and will not have any adverse impact upon the environment. The Board also notes that a separate assessment of the environmental impact of the substantive proposals contained in Dockets HM-102 and 103 is set forth in the preamble to the notice of proposed rulemaking for those proposals, published elsewhere in this edition of the FEDERAL REGISTER.

II. NEW CLASSIFICATIONS—OTHER REGULATED MATERIALS (ORM)

The Board's effort to consolidate virtually all of the Department's Hazardous Materials Regulations into one volume has made it necessary to develop a regulatory mechanism whereby the application of the regulations may be clearly established for each of the modes of transportation. This poses no difficulty concerning those materials already included in existing classifications; however, for certain materials, it will be necessary to make the regulations applicable only to transportation by air or water or both, due to the kinds of potential hazards presented when transported in those transportation environments. These materials are discussed in § 170.10 and defined in proposed § 173.500. These materials are now described as "hazardous articles" when transported by water (46 CFR 146.27), "other restricted articles" when transported by air (Tariff 6-D, C.A.B. No. 82 and the IATA Restricted Articles Regulations), or partially "exempt" materials when transported by highway or rail (49 CFR Part 173). The Board believes the best way to handle all these materials is to create an "Other Regulated Material" (ORM) category which would be divided into four classifications. By the addition of these new classifications, and including the letters A, B, C, or D to identify them, a method would be provided to identify the four types of materials covered and the ap-

plication of various regulations to them when they are transported by air, highway, rail, or water. A general description of the four classes of ORM materials are as follows:

An ORM–A material is a substance which has an anesthetic, irritating, noxious, toxic, or other similar property and which can cause extreme annoyance or discomfort to passengers and driver or crew in the event of leakage during transportation.

An ORM–B material is a substance capable of causing significant damage to a transport vehicle or vessel from leakage during transportation.

An ORM–C material is a substance which has other inherent characteristics not described as an ORM–A or ORM–B but which make it unsuitable for shipment, unless properly identified and prepared for transportation. Each ORM–C material is specifically named in § 172.101.

An ORM–D material is a material that is classed as a flammable liquid, corrosive material, flammable compressed gas, nonflammable compressed gas, flammable solid, oxidizing material, or organic peroxide, that, due to its limited quantity in a package, may be described and shipped as an ORM material. Shippers of ORM–D materials would be required to comply with the regulations pertaining to such materials regardless of the transportation mode utilized. However, no carrier operating regulations would apply, such as the carrying of shipping papers unless the ORM–D material is to be transported by aircraft.

On January 6, 1972 the Director of the Office of Hazardous Materials published a request for public participation entitled "Exemptions" in the FEDERAL REGISTER (37 FR 149). He explained the various aspects of the existing requirements pertaining to partial exemptions. Interested persons were invited to participate in the project by submission of supported information that would lead to the development of an appropriate rulemaking proposal. Many letters were received indicating interest in the project. However, very few submissions contained any form of supported information.

One organization, the Council for Safe Transportation of Hazardous Articles, hereafter referred to as COSTHA, submitted a petition for rulemaking in response to the project. The Task Force represents more than 1,000 companies engaged in manufacturing of end-use products packaged primarily for consumption in the home. The petition urges the Board to initiate rulemaking to delete the shipping paper requirements for small-quantity shipments of partially exempt hazardous materials which meet the existing quantity limitations, when overpacked in strong outside containers during transportation. As an alternative, the Task Force requested exemption for materials identified as consumer commodities and provided supporting data in the form of references to statutes pertaining to consumer protection. The Board does not agree with this latter approach since many of the other materials subject to its regulations are virtually identical in composition to materials that could be characterized as consumer commodities. However, they are not classed as such since they are intended for purposes other than consumption by consumers. For example, a container of a liquid that is packaged and marked "Nail Polish Remover" is intended for consumer use. Another package containing essentially the same material, acetone, is intended for some industrial purpose. If the Board were to accept the Council's proposed definition, it would be involved in discrimination against certain kinds of materials that present the same limited potential hazard as those identified as consumer commodities. Further, it would base certain hazardous materials regulations on vague and open-ended terminology.

Two other comments providing substantial comment in response to the request were received. The President of the Uniformed Fire Fighters Association of Greater New York expressed his view that shipping papers for materials covered by the partial exemptions in the regulations serve little or no benefit to fire fighters. The General Manager, International Association of Fire Chiefs stated in part as follows:

Specifically our comments are directed to that requirement, as referred to in your release, that each driver of a motor vehicle have in his possession copies of the shipping papers describing the articles transported by their technically prescribed shipping nomenclature and classification. Regardless of quantity involved, we refer now, not to articles that by their nature are so hazardous as to warrant application of your total safety requirements, but only to those classified as hazardous but designated partially exempt by reason of their relatively low-risk potential. In this partially exempt category, there are found ordinary everyday household products such as insecticides, room fresheners, a multitude of toilet articles and medicines.

Under existing regulations, the driver is expected to carry the shipping documents for each of the many shipments in his vehicle either on his person or in the cab of the truck. The purpose—and we consider it laudable—is to transmit to firemen, in an emergency, knowledge of the contents of the vehicle so that they may deal effectively with the situation without undue danger to their persons. However, in a fire situation where the material mentioned above are in limited quantities and are mixed in transit with ordinary combustible materials, it is unlikely that a fire officer would attempt to examine shipping papers prior to extinguishing the fire. The hazard does not warrant the delay involved in gaining control of the fire.

It is our opinion, therefore, that when all these limitations are considered, the shipping papers notations serve no practical purpose. They could be eliminated for all those commodities which, because of their relatively low hazard, have been exempted from virtually all other requirements of the regulations.

The Board agrees with the above statement and believes that shipper compliance with conditions specified for ORM–D materials will preclude the necessity for adherence to any carrier regulations or shipping paper requirements except for transportation by aircraft.

III. OTHER DOCKETS

Matters discussed in other dockets that were left outstanding namely HM–4, HM–8, HM–51, HM–101, HM–102, and HM–103, are considered proposed for resolution in the combined HM–103 and this docket, e.g., foodstuffs with poisons, pyrophoric solids, water reactive materials, toxicity definitions, materials which are corrosive only to aluminum, special marking of tank cars, packaging for flammable and combustible liquids. Any person who is of the opinion that these combined dockets do not satisfactorily resolve the pending issues in these other dockets should comment on the issues and indicate to the Board what other equivalently safe alternatives are available.

IV. LOADING POISONS WITH FOODSTUFFS

The Board is proposing revisions to §§ 174.632(m) (See § 174.680 in this Notice) and 177.841 to specify that packages bearing poison labels may not be loaded in the same transport vehicle with foodstuffs, feeds, etc. The present restrictions refer to poisons Class A or B which will no longer exist as classifications if the proposals contained in this Notice pertaining to toxic materials are adopted. Consistent with those proposals, and in recognition of the need for ready identification of materials subject to the loading restriction, the Board believes the best approach is to relate the restriction to labels on packages which would be easily recognized at the time of loading. The Board is aware that additional materials will be made subject to the loading restriction if the proposals made herein are adopted.

The matter of commingling of poisons and foodstuffs was the subject of Docket HM–4. The resulting action by the Board was to totally preclude loading within the same rail or highway transport vehicle. The Council for the Safe Transportation of Hazardous Articles (COSTHA), in its comments on HM–103 has requested that the Board consider segregation requirements in place of total restrictions. The basis for the request was recognition of the proposed hazard information requirements for additional highly toxic materials and the fact that the Committee of Experts on the Transport of Dangerous Goods (United Nations) has recognized a segregation requirement for Toxic Materials Group II which corresponds to the Highly Toxic Classification proposed herein. The recommendations adopted by the UN Group were based on an approval procedure adopted by a competent authority which for the United States would be the Department's Hazardous Materials Regulations Board. The Board is not prepared at this time to relax the restriction until workable and easily understood segregation requirements are proposed for consideration. The only apparent solutions at this time do not appear practical e.g., separate compartments and specialized containers for containment of packages. However, the Board invites comments on whether or not there should be some relaxation in this area and, if so, how it should be accomplished.

V. PART 170—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

In essence, this part is proposed to be comprised of the sections formerly found in Part 171. Changes are briefly explained as follows:

(a) Section 170.1 is a new section citing the sources for the Hazardous Materials Regulations and was formerly § 171.2. This section is expanded now that the Hazardous Materials Regulations will include regulations promulgated not only under the authority of (18 U.S.C. 831–835), but regulations promulgated under similar authorities for the Federal Aviation Administrator and the Commandant, U.S. Coast Guard.

(b) Section 170.2 is the former § 171.1, expanded in an effort to make the organization of the regulations clearer. It includes subject matter formerly covered in §§ 171.9 and 171.10.

(c) Section 170.6 is basically self-explanatory within its own text, as are §§ 170.7, 170.12, 170.14, 170.15 and 170.16.

(d) Section 170.8 is a new section proposing to clarify the applicability of the Hazardous Materials Regulations to combustible liquids.

(e) Section 170.10 is a new section proposing to explain the applicability of the regulations to ORM–A, B, C and D materials.

(f) Section 170.30 is a new section proposing to encompass all of the definitions formerly found in § 171.8 in alphabetical order in a "dictionary" format so that the definitions can be more easily located and so that new definitions can be easily added. Definitions for the following words are proposed which were not found heretofore in § 171.8: Air commerce, Approved, c.c., Cargo-only aircraft, cargo tank (new definition) Carrier, Civil aircraft, Express rail car, Flash point, Flight crewmember, Gross weight, Hazardous materials (new definition) Hermetically sealed, Includes, May, Net weight, No person may, Passenger-carrying aircraft, Passenger vessel, Person who offers for transportation, Public aircraft, Shipper, Solid, S.U.S., U.F.C., Viscous. It should be noted that a number of these definitions are now found in 14 or 46 CFR.

VI. PART 171—RULEMAKING PROCEDURES OF THE HAZARDOUS MATERIALS REGULATIONS BOARD.

Essentially, this part is proposed to be comprised of the sections formerly located in Part 170.

(a) Section 171.1 Editorial.

(b) Section 171.3 Updates former § 170.1. Editorially provides for practices that are presently being followed by the Board.

(c) Sections 171.5, 171.7, 171.9, editorial 171.11. Editorial. Proposes to require that petitions for rulemaking be submitted in English.

(d) Section 171.13 Editorial. Also, proposes to limit petitions to persons over whom the Board has jurisdiction, i.e., shippers and carriers. Proposes to require that petitions for waivers or exemptions be submitted in English.

(e) Section 171.15 Editorial. Also sets forth manner of processing of petitions by the Board, or any individual member of the Board.

(f) Section 171.23 Proposes to make reference to hearings to be held by the Commandant, U.S. Coast Guard.

(g) Section 171.31 Proposes to refer to hearings to be held by the Commandant, U.S. Coast Guard to the extent under (46 U.S.C. 170(a)), as amended.

(h) Section 171.35 Proposes to require that petition for rehearing or reconsideration of a rule be submitted at least 20 days before its effective date. The specified time is now 10 days. Also, proposes to provide that in any case in which a rule becomes effective in less than 30 days after issuance, such a petition may be filed at any time before the effective date. The specified time is now 15 days.

VII. PART 172—LIST OF HAZARDOUS MATERIALS AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS.

This part, except for Subpart B which is comprised of §§ 172.100 and 172.101, is covered in Docket HM–103, under which a notice is published in this issue of the FEDERAL REGISTER. For any explanations regarding this Part, see that document. However, Subpart B is covered in this Docket and the following comments are pertinent.

1. *Format.* The list of hazardous materials is presented in a new format. Basically, § 172.100 in the text gives a complete explanation of the new table.

2. *New entries.* To the present list, 341 new entries are proposed to be added. To clearly single out these new entries, a complete listing of them is given below together with the source of the entry. "6D" means the entry is found in C.A.B. No. 82, Air Transport Restricted Articles Tariff and the International Air Transport Association Restricted Articles Regulations. "USCG" means the item is found in the Dangerous Cargo Regulations of the U.S. Coast Guard, 46 CFR 146.04–5. "HM–57" means the item is proposed to be added as a result of the rule making completed in that docket. "Petition" means that the Board has received a request to list the subject material classed as shown. In the list below, some of the entries are followed by the words "air", "water", or "air and water" in parentheses. This is to indicate that it is proposed to regulate these materials only by these modes of transportation. The list below does not include new organic peroxide entries that are given in § 172.101. These are being shown for information only and to make § 172.101 as complete as possible. Some organic peroxide entries in the present § 172.5 list have been deleted. All these peroxide entries will be handled by separate rule making to be introduced in a notice before action is completed in this docket. Also, based on petitions received and the data submitted, lead arsenate, sodium cacodylate, and cacodylic acid are proposed to be removed from the listing. "Chemicals, n.o.s." is proposed to be deleted as an authorized description. This description has caused much confusion in the past. Based on another petition, the listings covering motion picture film are proposed to be greatly simplified. The list of new entries is as follows:

Acetal; 6D
Acetaldehyde ammonia; 6D
Acetic acid (aqueous solution): 6D, HM–57
Acetic acid, glacial: 6D, HM–57
Acetyl bromide: 6D, HM–57
Acetylene tetrabromide: 6D (air)
Acetyl iodide: 6D, HM–57
Acid butyl phosphate: 6D, HM–57
Acrylic acid: HM–57
Ammonium hydrogen sulfate: 6D (air)
Ammonium hydrosulfide solution: 6D (air)
Ammonium polysulfide solution; 6D (air)
Ammonium sulfate nitrate: USCG (water)
Ammonium sulfide solution: 6D (air)
Amyl acid phosphate: HM–57
Amylamine: 6D
Amylene: 6D
Amyl formate: 6D
Antimony lactate: 6D (air)
Aldrin, cast solid: 6D (air)
Aldrin mixture, dry, with 65% or less Aldrin: 6D (air)
Alkanesulfonic acid: 6D, HM–57
Aluminum bromide, anhydrous: 6D, HM–57
Aluminum chloride, anhydrous: 6D (air)
Aluminum chloride solution (air)
Aluminum hydride: 6D
Aluminum metallic, powder: 6D, USCG (air and water)
Aluminum phosphate: HM–57
Aluminum phosphide: 6D
Aminoethyl ethanolamine: HM–57
2-(2-aminoethoxy) ethanol: HM–57
n-aminoethyl piperazine: HM–57
Aminopropyl diethanolamine: HM–57
n-aminopropyl piperazine: HM–57
bis-aminopropyl piperazine: HM–57
Ammonium chlorate: 6D
Ammonium fluoride: 6D
Ammonium hydrogen fluoride: 6D HM–57 (air)
Ammonium hydrogen fluoride solution: 6D, HM–57
Antimony potassium tartrate: 6D (air)
Antimony sufide: 6D (air)
Antimony trichloride, solid: 6D, HM–57
Antimony trichloride solution: 6D HM–57
Argon, cryogenic liquid: Notice on cryogenic liquids soon to be issued by the Board
Arsine: 6D, petition
Asphalt, at or above its flash point: USCG (water)
Barium oxide: 6D (air)
Battery parts: USCG (water)
Benzaldehyde: USCG
Benzine USCG
Bleaching powder: 6D, USCG (water)
Bone oil: 6D (air)
Boron trifluoride-acetic acid complex: 6D, HM–57
Box toe board: USCG (water)
Box toe gum: USCG
Bromoacetic acid, solid: 6D, HM–57
Bromoacetic acid solution: 6D, HM–57
Bromobenzene: USCG
Bromochloromethane: 6D (air)
Burlap bags, new: USCG (water)
Burlap bags, used, not cleaned: 6D, USCG (air and water)
Burlap bags, cleaned: USCG (water)
Burlap-cloth: USCG (water)
Butylamine: 6D
Butyl bromide: 6D
Butyl ether: 6D
Butyl chloride: 6D
Butyl formate: 6D
Butyric acid: HM–57
Calcium carbide: 6D, USCG (air and water)
Calcium cyanamide: 6D, USCG (air and water)
Calcium hydrogen sulfite solution: 6D, HM–57
Calcium oxide: 6D, USCG (air and water)
Camphene: 6D, USCG (air and water)
Camphor oil: USCG
Carbaryl: 6D
Carbon dioxide, solid: 6D, USCG (air and water)
Carbon tetrachloride: 6D, USCG (air and water)
Castor beans: USCG (water)
Castor pomace: USCG (water)

Caustic potash, dry: 6D, USCG, HM-57
Cesium metal: 6D
Chlordane: 6D
Chloric acid: 6D
Chloroacetic acid, solid: 6D, HM-57
Chlorobenzol: USCG
Chloroform: 6D, USCG (air and water)
Chlorophenyl trichlorosilane: 6D, HM-57
Chloroplantinic acid: 6D (air)
2-chloropropene: 6D
Chromic acid mixture, dry: petition
Chromic fluoride, solid: 6D HM-57
Chromic fluoride solution: 6D, HM-57
Coal tar dye, liquid: HM-57
Coconut meal pellets: USCG (water)
Combustible liquid, n.o.s.: 6D, USCG, HM-102
Compounds, cleaning, liquid (containing phosphoric, acetic, etc.): HM-57
Copper chloride: 6D (air)
Copra: USCG (water)
Cotton: USCG (water)
Cotton batting: USCG (water)
Cotten seed hull fiber or shavings: USCG (water)
Cotton wadding: USCG (water)
Cotton waste: USCG (water)
Cresosote, coal tar: 6D, USCG
Crotonic acid: HM-57
Crotonylene: 6D
DDT: 6D (air)
Decahydronaphthalene: USCG
Diacetone alcohol: 6D
Diazinon: 6D (air)
Dibromodifluoromethane: 6D (air)
Dichloroacetic acid: 6D, HM-57
Dichloroacetyl chloride: 6D, HM-57
Dichlorobenzene, ortho: 6D (air)
Dichlorobenzene, para: 6D (air)
Dichlorodifluoroethylene: 6D (air)
Dichloroisopropyl ether: HM-57
Dichloromethane: 6D (air)
Dichloropentane: USCG
2,4-Dichlorophenoxy acetic acid: 6D (air)
Dichlorophenyl trichlorosilane: 6D, HM-57
Dichloropropene-dichloropropane mixture: HM-57
Dichloropropene and propylene dichloride mixture: HM-57
Dieldrin: 6D (air)
Di(2-ethyl hexyl) phosphoric acid: HM-57
Diethyl ketone: 6D
Dihydropyran: 6D
Diisopropylamine: 6D
Diisopropylethanolamine: HM-57
Diisopropylether: 6D
2,3-Dimethylbutane: 6D
Dimethyl carbonate: 6D
1,4-Dimethyl cyclohexane: 6D
Dinitro cyclohexylphenol: 6D (air)
Dioxane: 6D
Diphenylmethylbromide, solid: 6D, HM-57
Divinyl ether: 6D
Dye intermediate: HM-57
Ethyl acrylate: 6D
Ethyl benzene: 6D
Ethyl borate: 6D
Ethyl bromide: 6D
Ethyl butyl acetate: USCG
Ethyl butyl ether: 6D
Ethyl butyraldehyde: 6D
Ethyl butyrate: 6D
Ethyl chloroacetate: 6D
Ethyl crotonate: 6D
Ethylene chlorohydrin: 6D
Ethylene diamine: 6D
Eethylene dibromide: 6D (air and water)
Ethylene glycols: USCG
Ethyl hexaldehyde: USCG
Ethyl lactate: USCG
Ethyl propionate: 6D
Ethyl silicate: USCG
Excelsior: USCG (water)
Exothermic ferrochrome: USCG (water)
Exothermic ferromanganese: USCG (water)
Exothermic silicon chrome: USCG (water)
Feed, wet, mixed: USCG (air and water)
Felt, waste: USCG (water)
Ferric chloride, solid: 6D (air)
Ferric chloride solution: HM-57
Ferrophosphorus: USCG (water)
Ferrosilicon: 6D, USCG (air and water)
Fibers: USCG (water)
Fish meal: USCG (water)
Fluoboric acid: 6D, HM-57
Fuel oil: USCG
Fumaryl chloride: 6D, HM-57
Garbage tankage: USCG (water)
Germane: Petition
Hay: USCG (water)
Hay, loose, wet, or damp: USCG (water)
Heptachlor: 6D (air)
Hexachloroethane: USCG (water)
Hexadiene: 6D
Hexaldehyde: USCG
Hexamethylene diamine, solid: 6D HM-57
Hexanoic acid: HM-57
Hydrogen, cryogenic liquid: Notice on cryogenic liquids soon to be issued by the Board.
Hydrogen selenide: 6D, petition
Hypochlorite solution, containing not more than 7% available chlorine: 6D (air)
Iminobispropylamine: HM-57
Iodine pentafluoride: 6D, HM-57
Iron oxide, spent: 6D (air)
Isobutyl acetate: 6D
Isobutylamine: 6D
Isobutyric acid: HM-57
Isobutyric anhydride: HM-57
Isopentanoic acid: HM-57
Isopropyl acid phosphate, solid: 6D, HM-57
Isopropylamine: 6D
Isopropyl nitrate: 6D
Jute: USCG (water)
Kapok: USCG (water)
Kerosene: USCG
Lead dross: USCG (water)
Lead peroxide: petition
Lead sulfate, solid: 6D, HM-57
Lindane: 6D (air)
Lithium acetylide-ethylene diamine complex: 6D
Lithium borohydride: 6D
Lithium nitrate: 6D
Magnesium aluminum phosphide: 6D
Magnetized materials: 6D (air)
Malathion: 6D (air)
Manganese dioxide: 6D (air)
Mercury, metallic: 6D (air)
Mesityl oxide: USCG
Metal borings, turnings, etc.: USCG" (water)
Methyl acrylate: 6D
Methylal: 6D
Methyl amyl acetate: USCG
Methyl amyl ketone: USCG
Methyl butene: 6D
Methyl butyrate: 6D
Methyl chloroform: 6D (air)
Methyl cyclohexane: 6D
Methyl cyclopentane: 6D
Methyl dichloroacetate: 6D, HM-57
Methyl ethyl pyridine: HM-57
Methyl furan: 6D
Methyl methacrylate monomer, uninhibited: Petition
Methyl norbornene dicarboxylic anhydride 6D, HM-57
Methyl pentadiene: 6D
Methyl pentane: 6D
Methyl propionate: 6D
Methyl propyl ketone: 6D
Methyl sulfide: 6D
Mining reagent: HM-57
Mipafox: 6D (air)
Molybdenum pentachloride: 6D (air)
Monoethanolamine: HM-57
Naphthalene: 6D, USCG (air and water)
Nitrogen, cryogenic liquid: Notice on cryogenic liquids soon to be issued by the Board.
Nitromethane: Board proposal in this docket
Oakum: USCG (water)
Oiled material: 6D, USCG (air and water)
Organic phosphate compound, liquid (extremely toxic): HM-51
Organic phosphate compound, mixture, dry (extremely toxic): HM-51
Other regulated material, Group A, n.o.s.: 6D
Other regulated material, Group B, n.o.s.: 6D
Other regulated material, Group D: Board proposal in this docket.
Oxygen, cryogenic liquid. Notice on cryogenic liquids soon to be issued by the Board.
Paper, scrap: USCG (water)
Paraldehyde, USCG
Pentachlorophenol: 6D
Perfluoro-2-butene: 6D (air)
Pesticide, water reactive, etc.: USCG (water)
Petroleum coke: USCG (water)
Phencapton: 6D (air)
Phenylene diamine, meta or para: 6D (air)
Phosphine: 6D, petition
Phosphorus heptasulfide: 6D
Phosphorus trisulfide: 6D
Photographic flash lamps: USCG (water)
Polystyrene beads: 6D
Potassium dichromate: 6D (air)
Potassium fluoride solution: 6D, HM-57
Potassium hydrogen fluoride solution: 6D, HM-57
Potassium hydrogen sulfate, solid: 6D (air)
Potassium hydroxide, dry: 6D, HM-57
Potassium metabisulfite: 6D (air)
Proplonaldehyde: 6D
Propionic acid: 6D, HM-57
Propionic acid solution: HM-57
Propionic anhydride: HM-57
Propyl acetate: 6D
Propylamine: 6D
Propyl chloride: 6D
Propylene diamine: HM-57
Propyl formate: 6D
Pyroforic solid, n.o.s.: Board proposal in this docket.
Radioactive material, fissile, n.o.s.: Board proposal in this docket.
Rags, scrap: USCG (water)
Road oil: USCG
Rosin: USCG (water)
Rubber curing compound: USCG (water)
Rubidium metal: 6D
Rubidium metal, in cartridges: 6D
Rust preventive coating: USCG
Sawdust: USCG (water)
Selenic acid: 6D, HM-57
Soda lime: 6D, HM-57
Sodium aluminate, solid: 6D (air)
Sodium dichromate: 6D (air)
Sodium fluoride, solid: 6D (air)
Sodium fluoride solution: 6D, HM-57
Sodium hydrogen sulfate, solid: 6D (air)
Sodium hydrogen sulfate solution: 6D, HM-57
Sodium hydrogen sulfite, solid: 6D, HM-57
Sodium hydroxide, dry: 6D, HM-57
Sodium metabisulfite: 6D (air)
Sodium methylate, alcohol mixture: HM-57, petition
Sodium monoxide: 6D, HM-57
Sodium pentachlorophenate: 6D (air)
Sodium phenolate, solid: HM-57
Sodium phosphide: 6D
Stannic phosphide: 6D
Stannous chloride: 6D (air)
Styrene monomer: 6D, USCG
Sulfur, solid: USCG (water)
Sulfurous acid: 6D, HM-57
Tetrachloroethane: 6D, USCG (air and water)
Tetrachloroethylene: 6D (air)
Tetraethylene pentamine: HM-57
1,2,3,6-tetrahydrobenzaldehyde HM-57
Tetra hydrofuran: 6D
Tetramethyl ammonium hydroxide: HM-57
Tetramethyl methylene diamine: 6D (air)
Textile treating compound mixture, liquid: HM-57
Thioglycolic acid: 6D, HM-57
Thiram: 6D (air)
2,4-toluene diamine: 6D (air)
2,4-toluene diisocyanate: 6D
Toluene sulfonic acid: HM-57
Trichloroacetic acid, solid: 6D, HM-57
Trichloroacetic acid solution: 6D, HM-57

Trichloroethylene: 6D (air)
Triethylamine: 6D
Trimethyl acetyl chloride: 6D, HM-57
Twisted jute packing: USCG (water)
Uranium hexafluoride, low specific activity, etc.: Board proposal in this docket.
Uranium hexafluoride, fissile, etc.: Board proposal in this docket.
Uranium metal, pyroforic: Board proposal in this docket.
Uranyl nitrate hexahydrate solution: Board proposal in this docket.
Valeric acid: HM-57
Valeryl chloride: 6D, HM-57
Vinyl ethyle ether, inhibited: 6D
Vinyl isobutyl ether: 6D
Water reactive solid, n.o.s.: Board proposal in this docket.
Waxes, liquid: USCG
White acid, etc.: 6D, HM-57
Yeast: 6D (air)
Zinc chloride solution: 6D, HM-57
Zirconium hydride: 6D
Zirconium tetrachloride, solid: HM-57

3. *Exemptions.* Section § 172.101, column 5, proposes to eliminate packaging exemptions for certain materials. The list of these materials is as follows:

Acetone cyanohydrin
Acetonitrile
Acrylonitrile
Allyl alcohol
Allyl chloride
Aluminum hydride
Aluminum phosphide
Arsenic trichloride
Arsine
Boron trifluoride
Cesium, metal
Chloric acid
Chlorine
Chlorophenyl trichlorosilane
2-chloroprene
Dichlorophenyl trichlorosilane
Ethylene diamine
Dihydropyran
Diisopropyl ether
Dimethyl sulfide
Ether, (ethyl)
Hexadiene
Hydrobromic acid, more than 49% strength
Hydrogen peroxide solution, over 52% hydrogen peroxide
Hydrogen sulfide
Hydrofluosilicic acid
Isopropylamine
Lithium acetylide-ethylene diamine complex
Lithium borohydride
Lithium nitride
Magnesium aluminum phosphide
Mesityl oxide
Methylal
Methyl butene
Nicotine, liquid
Organic phosphate liquid liquid, n.o.s. (25% or less) (extremely toxic)
Parathion mixture, liquid
Pentane
Propylamine
Propyl chloride
Rubidium metal
Sodium phosphide
Stannic phosphide
Strychnine
Tetraethyl dithio pyrophosphate mixture, liquid
Tetraethyl pyrophosphate mixture, liquid
Tetrahydrofuran
Vinyl ethyl ether
Zirconium hydride

The Board is of the opinion that these materials present a level of hazard in transportation such that specification packaging should be a requirement for their shipment, including small quantities. Considering the packaging authorized and the properties of these materials which indicate they are highly flammable, extremely toxic, extremely corrosive, highly reactive, or highly flammable and toxic, the Board believes this proposal to be warranted.

4. *Passenger carrying aircraft.* For the same reasons, the following materials which are now permitted to be transported on passenger carrying aircraft, are proposed to be not permitted for transportation on such aircraft.

Acetaldehyde
Acetone cyanohydrin
Acrylonitrile
Aluminum phosphide
Arsenic trichloride
Benzyl chloride
Crude nitrogen fertilizer solution
Cyclopentane
Dihydropyran
Diisopropyl ether
2,3-Dimethylbutane
Dimethyl sulfide
Dioxane
Dioxolane
Divinyl ether
Ether, (ethyl)
Ethyl methyl ether
Ethyl nitrite
Gas drips, hydrocarbon
Gasoline
Hexadiene
Hydriodic acid
Isopentane
Isoprene
Isopropylamine
Mercapton mixture, aliphatic (combustible liquid)
Methylal
Methyl butene
Methyl formate
Methyl furan
Methyl pentadiene
Methyl proprionate
Methyl propyl ketone
Methyl sulfide
Monoethylamine
Neohexane
Nicotine, liquid
Organic phosphate, liquid (extremely toxic)
Organic phosphate compound mixture, liquid, n.o.s. (25% or less) (extremely toxic)
Parathione mixture, liquid
Polystyrene beads
Propylamine
Propyl chloride
Propylene oxide
Strychnine
Sulfur trioxide
Tetraethyl dithio pyrophosphate mixture, liquid
Tetraethyl pyrophosphate mixture, liquid
Tetrahydrofuran
2,4-toluene diisocyanate
Vinyl ethyl ether
Zirconium hydride

5. *Passenger carrying rail car.* Another important change is the specificity of what is permitted to be carried in a passenger carrying rail car. Presently there are limitations on rail carriers in baggage service. The proposed rule would prescribe what hazardous materials may be transported in a passenger rail car. The present regulations are silent in this respect and only address themselves to what is permissible in rail baggage service. As this constitutes a new area of regulation, the Board, for the time being, simply is proposing to apply the limitations for passenger-carrying aircraft. Under the circumstances this is considered to be a reasonable interim approach while the whole subject of the carriage of hazardous materials on passenger vehicles is evaluated. The Board expects to more fully cover this area in future rule making regarding hazardous materials on surface passenger vehicles. Meanwhile, so as not to unduly expand the areas of rule making in this docket, this interim approach has been adopted.

6. *Transportation aboard vessels.* In column 7, the stowage and segregation requirements for water transportation of hazardous materials are proposed to be changed from what is now found in 46 CFR 146 to provide consistency with the International Maritime Dangerous Goods Code developed by the Intergovernmental Maritime Consultative Organization (IMCO). For further discussion of the stowage and segregation changes, see that section of the preamble dealing with Part 176.

7. *Labeling and classification.* The list of Hazardous Materials (§ 172.101) sets forth the U.S. classification and label requirements for each material in columns 2 and 3. A problem is that the classification and label requirements for all the materials are not completely consistent with the UN system. For shipments by water, greater consistency is becoming a necessity. Vessels under many foreign flags carrying packaged hazardous materials in compliance with the UN system and calling at United States ports are becoming a frequent occurrence as more and more maritime nations begin to adopt the IMCO recommendations for the carriage of hazardous materials by vessels. The Board believes that some means must be provided to insure that the UN system of classification and labeling is permitted aboard these vessels while within the navigable waters of the United States. To achieve this end, the UN (also IMCO) classification and labeling requirements for each product listed in § 172.101 are set forth in column 4, if known. The regulations proposed would permit a carrier by water to transport hazardous materials classified and labeled in accordance with either the United States or UN systems. The present U.S. Coast Guard regulations in 46 CFR 146.02-10 and 146.02-11 permit the labeling and packaging of certain import, export, and transiting shipments to be in accordance with foreign requirements. Consequently, this recognition is not really a change in philosophy or regulation.

8. *Docket HM-51.* Review of § 172.101 will also reveal certain proposed changes relating to Docket HM-51. For the purposes of rulemaking, Docket HM-51 is superseded by this docket and the matters for rulemaking under that docket are now incorporated in this docket. The definitions as proposed in the Second Advance Notice in Docket No. HM-51 (36 FR 2934) are incorporated herein with one slight modification suggested by a commenter regarding particle sizes of dusts. See § 173.326a in this docket. A very important matter to note is that the list of hazardous materials does not include a number of items listed in C.A.B. No. 82, Air Transport Restricted Articles Tariff No. 6D. As stated in HM-57, Notice No. 73-6 (38 FR 24915) the Board

wishes to eliminate discrepancies between the Tariff and the list in the Hazardous Materials Regulations.

Based on the evaluation of the information available to the Board, it is of the opinion that many of the toxic materials listed in the Tariff are properly classed and proposes hereby to add them to § 172.101. In an effort to ascertain that the materials listed in § 172.101 as proposed herein meet the highly toxic or irritating material criteria, the Board requests that additional data be made available to it.

The Board is primarily interested in reviewing data representing results of the tests or criteria prescribed in §§ 173.326, 173.326a, and 173.326b. Accordingly, the Board will add those appropriate items as listed below, with packaging as prescribed for highly toxic materials *or irritating materials, not specifically* provided for, §§ 173.345, 173.364, or 173.384, as pertinent.

As an ancillary action, after the data has been reviewed and classification determinations have been completed through this rulemaking, the Department will undertake to notify the Civil Aeronautics Board of all discrepancies. In this manner, it is hoped that Tariff 6D and the DOT Hazardous Materials Regulations will be made more uniform thereby facilitating compliance with all regulations.

The list of materials proposed to be added is as follows: ("Irr" indicates irritating material; "Toxic" indicates the Board has some information indicating the material may not be highly toxic but it is not entirely conclusive and needs verification):

Acetylene tetrachloride
Allyl isothiocyanate: Irr
Antu
Benzadine base
Benzyl cyanide
Benzylidene chloride: Toxic
Beryllium chloride
Beryllium hydroxide
Beryllium metal, flake, or powder
Beryllium oxide
Beryllium sulfate
Brombenzyl cyanide, liquid: Irr
Butyl isocyanate: Irr
Carbonyl fluoride
Chloroacetone, stabilizer: Irr
Chloronitrobenzene, *meta or para,* solid
Chloronitrobenzene, *ortho,* liquid
Cyclohexyl isocyanate: Irr
Dichloroethyl sulfide
Dichlorovinylchloroarsine
Dichlorovos (DDVP)
Diethyl sulfate: Toxic
Dimefox
Dinitroaniline, liquid
Dinitrocresol
Dinitrotoluenes, liquid: Toxic
Dinoseb
Diphenylchloroarsine, solid: Irr
Endrin
Ethyl bromoacetate
Ethyl chloroacetate
Ethyl dichloroarsine
Ethyl isocyanate: Irr
Hydrogen selenide
Isodrin
Lead acetate: Toxic
Methyl chloroacetate
Methyl isocyanate: Irr
Methyl isothiocyanate: Irr
Naphthylamine: Toxic
Nickel arsenate
Nitroaniline
Nitrotoluene, liquid: Toxic
Nitrotoluene, solid: Toxic
Osmium tetroxide
Oxalic acid, solid: Toxic
Oxalic salts, solid: Toxic
Pentachloroethane: Toxic
Phenylcarbylamine chloride
Phenyldichloroarsine
Phenylisocyanate: Irr
Phenyl mercuric acetate, solid
Phenyl mercuric hydroxide, solid
Phenyl mercuric nitrate, solid
Pindone
Potassium cuprocyanide
Propyl isocyanate: Irr
Schradan
Selenic acid, solid
Silver arsenite
Sodium arsanilate
Tetrachlorodinitroethane
Thallium acetate
Thallium bromide
Thallium carbonate
Thallium chloride
Thallium hydroxide
Thallium iodide
Thallium monoxide
Thallium nitrate
Thallium peroxide
Thallium sesquichloride
Thallium sulfide
Toluidine, liquid
Trichloroacetyl chloride
Vanadium trichloride
Zinc phosphide

9. *Change of classifications.* In the proposed amended listing of hazardous materials, a number of materials in the present list are proposed to be changed classification. These proposed changes are a result either of Docket HM-103 which necessitates a philosophy that materials be classed according to the hazards they present in a transportation incident, or of the proposed revision of § 173.2 which prescribes the proper classification when a material meets more than one hazard classification. The list of materials for which the classification is proposed to be changed is as follows:

Acetyl chloride
Allyl alcohol
Allyl chlorocarbonate
Bromine pentafluoride
Bromine trifluoride
Chloropicrin and nonflammable, nonliquefied compressed gas mixture
Cyanogen chloride
Cyanogen gas
Diethyl dichlorosilane
Dimethyl sulfate
Ethyl chloroformate
Ethyl chlorothioformate
Ethylene imine
Fluorine
Hexaethyl tetraphosphate and compressed gas mixture
Hydrazine anhydrous
Hydrocyanic acid, liquefied, solution, etc.
Hydrogen peroxide
Insecticide, liquefied gas, containing extremely or highly toxic material
Iodine pentafluoride
Methyl bromide and nonflammable, nonliquefied compressed gas mixture
Methyl chloroformate
Nickel carbonyl
Nitrating (mixed) acid
Nitrating (mixed) acid, spent
Nitric acid
Nitric acid, fuming
Nitric oxide
Nitrobenzol
Nitrogen dioxide
Nitrogen peroxide
Nitrogen tetroxide
Nitrogen tetroxide-nitric oxide mixture
Parathion and compressed gas mixture
Pentaborane
Perchloric acid
Phosgene
Phosphoric anhydride
Phosphorus pentachloride

It should be noted that packaging requirements remain the same as present. The changes are limited to classification and labeling. Of course, this would also change the shipping paper description requirements. Editorially, the packaging sections would be appropriately relocated or amended as necessary, in the final amendment.

VIII. PACKAGING REQUIREMENTS

In this docket and in Docket HM-103 published elsewhere in this FEDERAL REGISTER, *poisonous materials would no* longer be designated as Class A or B poisons but rather as Extremely or Highly Toxic Materials.

Materials would be reordered in priority of care in packaging and handling according to their degree of toxicity. Because persons associated a Level of hazard distinction in definition for the previous Class A and Class B, (when the definitions quantitatively did not make such a distinction), these persons have mistakenly associated "Class A poison" with Extremely Toxic and "Class B poison" with Highly Toxic. This association should not be made. The extremely and highly toxic distinctions are proposed to be established to better relate the integrity of the packaging to the level of hazard of the material packaged. Several materials formerly identified as Class B poisons are now proposed to be *identified as extremely toxic materials.* Their specification packaging is not proposed to be changed because the Board believes the presently authorized packaging is adequate.

The following is a list of such materials:

Chloropicrin, absorbed
Chloropicrin liquid
Methyl bromide and chloropicrin mixture, liquid
Motor fuel antiknock compound
Perchloro methyl mercaptan

However, the Board believes that other Class B poison materials now proposed to be identified as extremely toxic materials, should not be authorized in some of the presently specified packaging. Appearing below is a list of these materials and, as a guide only, a summary description of the packaging that would no longer be authorized.

Acetone cyanohydrin: 5C, 17C, 17E, 37B, 10A, 10B, 10C, 11A, 11B, 12B with several glass bottles, 12D, 15A or 15B with glass bottles, 15C, 16A, 19A, tank cars, tank trucks, 1A, 1D, 1E, 21C, 42C, 42D, 15P, 22C, 37P, 12A, 29, 42C, and 12P.

Arsenic trichloride: Same as acetone cyanohydrin.

Cyanogen bromide: Glass or earthware inside containers.

Hydrocyanic acid solutions: 11A, 11B.

Nicotine, liquid: Same as acetone cyanohydrin.

Organic phosphate compound liquid (extremely toxic): 17C, 17E, 21C, 37A.

Organic Phosphate compound mixtures, n.o.s., dry: 17C, 17H, 37A, 21C for over 15% by weight.

Organic phosphate compound mixtures, n.o.s., liquid: 17C, 17E, 37B, 21C, 37A.

Parathion, liquid: 17C, 17E, 21C, 37A.

Parathion mixture, dry: 17C, 17H, 37A, 21C for over 15% by weight.

Parathion mixture, liquid: 17C, 17E, 37B, 21C, 37A.

Strychnine: 5A, 6B, 17E, 17H, 37A, 37B, 10A, 10B, 10C, 11A, 12A (12B or 12C) with glass bottles and some other inside packagings 15A and 15B with certain inside packaging, 15C, 16A, 19A, 18B, 22A, tank cars, 21C, and 37P.

Tetraethyl dithio pyrophosphate, liquid: 17C, 17E, 21C, 37A.

Tetraethyl dithio pyrophosphate mixture, dry: 17C, 17H, 37A, 21C for over 15% by weight.

Tetraethyl dithio pyrophosphate mixture, liquid: 17C, 17E, 37B, 21C, 37A.

Tetraethyl pyrophosphate, liquid: 17C, 17E, 21C, 37A.

IX. PART 173—SHIPPERS

Many changes are proposed in this part, the great majority being of an editorial nature. However, the Board recognizes that in the publication of such a voluminous document proposed changes might be unnoticed. It desires to highlight all proposed changes as clearly as possible.

Therefore, under these circumstances, the Board has determined that a preamble covering this part section by section would be the best approach to avoid any oversights. The proposed changes are therefore highlighted as follows:

Section 173.1. Editorial clarification. Proposed deletion of unnecessary language.

Section 173.2. Editorial when viewed with the notice in Docket HM–103.

Sections 173,3, 173.4, and 173.5. Editorial.

Section 173.6. Proposed new requirements covering the preparation of shipments of hazardous materials for transportation by aircraft. Most of these proposed requirements are derived from C.A.B. No. 82, Air Transport Restricted Articles Tariff No. 6–D and the International Air Transport Association (IATA) Restricted Articles Regulations.

Section 173.7. Editorial.

Section 173.9. Editorial. Also, proposed new requirements have been added in paragraph (d) to give added flexibility in using certain packagings of foreign manufacture. This proposed change is based on a petition from a domestic chemical manufacturer.

Section 173.18. Proposed new requirements for consolidation of aircraft shipments. These requirements are derived from rules in C.A.B. No. 82 Air Transport Restricted Articles Tariff No. 6D.

Section 173.21. Editorial. Also, proposed new requirements regarding the forwarding of Bureau of Explosives reports on cigarette lighters to the Department.

Sections 173.22, 173.23, 173.24, and 173.26. Editorial.

Section 173.27. Editorial changes caused by the incorporation of 14 CFR Part 103 in these regulations.

Section 173.28. Editorial.

Section 173.29. The Board is proposing to revise § 173.29 in its entirety to require that packagings and tanks which have not been cleaned or purged of all hazardous materials residue be carried in the same manner as if they were filled with hazardous materials. It has been brought to the Board's attention on several occasions that present regulations do not require identification of the potential hazards of materials such as parathion in so-called empty containers. The Board believes that packagings containing residual quantities of hazardous materials should be subject to the same requirements as those that are filled. However, a provision has been added to the shipping paper regulations proposed in Docket No. HM–103 authorizing addition of the word "Empty" to a shipping description when packagings have not been cleaned and purged.

Sections 173.30 173.31, 173.32, 173.33, and 173.34. Editorial.

Sections 173.51, 173.52, 173.54, 173.56, 173.57, 173.58, 173.59, 173.60, 173.61, 173.62, 173.63, and 173.64. Editorial.

Section 173.65. Proposed limitation to present exemption which would not permit transportation of small quantities of explosive chemicals described as drugs or medicines, by express rail car or aircraft.

Section 173.166. Proposed deletion of provision based on obsolete reference to an emergency.

Sections 173.67, 173.68, 173.69, 173.70, 173.71, 173.72, 173.73, 173.74, 173.75, 173.76, 173.77, 173.78, 173.79, and 173.80. Editorial.

Sections 173.86 and 173.87. Editorial.

Sections 173.89, 173.90, 173.91, 173.92, 173.93, 173.94, and 173.95. Editorial.

Section 173.101. Editorial.

Sections 173.103, 173.104, 173.105, 173.106, 173.107, 173.108, 173.109, 173.110, 173.111, 173.112, 173.113, and 173.114. Editorial.

Section 173.116. Editorial. Also, proposed addition of reference temperature of 130° F. regarding filling.

Section 173.116a. Editorial. To set forth the applicability of the U.S. Coast Guard regulations when transportation by water is involved for liquids having a flash point above 80° F. (Tagliabue open-cup).

Section 173.118. Proposed changes in requirements regarding "exempt" quantities of flammable liquids. "Exemptions" would now be limited to specification packaging. By reclassification to ORM–D, exemption from other regulations would also be effected under certain circumstances.

Section 173.118a. Proposed exemption provisions for combustible liquids.

Section 173.119. Editorial. Also, proposed packaging limitations as presently set forth in Tariff 6–D and the IATA Restricted Articles Regulations.

Section 173.119a. Proposed added combutible liquids packaging requirements which apply when such materials are transported by aircraft or passenger vessel.

Section 173.119b. Proposed added packaging requirements which apply when certain other combustible liquids are transported by aircraft or passenger vessel.

Section 173.120. Proposed simplification of requirements applicable to vehicles being transported by rail or highway.

Section 173.121. Editorial.

Section 173.122. Editorial. Also, proposed marking requirement for tank cars as originally introduced in Docket HM–101, Notice 72–5 (37 FR 7104).

Section 173.123. Editorial.

Section 173.124. Editorial. Also, proposed marking requirement for tank cars as originally introduced in Locket HM–101, Notice 72–5 (37 FR 7104).

Section 173.125. Editorial. Also, proposed deletion of provisions based on obsolete reference to an emergency. Proposed limitation on packaging authorized aboard an aircraft based on standards of the IATA Restricted Articles Regulations.

Section 173.126 and 173.127. Editorial.

Section 173.128. Editorial. Also, proposed incorporation of requirements from 46 CFR 146 and the IATA Restricted Articles Regulations. Proposed deletion of provisions based on obsolete reference to an emergency. Proposed deletion of certain labeling and marking exemptions.

Section 173.129. Editorial. Also, proposed limitations on packaging authorized aboard aircraft based on the IATA Restricted Articles Regulations. Proposed deletion of certain labeling and marking exemptions.

Section 173.130. Proposed to authorize reclassification of refrigerating machines containing a limited amount of a flammable liquid to ORM–D.

Section 173.132. Editorial. Also, proposed incorporation of requirements from 46 CFR 146 and the IATA Restricted Articles Regulations. Proposed deletion of provisions based on obsolete reference to an emergency. Proposed deletion of certain labeling and marking exemptions.

Section 173.133. Editorial. Also, proposed deletion of provisions based on obsolete reference to an emergency.

Sections 173.134, 173.135, 173.136, 173.137, and 173.138. Editorial.

Section 73.139. Editorial. Also, proposed marking requirement for tank cars as originally introduced in Docket HM–101, Notice 72–5 (37 FR 7104).

Sections 173.140 and 173.141. Editorial.

Section 173.143. Editorial.

Section 173.144. Editorial. Also, proposed limitation on packaging authorized aboard aircraft based on the IATA Restricted Articles Regulations. Proposed deletion of certain labeling and marking exemptions.

Section 173.145. Editorial. Also, proposed limitation on packaging authorized aboard aircraft based on the IATA Restricted Articles Regulations.

Section 173.146. Editorial.

Section 173.147. Proposed change in requirements regarding "exempt" quantity of methyl vinyl ketone. "Exemption" would now be limited to specification packaging. By reclassification to ORM–D, exemption from other regulations would also be effected under certain circumstances.

Sections 173.148 and 173.149. Editorial.

Section 173.149a. Proposed addition of requirements for the shipment of nitromethane.

Section 173.149b. Proposed incorporation of requirements from 46 CFR 146 and Tariff 6–D for formaldehyde.

Section 173.150. Editorial.

Section 173.151. Editorial. Proposed separation of oxidizing materials and organic peroxides as two separate classes of hazardous materials.

Section 173.151a. Proposed addition of an organic peroxide definition.

Section 173.153. Proposed changes in requirements regarding "exempt" quantities of flammable solids, oxidizing materials, and organic peroxides. "Exemption" would now be limited to specification packaging. By reclassification to ORM–D, exemption from other regulations would also be effected under certain circumstances.

Sections 173.154, 173.154a, 173.155, and 173.156. Editorial.

Sections 173.158, 173.159, 173.160, and 173.161. Editorial.

Section 173.162. Editorial. Proposed changes in requirements regarding "exempt" quantity of charcoal. "Exemption" would now be limited to specification packaging. By reclassification to ORM–D, exemption from other regulations would also be effected under certain circumstances.

Section 173.163. Editorial.

Section 173.164. Proposed addition of "chromic acid mixture, dry" based on Manufacturing Chemists Association petition.

Sections 173.165, 173.166, 173.167, 173.168, 173.169, 173.170, 173.171, and 173.172. Editorial.

Sections 173.174 and 173.175. Editorial.

Section 173.176. Editorial. Also, proposed changes in requirements regarding exemptions for matches. Exemptions would now be limited to packaging. By reclassification to ORM–D, exemption from other regulations would also be effected under certain circumstances.

Section 173.177. Editorial. Also, proposed deletion of provision relating to obsolete reference to an emergency.

Sections 173.178, 173.179, 173.180, and 173.181. Editorial. Also, proposed deletions based on petition stating that slow burning (nonflammable) film does not meet flammable solid definition.

Section 173.182. Editorial. Based on Docket HM–104, Notice No. 72–10 (37 FR 16108), note would be added for calcium nitrate. Also, proposes to delete exemptions from labeling and marking, except those provided in § 173.153, if the material meets oxidizing material definition.

Sections 173.183, 173.184, and 173.185. Editorial.

Section 173.186. Editorial. Also, proposed deletion of provision relating to obsolete reference to an emergency.

Section 173.187. Editorial.

Section 173.188. Editorial. Also, proposed deletion of provision relating to obsolete reference to an emergency.

Section 173.189. Editorial.

Section 173.190. Editorial. Also, proposed marking requirements for tank cars as originally introduced in Docket HM–101, Notice 72–5 (37 FR 7104).

Sections 173.191, 173.192, 173.193, and 173.194. Editorial.

Section 173.195. Editorial. Also, proposed deletion of provision relating to obsolete reference to an emergency. Proposes to incorporate text of § 173.196.

Section 173.196. Editorial.

Sections 173.197, 173.197a, 173.198, 173.199, 173.200, 173.201, 173.202, and 173.203. Editorial.

Section 173.204. Editorial. Also, proposed limitation on packaging authorized aboard aircraft based on IATA Restricted Articles Regulations. Proposed deletion of provision relating to obsolete reference to an emergency.

Sections 173.205, 173.206, 173,207, 173.208, 178.209, 173.210, 173.211, 173.212, 178.213, 178.214, and 173.216. Editorial.

Section 173.217. Editorial. Also, proposed deletion of certain labeling and marking exemptions.

Section 173.218. Editorial.

Section 173.220. Editorial. Also, proposed deletion of certain labeling and marking exemptions.

Sections 173.221 and 173.222. Editorial.

Section 173.223. Editorial. Also, proposed deletion of certain labeling and marking exemptions.

Section 173.224 and 173.225. Editorial.

Section 173.226. Editorial. Also, proposed change in requirements regarding "exempt" quantity of powdered thorium metal. "Exemption" would be limited to specification packaging. By reclassification to ORM–D, exemption from other regulations would also be effected under certain circumstances.

Sections 173.227 and 173.228. Editorial.

Section 173.229. Editorial. Also, proposed changes in requirements regarding "exempt" quantities of chlorate and borate mixtures or chlorate and magnesium chloride mixtures. "Exemption" would be limited to specification packaging. By reclassification to ORM–D, exemption from other regulations would also be effected under certain circumstances.

Sections 173.230, 173.231, 173.232, 173.233, 173.234, 173.235, 173.236, 173.237, 173.238 and 173.239. Editorial.

Section 173.240. Editorial. Changes are to recognize proposed criteria for materials corrosive to aluminum proposed to be covered as an ORM–B classification. ORM–B, n.o.s. materials would be subject to restrictions only when intended to be transported by air.

Section 173.241. Editorial. Also, proposed addition of reference temperature of 130° F regarding filling.

Section 173.242. Editorial.

Section 173.244. Editorial. Also, proposed changes in requirements regarding exemptions for corrosive materials. Exemptions would be limited to specification packaging. By reclassification to ORM–D, exemptions from other regulations would also be effected under certain circumstances.

Section 173.245. Editorial. Also, proposed incorporation of certain packaging limitations aboard aircraft as set forth in Tariff 6–D and the IATA Restricted Articles Regulations.

Sections 173.245a, 173.245b, and 173.246. Editorial.

Sections 173.247 and 173.248. Editorial. Also, proposed incorporation of packaging limitation aboard aircraft as set forth in the IATA Restricted Articles Regulations.

Section 173.249. Editorial. Also, proposes to delete certain older specification tank cars. Proposes changes in requirements regarding exemptions for certain corrosive liquids. Exemptions would be limited to specification packaging. By reclassification to ORM–D, exemptions from other requirements would also be effected.

Section 173.250. Editorial. Also, proposed simplification of requirements governing the transportation of automobiles.

Section 173.251. Editorial.

Section 173.252. Editorial. Also, proposed to require marking of tank cars as originally introduced in Docket No. HM–101, Notice 72.5 (37 FR 7104).

Section 173.253. Editorial. Also, proposed deletion of provisions relating to obsolete references to an emergency.

Sections 173.254 and 173.255. Editorial.

Sections 173.256, 173.257, and 173.258. Editorial. Also, proposed incorporation of certain packaging limitations aboard aircraft based on requirements of the IATA Restricted Articles Regulations.

Section 173.259. Editorial.

Section 173.260. Editorial. Proposed deletion of exemption governing batteries shipped by rail.

Section 173.261. Editorial. Also, proposed changes in requirements regarding exemptions for fire-extinguisher charges which are corrosive. Exemptions would be limited to specification packaging. By reclassification to ORM–D, exemptions from other regulations would also be effected.

Section 173.262. Editorial. Also, proposed incorporation of certain packaging limitations aboard aircraft based on requirements of the IATA Restricted Articles Regulations.

Section 173.263. Editorial. Also, proposed incorporation of certain packaging limitations aboard aircraft based on requirements of the IATA Restricted Articles Regulations. Proposed deletion of exemption from labeling and marking for hydrochloric acid of not over 20% strength unless packaged in accordance with § 173.244 for ORM–D.

Section 173.264. Editorial. Also, proposed deletion of provisions relating to obsolete references to an emergency. Proposed to require marking of tank cars as originally introduced in Docket No. HM–101, Notice 72–5, (37 FR 7104).

Section 173.265. Editorial. Also, proposed incorporation of certain packaging limitations aboard aircraft based on requirements of the IATA Restricted Articles Regulations.

Section 173.266. Editorial. Also, proposed incorporation of certain packaging limitations aboard aircraft based on requirements of the IATA Restricted Articles Regulations. Proposed to require marking of tank cars as originally introduced in Docket No. HM–101, Notice 72–5, (37 FR 7104).

Section 173.267. Editorial.

Section 173.268. Editorial. Also, proposed to require marking of tank cars as originally introduced in Docket No. HM–101, Notice 72–5 (37 FR 7104).

Section 173.269. Editorial. Also, proposed incorporation of certain packaging limitations aboard aircraft based on requirements of the IATA Restricted Articles Regulations.

Sections 173.270 and 1732.71. Editorial.

Section 173.272. Editorial. Also, proposed deletion of labeling and marking exemptions for sulfuric acid of not over 25 percent concentration unless packaged in accordance with § 173.244 for ORM–D. Proposed incorporation of certain packaging limitations of Tariff 6–D and the IATA Restricted Articles Regulations aboard aircraft.

Section 173.273. Editorial. Also, proposed to require marking of tank cars as originally introduced in Docket No. HM–101, Notice 72–5 (37 FR 7104).

Sections 173.274 and 173.275. Editorial.

Section 173.276. Editorial. Also, proposed incorporation of packaging limitation aboard aircraft based on requirements of the IATA Restricted Articles Regulations.

Section 173.277. Editorial. Also, proposed incorporation of packaging limitations aboard aircraft of Tariff–6D and the IATA Restricted Articles Regulations. Proposed changes in requirements regarding exemptions for hypochlorite solutions. Exemptions in this section would be limited to specification packaging. By reclassification to ORM–D exemptions from other regulations would also be effected.

Section 173.278. Editorial. Also, proposed incorporation of packaging limitation aboard aircraft based on the requirements of the IATA Restricted Articles Regulations.

Section 173.279. Editorial. Also, proposed deletion of exemptions from labeling and marking for anisoyl chloride unless packaged in accordance with § 173.244 for ORM–D.

Sections 173.280, 173.281, 173.282, 173.283, 173.284, and 173.285. Editorial.

Section 173.286. Editorial. Proposed changes to the requirements on exemptions for chemical kits. Exemptions would be limited to specification packaging. By reclassification to ORM–D, exemptions from other regulations would also be effected.

Sections 173.287 and 173.288. Editorial. Also, proposed incorporation of packaging limitations aboard aircraft based on IATA Restricted Articles Regulations.

Section 173.289. Editorial. Also, proposed deletion of authorization for Bureau of Explosives approval. Proposed incorporation of packaging limitations aboard aircraft based on IATA Restricted Articles Regulations.

Section 173.290. Editorial

Section 173.291. Editorial. Also, proposed incorporation of packaging limitations aboard aircraft based on the IATA Restricted Articles Regulations.

Sections 173.292, 173.293, and 173.294. Editorial.

Section 173.295. Editorial. Also, proposed incorporation of packaging limitation aboard aircraft based on the requirements of the IATA Restricted Articles Regulations.

Sections 173.296 and 173.297. Editorial.

Section 173.298. Editorial. Also, proposed incorporation of packaging limitation aboard aircraft based on the requirements of the IATA Restricted Articles Regulations.

Sections 173.299, 173.299a, and 173.300. Editorial.

Sections 173.301. Editorial. Also, proposed addition of specific limitations on handling of cylinders containing an extremely toxic gas.

Sections 173.302, 173.303, 173.304, and 173.305. Editorial.

Sections 173.306 and 173.307. Editorial. Also, proposed changes in requirements regarding exemptions for certain compressed gases. Exemptions would be limited to packaging. By reclassification to ORM–D, as set forth in proposed § 173.307, exemptions from other regulations would also be effected under certain circumstances. Paragraphs 173.306 (c) and (f) are shown only for information. They are subject to rulemaking in Docket HM–106, Notice 72–2 (38 FR 7470).

Section 173.308. The Board proposes to prescribe certain limitations on the shipment of cigarette lighters or other similar devices charged with fuel.

Section 173.314. Proposed marking of certain tank cars as originally presented in Docket No. HM–101, Notice 72–5 (37 FR 7104).

Sections 173.315 and 173.316. Editorial.

Section 173.325. Editorial.

Sections 173.326, 173.326a, and 173.326b. Proposed new definitions for Extremely Toxic, Highly Toxic, and Irritating materials. These definitions are based on comments received in the two Advance Notices of Proposed Rulemaking issued under Docket HM–51 (35 FR 8831 and 36 FR 2934).

Section 173.327. Editorial. Also, proposed additional general requirements regarding filling. Proposed tank car marking requirements as originally presented in Docket No. HM–101, Notice 72–5 (37 FR 7104).

Sections 173.328, 173.329, 173.330, 173.331, 171.332, and 173.333. Editorial.

Section 173.334. Editorial. Also, propose to require approval of valves by the Department in place of the Bureau of Explosives.

Section 173.335. Obsolete. Proposed to be deleted.

Sections 173.336, 173.337, 173.338, and 173.343. Editorial. Section 173.343 replaced by § 173.326a.

Section 173.344. Editorial. Proposed specific temperature reference for filling.

Section 173.345. Editorial. Also, proposed deletion of exemptions from labeling and marking for poisonous materials.

Section 173.346. Editorial. Also proposed incorporation of packaging limitations from Tariff 6–D and the IATA Restricted Articles Regulations for aircraft.

Section 173.347. Editorial. Also, proposed deletion of provision relating to obsolete reference to emergency.

Sections 173.348 and 173.349. Editorial. Also, proposed incorporation of packaging limitations from Tariff 6–D and the IATA Restricted Articles Regulations for aircraft.

Section 173.350. Editorial.

Section 173.351. Editorial. Also, proposed deletion of obsolete packaging and incorporation of performance testing for glass packagings for hydrocyanic acid solutions.

Section 173.352. Editorial. Also, proposed incorporation of packaging limitations from IATA Restricted Articles Regulations for aircraft.

Section 173.353. Editorial. Also, proposed additional limitations on packaging containing compressed gases.

Sections 173.354, 173.355, and 173.356. Editorial.

Section 173.357. Editorial. Also, proposed deletion of provision relating to obsolete reference to emergency.

Section 173.358. Editorial. Also, proposed deletion of certain packagings for materials classed as Extremely Toxic.

Section 173.358a. Editorial. Also, proposed adjustment of former § 173.358 to recognize those materials that are classed as Highly Toxic and provide more flexibility in authorized packaging than is provided for Extremely Toxic materials.

Section 173.359. Editorial. Also, proposed deletion of certain packaging for materials classed as Extremely Toxic. Proposed deletion of exemption from labeling and marking for certain mixtures.

Section 173.359a. Editorial. Also, proposed adjustment of former § 173.359 to recognize those materials that are classed as Highly Toxic and provide more flexibility in authorized packaging than is provided for Extremely Toxic materials.

Sections 173.360, 173.361, 173.362, and 173.363. Editorial.

Section 173.364. Editorial. Also, proposed deletion of exemption from labeling and marking for Highly Toxic solids. Note: throughout the following sections, the use of multi-wall paper bags is prohibited from carriage on aircraft.

Section 173.365. Editorial. Also, proposed deletion of provision relating to obsolete reference to emergency. Proposed incorporation of packaging limitations of the IATA Restricted Articles Regulations for aircraft.

Section 173.366. Editorial.

Section 173.367. Editorial. Also proposed deletion of provision relating to obsolete reference to emergency. Proposed incorporation of packaging limitations of the IATA Restricted Articles Regulations for aircraft.

Section 173.368. Editorial.

Section 173.369 and 173.370. Editorial. Also, proposed incorporation of packaging limitations of the IATA Restricted Articles Regulations for aircraft. Proposed deletion of exemption from labeling and marking for cyanides, cyanide mixtures, and carbolic acid.

Section 173.371. Editorial. Also, proposed addition of reference temperature regarding the form of dinitrobenzol for application of packaging requirements.

Sections 173.372, 173.373, and 173.374. Editorial.

Section 173.375. Editorial. Also, proposed deletion of provision relating to obsolete reference to emergency.

Section 173.376. Editorial.

Section 173.377. Editorial. Also, proposed deletion of certain packagings for mixtures classed as Extremely Toxic. Proposed to incorporate packaging limitations of the IATA Restricted Articles Regulations for aircraft.

Section 173.377a. Editorial. Also, proposed adjustment of former § 173.377 to recognize those materials that are classed as Highly Toxic and provide more flexibility in authorized packaging than is provided for Extremely Toxic materials.

Section 173.377b. Proposed deletion of exemptions from labeling and marking for certain mixtures.

Section 173.379. Editorial. Also, proposed deletion of glass or earthenware packaging for cyanogen bromide.

Section 173.381. Editorial. For definition, see § 173.326b. Also, proposed additional general packaging requirements that are common to most hazardous materials.

Section 173.382. Editorial. Proposed clarification of the requirements for packagings when a compressed gas mixture is used. See § 173.305. Under present circumstances, persons may believe that ordinary drums are authorized as packaging for certain compressed gases.

Section 173.384. Obsolete. The Board believes this material is no longer being shipped.

Sections 173.385, 173.386, 173.387, and 173.388. Editorial.

Sections 173.389 through 173.399. Editorial.

Section 173.426. Proposed requirements for truck bodies and trailers transported by rail car, regarding handling of fumigated rolling stock.

Section 173.432. Editorial. Also, proposed inclusion of flammable compressed gases in prohibition against loading into tank cars from motor vehicles or drums.

Section 173.500. Proposed new definitions for ORM–A, B, C, and D materials. These ORM–A, B, and C definitions are now in use and are contained in Tariff 6–D and the IATA Restricted Articles Regulations.

Section 173.505. New section.

Section 173.510. Proposed requirements which contain general packaging rules for all ORM substances.

For §§ 173.605 through 173.1085, see the listing of hazardous materials in this preamble that are proposed to be added to the Hazardous Materials Regulations. In that list, the source of the regulation is indicated. All the materials covered by these sections are either presently subject to some form of restriction for air or water transportation, or both, as indicated or the Board has received a petition for their inclusion. Otherwise, no new materials have been added by the Board to these categories. The packaging proposed is generally what is now required by Tariff 6D or the IATA Regulations for aircraft, or 46 CFR 146.27–100 for vessels.

In addition, a change is being proposed to § 173.115(b) that would affect the classification of materials with any flash point if they are thermally unstable. In this change, it is proposed to classify a thermally unstable liquid material as a flammable liquid even though its flash point is over 100°F.

X. Part 174—Carriers by Rail

This part is proposed to be reorganized. The Board proposes to combine present Parts 174, 175 and 176 into one Part 174, at the same time making several changes of substance. The table below sets forth the new section numbers followed by section references to where the regulations are now located in 49 CFR. In addition, changes of significant substance are highlighted.

§ *174.1* (§ *174.500*). Editorial.
§ *174.3* (§ *174.501*). Editorial.
§ *174.5* (§ *174.504*). Editorial.
§ *174.8* (§ *174.501*). Editorial. Also proposes requirement to inspect all placarded cars at inspection points.
§ *174.9* (§ *174.596*). No change.
§ *174.10* (§ *174. 598*). No change.
§ *174.11* (§ *174.505*). Editorial.
§ *174.12* (§ *174.576*). Editorial.
§ *174.14* (§ *174. 582*). Editorial.
§ *174.16* (§ *174.564*). Editorial.
§ *174.18* (§ *174.588(g) and (h)*).
§ *174.20* (§ *174.575*). Editorial.
§ *174.22* (§ *174.589(a) 174.560 Note 1*). Updating. Some definitions are now found in § 170.30. Others, considered unnecessary have been deleted. Important to note is the proposed definition for "train."
§ *174.24* (§ *174.510*). Editorial. Also, proposes new requirements concerning possession of the paper and position in train of each placarded car.
§ *174.25* (§*174.589(f)*). Editorial. Also, proposes to expand the application of this regulation to toxic gases.
§ *174.27* (§ *174.511*). Editorial.
174.33
§ *174.45* (§ *174.506*). Editorial.
(§ 174.511) Editorial.
§ *174.47* (§ *174.580, 174.588(c)*). Editorial.
§ *174.49* (§ *174.578*). Editorial.
§ *174.50* (§ *174.594*). Proposed to be revised to delete certain non-regulatory language and improve requirements regarding any leaking tank cars containing hazardous materials.
§ *174.55* (§ *174.532(a), (1), (6), (8), (9), (10) and* § *174.586(d) and (e)*). Proposes to add several new requirements for the handling of hazardous materials in general. Some of these proposed requirements formerly were limited to certain classes of hazardous materials.
§ *174.57* (§ *174.566(c)*). Editorial.
§ *174.59* (§ *174.547*). Editorial. Also proposes new requirements with respect to some details of placard replacement.
§ *174.61* (§ *174.533*). Editorial. Also proposes changes in present requirements and adds containers on flat cars.
§ *174.63* (§ *174.534*). Editorial. Also proposes an additional requirement regarding impact speeds to be withstood.
§ *174.67* (§ *174.561*). Editorial. Proposes to update some requirements and make certain recommendations regulatory requirements, namely: (a)(1), (b) introductory, (b)(2), (e) and (n).
§ *174.69* (§ *174.562*). Editorial.
§ *174.81* (§ *174.538*). Editorial. Also proposes to add "corrosive solids" to segregation requirements.
§ *174.83* (§ *174.589(c)(d)*). Editorial. Also proposes new rule regarding impacting of certain cars.
§ *174.84.* Proposes new requirements concerning flat cars carrying placarded trailers or containers.
§ *174.85* (§ *174.589(b)*). Editorial.
§ *174.87* (§ *174.589*). Editorial.
§ *174.88* (§ *174.589(g)*). Editorial.
§ *174.89* (§ *174.589(m)*). Editorial.
§ *174.90* (§ *174.589(n)*). Editorial.
§ *174.95* (§ *174.589(m)*). Editorial.
§ *174.100* (§ *174.502*). Editorial.
§ *174.101* (§ *174.526*). Editorial.
§ *174.102* (§ *174.527*). Editorial.
§ *174.103* (§ *174.588(a), (b), (d), (e), (f), and (g)*).
§ *174.104* (§ *174.525*). To be handled by separate rule making action.
§ *174.105* (§ *174.581*). Editorial
§ *174.106* (§ *174.503*). Editorial.
§ *174.107* (§ *174.577*). Editorial.
§ *174.109* (§ *174.585*). Editorial.
§ *174.110* (§ *174.591*). Editorial.
§ *174.112* (§ *174.529*). Editorial.
§ *174.114* (§ *174.590*). Editorial.
§ *174.115* (§ *174.530*). Editorial.
§ *174.200* (§ *174.532(b)*). Editorial.
§ *174.201* (§ *174.532(i)*). Editorial.
§ *174.204* (§ *174.560*). Editorial.
§ *174.208* (§ *174.579*). Editorial—Also proposed to be amended to include truck bodies or trailers on rail cars.
§ *174.280* (§ *174.532(m)*). Proposes to expand application to all poisonous materials even though they are not so classed, in this case extremely or highly toxic materials which are classed as gases.
§ *174.290* (§ *174.532(L)*). Editorial.
§ *174.300* (§ *174.532 (a), and (d)*). Editorial.
§ *174.304* (§ *174.560(a)*). Editorial.
§ *174.380* (§ *174.532(m)*). Proposes to expand application to all poisonous materials even though they are not so classed, in this case classed as flammable liquids.
§ *174.410* (§ *174.532(g)*). Editorial.
§ *174.450* (§ *174.592, 174.593*). Editorial.
§ *174.480* (§ *174.532(m)*). Proposes to expand application to all poisonous materials even though they are not so classed, in this case classed as flammable solids.
§ *174.510* (§ *174.532(k)*). Editorial.
§ *174.515* (§ *174.566(b)*). Editorial.
§ *174.580* (§ *174.532(m)*). Proposes to expand application to all poisonous materials even though they are not so classed, in this case classed as oxidizing materials.
§ *174.600* (§ *174.532(l)(9)*). Proposes to extend requirement to all poisonous materials.
§ *174.615* (§ *174.566 (a) and (b)*). Editorial.
§ *174.625.* Editorial.
§ *174.680* (§ *174.532(m)*). Editorial. Also limitation now refers to labeled toxic materials.
§ *174.700* (§ *174.532(f) and 174.586(h)*). Editorial.
§ *174.715* (§ *174.566(d)*). Editorial.
§ *174.750* (§ *174.588(c)*). Editorial.
§ *174.800* (§ *174.532 (h), (h)(1), 174.532(f), 174.586(g)*). Editorial.
§ *174.810* (§ *174.532(h) (3) and (4)*). Editorial.
§ *174.812* (§ *174.532 (h) and (h)(2)*). Editorial—Also, the recommendatory language is proposed to be made mandatory.

XI Part 175—Aircraft Operators

It is proposed to place the requirements pertaining to the transportation of hazardous materials by aircraft in new Part 175. Part 103 of Title 14, Code of Federal Regulations would be canceled if this new part is adopted. Concurrently, the FAA Administrator will issue appropriate amendments in Part 91 of the Federal Aviation Regulations to reflect this proposed consolidation.

A number of substantive changes to the regulations are proposed pertaining to the acceptance, loading, and transportation of hazardous materials by civil aircraft. Sections of particular importance are as follows:

Section 175.1. If adopted as proposed, the scope of Part 175 will be confined to

requirements that must be observed by aircraft operators. Shipper requirements pertaining to carriage by air are contained in Parts 172 and 173. The FAA will continue to exercise jurisdiction over shippers when shipments are offered for carriage by air.

Section 175.5. Aircraft leased to and operated by foreign nationals outside the United States are exempt from the regulations proposed herein. Otherwise, the regulations continue to be applicable to the loading and transportation of hazardous materials in any civil aircraft in the United States and in civil aircraft of United States registry anywhere in air commerce.

Section 175.10. Contains exceptions indicating the kinds of materials that are not covered by the regulations in the part. Of significance is the addition to the present regulations of provisions pertaining to aircraft parts and equipment to include supplies and replacement items if authorized or required to be carried aboard an aircraft for its operation and to include certain articles for passenger consumption and use. This section also deals in part with proposed Notice 73–13 (38 FR 10157; published April 25, 1973). The proposal is to permit the carriage of medicinal and toilet articles in crewmember or passenger baggage including carry-on baggage within certain quantity limitations.

Section 175.20. Sets forth conditions requiring aircraft operators to train personnel in the handling and carriage of hazardous materials by reference to the training program and manual requirements in certain parts of 14 CFR.

Section 175.30. Sets forth conditions for acceptance of shipments for transportation by aircraft. It specifies the quantity limitations, shipping papers, certification, and labeling requirements by referencing the appropriate subparts of proposed New Part 172.

Section 175.35. Contains proposed requirements for the shipping papers which must be carried aboard aircraft transporting hazardous materials.

Section 175.40. Specifies that aircraft operators must keep labels on hand and that they must replace lost or detached labels.

Section 175.45. This section deals, in part, with proposed Notice 73–17 (38 FR 149637; published June 7, 1973). The proposal is to permit certificate holders under Parts 121, 127, and 135 to report certain incidents involving dangerous articles to the FAA District Office holding the carrier's operating certificate and charged with the overall inspection of its operation.

Section 175.50. Sets forth the conditions pertaining to deviations from the provisions in the Part. Of significance is the addition of the proposed requirement that safety instructions be written.

Section 175.75. States the limitations on the quantities of hazardous materials permitted aboard aircraft. Note that it is proposed to change the quantity limitations from 50 pounds net weight to 65 pounds gross weight. The proposed increase takes into account the weight of packaging material. The same applies to the weight of compressed gas cylinders which has been increased from 150 lbs. net to 300 lbs. gross. Gross weights are the standard commercial measurement for revenue purposes and the Board believes they should be used in place of net weight of content measurements for the purposes of these limitations. Net weights are appropriate for purposes of specifying the limitations on the amount of a material which may be placed into a package. It should also be noted that no limitation is proposed on the number of packages for "Other Regulated Materials" aboard an aircraft. Another significant proposed change is to consider a reusable transport container in the same category as an inaccessible cargo pit or bin for the purpose of carrying hazardous materials.

Section 175.85. This section deals with cargo location aboard an aircraft. Note that paragraph (b) requires that materials authorized for cargo-only aircraft must be accessible to a crewmember during flight and that hazardous materials, other than magnetized material, must be inaccessible to persons other than crewmembers on passenger-carrying aircraft.

SUBPART C

Contains specific regulations that would apply to particular kinds of materials according to their classification. Included are requirements pertaining to self-propelled vehicles, the carriage of gasoline, kerosene, or aviation fuel in aircraft, the carriage of flammable liquids in cargo aircraft in the State of Alaska, special requirements for poisons, and special requirements pertaining to radioactive materials.

Section 175.205. This section has been added to propose safety requirements for vehicle ferry operations.

Section 175.220. This section is being proposed to permit the transportation in the State of Alaska in cargo-only aircraft of certain flammable liquids in quantities not to exceed 55 U.S. gallons. Such carriage will be permitted only under certain conditions set forth in the text of the section, one of which is that another means of transportation is impractical.

Persons reviewing proposed new Part 175 should compare it with existing Part 103, Title 14, Code of Federal Regulations. Also, they should study the list of hazardous materials in proposed § 172.101 since it contains significant regulatory proposals pertaining to the kinds and quantities of hazardous materials permitted to be transported aboard civil aircraft. These changes are highlighted in that portion of the preamble dealing with Part 172.

XII PART 176—CARRIERS BY WATER

Persons interested in a detailed section by section review of how the regulations in 46 CFR Part 146 were affected by the transfer of these regulations in 49 CFR Part 176 should review Marine Safety Council Public Hearing Agenda, C6–249, June 1, 1973. (The June date is for record purposes only and is not indicative of its date of issue.) This publication, CG–249, will be automatically distributed to those organizations who receive Coast Guard reprints. An errata will also be distributed to account for the changes to Part 176 since the printing of CG–249. A copy of this publication may be obtained by interested persons not on the mailing list for reprints by a letter request to Commandant (G–MHM), U.S. Coast Guard, Washington, D.C. 20590. This preamble is intended to simply highlight the more important changes that are being proposed regarding the Hazardous Materials Regulations as they apply to carriers by water.

The objectives of the transfer of the 46 CFR Part 146 regulations are summarized as follows:

1. To achieve a better regulations format by including all the DOT Hazardous Materials in one Code of Federal Regulations, except for bulk transportation by water and military explosives regulations.

2. To simplify by reorganization the regulations that are being transferred to 49 CFR Part 176.

3. To completely revise the stowage and segregation requirements to provide as much consistency as possible with the International Maritime Dangerous Goods Code developed by the Intergovernmental Maritime Consultative Organization (IMCO).

4. To eliminate the separate shipper requirements originally contained in 46 CFR 146 by integrating them completely with the shipper requirements set forth in 49 CFR Part 173.

5. To revise and update certain handling requirements for hazardous materials.

6. To establish regulations for barge-carrying vessels.

7. To revise the requirements for roll-on/roll-off vessels to make the United States requirements consistent with new requirements being adopted by IMCO.

8. To revise the requirements for stowage and segregation of land-sea containers and portable tanks carried aboard vessels.

9. To add requirements pertaining to the existing regulations for the stowage of hazardous materials within land-sea containers.

10. To revise the requirements for the inspection of hazardous materials aboard vessels.

11. To modify the requirements for ferry vessels.

12. To modify the requirements for jettisoning hazardous materials.

13. To modify the requirements regarding reports concerning hazardous materials leakage incidents.

14. To require that the dangerous cargo(hazardous materials) manifest be kept on or near the bridge house of vessels, in a special place.

15. To change the name of the classification "Hazardous Articles" to "Other Regulated Material," abbreviated ORM.

16. To revise shipper requirements for "No Label Required" items to allow for consistency with the rail and highway regulations.

17. To revise requirements for the Dangerous Cargo Manifest to allow use of IMCO's correct technical name.

1. *Changes relating to format.* Presently the requirements for the shipment of hazardous materials by water are published in a separate Title of the Code of Federal Regulations (46 CFR) from those published for the same materials shipped by highway and rail (49 CFR). For hazardous materials (other than in bulk quantity), the requirements for shippers in both titles are almost identical. However, publication in two titles leads to much duplication, creating an unnecessary duplication of administrative effort by government and a need by the public to keep abreast of two series of regulatory developments and changes. Understandably, this separation and the fact that each title (CFR) has a distinctive format, has lead to an important number of obvious inconsistencies between the two titles. The treating of these inconsistencies has resulted in significant time and effort spent by the public and government to alleviate undesired interruptions in the smooth flow of goods between modes of transportation. In a number of instances these administrative inconsistencies have created confusion whereby shipments have been delayed during transit.

With the continuing need for regulation development and consequent change, and with an emphasis on consistent regulations for intermodal shipments, this situation is completely undersirable from the standpoint of the public in knowing and understanding the regulations and of the government in efficiently managing a consistent hazardous materials regulatory program. The proposed incorporation of 46 CFR 146 in 49 CFR 170–189 would provide a more concise code of regulations for administration by the Board and thereby be more understandable and easier to follow by shippers, carriers, and other interested members of the public.

The incorporation of 46 CFR 146 (except § 146.29) into 49 CFR 170–189 necessarily would change the present format of the U.S. Coast Guard Dangerous Cargo Regulations. Generally speaking, the proposal consists of placing the detailed requirements for the water transportation of hazardous materials in a new Part 176 of 49 CFR, and revising the current list of hazardous materials in 49 CFR 172.5 to accommodate certain U.S. Coast Guard requirements. The shipper requirements would be in 49 CFR 173.

The specific stowage location for each material (i.e., on deck or below deck) would appear in a column 7 of the list (172.101). Also appearing in this column, would be any special requirements for a given hazardous material. Presently this information appears in column (2) and (4) through (7) of Tables A through K of 46 CFR 146. For a further explanation of the proposal to revise the list of hazardous materials see that portion of this preamble covering Part 172 and the proposed § 172.100.

The information that now appears in Subparts 146.01 through 146.27 of 49 CFR (exclusive of Tables A through K and the Table for Radioactive Materials) would be relocated in a new 49 CFR Part 176. Information relating to shippers would be integrated into 49 CFR Part 173 (most of the information is now found in this part, the regulations in 46 CFR Part 146 being a duplication).

2. *Changes relating to content.* The Board desires to create as complete consistency as possible between the regulations of rail, highway, air, and water, and similar requirements of other countries. Although many present requirements of the various modes of transportation in the United States and in other countries are similar, major differences exist. However, the U.S. Coast Guard Guard believes it is necessary in water transportation to resolve these differences, and that they can be resolved without an inordinate amount of difficulty. This notice proposes to accomplish this as one of its objectives.

a. *Packaging.* Presently, in several cases, 46 CFR Part 146 and 49 CFR 173 authorize different outside packagings for the same hazardous materials. In some instances, the differences are warranted due to the additional hazards presented by the relatively confined conditions aboard vessels at sea. The regulations in 49 CFR Part 173 are proposed to be amended to recognize these situations. In other cases, the differences are not considered justifiable but are truly the product of outdated (46 CFR Part 146 not having been revised when 49 CFR Part 173 was changed) or incompletely or erroneously stated requirements in 46 CFR Part 146. To correct this situation, the U.S. Coast Guard proposes to authorize the same outside packagings for water transportation as for surface transportation, with certain exceptions as set forth in Part 173 in this document and as outlined below. The U.S. Coast Guard is not considering adoption of the IMCO packaging requirements in 49 CFR Part 173 at this time. Notable packaging exceptions are as follows:

i. Portable tanks, other than those DOT–51 and 60 specification tanks presently authorized by 46 CFR 146 for certain materials, would not be permitted for gases or liquids.

ii. Tank cars, motor vehicle tank trucks, and other bulk transporters, other than those presently authorized by 46 CFR 146 for certain materials, would not be permitted.

iii. Certain other individual packagings would not be permitted as specifically set forth in 49 CFR 173. (These exceptions would be very few.)

b. *Stowage.* This notice proposes adoption of the stowage requirements of the IMCO Dangerous Goods Code. Most maritime countries, including the United States, are participating in the continuing development of this Code and many are presently using it for their national regulations. Consequently, the adoption of the Code's standards by the United States would result in much consistency with the maritime shipping regulations of many other countries.

The current regulations in 46 CFR Part 146 differ in basic philosophy from those of IMCO. A major shift in the thinking of United States carriers by water regarding stowage is called for by this proposal for adoption of the IMCO stowage system. The regulations in 46 CFR Part 146 have been based on a principle that "on deck" stowage is safest. Of primary importance in the early stages of development of this theory was the ease of access to hazardous cargo, the fact that flammable or toxic vapors (in the event of leakage) would not be confined, and the positioning of hazardous cargo for jettisoning in case of an accident. On the other hand, though the IMCO Code recognizes that on deck stowage is necessary for certain extremely hazardous materials, its safety philosophy is that "below deck" stowage is more advisable, when possible, because it is most important to achieve the highest degree of physical protection possible for hazardous cargo to reduce the potential for outside influences to cause a hazardous materials incident.

Although these two philosophies are quite divergent, the U.S. Coast Guard believes that the additional features built into the IMCO requirements (such as stipulating accessible stowage when "under deck" stowage is used), present an overall system which promotes a completely adequate, and perhaps higher, level of safety.

The IMCO system with its three stowage terms "on deck," "under deck," and "under deck away from heat," together with the accessibility requirement, is significantly simpler than the numerous stowage terms now in use in 46 CFR Part 146. This simplicity should lead to easier understanding and improved compliance thereby creating safer conditions aboard vessels transporting hazardous materials.

The stowage requirements for portable tanks and containers are proposed to be revised to preclude "under deck" stowage for hazardous materials required to be stowed "on deck" only (46 CFR 146.07–40). The regulations now provide an exemption for tanks and containers from the "on deck" only stowage requirement for some hazardous materials. The U.S. Coast Guard believes this is not in the best interests of safety. Also, this exemption seriously conflicts with the standards of IMCO.

c. *Segregation.* The segregation requirements for break bulk stowage outlined in the IMCO Code are proposed for adoption in this notice. The present requirements in 46 CFR Part 146 regarding segregation are quite extensive and complex and there are more exceptions than general rules regarding their use. On the other hand, the U.S. Coast Guard believes the IMCO system is very simple and there are few exceptions to the general rules.

IMCO has under consideration a recommended Code for the segregation of hazardous materials in highway vehicles aboard roll-on/roll-off vessels. This Code has been approved by the responsible subcommittee of IMCO. All that remains to be obtained is the approval of the General Assembly. In anticipation of the formal adoption of this Code, it is being proposed in this notice.

The segregation requirements for containerships and break bulk vessels which handle containers and portable tanks (46

CFR 146.07) are very general and in some cases not clear in their application. Some classes of hazardous materials may be stowed in the same hold separated by only one container, whereas, on a break bulk vessel, packages containing the same hazardous materials must be separated by a hold. These are materials where the intermingling under accident conditions could very significantly increase the magnitude of an existing accident and complicate any emergency action. The U.S. Coast Guard, therefore, believes that the segregation requirements for such materials in containers are in need of improvement and proposes major changes to the segregation requirements for containerships.

This notice also proposes requirements for the segregation of barges on board barge-carrying vessels. The segregation requirements in 46 CFR 146 are not directly applicable to this type of vessel. In developing the requirements proposed in this notice for these vessels, the primary objective pursued was to achieve an equivalent degree of safety as is proposed herein for break bulk vessels. The U.S. Coast Guard acknowledges that barge carrying vessels may afford a higher level of safety for the carriage of hazardous materials, in which case a less rigorous segregation philosophy could be considered. However, due to the fact this type of vessel has been operating only a short time, the U.S. Coast Guard does not believe it has sufficient justification in the interests of safety to depart from the approach it has assumed.

Hazardous materials on barges are not required to be in compliance with the segregation requirements in 46 CFR Part 146 that apply to break bulk vessels. The U.S. Coast Guard believes that this situation poses undue hazards in the handling of hazardous materials aboard barges and proposes to revise the regulations to make it clear that barges are not exempt from these segregation requirements. This proposal was originally set forth in the FEDERAL REGISTER of March 20, 1971 (36 FR 5400) but has been delayed in further development pending this major proposal regarding 46 CFR Part 146.

d. *Other carrier requirements.* 46 CFR Part 146 contains no detailed requirements for the proper stowage of hazardous materials within containers. Subpart 146.07 stipulates that hazardous materials loaded into containers must be properly secured but gives no specific guidance. In the case of segregation within a container, the requirements are not completely clear. This notice proposes specific requirements for the stowage of hazardous materials in containers. Also, since there is no statement exempting containers, the U.S. Coast Guard advises that it would consider the standard segregation requirements as being applicable to stowage of hazardous materials within containers.

e. *Requirements for the carriage of bulk solids.* The various subparts of 46 CFR 146 contain requirements for the carriage of solids in bulk (materials received without mark or count). These requirements will be contained in a new part of subchapter O in Title 46 and will be published in a separate document at a later date.

46 CFR Subparts 146.01 through 146.28 will be deleted in their entirety if the proposals contained in this document and the future proposal to include in subchapter O of Title 46 the carriage of solids in bulk are adopted.

The Coast Guard will hold a hearing on April 9, 1974 at 9:30 a.m. in room 2230 of the Nassif Building, Department of Transportation, 400 Seventh Street, SW., Washington, D.C. Interested persons are invited to attend the hearing and present oral or written statements on this proposal. It is requested that anyone desiring to attend the hearing notify the Commandant (G-CMC), U.S. Coast Guard, Washington, D.C. 20590.

VIII. PART 177—CARRIERS BY PUBLIC HIGHWAY

No major changes are proposed for Part 177 except to §§ 177.817 and 177.823 which relate to the proposals made in Docket HM-103. These proposals are subject to adoption contingent on adoption of the corresponding proposals made in that Docket.

SHIPPING PAPERS

a. *Section 177.817.* The Board proposes to revise § 177.817 to relate the shipping paper requirements to Subpart C of Part 172 as proposed in Docket No. HM-103. The revised section contains only those requirements that are specifically applicable to motor carrier operations. It should be noted that the proposed revision to this section (1) clarifies the requirements pertaining to shippers' certificates, (2) provides that materials identified as ORM-A, B, C, or D are not subject to the shipping paper requirements for transportation by highway unless such shipments are accepted for subsequent transportation by air or water, and (3) proposes to clarify the possession requirements for shipping papers with the recommendation that shipping papers be placed in a pouch or other device that is mounted on the inside of the door to the left of the driver's position. Comments as to the practicality of making such a location a mandatory requirement in the future are invited. New paragraph (d) in the revised section proposes to require that shipping papers pertaining to hazardous materials be arranged so they will appear first upon examination during transportation. This is in order to make such documents readily available should incidents requiring their immediate examination occur during transportation. In considering this requirement, commenters should acquaint themselves with the increased reliance placed on shipping papers for the specific identification of certain hazards, certain kinds of LCL and LTL shipments as proposed in Docket HM-103. Also included is an recommendatory provision indicating that the driver of a motor vehicle should offer the shipping papers in his possession to emergency personnel for their examination.

MARKING AND PLACARDING MOTOR VEHICLES

b. *Section 177.823.* The Board is proposing to revise § 177.823 to make reference to the requirements contained in new Part 172 as proposed in Docket No. HM-103. In addition, the revised section contains two proposed exceptions from the placarding requirements, the first pertaining to a vehicle escorted by a representative of a state or local government, and the second when a carrier has received permission from the Department. These provisions are proposed to provide some flexibility in the placarding requirements in order to facilitate the movement of vehicles during emergencies.

XIV. CONCLUSION

The Board has under development a plan whereby it would completely restructure the major Parts of 49 CFR Parts 170 to 189. This would permit more orderly arrangement of the present regulations and any new regulations published. This plan could have been placed into effect in this notice, however, it was the opinion of the Board that it would have made this docket extremely more difficult to review for the public. It is proposed, in the final amendment, to generally reorganize the regulations as follows:

Part 170	General Information, Regulations, and Definitions.
Part 171	Rule-Making Procedures of the Hazardous Materials Regulations Board.
Part 172	List of Hazardous Materials and Hazardous Materials Communications Regulations.
Part 173	Shippers; General Requirements for Shipments and Packagings.
Part 174	Carriers by Rail.
Part 175	Aircraft Operators.
Part 176	Carriers by Water.
Part 177	Carriers by Public Highway.
Part 178	Shipping Container Specifications.
Part 179	Specifications for Tank Cars.
Part 180	(Vacant).
Part 181	Explosives.
Part 182	Gases.
Part 183	Flammable and Combustible Liquids.
Part 184	Flammable Solids.
Part 185	Oxidizing Materials and Organic Peroxides.
Part 186	Toxic Materials, Irritating Materials, and Etiologic Agents.
Part 187	Radioactive Materials.
Part 188	Corrosive Materials.
Part 189	Other Regulated Materials (ORM), A, B, C, and D.
Parts 181 to 188	would contain the specific packaging requirements for hazardous materials which are now located in Part 173.

The Board welcomes any comments on this planned reorganization.

In order to assist interested persons in their efforts to understand fully the proposals made in this Notice, the Board has scheduled a meeting which will be open to the public. The meeting will be for the purpose of answering questions and providing explanations of the proposals contained in this Notice. Statements relative to the merits of the proposals in this Notice may not be made at the meeting, but must be submitted in writing.

The meeting will be held on February 13, 1974, in the Departmental Auditorium located on Constitution Avenue between 12th and 14th Streets, NW., Washington, D.C. beginning at 10:00 a.m.

Commenters are requested to make their comments in a manner that will clearly identify the particular matters on which they are commenting. Unless comments are general in nature pertaining to the entire Notice, it is requested that each paragraph of comments be identified in the following manner:

Part 176 We think _____" or *"Section 172.503* We believe _____"

Also, those commenters submitting more than two pages of comments are requested to submit six copies in order to facilitate their handling by the Board.

In consideration of the foregoing, the Hazardous Materials Regulations Board proposes to amend 49 CFR Parts 170, 171, 172, 173, 174, 175, 176, and 177, the Coast Guard proposes to amend 46 CFR Subparts 146.01 through 146.28, and the Federal Aviation Administration proposes to amend 14 CFR Part 103 as follows:

PART 170—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

A. The current heading of Part 171 would be amended and become the heading of Part 170 as set forth above.

B. In Part 170, the Table of Contents (formerly Part 171 Table of Contents) would be amended to read as follows:

Subpart A—General

Subpart B—Definitions

C. Subpart A would be added to read as follows:

Subpart A—General

D. Section 170.1 would be amended to read as follows:

§ 170.1 Authority and penalties.

(a) The regulations in Parts 170 to 189 of this subchapter are designated the "Hazardous Materials Regulations" of the Department of Transportation. The authority for these regulations is 18, U.S.C. 831–835 Title VI and section 902 (h) of the Federal Aviation Act of 1958 (49 U.S.C. 1421–1430, 1472(h), and 1655 (c)), and the Dangerous Cargo Act, section 4472 of Title 52 of the Revised Statutes, as amended (46 U.S.C. 170).

(b) Penalties, including fines and imprisonment of up to $10,000 and 10 years for violation of these regulations are prescribed in the Acts referred to in paragraph (a) of this section.

E. A new § 170.2 would be added to read as follows:

§ 170.2 Plan of the regulations.

(a) Parts 170–189 of this subchapter are regulations for the preparation of hazardous materials by shippers for transportation and for the transportation of hazardous materials by rail, air, water or highway carriers, which include but are not limited to construction of packagings, filling, marking, labeling, shipping papers, and the loading, handling and unloading of transport vehicles and vessels.

(b) Regulations for equipping and general operation of transport vehicles are published in separate regulations issued by the Department.

(c) The general content of the regulations is as follows:

Part 170—*General information, regulations, and definitions.*
Part 171—*Hazardous Materials Regulations Board; its rules and procedures.*
Part 172—*Hazardous Materials communications regulations including the List of Hazardous Materials and certain transportation identification requirements.*
Part 173—*Packaging requirements for shippers of hazardous materials.*
Part 174—*Regulations applying to rail carriers.*
Part 175—*Regulations applying to aircraft operators.*
Part 176—*Regulations applying to water carriers.*
Part 177—*Regulations applying to highway carriers.*
Part 178—*Specifications for packagings other than tank cars.*
Part 179—*Specifications for tank cars.*
Parts 180 to 189—[Reserved.]

(d) Unless otherwise specifically provided, the title of a section, subpart or part has no binding effect and is intended only as an indexing aid.

(e) This subchapter does not apply to the transportation by water of bulk hazardous materials that are loaded and transported on a vessel without benefit of packaging, containers, or wrappers and received and delivered by the water carrier without mark or count.

F. Section 170.6 (formerly § 171.6) would remain the same except paragraphs (a) and (c) would be amended and (b)(2) would be deleted as follows:

§ 170.6 Special permits; standard requirements and conditions.

(a) Each holder of a special permit shall comply with all requirements of Parts 170–189 of this subchapter except as specifically provided by the terms of the special permit.

(b) * * *

(2) [Deleted]

* * * * *

(c) Each permit is subject to immediate suspension or revocation by a member of the Hazardous Materials Regulations Board for his mode of transportation or by the Hazardous Materials Regulations Board itself before its expiration date for failure to comply with any terms of the permit, or with any requirement of Parts 170–189 of this subchapter regardless of whether the requirement pertains to the special permit.

G. Section 170.7 (redesignated from § 171.7) would remain the same except paragraphs (a), and the introductory text of paragraph (d) would be amended, paragraphs (c)(18) and (d)(13) would be added to read as follows:

§ 170.7 Matter incorporated by reference.

(a) There is incorporated by reference in Parts 170–189 of this subchapter all matter referred to that is not specifically set forth. These materials are hereby made a part of the regulations in Parts 170–189 of this subchapter. Matter referenced is incorporated only with respect to the edition listed in this section. Later editions are not incorporated unless specifically provided otherwise.

* * * * *

(c) * * *

(18) Uniform Classification Committee, 222 South Riverside Plaza, Chicago, Illinois 60606.

(d) The full titles and application of the matters incorporated by reference in Parts 170–189 of this subchapter are as follows:

* * * * *

(13) Uniform Classification Committee tariff, Uniform Freight Classification (UFC) 11.

H. Section 170.8 would be added to read as follows:

§ 170.8 Flammable and combustible liquids.

(a) This subchapter does not apply to a combustible liquid when it is transported:

(1) By highway when in a packaging having a capacity of less than 110 gallons;

(2) By aircraft in a packaging having a capacity of one gallon or less;

(3) By aircraft in a packaging having a capacity of 110 gallons or less if its flash point exceeds 141°F.

(b) For flammable and combustible liquids transported on vessels (see §§ 173.116a and 176.300 of this subchapter.)

I. Section 170.10 would be added to read as follows:

§ 170.10 Other Regulated Materials (ORM); application.

(a) A highway or rail carrier of Other Regulated Materials (ORM) (§ 173.500 of this subchapter), not transporting any other hazardous materials in the same transport vehicle, is not subject to any regulations in this subchapter unless he delivers such materials to subsequent carriers by air or water who must comply with the regulations pertaining to these materials. In the case of delivery to carriers by air or water, the highway or rail carrier is responsible for the giving of shipping papers containing the information required by Subpart C of Part 172 of this subchapter.

(b) Shippers of materials classed as ORM–A, B, or C are subject to the regulations in this subchapter when they offer these materials for transportation to any carrier when all or a portion of

transportation is to be by air or water. However, this requirement applies only to shipments intended for transportation by air or water, or both, according to the applicability of the regulations in this subchapter by the listing of the material in § 172.101 of this subchapter. These materials are always preceded by the symbol Ⓐ, Ⓦ, or both in that section. (See § 172.100 for explanation of these symbols.)

(c) Shippers of materials classed as ORM–D are subject to the regulations in this subchapter when they offer these materials for transportation by any carrier.

J. Section 170.12 (formerly § 171.12) would be amended to read as follows:

§ 170.12 Export shipments by carriers by rail and motor vehicles.

(a) When packed, marked, labeled, and described, in acordance with rules and regulations in force at destination ports, no person may offer to any carrier by rail or highway for domestic transportation, nor may any such carrier accept hazardous materials authorized to be exported from the United States unless these materials also are in compliance with the regulations in Parts 170–189.

(b) Except for the requirements of Part 172 and § 177.817 of this subchapter, requirements of Parts 170–189 of this subchapter do not apply to transportation by motor vehicle or water necessary to effect transfer of export shipments from place of shipment to other places within the same port area or delivery to a water carrier within the same port area (including contiguous harbors). For regulations applying to further transportation of these export shipments by connecting water carrier, see Part 176 of this subchapter.

K. Section 170.14 (formerly § 171.14) would be amended to read as follows:

§ 170.14 Specification markings.

Packagings with the specification markings "ICC" placed thereon before January 1, 1970, may be continued in service as marked if otherwise in accordance with this subchapter.

L. Section 170.15 (formerly § 171.15) would remain the same except paragraphs (a)(4), and (c) would be amended to read as follows:

§ 170.15 Immediate notice of certain hazardous materials incidents.

(a) * * *

(4) Fire, breakage, spillage, or suspected radioactive contamination occurs involving shipment of radioactive material (see also §§ 174.311(c)(1), 175.725(c), and 177.861(a) of this subchapter).

* * * * *

(c) Each carrier making a report under this section shall also make the report required by § 170.16.

M. Section 170.16 (formerly § 171.16) would remain the same except the reference "171.15(a)" in paragraph (a) would be changed to read "170.15(a)."

N. Subpart B would be added to read as follows:

Subpart B—Definitions

O. Section 170.30 (formerly § 171.8) would be amended to read as follows:

§ 170.30 Definitions.

(a) In Parts 170–189 of this subchapter, the word(s) mean—

"Air Commerce" means interstate, overseas, or foreign air commerce or the transportation of mail by aircraft within the limits of any Federal Airway or any operation or navigation of aircraft which directly affects or which may endanger safety in interstate, overseas, or foreign air commerce.

"Approved" means approval by the Department unless otherwise specifically indicated in this subchapter.

"°C" means degree celsius.

"c.c." means closed-cup.

"Cargo-only aircraft" means any aircraft that is not a passenger-aircraft and carries cargo.

"Cargo tank" means—

Any tank permanently attached to or forming a part of any motor vehicle or other highway vehicle or any bulk liquid or compressed gas packaging not permanently attached to any motor vehicle or other highway vehicle, which by reason of its size, construction, or attachment to a motor vehicle, is loaded or unloaded without being removed from the motor vehicle.

Any tank on a transport vehicle, in use to transport flammable or combustible liquid, or compressed gas, solely for the purpose of supplying fuel for propulsion of the vehicle to which the tank is attached or for the operation of other equipment on the vehicle, is a fuel tank and not a cargo tank.

Any packaging fabricated under specifications for cylinders is not a cargo tank.

"Carrier" means any person who performs any function assigned by the regulations in this subchapter to a carrier, and includes the owner, charterer, agent, master, pilot, driver, or any person in charge of a transport vehicle or vessel and other carrier employees. Consideration of one individual as a carrier does not exclude another person from also being considered a carrier for an assigned function unless the regulations specifically provide that one party is responsible.

"Civil Aircraft" means aircraft other than public aircraft.

"Department" means the Department of Transportation.

"Express rail car" means a car which handles express mail or baggage in a passenger train.

"°F." means degrees Fahrenheit.

"Flash point" means the temperature at which the substance gives off flammable vapors which in contact with spark or flame will ignite. Unless otherwise specified in this subchapter, a flash point is determined by a closed-cup method.

"Flight Crewmember" means a pilot, flight engineer, or flight navigator assigned to duty in an aircraft during flight time.

"Gross weight" is a measure of weight which includes the contents and all the packaging material which comprise a package.

"Hazardous materials" means any material determined to be hazardous and listed or described in these regulations pursuant to the Transportation of Explosives Act, (18 U.S.C. 831 et seq.), section 902(h) of the Federal Aviation Act of 1958, and Section 4472 of The Revised Statutes, (46 U.S.C. 170).

"Hermetically sealed" means closed airtight by, or as by, fusion, or crimping, so that no gas or vapor can enter or escape.

"Includes" means includes but is not limited to.

"May" is used in the permissive sense to state authority or permission to do the act described.

"Must" or "shall" is used in the mandatory sense.

"Net weight" is a measure of weight referring only to the contents of a packaging, and does not include the immediate (primary) or outside packaging.

"No person may" or "a person may not" means that no person is required, authorized, or permitted to do the act described.

"Package" means the packaging plus its content of hazardous materials as presented for transportation.

"Packaging" means the assembly of the containers and any other components necessary to assure compliance with the prescribed packaging requirements.

"Passenger car or passenger vehicle of any description operated in the transportation of passengers by any for-hire carrier * * * by land" means any railroad car of a passenger train, or highway vehicle, with passenger for-hire in the same such railroad car or highway vehicle.

"Passenger-carrying aircraft" means an aircraft that carriers persons in addition to crew members, company employees, authorized representatives of the United States, or persons accompanying a shipment.

"Passenger vessel" means—

Any vessel subject to any of the requirements of the International Convention for the Safety of Life at Sea, 1960, which carries more than 12 passengers; or

Any cargo vessel documented under the laws of the United States and not subject to that Convention which carries more than 16 persons in addition to the crew; or

Any cargo vessel of any foreign nation that extends reciprocal privileges and is not subject to the Convention and which carries more than 16 persons in addition to the crew; or

Any vessel engaged in a ferry operation which carries passengers.

"Person" as defined in (18 U.S.C. 831), means any individual, firm, copartnership, corporation, company, association, or joint-stock association, and includes any trustee, receiver, assignee, or personal representatives thereof.

"Person who offers for transportation" includes a person who transports material as a private carrier.

"Portable tank" means any packaging (except a cylinder having a 1000-pound or less water capacity) over 110 U.S. gallons capacity and designed primarily to be loaded into or on or temporarily attached to a transport vehicle or ship, and equipped with skids, mountings, or accessories to facilitate handling of the tank by mechanical means. Portable tank does not include a container loaded or unloaded while in place in or on a vehicle or other conveyance, any cargo tank, tank car tank, or tank of the DOT-106A or 110A type. This exclusion for DOT 106A and 110A tanks does not apply to Part 172. (See § 172.6 of this subchapter.)

"P.s.i.a." means pounds per square inch absolute.

"P.s.i.g." means per square inch gauge.

"Public aircraft" means aircraft used only in the service of a government or a political subdivision. It does not include any government-owned aircraft engaged in carrying persons or property for commercial purposes.

"Shipper" means any person who performs any function assigned by the regulations in this subchapter to a shipper. Performance of any function by one individual as a shipper does not exclude another person from also being considered a shipper. For example, a warehouseman who presents hazardous materials to a carrier may be subject to the regulations as a shipper or as the agent of a shipper, and the person who packed, marked, classified, and labeled the shipment initially may also be considered a shipper.

"Should" is used in recommendatory provisions.

"Solid" means a material which has a minimum viscosity of 5,000 centipoises at a temperature up to 100° F., except that a material shipped under refrigeration must be measured at the shipping temperature. If the product to be shipped contains solid material susceptible to phase separation, the viscosity measurement must be determined on the liquid component when it is present in an amount greater than 10 percent by weight. Viscosity must be determined by a viscometer of the Brookfield type equipped with a No. 4 spindle rotated at 20 revolutions per minute or by any other instrument giving an equivalent measurement.

"S.U.S." means Saybolt Universal Seconds as determined by the Standard Method of Test for Saybolt Viscosity (ASTM D88-56) and may be determined by use of the S.U.S. conversion tables specified in ASTM Method D2161-66 following determination of viscosity in accordance with the procedures specified in the Standard Method of Test for Viscosity of Transparent and Opaque Liquids (ASTM D445-65).

"Tank motor vehicle" means any motor vehicle designed or used for the transportation of hazardous materials in a cargo tank.

"Transport vehicle" means the conveyance used for the transportation of hazardous materials and includes any motor vehicle, rail car, or aircraft. Each cargo-carrying body (trailer, van, box car, etc.) is a separate vehicle.

"UFC" means Uniform Freight Classification.

"Viscous" means a liquid material which has a measured viscosity in excess of 2500 centistokes at 25° C (77° F.) when determined in accordance with the procedures specified in ASTM Method D445-72 "Kinematic Viscosity of Transparent and Opaque Liquids (and the Calculation of Dynamic Viscosity)" or ASTM Method D1200-70 "Viscosity of Paints, Varnishes, and Lacquers by Ford Viscosity Corp."

PART 171—RULEMAKING PROCEDURES OF THE HAZARDOUS MATERIALS REGULATIONS BOARD

A. The current heading of Part 170 would become the heading of Part 171 as set forth above.

B. In Part 171, the Table of Contents (formerly Part 170 Table of Contents) would be amended to read as follows:

C. Subpart A in Part 170 would be redesignated in Part 171 as follows:

Subpart A—General

D. Section 171.1 (formerly § 170.1) would be amended to read as follows:

§ 171.1 Applicability.

This Part prescribes general rulemaking procedures that apply to the issue, amendment, and repeal of hazardous materials regulations and special permits.

E. Section 171.3 (a new section) would be added to read as follows:

§ 171.3 Hazardous Materials Regulations Board.

(a) The Hazardous Materials Regulations Board (hereinafter referred to as the "Board") is composed of:

(1) Assistant Secretary for Environment, Safety, and Consumer Affairs.	Chairman.
(2) Federal Railroad Administrator.	Member.
(3) Federal Highway Administrator.	Member.
(4) Federal Aviation Administrator.	Member.
(5) Commandant, U.S. Coast Guard.	Member.
(6) General Counsel	Legal Advisor.
(7) Director, Office of Hazardous Materials.	Secretary.

(b) For the purposes of this part, the term "Board" means the Hazardous Materials Regulations Board or the member of the mode or administration for which he has authority, as appropriate.

(c) Subject to such limitations as he may prescribe, any Member of the Board may delegate any of his authority to act under the authority cited in § 170.1 of this subchapter to a member of his staff and an alternate or alternates, except any delegation to a Member must be at least at the Office Director level.

(d) The Chairman, the Legal Advisor, and the Secretary of the Board assist and advise the Board regarding matters coming before the Board.

(e) Except as provided in paragraph (f) of this section, the Director of the Office of Hazardous Materials issues all notices of proposed rulemaking relating to classification, packaging, labeling, shipping papers, compatibility, and general shipping requirements after concurrence of the appropriate Board members.

(f) Each Board member issues notices of proposed rulemaking relating to requirements for the transportation of hazardous materials when those requirements are applicable solely to his mode of transportation, including handling, stowage, and storage. Except as specifically provided otherwise, the procedure specified in this part applies to rulemaking initiated under this paragraph as well as rulemaking initiated under the preceding paragraph.

(g) Regulations are issued under the authority of each administration. The signature of a member on a regulation constitutes adoption of it for the operating administration he represents and no regulation is effective for a mode unless signed by a member of the respective administration.

(h) If a Board Member disagrees with a rule making affecting his mode, a statement will appear in the regulations indicating the final rule does not apply to his mode.

F. Section 171.5 (formerly § 170.7) would be amended to read as follows:

§ 171.5 Regulatory docket.

Records of the Board concerning rule making actions, including notices of proposed rule making initiated under § 171.3(e) and (f), comments received in response to those notices, petitions for rule making (including special permits for waiver or exemption), petitions for rehearing or reconsideration, grants and denials of special permits, denials of petitions for rule making, records of additional rulemaking proceedings under § 171.29, and final rules are maintained in current docket form in the Depart-

ment. They are available for inspection as provided in Part 7 of this Title.

G. Section 171.7 (formerly § 170.3) would be amended to read as follows:

§ 171.7 Initiation of rulemaking.

The Board initiates rulemaking on the motion of any of its members or a member initiates rulemaking as provided in § 171.3(f). The recommendations of other agencies of the U.S. Government and of interested persons are considered.

H. Section 171.9 (formerly § 170.5 would be amended to read as follows:

§ 171.9 Participation in rule-making proceedings.

A person may comment in rulemaking proceedings by submitting written information or views in duplicate unless he submits more than two pages. If he submits more than two pages, six copies are required. Any person may be allowed to participate in additional rulemaking proceedings, such meetings or hearings held with respect to any rule.

I. Subpart B in Part 170 would be redesignated in Part 171 as follows:

Subpart B—Petitions for Rulemaking, Special Permits, and Exemptions

J. Section 171.11 (formerly § 170.11) would remain the same except paragraph (a) and (b)(1) would be amended to read as follows:

§ 171.11 Filing of petitions for rulemaking.

(a) Any person may petition the Board or a member of the Board pursuant to § 171.3(f).

(b) * * *

(1) Be submitted, in English, in duplicate, to the Secretary, Hazardous Materials Regulations Board, Department of Transportation, Washington, D.C. 20590.

* * * * *

K. Section 171.13 (formerly § 170.13) would remain the same except paragraph (a), the introductory text of paragraph (b), and paragraph (b)(8) would be amended, and paragraph (d) would be added to read as follows:

§ 171.13 Filing of petitions for special permits and for waivers.

(a) Any shipper or carrier may petition the Board, or with respect to a matter referred to in § 171.3(f), a member of the Board, for a special permit for a waiver or exemption from any provision of Parts 170–189 of this subchapter.

(b) Each petition must be submitted, in English, and in duplicate, to the Secretary, Hazardous Materials Regulations Board, Department of Transportation, Washington, D.C. 20590, or to a member of the Board (with a duplicate to the Secretary), if the matter is with respect to § 171.3(f), and contain the following information:

* * * * *

(8) A statement or recommendation regarding any changes to the regulations which would be desirable to obviate the need for the special permit.

* * * * *

(d) See § 171.15(e) regarding confidentiality.

L. Section 171.15 (formerly § 170.15) would be amended to read as follows:

§ 171.15 Initial processing of petitions for rulemaking, special permits, and exemptions.

(a) *General.* The Board, or with respect to rulemaking initiated under § 171.3(f), a member of the Board, considers the information submitted by the petitioner and any other available pertinent information. Unless otherwise directed by the Board, no public hearing, argument, or other proceeding is held directly on a petition before its disposition.

(b) *Rulemaking.* If the Board, or a member of the Board (if the rule making is initiated under § 171.3(f)), finds that the petitioner's proposal would provide adequate safety and is otherwise justified, rule-making action is initiated under Subpart C of this Part.

(c) *Special permits and exemptions.* If the Board, finds that the petitioner's proposal would provide adequate safety and is otherwise justified, the special permit is issued for the modes of transportation requested and signed by the appropriate members. Exemptions from the regulations of Part 175 of this subchapter are processed in accordance with 14 CFR Part 11.

(d) *Denials.* If the Board, finds the petitioner's proposal would not provide adequate safety or is not otherwise justified, the petition is denied. The Board will inform the petitioner of the basis for the denial. Exemptions from the regulations of Part 175 of this subchapter are processed in accordance with 14 CFR Part 11.

(e) *Confidentiality.* The treatment of a trade secret and commercial or financial information that is privileged or confidential and that is submitted by any petitioner is governed by § 7.59 of this title. At the time of submission, a petitioner should indicate the special nature of his material if he desires that his material be treated in such a manner, but final decisions with respect to the nature of the material are governed by § 7.59 of this title.

M. Subpart C in Part 170 would be amended and redesignated Part 171 to read as follows:

Subpart C—Rulemaking Procedures

N. Section 171.21 (formerly § 170.21) would remain the same as now written.

O. Section 171.23 (formerly § 170.23) would remain the same except paragraph (b)(6) would be added to read as follows:

§ 171.23 Contents of notices.

* * * * *

(b) * * *

(6) The time and location of any public hearing to be held by the Commandant of the U.S. Coast Guard.

P. Sections 171.25, 171.27, and 171.29 (formerly §§ 170.25, 170.27, and 170.29 respectively) would remain the same as now written.

Q. Section 171.31 (formerly § 170.31) would remain the same except paragraph (c) would be added to read as follows:

§ 171.31 Hearings.

* * * * *

(c) To the extent required by subsection (9) of the Dangerous Cargo Act (46 U.S.C. 170(a)), the Commandant of the Coast Guard, or his designee, holds hearings with respect to proposed rule makings under that Act to receive comments on those aspects of the proposals that would apply to the transportation of hazardous materials by water.

R. Section 171.33 (formerly § 170.33) would remain the same as now written.

S. Section 171.35 (formerly § 170.35) would remain the same except paragraph (a) would be amended to read as follows:

§ 171.35 Petitions for rehearing or reconsideration of a rule.

(a) Any interested person may petition the Board, or with respect to a matter referred to in § 171.3(f), a member of the Board, for reconsideration of any rule issued under this part. Such a petition must be transmitted, in duplicate, to the Secretary, Hazardous Materials Regulations Board, Department of Transportation, Washington, D.C. 20590, at least 20 days before the effective date of the rule unless a different time interval is specified by the Board in its publication of a rule. However, in any case in which a rule becomes effective in less than 30 days after issuance, the petition may be filed at any time before the effective date. Petitions that are not timely filed will be considered as petitions for rule making filed under § 171.11. The petition must contain a brief statement of the requested action and an explanation as to why compliance with the rule is not possible, is not practicable, is unreasonable, or is not in the public interest. Petitions for reconsideration of exemptions involving Part 175 of this subchapter are processed in accordance with 14 CFR Part 11.

* * * * *

PART 172—LIST OF HAZARDOUS MATERIALS AND HAZARDOUS MATERIALS COMMUNICATIONS REGULATIONS

A. Part 172 Table of Contents would be canceled; a new Part 172 Table of Contents would be added to read as follows:

Subpart A—General

Sec.
172.1 Applicability of this part.
172.6 Meaning of words and terms.

Subpart B—List of Hazardous Materials

172.100 Explanation and requirements of the list of Hazardous Materials.
172.101 List of hazardous materials.

Subpart C—Shipping Papers

172.200 Applicability.
172.201 General.
172.202 Description of hazardous materials on shipping papers.
172.203 Additional description requirements.
172.204 Shipper's certification.

B. Part 172 would be canceled; Subpart B of this Part would be added to read as follows: (See Docket HM-103; Notice 73-10 in this issue of the FEDERAL REGISTER for the remaining Subparts.)

Subpart B—List of Hazardous Materials

§ 172.100 Explanation and requirements of the list of Hazardous Materials.

(a) *Column 1* lists hazardous materials in alphabetical order. The required shipping name appears in Roman type (not italics). For export shipments by water additional requirements are prescribed in § 172.203, for marking and the shipping description (see Docket HM-103).

(1) Shipping names may be used optionally in the singular or plural.

(2) The word "or" in italics indicates that any one term in the sequence it links (nouns or adjectives) may be used to complete the shipping name. Each term is not required to be used.

(3) An asterisk placed before the shipping name indicates that the material may or may not be of the classification shown in column 2.

(4) The abbreviation "n.o.s." means "not otherwise specified." The abbreviation "n.o.i." which means "not otherwise indexed" or "n.o.i.b.n." which means "not otherwise indexed by name" may be used interchangeably with "n.o.s." These abbreviations may be capitalized.

(5) When qualifying words are used as part of the noun description, the sequence of the qualifying words as they appear on package markings and shipping paper descriptions is optional.

(6) The symbol Ⓐ means that the material is subject to Parts 170–189 of this subchapter only for transportation by air.

(7) The symbol Ⓦ means that the material is subject to Parts 170–189 of this subchapter only for transportation by water.

(b) *Column 2* gives the classification and the hazard information number required to be used. Except for ORM A, B, C, and D materials and etiologic agents, where no hazard information number is assigned, the number must be assigned by the shipper in accordance with § 172.602 (see Docket HM-103).

(1) For all radioactive materials n.o.s. type entries, either Hazard Information Number 70 or 71 will be applicable in accordance with the following:

(i) *Hazard Information Number 70* applied as follows (no vehicle placard required): All packages containing not more than Type A quantities and which bear either a category White-I or Yellow-II label.

(ii) *Hazard Information Number 71* applied as follows: All packages containing in excess of Type A quantities or any package bearing a category Yellow-III label, regardless of quantity.

(c) *Column 3* describes the label or labels required to be applied to packages unless exempted therefrom by Parts 170 to 189 of this subchapter.

(d) *Column 4* describes the United Nations (U.N.) class and package label conforming to the U.N. Recommendations for the Transport of Dangerous Goods. If the class and label are identical, only one entry is shown. When these differ, multiple entries are shown, the first being the class, the others describing labels. For applicability of this column to classification and labeling of shipments within the United States see §§ 172.401, 173.9, and 176.30 of this subchapter. This column is for information only except as specified in § 176.30 of this subchapter.

(e) *Column 5* references the predominant regulations for exemptions (if any) and the packaging sections applicable to the hazardous materials listed. When a specific paragraph is referenced in a section, e.g., § 173.244(a)(1), this means that only that paragraph has effect and the remaining paragraphs in the section are inapplicable.

(f) *Column 6* is divided into three sections. A dashed line indicates that there are no special quantity limitations except those which may be specified according to the limitations on package type, or location of stowage in Parts 170 through 189 of this subchapter. The quantity shown is the maximum net quantity of hazardous material permissible in one outside package as this term is used to describe a packaging suitable for shipment. "Not permitted" means the material may not be shipped in the manner described in the applicable column.

(1) *Column 6.a.* applies to a rail car in express service in a passenger train.

(2) *Column 6.b.* applies to an aircraft or rail car transporting any passenger that is not a crew member. When a combustible liquid is listed, the quantity limitation does not apply to a passenger rail car.

(3) *Column 6.c.* applies to an aircraft transporting cargo and not transporting any passengers.

(g) *Column 7* shows the basic stowage conditions applicable to the listed hazardous material for shipment by water on cargo and passenger vessels. Additional requirements are found in Part 176 of this subchapter. The key to the numerals listed is as follows:

(1) "1" means on deck, that the hazardous materials must be stowed on the weather deck unless another stowage is listed. See § 176.63(a)(1) of this subchapter.

(2) "2" means under deck, that the hazardous materials must be stowed in a cargo space or hold below the weather deck unless another stowage is listed. (See § 176.63 (a)(2) of this subchapter).

(3) "3" means under deck away from heat, that the hazardous material must be stowed in a cargo space with built in means for ventilation and not subject to heat from any artificial source, unless on deck stowage is permitted and used for the material in place of this stowage.

(4) For definition of stowage terms used see also § 176.83(c) of this subchapter.

§ 172.101 List of hazardous materials.

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Accumulator, pressurized (*pneumatic or hydraulic*), *containing nonflammable gas.*	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306(f).				1,2.
Acetal	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Acetaldehyde (*ethyl aldehyde*).	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Ⓐ Acetaldehyde ammonia	ORM-A	None	M.D.S., none	173.505, 173.510.				
*Acetic acid (*aqueous solution*).	Corrosive material.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2. Stow separate from nitric acid acid or oxidizing materials.
Acetic acid, glacial	Corrosive material, 83.	Corrosive	Flammable liquid; Flammable liquid and Corrosive.	173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2. Stow separate from nitric acid or oxidizing materials. Segregation same as for flammable liquids.
Acetic anhydride	Corrosive material, 83.	Corrosive	Corrosive	173.244, 173.247.	1 gallon	1 quart	1 gallon	1,2. Separate longitudinally by an intervening complete hold or compartment from explosives.
Acetone	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Acetone cyanohydrin	Extremely toxic, 67.	Poison and Flammable liquid.	Poison	No exemption. 173.358.	55 gallons	Not permitted.	55 gallons	1. Shade from radiant heat. Stow away from corrosive materials. Not permitted on passenger vessels.
Acetone oil	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1. *See* § 176.300.
Acetonitrile	Flammable liquid, 32.	Flammable liquid and Poison.	Poison; Poison and Flammable liquid.	No exemption, 173.119.	10 gallons	1 quart	10 gallons	1. Shade from radiant heat. Not permitted on passenger vessels.
Acetyl acetone peroxide solution, *not over 40% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
Acetyl benzoyl peroxide solution, *not over 45% peroxide.*	Organic peroxide, 57.	Organic peroxide.	Organic peroxide.					
Acetyl bromide	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.247.	1 gallon	1 quart	1 gallon	1. Keep dry. Glass carboys not permitted on passenger vessels.
Acetyl chloride	Flammable liquid, 31.	Flammable liquid	Corrosive material; Corrosive and Flammable liquid.	173.244(a)(1), 173.247.	1 gallon	1 quart	1 gallon	1. Stow away from alcohols. Keep cool and dry. Separate longitudinally by an intervening complete compartment or hold from explosives.
Acetyl cyclohexane sulfonyl peroxide wetted, *not over 82% peroxide with minimum 18% water.*	Organic peroxide, 59.	Organic peroxide.						
Acetyl cyclohexane sulfonyl peroxide solution, *not over 32% peroxide.*	Organic peroxide, 58.	Organic peroxide.						
Acetylene	Flammable gas, 23.	Flammable gas.	Flammable gas.	No exemption, 173.303.	300 pounds	Not permitted.	300 pounds	1. Shade from radiant heat.
Ⓐ Acetylene tetrabromide	ORM-A	None		173.505, 173.510.		10 gallons	55 gallons	
Acetyl iodide	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.247.	1 gallon	1 quart	1 gallon	1. Keep dry. Glass carboys not permitted on passenger vessels.
Acetyl peroxide solution, *not over 25% peroxide.*	Organic peroxide, 57.	Organic peroxide.	Organic peroxide.					
Acid butyl phosphate	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245.	5 gallons	1 quart	5 gallons	1,2. Glass carboys in hampers not permitted under deck.
Acid carboy empty. *See* Carboy, empty.								
*Acid, liquid, n.o.s.	Corrosive material.	Corrosive	Corrosive	173.244, 173.245.	5 pints	1 quart	5 pints	1. Keep cool. Not permitted on passenger vessels.
*Acid, sludge	Corrosive material.	Corrosive	Corrosive	No exemption, 173.248.	1 quart	Not permitted.	1 quart	1,2. Passenger vessels: 1.
Acrolein, inhibited	Flammable liquid, 36.	Flammable liquid and Poison.	Flammable liquid: Flammable liquid and Poison.	No exemption, 173.122.	1 quart	Not permitted.	1 quart	1,2. Keep cool. Stow away from living quarters. Not permitted on passenger vessels.
Acrylic acid	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245.	5 pints	1 quart	1 quart	1.
Acrylonitrile	Flammable liquid, 35.	Flammable liquid.	Flammable liquid; Flammable liquid and Poison	No exemption, 173.119.	1 quart	Not permitted.	1 quart	1,2. Keep cool. Not permitted on passenger vessels.
Actuating cartridge, explosive, (*fire extinguisher, or value*).	Class C explosive, 15.	Explosive C		173.114	150 pounds	50 pounds	150 pounds	1,2. Keep cool and dry.
*Adhesive, n.o.s. *See* Cement, liquid, n.o.s.								
Airplane flare. See Fireworks, special								
Ⓐ Aerosol product, each aerosol container exceeding 50 cubic inches capacity. *See* Compressed gas, n.o.s.								
Ⓐ Aerosol product, nonflammable gas (*including contents*), *each aerosol container not exceeding 50 cubic inches capacity.*	Nonflammable gas.	Nonflammable gas.		173.306, 173.305, 173.304, 173.302.		150 pounds	300 pounds	

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Ⓐ Aerosol product, flammable gas (*including contents*), *each aerosol container not exceeding 60 cubic inches capacity.*	Flammable gas.	Flammable gas.		173.306, 173.305, 173.304, 173.302.		50 pounds	300 pounds	
Air, compressed	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.302.	300 pounds	150 pounds	300 pounds	1,2.
Aircraft rocket engine (*Commercial*).	Flammable solid.	Flammable solid.		No exemption, 173.238.	550 pounds	Not permitted.	550 pounds	1,3. Not permitted on passenger vessels.
Aircraft rocket engine igniter (*Commercial*).	Flammable solid.	Flammable solid.		No exemption, 173.238.	25 pounds	Not permitted.	25 pounds	1,3. Not permitted on passenger vessels.
*Alcohol, n.o.s.	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.125	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Alcohol, n.o.s.	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Aldrin	Highly toxic, 60.	Poison	Poison	173.364, 173.376.	200 pounds	50 pounds	200 pounds	1,2.
Ⓐ Aldrin, cast solid	ORM–A	None		173.505, 173.510.				
Aldrin mixture, dry (*with more than 65% aldrin*).	Highly toxic, 60.	Poison	Poison	173.364, 173.376.	200 pounds	50 pounds	200 pounds	1,2.
Ⓐ Aldrin mixture, dry, with 65% or less aldrin.	ORM–A	None		173.505, 173.510.				
Aldrin mixture, liquid, (*with more than 60% aldrin*).	Highly toxic	Poison	Poison	173.345, 173.361	55 gallons	1 quart	55 gallons	1,2. If flash point less than 141° F., segregation same as for flammable liquids.
Ⓐ Aldrin mixture, liquid, with 60% or less aldrin.	ORM–A	None		173.505, 173.510.				
*Alkaline caustic liquid, n.o.s.	Corrosive material.	Corrosive	Corrosive	173.244, 173.240.	10 gallons	1 quart	5 gallons	1,2.
Alkaline corrosive battery fluid.	Corrosive material, 80	Corrosive	Corrosive	173.244, 173.249, 173.267.	10 gallons	1 quart	10 gallons	1,2.
Alkaline corrosive battery fluid with empty storage battery.	Corrosive material, 80.	Corrosive	Corrosive	No exemption, 173.258.	400 pounds	Not permitted.	5 pints	1,2.
*Alkaline corrosive liquid, n.o.s.	Corrosive material.	Corrosive		173.244, 173.240.	10 gallons	1 quart	5 gallons	1,2.
*Alkanesulfonic acid	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245.	1 gallon	5 pints	1 gallon	1,2. Passenger vessels: 1.
Alkyl aluminum halides. *See* Pyrophoric liquid, n.o.s.								
Ⓐ Allethrin	ORM–A	None		173.505, 173.510.				
Allyl alcohol	Flammable liquid, 32.	Flammable liquid and Poison.	Flammable liquid; Flammable liquid and Poison.	No exemption, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Allyl bromide	Flammable liquid 31.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Passenger vessels: 1.
Allyl chloride	Flammable liquid, 32.	Flammable liquid and Poison.	Flammable liquid; Flammable liquid and Poison.	No exemption, 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Allyl chlorocarbonate	Flammable liquid, 31.	Flammable liquid.	Corrosive	No exemption, 173.288.	5 pints	Not permitted.	5 pints	1. Keep dry. Separate longitudinally by an intervening complete hold or compartment from explosives. *Segregation same as* for corrosive materials. Not permitted on passenger vessels.
Allyl chloroformate. *See* Allyl chlorocarbonate.								
Allyl trichlorosilane	Corrosive material, 83.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry. Separate longitudinally by an *intervening* complete hold or compartment from explosives.
Aluminum alkyls. *See* Pyrophoric liquid, n.o.s.								
Aluminum bromide, anhydrous.	Corrosive material, 82.	Corrosive	Corrosive	173.244, 173.245b.	100 pounds	25 pounds	100 pounds	1,2. Keep dry.
Ⓐ Aluminum chloride, anhydrous.	ORM–B	None	Corrosive	173.505, 173.510.		25 pounds	25 pounds	
Ⓐ Aluminum chloride solution.	ORM–B	None		173.505, 173.510.		1 gallon	10 gallons	
Aluminum dross, wet or hot. *See* § 173.173.								
Aluminum hydride	Flammable solid, 46.	Flammable solid and Dangerous when wet.		No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solid labeled Dangerous When Wet. Not permitted on passenger vessel.
*Aluminum, liquid or paint. *See* paint, enamel, lacquer stain, shellac, varnish, etc.								
Ⓐ◎* Aluminum, metallic, powder.	ORM–C	None	Dangerous when wet.	173.505, 173.905.		25 pounds	100 pounds	1,2. Keep dry. Segregation same as for flammable solids labeled dangerous when wet.
Aluminum nitrate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.152.	100 pounds	25 pounds	100 pounds	1,2.
Aluminum phosphate solution.	Corrosive material.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
Aluminum phosphide	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Poison	No exemption, 173.154.	25 pounds	Not permitted.	25 pounds	1,2. Stow away from acids and oxidizing materials.

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and specia segregation
Amatol. See High explosive.								
2-(2-Aminoethoxy) ethanol	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
n-Aminoethylpiperazine	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
Aminopropyldiethanolamine.	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
n-Aminopropylmorpholine	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
bis (Aminopropyl) piperazine.	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
Ammonia, anhydrous	Nonflammable gas, 21.	Nonflammable gas.	Nonflammable gas; Poison gas.	173.306, 173.304, 173.314, 173.315.	300 pounds	Not permitted.	300 pounds	1,2. Stow in well ventilated space. Not permitted on passenger vessels.
Ammonia solution (*containing more than 44% ammonia*). *See* Ammonia, anhydrous.								
Ammonia solution, containing *over 10% but* not more than 44% ammonia (*below 25.5 p.s.i.g.*).	Corrosive material, 80.	Corrosive		173.244, 173.245.	2 gallons	2 gallons	2 gallons	1. Not permitted on passenger vessels.
Ammonium arsenate, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2. Stow away from alkaline corrosives.
Ammonium bichromate (*ammonium dichromate*).	Oxidizing material, 51.	Oxidizer	Oxidizing material.	173.153, 173.154, 173.235.	100 pounds	25 pounds	100 pounds	1,2. Stow well away from foodstuffs.
Ammonium bifluoride, *See* Ammonium hydrogen fluoride.								
Ammonium chlorate				Not permitted.				
Ⓐ Ammonium fluoride	ORM-B	None		173.505, 173.510, 173.800.		25 pounds	100 pounds	
Ⓐ Ammonium hydrogen fluoride, solid.	ORM-B	None	Corrosive	173.505, 173.510, 173.800.		25 pounds	100 pounds	
*Ammonium hydrogen fluoride solution.	Corrosive material.	Corrosive		173.244, 173.245.	10 gallons	1 quart	5 gallons	1,2. Keep dry.
Ⓐ Ammonium hydrogen sulfate.	ORM-B	None		173.505, 173.510, 173.800.		25 pounds	100 pounds	
Ⓐ Ammonium hydrosulfide solution.	ORM-A	None		173.505, 173.510, 173.605.		10 gallons	55 gallons	
Ammonium nitrate (no organic coating).	Oxidizing material, 54.	Oxidizer	Oxidizing material.	173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2.
Ammonium nitrate-carbonate mixture.	Oxidizing material, 50.	Oxidizer		173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2.
Ammonium nitrate fertilizer, *containing no more than 0.2% carbon.*	Oxidizing material, 54.	Oxidizer	Oxidizing material.	173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2.
Ammonium nitrate-fuel oil mixture. See Nitro carbo nitrate or *Explosives, Class A or B.*								
*Ammonium nitrate mixed fertilizer.	Oxidizing material.	Oxidizer		173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2.
Ammonium nitrate (organic coating).	Oxidizing material, 54.	Oxidizer	Oxidizing material.	173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2.
*Ammonium nitrate-phosphate.	Oxidizing material, 50.	Oxidizer		173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2.
Ammonium perchlorate	Oxidizing material, 54.	Oxidizer	Oxidizing material	173.153, 173.154, 173.289a.	100 pounds	25 pounds	100 pounds	1,2. Stow away from powdered metals. Not permitted on passenger vessels.
Ammonium permanganate	Oxidizing material, 54.	Oxidizer	This material may be forbidden in water transportation by certain countries.	173.153, 173.154.	100 pounds	Not permitted.	Not permitted.	1,2. Separate from ammonium compounds and hydrogen peroxide.
Ammonium picrate. See High explosive.								
Ammonium picrate, wet, not to exceed 16 ounces (*in one outside package*).	Flammable solid, 48.	Flammable solid.	Flammable solid.	173.192	1 pound	1 pound	1 pound	1. Stow away from heavy metals and their compounds. Not permitted on passenger vessels.
Ⓐ Ammonium polysulfide solution.	ORM-A	None		173.505, 173.510, 173.605.		10 gallons	55 gallons	
Ⓦ Ammonium sulfate nitrate.	ORM-C	None		173.605, 173.910.				1,2. Must not be accepted for transportation while hot. Separate by an intervening hold or compartment from Class A explosives. Separate from other explosives, corrosive materials, flammable solids, liquids, or gases, oxidizing materials, organic peroxides, or organic materials.
Ⓐ Ammonium sulfide solution.	ORM-A	None		173.505, 173.510, 173.605.		10 gallons	55 gallons	
Ammunition, chemical (containing an extremely toxic liquid or gas). See Chemical ammunition (containing an extremely toxic material).								

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Ammunition, chemical (containing a highly toxic liquid or gas). See Chemical ammunition (containing a highly toxic material).								
Ammunition, chemical (containing an irritating liquid or solid). See Chemical ammunition (containing an irritating material).								
Ammunition, chemical (explosive with fuze or bursting charge). When shipped without ignition element assembled, see appropriate Chemical ammunition entry.	Class A explosive, 19.	Explosive A		173.59	Not permitted.	Not permitted.	Not permitted.	Magazine. No other cargo may be stowed in the same hold with these items. Not permitted on passenger vessels.
Ammunition for cannon with empty projectile.	Class B explosive, 17.	Explosive B		No exemption, 173.89.	Not permitted.	Not permitted.	Not permitted.	1,2. Not permitted on passenger vessels.
Ammunition for cannon with explosive projectile.	Class A explosive, 19.	Explosive A		No exemption, 173.54.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Ammunition for cannon with gas projectile.	Class A explosive, 19.	Explosive A		No exemption, 173.54.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Ammunition for cannon with illuminating projectile.	Class A explosive 19.	Explosive A		No exemption, 173.54.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Ammunition for cannon with incendiary projectile.	Class A explosive, 19.	Explosive A		No exemption, 173.54.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Ammunition for cannon with inert loaded projectile.	Class B explosive, 17.	Explosive B		No exemption, 173.89.	Not permitted.	Not permitted.	Not permitted.	1,2. Not permitted on passenger vessels.
Ammunition for cannon with smoke projectile.	Class A explosive, 19.	Explosive A		No exemption, 173.54.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Ammunition for cannon with solid projectile.	Class B explosive, 17.	Explosive B		No exemption, 173.89.	Not permitted.	Not permitted.	Not permitted.	1,2. Not permitted on passenger vessels.
Ammunition for cannon without projectile.	Class B explosive, 17.	Explosive B		No exemption, 173.89.	Not permitted.	Not permitted.	Not permitted.	1,2. Not permitted on passenger vessels.
Ammunition, non-explosive				173.55				
Ammunition, rocket, See Rocket ammunition.								
Ammunition, small-arms. *See* Small-arms ammunition.								
Ammunition for small-arms with explosive projectile.	Class A explosive, 19.	Explosive A		No exemption, 173.58.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Ammunition for small-arms with incendiary projectile.	Class A explosive, 19.	Explosive A		No exemption, 173.58.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Amyl acetate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: *See* § 176.300.
Amyl acid phosphate	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
Amylamine	Flammable Liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Amyl chloride	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Amylene, *normal*	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool.
Amyl formate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Amyl mercaptan	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	No exemption, 173.141.	10 gallons	Not permitted.	10 gallons	1,2. Passenger vessels: 1.
Amyl nitrite	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Amyl trichlorosilane	Corrosive liquid, 83.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry. Separate longitudinally by an intervening complete hold from explosives.
Anhydrous, ammonia. *See* Ammonia, anhydrous.								
Anhydrous hydrazine. *See* Hydrazine, anhydrous.								
Anhydrous hydrofluoric acid. *See* Hydrogen fluoride.								
Aniline oil drum, empty				173.347				1,2. Passenger vessels: 1 Do not accept unless returnable package notice is on drum and the instructions thereon have been carried out.
Aniline oil, liquid	Highly toxic, 61.	Poison	Poison	No exemption, 173.347.	55 gallons	Not permitted.	55 gallons	1,2. Stow away from oxidizing materials and acids.
Anisoyl chloride	Corrosive material, 81.	Corrosive	Corrosive	172.244(a)(1), 173.279.	1 quart	1 quart	1 quart	1. Keep dry.
*Antifreeze compound, liquid.	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Antifreeze compound, liquid.	Combustible liquid, 30	None		173.118a, 173.119b.		15 gallons	55 gallons	*See* §176.300, Passenger vessels: 1,2.

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
*Antifreeze preparation, liquid.	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Antifreeze preparation, liquid.	Combustible liquid, 30.	None		173.118a, 173.119b.		15 gallons	55 gallons	*See* §176.300. Passenger vessels: 1,2.
Antimonius chloride. *See* Antimony trichloride.								
Ⓐ Antimony lactate, solid	ORM-A	None	Poison	173.505, 173.510.				
Antimony pentachloride	Corrosive material, 80.	Corrosive	Corrosive	No exemption, 173.247.	1 quart	1 quart	1 quart	1. Keep dry. Glass carboys not permitted on passenger vessels.
*Antimony pentachloride solution.	Corrosive material.	Corrosive	Corrosive	173.244(a)(1), 173.245.	1 quart	1 quart	5 pints	1. Keep dry. Glass carboys not permitted on passenger vessels.
Antimony pentafluoride	Corrosive material, 81.	Corrosive	Corrosive material; Corrosive and Poison.	No exemption, 173.246.	25 pounds	Not permitted.	25 pounds	1. Keep dry. Not permitted on passenger vessels.
Ⓐ Antimony potassium tartrate solid.	ORM-A	None	Poison	173.505, 173.510.				
Ⓐ Antimony sulfide, solid	ORM-A	None	M.D.S., none	173.505, 173.510.				
Antimony trichloride, solid	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245b.	10 pounds	25 pounds	100 pounds	1,2. Keep dry.
*Antimony trichloride solution.	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245.	5 pints	1 quart	5 pints	1. Keep dry.
Argon	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.302, 173.314.	300 pounds	150 pounds	300 pounds	1,3.
Argon, cryogenic, liquid	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	No exemption, 173.304.	300 pounds	Not permitted.	300 pounds	1,3.
*Arsenic acid solution	Highly toxic, 60.	Poison	Poison	173.345, 173.348.	55 gallons	1 quart	55 gallons	1,2.
Arsenic acid, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.366.	200 pounds	50 pounds	200 pounds	1,2.
*Arsenical compound n.o.s., liquid, *or* arsenical mixture, n.o.s., liquid.	Highly toxic	Poison	Poison	173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2.
*Arsenical compound n.o.s., solid, *or* arsenical mixture, n.o.s., solid.	Highly toxic	Poison	Poison	173.364, 163.367.	200 pounds	50 pounds	200 pounds	1,2. Keep dry.
Arsenical dip, liquid (*sheep dip*).	Highly toxic, 60.	Poison	Poison	173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2.
Arsenical dust	Highly toxic, 60.	Poison	Poison	173.364, 173.368.	200 pounds	50 pounds	200 pounds	1,2.
Arsenical flue dust	Highly toxic, 60.	Poison	Poison	173.364, 173.368.	200 pounds	50 pounds	200 pounds	1,2.
Arsenic bromide, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Arsenic chloride (*arsenious*) liquid. *See* Arsenic trichloride.								
Arsenic iodide, solid	Highly toxic, 60.	Poison		173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Arsenic pentoxide, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Arsenic, solid	Highly toxic, 60.	Poison		173.364, 173.366.	200 pounds	50 pounds	200 pounds	1,2.
Arsenic sulfide, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2. Keep dry.
Arsenic trichloride, liquid	Extremely toxic, 62.	Poison	Poison	No exemption, 173.358.	Not permitted.	Not permitted.	55 gallons	1,2.
Arsenic trioxide, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.366, 173.368.	200 pounds	50 pounds	200 pounds	1,2.
Arsenic, white, solid. *See* Arsenic trioxide, solid.								
Arsenious acid, solid. *See* Arsenic trioxide, solid.								
*Arsenous and mercuric iodide solution.	Highly toxic	Poison		173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2.
Arsine	Flammable gas, 29.	Flammable gas and Poison.		No exemption, 173.328.	Not permitted.	Not permitted.	Not permitted.	1. Not permitted on passenger vessel.
Ⓜ Asphalt, *at or above its flashpoint.*	ORM-C	None		Railroad or highway vehicle.				1. When applicable, no fire or residue thereof may be present in the furnace heating the substance while the vehicle is on board a cargo vessel. Not permitted on passenger vessels.
*Asphalt, cut back	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.131.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Asphalt, cut back	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels; 1,2.
Automobile, motorcycle, tractor, or other self-propelled vehicle.				173.120, 173.306.				1,2.
Automobile, motorcycle, tractor, or other self-propelled vehicle, engine, or other mechanical apparatus, with charged electric storage battery, wet.				173.120, 173.250, 173.306.				1,2.
1-Aziridinyl phosphine oxide (tris). *See* Tris-(1-aziridinyl) Phosphine oxide.								

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Bags, burlap used (*Also see Burlap bags, etc.*).				173.28, 173.930, 173.931.				
Bags, sodium nitrate, empty and unwashed.	Flammable solid, 40.	Flammable solid.	Spontaneously combustible.	No exemption, 173.155.	25 pounds	Not permitted.	25 pounds	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
*Barium azide, wet, *50% or more water.*	Flammable solid, 48.	Flammable solid.	Poison	No exemption, 173.239.	1 pound	Not permitted.	1 pound	1,2. Stow away from heavy metals.
Barium chlorate	Oxidizing material, 50.	Oxidizer	Oxidizing material; Oxidizer and Poison.	173.153, 173.163.	100 pounds	25 pounds	100 pounds	1,2. Separate from ammonium compounds. Stow away from *powdered metals.*
*Barium chlorate, wet	Oxidizing material, 50.	Oxidizer		173.153, 173.163.	200 pounds	25 pounds	200 pounds	1,2. Separate from ammonium compounds. Stow away from powdered metals.
Barium cyanide, solid	*Highly toxic, 60*	*Poison*	*Poison*	*173.370*	*200 pounds*	*25 pounds*	*200 pounds*	*1,2. Stow away from acids.*
Barium nitrate	Oxidizing material, 50.	Oxidizer	Oxidizing material; Oxidizer *and Poison.*	173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2.
Ⓐ Barium oxide	ORM-B		Poison	173.505, 173.510, 173.800.		25 pounds	100 pounds	
Barium perchlorate	*Oxidizing material, 50.*	*Oxidizer*	*Oxidizing material, Oxidizer and Poison.*	*173.153,* 173.154.	*100 pounds.*	*25 pounds*	*100 pounds.*	1,2. Stow away from powdered metals.
Barium permanganate	*Oxidizing material, 50.*	*Oxidizer*	*Oxidizing material;* Oxidizer and Poison.	*173.153,* 173.154.	*100 pounds.*	*25 pounds*	*100 pounds.*	1,2. Separate from ammonium compounds and hydrogen peroxide.
Barium peroxide (*binoxide, dioxide*).	*Oxidizing material,* 50.	*Oxidizer*	*Oxidizing material;* Oxidizer and Poison.	*173.153,* 173.156.	*100 pounds.*	*25 pounds*	*100 pounds.*	*1,2.* Keep dry.
Barrel, empty. *See* Drum, empty.								
Battery, dry				Not subject to Parts 170–189 of this subchapter.				
Battery, electric storage, wet.	Corrosive material, 80.	Corrosive	Corrosive	173.260	600 pounds	Not permitted.		1,2.
Battery, electric storage, wet, *with containers* of corrosive battery fluid.	Corrosive material, *80.*	Corrosive	Corrosive	No exemption, 173.258.	2 gallons	Not permitted.	2 gallons	1,2.
Battery, electric storage, wet, with automobile, auto parts, engine (*or other specifically named mechanical apparatus*).	Corrosive material, 80.	Corrosive		173.250, 173.260.				1,2. Keep dry.
Battery charger with electrolyte (acid or alkaline battery fluid).	Corrosive material, 80.	Corrosive		No exemption, 173.259.	5 gallons	Not permitted.	5 pints	1,2.
Battery fluid. See Electrolyte (acid) or Alkaline battery fluid).								
Ⓦ Battery parts (*plates, grids, etc., unwashed, exhausted*).	ORM-C	None		173.505, 173.915.				1,2. Not permitted on passenger vessels.
Benzaldehyde	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Benzene (*benzol*)	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Benzene phosphorus dichloride.	Corrosive material, 82.	Corrosive		173.244, 173.250a.	5 pints	Not permitted.	5 pints	1. Not permitted on passenger vessels.
Benzene phosphorus thiodichloride.	Corrosive material, 82.	Corrosive		173.244, 173.250a.	5 pints	Not permitted.	5 pints	1. Not permitted on passenger vessels.
*Benzine	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Benzine	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Benzoyl chloride	Corrosive material, 86.	Corrosive	Corrosive	173.244(a)(1), 173.247.	1 quart	1 quart	1 quart	1. Keep dry. Glass carboys. Not permitted on passenger vessels.
Benzoyl peroxide (*other than as specified below*).	Organic peroxide 59.	Organic peroxide.	Organic peroxide.					
Benzoyl peroxide, solid, *not over 52% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
Benzoyl peroxide, paste, *over 72% peroxide.*	Organic peroxide, 59.	Organic peroxide.						
Benzoyl peroxide, paste, not over 72% peroxide.	Organic peroxide, 57.	Organic peroxide.						
Benzoyl peroxide, in water, *over 77% peroxide.*	Organic peroxide, 59.	Organic peroxide.						
Benzoyl peroxide, in water, not over 77% peroxide.	Organic peroxide, 57.	Organic peroxide.						
Benzyl bromide (*bromotoluene, alpha*).	Corrosive material, 85.	Corrosive	Corrosive	No exemption, 173.281.	5 pints	Not permitted.	5 pints	1. Keep dry. Not permitted on passenger vessels.
Benzyl chloride	Corrosive material, 85.	Corrosive	Corrosive	173.244(a)(1), 173.295.	1 quart	Not permitted.	1 quart	1. Keep dry. Not permitted on passenger vessels.
Benzyl chloroformate (or Benzyl chlorocarbonate).	Corrosive material, 81.	Corrosive	Corrosive	No exemption, 173.288.	5 pints	Not permitted.	5 pints	1. Keep dry. Not permitted on passenger vessels.

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Beryllium compound, n.o.s.	Highly toxic	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Black powder	Class A explosive, 19.	Explosive A		No exemption, 173.60.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Black powder igniter with empty cartridge bag.	Class C explosive, 15.	Explosive C		No exemption, 173.106.	150 pounds	50 pounds	150 pounds	1,3.
Blasting caps—*(1,000 or less) (Show actual number).*	Class C explosive, 15.	Explosive C		No exemption, 173.103.	173.86	Not permitted.	Not permitted.	Portable magazine or metal locker. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded. Not permitted on passenger vessels.
Blasting caps—*(more than 1,000) (Show actual number.)*	Class A explosive, 19.	Explosive A		No exemption, 173.66.	Not permitted.	Not permitted.	Not permitted.	Magazine. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded. Not permitted on passenger vessels.
Blasting caps—electric *(1,000 or less) (Show actual number.)*	Class C explosive, 15.	Explosive C		No exemption, 173.103.	173.86	Not permitted.	Not permitted.	Portable magazine or metal locker. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded. Not permitted on passenger vessels.
Blasting caps—electric *(more than 1,000) (Show actual number).*	Class A explosive, 19.	Explosive A		No exemption, 173.66.	Not permitted.	Not permitted.	Not permitted.	Magazine. Do not stow blasting any high explosive. Do not handle blasting caps at the same time high explosives are being loaded. Not permitted on passenger vessels.
Blasting caps with metal clad mild detonating fuse—*(1,000 or less) (Show actual number).*	Class C explosive, 15.	Explosive C		No exemption, 173.103.	173.86	Not permitted.	Not permitted.	Portable magazine or metal locker. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded. Not permitted on passenger vessels.
Blasting caps with metal clad mild detonating fuse—*(more than 1,000) (Show actual number).*	Class A explosive, 19.	Explosive A		No exemption. 173.66(c). 173.67.	Not permitted.	Not permitted.	Not permitted.	Magazine. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded. Not permitted on passenger vessels.
Blasting caps with safety fuse—*(1,000 or less) (Show actual number).*	Class C explosive, 15.	Explosive C		No exemption, 173.103.	173.86	Not permitted.	Not permitted.	Portable magazine or metal locker. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded. Not permitted on passenger vessels.
Blasting caps with safety fuse—*(more than 1,000) (Show actual number).*	Class A explosive, 19.	Explosive A		No exemption, 173.66(c), 173.67.	Not permitted.	Not permitted.	Not permitted.	Magazine. Do not stow blasting caps with any high explosive. Do not handle blasting caps at the same time high explosives are being loaded. Not permitted on passenger vessels.
Blasting gelatin. See High explosive.								
Blasting powder. See Black powder.								
Ⓦ Bleaching powder, *containing 39% or less chlorine.*	ORM-C	None		173.505, 173.920.				1,2. Keep dry. Stow separate from flammable liquids and acids. (Stow away from oils, grease, and similar organic materials.)
*Boiler compound, liquid	Corrosive material.	Corrosive		173.244, 173.249.	10 gallons	1 quart	10 gallons	1,2.
Bomb, explosive. See Explosive bomb.								
Bomb, explosive with gas, smoke, or incendiary material. See Explosive bomb.								
Bomb, fireworks. See Fireworks, special.								
Bomb, gas, smoke, or incendiary, non-explosive. See Chemical ammunition.								
Bomb, incendiary, or smoke without bursting charge. See Fireworks, special.								
Bomb, practice, with electric primer or electric squib (non-explosive).				173.55				
Bomb, sand-loaded or empty (Non-explosive).				173.55				
Ⓐ Bone oil	ORM-A	None		173.505, 173.510.				
Booster, explosive	Class A explosive, 19.	Explosive A		No exemption, 173.69.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
*Bordeaux arsenite, liquid	Highly toxic, 60.	Poison	Poison	173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2.
*Bordeaux arsenite, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.

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Boron tribromide	Corrosive material, 81.	Corrosive		No exemption, 173.251.	1 quart	Not permitted.	1 quart	1. Not permitted on passenger vessels.
Boron trichloride	Corrosive material, 81.	Corrosive	Nonflammable gas; Poison gas and Corrosive.	No exemption, 173.251.	1 quart	Not permitted.	1 quart	1,2. Stow in well ventilated space. Shade from radiant heat. Segregation same as for nonflammable gases. Not permitted on passenger vessels.
Boron trifluoride	Nonflammable gas, 20.	Nonflammable gas and Poison.	Nonflammable gas; Poison gas.	No exemption, 173.302.	Not permitted.	Not permitted.	Not permitted.	1. Stow away from living quarters and foodstuffs. Not permitted on passenger vessels.
Boron trifluoride-acetic acid complex.	Corrosive material, 80.	Corrosive	Corrosive	173.244(a)(1), 173.247.	1 gallon	1 quart	1 gallon	1,2.
Bottles, empty, *having previously contained a corrosive liquid and not cleaned.*				173.29				
Ⓦ*Box toe board (*nitrocellulose base.*).	ORM-C			173.505, 173.925.				1,3. Provide cool stowage in a compartment having a temperature not exceeding 130° F., well away from any sources of heat, and in position to protect or move, even to jettison in event of fire. Separate from explosives, flammable liquids or gases, oxidizing materials, organic peroxides, or corrosive liquids.
*Box toe gum	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Box toe gum	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Bromine	Corrosive material 81.	Corrosive	Corrosive	No exemption, 173.353.	1 quart	Not permitted.	1 quart	1. Keep cool. Not permitted on passenger vessels.
Bromine pentafluoride	Oxidizing material, 63.	Oxidizer	Corrosive material; Corrosive, oxidizer and Poison.	No exemption, 173.284.	100 pounds	Not permitted.	100 pounds	1. Shade from radiant heat. Segregation same as for corrosives. Not permitted on passenger vessels.
Bromine trifluoride	Oxidizing material, 53.	Oxidizer and Poison.	Corrosive material; Corrosive and Poison.	No exemption, 173.283.	100 pounds	Not permitted.	100 pounds	1. Shade from radiant heat. Segregation same as for corrosives. Not permitted on passenger vessels.
Bromoacetic acid, solid	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245b.	100 pounds	25 pounds	100 pounds	1,2. Keep dry.
*Bromoacetic acid solution	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245.	1 quart	1 quart	1 quart	1,2. Glass carboys in hampers not permitted under deck.
Bromoacetone, liquid	Extremely toxic, 62.	Poison	Poison	No exemption, 173.329 (a).	Not permitted.	Not permitted.	Not permitted.	1. Segregation same as for flammable liquids. Not permitted on passenger vessels.
Bromobenzene	Combustible liquid, 30.	None		173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Ⓐ Bromochloromethane	ORM-A	None	M.D.S., none	173.505, 173.510, 173.605.		10 gallons	55 gallons	
Bromotoluene, alpha. *See* Benzyl bromide.								
Brucine, solid (dimethoxy strychnine).	Highly toxic, 60.	Poison	Poison	173.364, 173.385.	200 pounds	50 pounds	200 pounds	1,2.
Ⓦ Burlap bags, new. *See* Burlap cloth.								
Ⓐ Ⓦ Burlap bags, used and unwashed, or not cleaned.	ORM-C	None		173.930				1. Keep cool.
Ⓦ Burlap bags, cleaned (*vacuum cleaned, wheel cleaned, or otherwise mechanically brushed*). *See* Burlap cloth.								
Ⓦ Burlap cloth (*hessian*)	ORM-C	None		173.931				1,2. Keep dry. Stow away from organic liquids.
Burnt cotton, not repicked	Flammable solid, 40.			No exemption, 173.169.	Not permitted.	Not permitted.	Not permitted.	1. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
Burnt fiber	Flammable solid, 40.	Flammable solid.		No exemption, 173.169.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials or organic peroxides.
Burster, explosive	Class A explosive, 19.	Explosive A		No exemption, 173.69.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Butadiene, inhibited	Flammable gas, 23.	Flammable gas.	Flammable gas.	173.306, 173.304, 173.314, 173.315.	300 pounds	Not permitted.	300 pounds	1,2. Passenger vessels: 1. Stow away from living quarters.
Butane *or* Liquefied petroleum gas. *See* Liquefied petroleum gas.								
Butyl acetate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1. *See* § 176.300.
n-Butyl acid phosphate. *See* Acid butyl phosphate.								
*Butyl alcohol. *See* Alcohol, n.o.s.								
Butylamine	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Butyl bromide, *normal*	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 g allons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Butyl ether	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2.

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n-butyl-4, 4-bis (t-butylperoxy) valerate.	Organic peroxide, 50.	Organic peroxide.						
n-butyl-4, 4-bis (t-butylperoxy) valerate, solid, not over 52% peroxide.	Organic peroxide, 57.	Organic peroxide.						
Butyl chloride	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels. 1.
t-butyl cumyl peroxide	Organic peroxide, 57.	Organic peroxide.						
bis-(4-tert-butyl cyclohexyl) peroxydicarbonate.	Organic peroxide, 58.	Organic peroxide.						
t-butyl diperphthalate solution, *not over 55% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
t-butyl diperphthalate paste, *not over 55% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
Butyl formate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
t-butyl hydroperoxide solution, *over 72% but not more than 90% peroxide in water.*	Organic peroxide, 57.	Organic peroxide.						
t-butyl hydroperoxide solution, not over 72% peroxide in water.	Organic peroxide, 57.	Organic peroxide.						
t-butyl hydroperoxide solution, not over 80% in di-t-butyl-peroxide or solvent.	Organic peroxide, 57.	Organic peroxide.						
Butyl mercaptan	Flammable liquid, 30.	Flammable liquid.		No exemption, 173.141.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
t-butyl monoperphthalate	Organic peroxide, 57.	Organic peroxide.						
t-butyl peracetate solution, *not over 76% peroxide.*	Organic peroxide, 59.	Organic peroxide.						
t-butyl peracetate solution, not over 52% peroxide.	Organic peroxide, 57.	Organic peroxide,						
t-butylper-(2-ethyl) hexanoate.	Organic peroxide 58.	Organic peroxide.						
t-butyl perisobutyrate solution, not over 77% peroxide.	Organic peroxide, 59.	Organic peroxide.						
t-butyl permaleate	Organic peroxide, 59.	Organic peroxide.						
t-butyl permaleate solution, *not over 55% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
t-butyl permaleate paste, *not over 52% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
t-butyl perneodecanoate solution, *not over 77% peroxide.*	Organic peroxide, 58.	Organic peroxide.						
t-butyl peroxide	Organic peroxide, 57.	Organic peroxide.						
2,2-bis (t-butyl peroxy) butane, solution, *not over 55% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
2,2-bis (4,4-ditert butylperoxy cyclohexyl) propane solid, *not over 42% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
n-Butyl peroxy dicarbonate solution, *not over 52% peroxide.*	Organic peroxide, 58.	Organic peroxide.						
n-butyl peroxy dicarbonate solution, not over 27% peroxide.	Organic peroxide, 58.	Organic peroxide.						
t-butyl peroxy diethylacetate.	Organic peroxide, 57.	Organic peroxide.						
1,3-bis (2,tert-butyl peroxy isopropyl) benzene, solid, *or* 1,4-bis (2,tert-butyl peroxy isopropyl) benzene solid. 1,3-bis (2,tert-butyl peroxy isopropyl) benzene and 1, 4-bis (2,tert-butyl peroxy isopropyl) benzene mixture, solid. (*See entry immediately preceding*).	Organic peroxide. 57.	Organic peroxide.						
t-butyl peroxy isopropyl carbonate.	Organic peroxide, 59.	Organic peroxide.						
1,1-bis (t-butyl peroxy)-3,3,5-trimethyl cyclohexane.	Organic peroxide, 57.	Organic peroxide.						
1,1-bis (t-butyl peroxy)-3,3,5-trimethyl cyclohexane solution, *not over 57% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
1,1-bis (t-butyl peroxy)-3,3,5-trimethyl cyclohexane, solid, *not over 58% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
t-butyl peroxy-3,5,5-trimethyl hexanoate (t-butyl perisononanoate).	Organic peroxide, 57.	Organic peroxide.						
t-butyl perpivalate	Organic peroxide, 59.	Organic peroxide.						

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t-butyl perpivalate solution, *not over 77% peroxide.*	Organic peroxide, 58.	Organic peroxide.						
t-butyl pervenzoate, or t-butyl pervenzoate solution *over 76% peroxide.*	Organic peroxide, 59.	Organic peroxide.						
t-butyl pervenzoate solution, *not over 76% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
Butyl phosphoric acid. *See* n-Butyl acid phosphate.								
Butyl trichlorosilane	Corrosive material, 83.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry. Separate longitudinally by intervening complete hold or compartment from explosives.
Butyraldehyde	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels; 1.
Butyric acid	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
Calcium arsenate, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.367, 173.368.	200 pounds	50 pounds	200 pounds	1,2.
Calcium arsenite, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
*Calcium bisulfite solution. *See* *Calcium hydrogen sulfite solution.								
*Calcium hydrogen sulfite solution.	Corrosive material.	Corrosive	Corrosive	173.244, 173.245.	5 gallons	1 quart	5 gallons	1,2.
Calcium carbide	Flammable solid, 44.	Flammable solid,		No exemption, 173.164.	25 pounds	Not permitted.	25 pounds	1,2. Keep dry. Stow away from copper, its alloys, and salts.
Calcium chlorate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.163.	100 pounds	25 pounds	100 pounds	1,2. Separate from ammonium compounds. Stow away from powdered metals and cyanide.
Calcium chlorite	Oxidizing material, 50.	Oxidizer	Oxidizing material.	No exemption, 173.160.	100 pounds	Not permitted.	100 pounds	1,2. Separate from ammonium compounds powdered materials, and cyanides.
Ⓐ Ⓦ Calcium cyanamide, not hydrated, containing more than 0.1% calcium carbide.	ORM-C	None	Dangerous when wet.	No exemption, 173.945.		25 pounds	200 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet.
*Calcium cyanide, solid, or Calcium cyanide mixture, solid.	Highly toxic, 60.	Poison	Poison	173.370 (c) and (d).	200 pounds	25 pounds	200 pounds	1,2. Stow away from corrosive liquids. Keep dry.
Calcium hypochlorite mixture (*dry, containing more than 39% available chlorine*).	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.217.	100 pounds	50 pounds	100 pounds	1,2. Keep cool and dry.
Calcium, metallic	Flammable solid, 44.	Flammable solid and Dangerous when wet.	Dangerous when wet.	173.153(a), 173.164.	100 pounds	25 pounds	100 pounds	1,2. Keep cool and dry. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessel.
Calcium, metallic, crystalline.	Flammable solid, 44.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.231.	25 pounds	Not permitted.	25 pounds	1,2. Keep cool and dry. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessel.
*Calcium nitrate (*See § 173.188 Note*).	Oxidizing material, 50.	Oxidizer	Oxidizer	173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2.
Ⓐ Ⓦ Calcium oxide	ORM-B	None	M.D.S., none	173.505, 173.850.		25 pounds	100 pounds	1,2. Keep dry. Stow away from explosives, acids, combustible materials, and ammonium salts.
Calcium permanganate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.154.	100 pounds	25 pounds	100 pounds	1,2. Separate from ammonium compounds and hydrogen peroxide.
Calcium peroxide	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.156.	100 pounds	25 pounds	100 pounds	1,2. Keep dry.
Calcium phosphide	Flammable solid, 45.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.161.	25 pounds	Not permitted.	25 pounds	1. Keep cool and dry. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Calcium resinate	Flammable solid, 40.	Flammable solid.		No exemption, 173.166.	125 pounds	Not permitted.	125 pounds	1. Not permitted on passenger vessels.
Calcium resinate, fused	Flammable solid, 40.	Flammable solid.		No exemption, 173.166.	125 pounds	Not permitted.	125 pounds	1. Not permitted on passenger vessels.
Ⓐ Ⓦ Camphene	ORM-A	None		173.505, 173.948.				1,3. Stow away from foodstuffs and living quarters.
Camphor oil	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Cannon primers	Class C explosive, 15.	Explosive C		No exemption, 173.107.	150 pounds	50 pounds	150 pounds	1,3. Not permitted on passenger vessels.
Caps, blasting. See Blasting caps.								
Caps, toy. See Toy caps.								
Ⓐ Carbaryl	ORM-A	None		173.505, 173.510.				
Carbolic acid, liquid or Phenol, liquid, (*liquid tar acid containing over 50% benzophenol*).	Highly toxic, 61.	Poison		173.345, 173.349.	55 gallons	1 quart	55 gallons	1,2. Stow away from foodstuffs.

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Carbolic acid, or Phenol	Highly toxic, 61.	Poison	Poison	173.364, 173.369.	250 pounds.	50 pounds.	250 pounds.	1,2. Stow away from foodstuffs.
Carbon bisulfide, or Carbon disulfide.	Flammable liquid, 30.	Flammable liquid.	Flammable liquid; Flammable liquid and Poison.	No exemption, 173.121.	Not permitted.	Not permitted.	Not permitted.	1. Keep cool. Not permitted on any vessel transporting explosives. Not permitted on passenger vessels.
Carbon dioxide, liquefied	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.304, 173.314, 173.315.	300 pounds.	150 pounds.	300 pounds.	1,2.
Carbon dioxide-nitrous oxide mixture.	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.304.	300 pounds.	150 pounds.	300 pounds.	1,2.
Carbon dioxide-oxygen mixture.	Nonflammable gas.	Nonflammable gas.	Nonflammable gas.	173.306, 173.304.	300 pounds.	150 pounds.	300 pounds.	1,2.
Ⓐ Ⓦ Carbon dioxide, solid, or Dry ice, or Carbonice.	ORM-A	None		No exemption, 173.615.				1. Stow in well-ventilated place where gas cannot accumulate. Stow away from open ventilation and direct openings. Stow away from cyanides or cyanide mixtures, liquid or dry.
Carbon monoxide	Flammable gas, 23.	Flammable gas.	Flammable gas; Flammable gas and Poison.	173.306, 173.302.	150 pounds.	Not permitted.	150 pounds.	1. Not permitted on passenger vessels.
*Carbon remover, liquid	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons.	1 quart.	10 gallons.	1,2. Passenger vessels: 1.
Ⓐ Ⓦ Carbon tetrachloride	ORM-A	None	Poison	173.505, 173.620.		1 quart.	55 gallons.	1,2. Stow away from living quarters.
Carbonyl chloride. See Phosgene.								
Carboys, empty (*previously used for hazardous materials*).				173.29.				1,2.
Cartridge bags, empty, with black powder igniter.	Class C explosive, 15.	Explosive C.		No exemption, 173.106.	150 pounds.	50 pounds.	150 pounds.	1,3.
Cartridge cases, empty, primed.	Class C explosive, 15.	Explosive C.		No exemption, 173.107.	150 pounds.	50 pounds.	150 pounds.	1,3.
Cartridge, practice ammunition.	Class C explosive, 15.	Explosive C.		No exemption, 173.101a.	150 pounds.	50 pounds.	150 pounds.	1,2.
Cuse oil. See Gasoline or Naphtha.								
Casinghead gasoline. See Gasoline.								
Ⓦ Castor beans	ORM-A	None		173.505, 173.625.				1,2. Stow away from living quarters and foodstuffs. Bulk shipments permitted in tight vans or containers only on cargo vessels (Castor beans only).
Ⓦ Castor pomace. *See* Castor beans.								
*Caustic potash, liquid or solution. *See* Potassium hydroxide solution.								
Caustic potash, dry, solid, flake, bead, or granular. *See* Potassium hydroxide, dry, etc.								
*Caustic soda, liquid or solution. *See* Sodium hydroxide solution.								
Caustic soda, dry, solid, flake, bead, or granular. *See* Sodium hydroxide, dry, etc.								
Ⓦ *Cellosolve.* See Ethylene glycol monoethyl ether.								
Ⓦ *Cellosolve acetate.* See Ethylene glycol monoethyl ether acetate.								
*Cement, adhesive, n.o.s. *See* Cement, liquid, n.o.s.								
*Cement, container, linoleum, tile, or wallboard, liquid.	Flammable liquid.	Flammable liquid.		173.118, 173.132.	15 gallons.	1 quart.	15 gallons.	1,2. Passenger vessels: 1.
*Cement, leather	Flammable liquid.	Flammable liquid.		173.118, 173.119.	12 gallons.	1 quart.	10 gallons.	1,2. Passenger vessels: 1.
*Cement, liquid, n.o.s.	Combustible liquid, 30.	None		173.118a, 173.119a.		15 gallons.	55 gallons.	*See* § 176.300. Passenger vessels: 1,2.
*Cement, liquid, n.o.s.	Flammable liquid.	Flammable liquid.		173.118, 173.132.	15 gallons.	1 quart.	10 gallons.	1,2. Passenger vessels: 1.
*Cement, pyroxylin	Flammable liquid.	Flammable liquid.		173.118, 173.132.	15 gallons.	1 quart.	15 gallons.	1,2. Passenger vessels: 1.
*Cement, roofing, liquid	Flammable liquid.	Flammable liquid.		173.118, 173.119.	12 gallons.	1 quart.	10 gallons.	1,2. Passenger vessels: 1.
*Cement, rubber	Flammable liquid.	Flammable liquid.		173.118, 173.132.	15 gallons.	1 quart.	15 gallons.	1,2. Passenger vessels: 1.
Cesium metal	Flammable solid, 46	Flammable solid and dangerous when wet.	Dangerous when wet.	No exemption, 173.206.	25 pounds.	Not permitted.	25 pounds.	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Charcoal, activated	Flammable solid, 40.	Flammable solid.		173.162.	200 pounds.	25 pounds.	200 pounds.	1,3.
Charcoal briquettes	Flammable solid, 40.	Flammable solid.		173.162.	200 pounds.	50 pounds.	50 pounds.	1,2.

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Charcoal screenings, made from "pinon" wood.	Flammable solid, 40.	Flammable solid.		173.162	200 pounds	25 pounds	200 pounds	1,2.
Charcoal screenings, wet	Flammable solid, 40.			Not permitted.				
Charcoal, shell	Flammable solid, 40.	Flammable solid.		173.162	200 pounds	25 pounds	200 pounds	1,2.
Charcoal, wet	Flammable solid, 40.			Not permitted.				
Charcoal, wood, ground, crushed, granulated, or pulverized.	Flammable solid, 40.	Flammable solid.		173.162	200 pounds	25 pounds	200 pounds	1,2.
Charcoal, wood, lump	Flammable solid, 40.	Flammable solid.		173.162	100 pounds	50 pounds	50 pounds	1,2.
Charcoal wood screenings, other than "pinon" wood screenings.	Flammable solid, 40.	Flammable solid.		No exemption, 173.162.	Not permitted.	Not permitted.	Not permitted.	1.
Charged oil well jet perforating gun (*total explosive contents in guns 80 pounds or more per motor vehicle*).	Class A explosive, 19.	Explosive A		No exemption, 173.53 (u), 173.80.	Not permitted.	Not permitted.	Not permitted.	Not permitted.
Charged oil well jet perforating gun (*total explosive contents in guns not exceeding 80 pounds per motor vehicle*).	Class C explosive, 15.	Explosive C		No exemption, 173.53 (u), 173.110.	Not permitted.	Not permitted.	Not permitted.	Not permitted.
Chemical ammunition (*containing an extremely toxic material*).	Extremely toxic.	Poison		No exemption, 173.330.	Not permitted.	Not permitted.	Not permitted.	*See* correct shipping name of applicable Extremely toxic material for stowage, special handling, and special segregation requirements.
Chemical ammunition (containing a highly toxic material).	Highly toxic	Poison		173.345, 173.360.	55 gallons	Not permitted.	55 gallons	*See* correct shipping name of applicable Highly toxic material for stowage, special handling, and special segregation requirements.
Chemical ammunition (containing an irritating material).	Irritating material, 05.	Irritant		No exemption, 17.333	20 pounds	Not permitted.	20 pounds	*See* correct shipping name of applicable Irritant material for stowage, special handling, and special segregation requirements.
Chemical ammunition explosive. See Ammunition, chemical, explosive.								
*Chemical kit	Corrosive material.	Corrosive		173.286	1 quart	1 quart	1 quart	1,2. Keep cool.
*Chlorate and borate mixture.	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.229.	100 pounds	25 pounds	100 pounds	1,2. Stow away from ammonium compounds and away from powdered metals. Not permitted on passenger vessels.
*Chlorate and magnesium chloride mixture.	Oxidizing material.	Oxidizer	Oxidizing material.	173.153, 173.229.	100 pounds	25 pounds	100 pounds	1,2. Stow away from ammonium compounds and away from powdered metals. Not permitted on passenger vessels.
Chlorate, n.o.s.	Oxidizing material.	Oxidizer	Oxidizing material.	173.153, 173.163.	100 pounds	25 pounds	100 pounds	1,2. Stow away from ammonium compounds and away from powdered metals. Not permitted on passenger vessels.
*Chlorate, n.o.s., wet	Oxidizing material, 50.	Oxidizer		173.153, 173.163.	200 pounds	25 pounds	200 pounds	1,2. Stow away from ammonium compounds and away from powdered metals. Not permitted on passenger vessels.
Chlorate explosive, dry. See High explosive.								
Chlorate of potash. *See* Potassium chlorate.								
Chlorate of soda. *See* Sodium chlorate.								
Chlorate powder. See High explosive.								
Chlordane, liquid	Combustible liquid, 30.	None		173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Chloric acid	Oxidizing material, 50.	Oxidizer		No exemption, 173.237.	Not permitted.	Not permitted.	Not permitted.	1,2. Stow away from organic materials. Keep cool. Not permitted on passenger vessels.
Chloride of phosphorus. *See* Phosphorus trichloride.								
Chloride of sulfur. *See* Sulfur chloride.								
Ⓦ Chlorinated lime (*chloride of lime.*) *See* Bleaching powder.								
Chlorine	*Nonflammable* gas, 26.	*Nonflammable* gas and Poison.	*Nonflammable* gas; Poison gas and Oxidizer.	*No exemption, 173.304, 173.314, 173.315.*	*Not permitted.*	*Not permitted.*	*Not permitted.*	*1,2. Stow in a well-ventilated space. Stow away from organic materials. Not permitted on passenger vessels.*
Chlorine dioxide hydrate, frozen.	Oxidizing material, 50.	Oxidizer and Poison.		No exemption, 173.237.	Not permitted.	Not permitted.	Not permitted.	Not permitted.
Chlorine trifluoride	Oxidizing material, 53.	Oxidizer and Poison.	Nonflammable gas, Poison gas, Oxidizer, and Corrosive.	No exemption, 173.285.	100 pounds	Not permitted.	100 pounds	1,2. Keep cool. Segregation same as for nonflammable gas. Stow in a well ventilated space. Not permitted on passenger vessels.
Chloroacetic acid, solid	Corrosive material, 82.	Corrosive	Corrosive	173.244, 173.245b.	100 pounds	25 pounds	100 pounds	1,2. Keep dry.

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*Chloroacetic acid solution. *See* Monochloroacetic acid solution.								
Chloroacetophenone, gas, liquid, *or* solid (CN).	Irritating material, 65.	Irritant	Poison	No exemption, 173.382.	75 pounds	Not permitted.	75 pounds	1. Not permitted on passenger vessels.
Chloroacetyl chloride	Corrosive material 84.	Corrosive	Corrosive	No exemption, 173.253.	1 quart	Not permitted.	1 quart	1. Keep dry. Not permitted on passenger vessels.
Chlorobenzene. See Chlorobenzol.								
Chlorobenzol	Flammable liquid, 30.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels:
p-Chlorobenzoyl peroxide paste. *not over 52% concentration,*	Organic peroxide, 57.	Organic peroxide.						1. See §176.300.
p-Chlorobenzoyl peroxide, wet, *not over 75% concentration.*	Organic peroxide, 57.	Organic peroxide.						
Chlorodinitrobenzoyl. See Dinitrochlorobenzoyl, solid.								
Ⓐ Ⓡ Chloroform	ORM–A	None	M.D.S. none	173.505, 173.630.		10 gallons	55 gallons	1,2. Stow away from living quarters and foodstuffs.
4-Chloro-o-toluidine hydrochloride.	Highly toxic, 60.	Poison	Poison	No exemption, 173.362.	1 quart	Not permitted.	1 quart	1,2.
Chlorophenyltrichlorosilane	Corrosive material, 80.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry.
Chloropicrin, absorbed	Extremely toxic, 62.	Poison		No exemption, 173.357.	Not permitted.	Not permitted.	Not permitted.	1. Keep cool. Not permitted on passenger vessels.
Chloropicrin and methyl chloride mixture.	Flammable gas, 28.	Flammable gas and Poison.	Poison	No exemption, 173.329-(b).	Not permitted.	Not permitted.	Not permitted.	1. Keep cool. Not permitted on passenger vessels.
Chloropicrin, liquid	Extremely toxic, 62.	Poison	Poison	No exemption, 173.357.	Not permitted.	Not permitted.	Not permitted.	1. Keep cool. Not permitted on passenger vessels.
Chloropicrin mixture (*containing no compressed gas or poisonous liquid, extremely toxic*).	Highly toxic	Poison		No exemption, 173.357.	75 pounds	Not permitted	Not permitted.	1. Keep cool. Not permitted on passenger vessels.
Chloropicrin and nonflammable, nonliquefied compressed gas mixture.	Nonflammable gas, 26.	Nonflammable gas and Poison.		No exemption, 173.329-(c).	Not permitted.	Not permitted.	Not permitted.	1. Keep cool. Not permitted on passenger vessels.
Ⓐ Chloroplatinic acid, solid	ORM–B	None		173.505, 173.510, 173.630.		25 pounds	100 pounds	
2-Chloropropene	Flammable liquid, 30.	Flammable liquid.		No exemption, 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Not permitted on passenger vessels.
Chlorosulfonic acid	Corrosive material, 82.	Corrosive	Corrosive	173.244(a)-(1), 173.254.	1 quart	1 quart	1 quart	1. Keep dry. Glass carboys not permitted on passenger vessel.
Chlorosulfonic acid-sulfur trioxide mixture.	Corrosive material, 82.	Corrosive	Corrosive	173.244(a)-(1), 173.254.	1 quart	1 quart	1 quart	1. Keep dry. Glass carboys not permitted on passenger vessels.
Chromic acid mixture, dry	Oxidizing material, 51.	Oxidizer		173.153, 173.164.	100 pounds	25 pounds	100 pounds	1,2. Stow away from foodstuffs.
Chromic acid, solid	Oxidizing material, 51.	Oxidizer	Oxidizing material; Oxidizer and Corrosive.	173.153, 173.164.	100 pounds	25 pounds	100 pounds	1,2. Stow away from foodstuffs. Stow separate from flammable liquids and solids.
*Chromic acid solution	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.287.	1 gallon	1 quart	1 gallon	1.
Chromic anhydride. *See* Chromic acid, solid.								
Chromic fluoride, solid	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245b.	100 pounds	25 pounds	100 pounds	1,2.
*Chromic fluoride solution	Corrosive material.	Corrosive	Corrosive	173.244, 173.245	1 gallon	1 quart	1 gallon	1,2.
Chromic trioxide, *see* Chromic acid, solid.								
Chromium oxychloride *or* Chromyl chloride.	Corrosive material. 80	Corrosive	Corrosive	No exemption, 173.247	1 gallon	Not permitted.	1 gallon	1. Keep dry. Glass carboys not permitted on passenger vessels.
Cigar and cigarette lighter fluid. See Lighter fluid.								
Cigarette lighter (*or other similar ignition device*) charged with flammable liquid fuel.	Flammable liquid, 30.	Flammable liquid.		173.21(d)		Not permitted.	Not permitted.	1.
Cigarette lighter (*or other similar ignition device*), charged with flammable gas fuel.	Flammable gas, 23.	Flammable gas.		173.21(d), 173.308.		21 ounces	25 pounds	1.
Cigarette load	Class C explosive, 15.	Explosive C		No exemption, 173.111.	150 pounds	50 pounds	150 pounds	1,2.
Clothing, used. See Rags, scrap.								
Cloud gas cylinder: See Chemical ammunition.								
Coal briquettes, hot				Forbidden				

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Coal facings. *See* Coal ground bituminous, *etc.*								
Coal gas. See Hydrocarbon gas, nonliquefied.								
Coal, ground bituminous, sea coal; coal facings; *etc.*	Flammable solid, 40.	Flammable solid.		173.165	Not permitted.	Not permitted.	Not permitted.	1. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
Coal oil (*export shipment only*). *See* Kerosene.								
*Coal tar distillate	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Coal tar distillate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Coal tar dye, liquid (*not otherwise specifically named in § 172.101*).	Corrosive material, 80.	Corrosive		173.244, 173.245, 173.249a.	10 gallons	1 quart	10 gallons	1,2.
*Coal tar light oil	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Coal tar light oil	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Coal tar naphtha	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Coal tar naphtha	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Coal tar oil	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Coal tar oil	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Coating solution	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.132.	15 gallons	1 quart	15 gallons	1,2. Passenger vessels: 1. *See* § 176.300.
Cobalt resinate, precipitated.	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.166.	125 gallons	Not permitted.	125 pounds.	1,2.
Cocculus, solid (*fishberry*)	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Ⓦ*Coconut meal pellets *containing at least 6%*	ORM-C	None		173.505, 173.955.				1,2. Keep dry. Not permitted on passenger vessels.
Coir. *See* Fibers.								
Coke, hot				Forbidden				
Collodion	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1. *See* § 176.300.
Collodion cotton, wet. See Nitrocellulose, wet.								
Cologne spirits (*alcohol*)	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.125.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Columbian spirits (*wood alcohol*).	Flammable liquid, 30.	Flammable liquid.	Flammable liquid; Flammable liquid and Poison.	173.118, 173.125.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Combination fuze	Class C explosive, 15.	Explosive C		No exemption, 173.105.	150 pounds.	50 pounds.	150 pounds.	1,3.
Combination primer	Class C explosive, 15.	Explosive C		No exemption, 173.107.	150 pounds.	50 pounds.	150 pounds.	1,3. Not permitted on passenger vessels.
Combustible liquid, n.o.s.	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons.	*See* § 176.300. Passenger vessels: 1,2.
Commercial shaped charge. See High explosive.								
Common fireworks. *See* Fireworks, common.								
*Compound, cleaning, liquid.	Combustible liquid, 30.	None		173.118a, 173.119b.		15 gallons	55 gallons	*See* §176.300. Passenger vessels: 1,2.
*Compound, cleaning, liquid.	Corrosive material.	Corrosive		173.244, 173.245.	1 quart	1 quart	1 quart	1,2.
*Compound, cleaning, liquid.	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Compound, cleaning, liquid (containing hydrochloric (muriatic) acid).	Corrosive material.	Corrosive		173.244(a)(1), 173.263.	10 pints	1 quart	1 gallon	1.
Compound, cleaning, liquid (containing hydrofluoric acid).	Corrosive material.	Corrosive		173.244(a)(1), 173.256.	10 pints	1 quart	1 gallon	1. Not permitted on passenger vessels.
Compound, cleaning liquid (*containing phosphoric acid, acetic acid, sodium or potassium hydroxide*).	Corrosive material.	Corrosive		173.244, 173.245, 173.249a.	10 gallons	1 quart	1 quart	1,2.
*Compound, enamel	Flammable liquid.	Flammable liquid.		173.118, 173.128.	55 gallons	1 quart	55 gallons	1,2. Passenger vessels: 1.
*Compound, rust preventing or Compound, rust removing.	Corrosive material.	Corrosive		173.244, 173.245.	1 gallon	1 quart	1 gallon	1,2.
*Compound, lacquer, paint, or varnish, removing, reducing, or thinning, liquid.	Combustible liquid, 30.	None		173.118a, 173.119b.		15 gallons	55 gallons	*See* §176.300. Passenger vessels: 1,2.
*Compound, lacquer, paint, or varnish, removing, reducing, or thinning, liquid.	Flammable liquid.	Flammable liquid.		173.118, 173.128.	55 gallons	1 quart	55 gallons	1,2. Passenger vessels: 1.
*Compound, lacquer, paint, or varnish removing, liquid.	Corrosive material.	Corrosive		173.244, 173.245.	1 gallon	1 quart	1 gallon	1,2.
*Compound, polishing, liquid.	Flammable liquid.	Flammable liquid.		173.118, 173.129.	55 gallons	1 quart	55 gallons	1,2. Passenger vessels: 1.
*Compound, tree or weed killing, liquid.	Combustible liquid, 30.	None		173.118a, 173.119b.		15 gallons	55 gallons	*See* §176.300. Passenger vessels: 1,2.

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*Compound, tree or weed killing, liquid.	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Compound, tree or weed killing, liquid.	Highly toxic	Poison		173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2.
*Compound, tree or weed killing, solid.	Oxidizing material.	Oxidizer		173.153, 173.154, 173.229.	100 pounds	25 pounds	100 pounds.	1,2.
*Compound, type cleaning, liquid.	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Compound, vulcanizing, liquid.	Corrosive material.	Corrosive		173.244, 173.245.	1 quart	1 quart	1 quart	1,2.
*Compound, vulcanizing, liquid.	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Compound, water treatment, liquid. *See* Water treatment, liquid.								
Compressed gas, flammable, n.o.s.	Flammable gas.	Flammable gas	Flammable gas	173.306, 173.305, 173.304, 173.302.	300 pounds	Not permitted.	300 pounds	1. Not permitted on passenger vessels.
Compressed gas, nonflammable, n.o.s.	Nonflammable gas.	Nonflammable gas.	Nonflammable gas.	173.306, 173.305, 173.304, 173.302.	300 pounds	150 pounds	300 pounds	1,2.
Container, reused or empty (previously used for hazardous materials).				173.28, 173.29.				*See* Bottles, empty; carboys, empty; cylinders, empty; drums, empty:
Copper acetoarsenite, solid (*emerald green, imperial green, King's green, moss green, meadow green, mitis green, parrot green, Vienna green*).	Highly toxic, 60.	Poison	Poison	173.364, 173.367.	200 pounds	50 pounds	200 pounds	1,2.
Copper arsenite, solid (*Scheeles green, cuprice green, copper orthoarsenite, Swedish green*).	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Ⓐ Copper chloride	ORM-B	None		173.505, 173.510, 173.800.		25 pounds	100 pounds	
Copper cyanide	Highly toxic, 60.	Poison	Poison	173.370		25 pounds		1,2. Stow away from acids.
Ⓦ Copra	ORM-C	None	Spontaneously combustible material.	173.505, 173.960.				1,2. Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
Copra pellets. See Coconut meal pellets.								
Cordeau detonant fuse	Class C explosive, 15.	Explosive C		No exemption, 173.104.	300 pounds	50 pounds	300 pounds.	1,2.
Corrosive battery fluid. *See* Electrolyte (acid), or Alkaline Corrosive battery fluid.								
Corrosive liquid, n.o.s	Corrosive material.	Corrosive	Corrosive	173.244, 173.245, 173.245a.	5 pints	1 quart	1 quart	1. Not permitted on passenger vessels.
Corrosive solid, n.o.s	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245b.	100 pounds	25 pounds	100 pounds.	1. Keep dry. Not permitted on passenger vessels.
*Cosmetics, n.o.s	Combustible liquid, 30.	None		173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300 Passenger vessels: 1,2.
*Cosmetics, n.o.s., liquid	Corrosive material.	Corrosive		173.244, 173.245.	1 quart	1 quart	1 quart	1,2.
*Cosmetics, n.o.s., solid	Corrosive material, 80.	Corrosive		173.244, 173.245b.	100 pounds	25 pounds	100 pounds.	1,2. Keep dry.
*Cosmetics, n.o.s	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Cosmetics, n.o.s	Flammable solid.	Flammable solid.		173.153, 173.154.	100 pounds	25 pounds	100 pounds.	1,2.
*Cosmetics, n.o.s	Oxidizing material.	Oxidizer		173.153, 173.154.	100 pounds	25 pounds	100 pounds.	1,2.
Ⓦ Cotton	ORM-C	None	Flammable solid.	173.505, 173.965.				1,2. Segregation same as for flammable solids.
Ⓦ Cotton batting	ORM-C	None		173.505, 173.970.				1,2. Keep dry. Stow away from vegetable or animal oils.
Ⓦ Cotton batting dross. *See* Cotton batting.								
Cotton, burnt. See Burnt cotton.								
Ⓦ Cotton seed hull fiber or shavings, pulp, or cut linters. *See* Cotton batting.								
Cotton sweepings. *See* Cotton waste.								
Ⓦ Cotton wadding. *See* Cotton batting.								
Ⓦ Cotton waste	ORM-C	None		173.505, 173.975.				1,2. Keep dry. Stow away from vegetable or animal oils.
Cotton waste, oily (*with more than 8% of animal or* vegetable oil).	Flammable solid, 40.	Flammable solid.	Spontaneously combustible material.	No exemption, 173.167.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
Creosote, coal tar	Combustible liquid, 30.	None		173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300 Passenger vessels: 1,2.

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Creosote oil. See Creosote, coal tar.								
Crotonaldehyde	Flammable liquid, 35.	Flammable liquid.	Flammable liquid.	713.118(a), 173.119 (m).	10 gallons	1 quart	1 gallon	1,2. Passenger vessels: 1.
Crotonic acid	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
Crotonylene	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Crude nitrogen fertilizer solution (more than 25.3 p.s.i.g.).	Nonflammable gas, 20.	Nonflammable gas.		173.306, 173.304, 173.314.	300 pounds	Not permitted.	300 pounds	1,3.
*Crude oil, petroleum	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Crude oil, petroleum	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Cumene hydroperoxide	Organic peroxide, 57.	Organic peroxide.	Organic peroxide.					
Cupric cyanide. See Copper cyanide.								
*Cuprietbylene-diamine solution.	Corrosive material, 80.	Corrosive	Corrosive material; Corrosive and Poison.	173.244, 173.249.	1 gallon	1 quart	1 gallon	1,2.
*Cyanide or cyanide mixture, dry.	Highly toxic, 60.	Poison	Poison	173.364, 173.370.	200 pounds	25 pounds	200 pounds	1,2. Keep dry. Stow away from acids.
Cyanogen bromide	Extremely toxic, 62.	Poison	Poison; Poison and Corrosive.	No exemption, 173.379.	Not permitted.	Not permitted.	25 pounds	1. Shade from radiant heat. Segregation same as for corrosive materials. Not permitted on passenger vessels.
Cyanogen chloride *containing less than 0.9% water.*	Nonflammable gas, 26.	Nonflammable gas and Poison.	Poison gas	No exemption, 173.328.	Not permitted.	Not permitted.	Not permitted.	1. Shade from radiant heat. Not permitted on passenger vessels.
Cyanogen gas	Flammable gas, 28.	Flammable gas and Poison.	Flammable gas; Poison gas and Flammable gas.	No exemption, 173.328.	Not permitted.	Not permitted.	Not permitted.	1. Not permitted on passenger vessels.
Cyclohexane	Flammable liquid, 30.	Flammable liquid.,	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Cyclohexanone peroxide solution, *over 90% peroxide.*	Organic peroxide, 59.	Organic peroxide.	Organic peroxide.					
Cyclohexanone peroxide solution, 10% or more water.	Organic peroxide, 57.	Organic peroxide.	Organic peroxide.					
Cyclohexanone peroxide paste, or solution, *not over 72% peroxide.*	Organic peroxide, 57.	Organic peroxide.	Organic peroxide.					
Cyclohexanone peroxide, solid, *not over 30% peroxide.*	Organic peroxide, 57.	Organic peroxide.	Organic peroxide.					
Cyclohexanone peroxide and bis (1-hydroxy cyclohexyl) peroxide mixture. *See appropriate cyclohexanone peroxide entry immediately preceding.*								
Cyclohexenyl trichlorosilane.	Corrosive material, 83.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry.
Cyclohexyl trichlorosilane	Corrosive material, 83.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry.
Cyclopentane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Cyclopentane, methyl	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Cyclopropane	Flammable gas, 23.	Flammable gas.	Flammable gas.	173.306, 173.304.	300 pounds	Not permitted.	300 pounds	1,2. Passenger vessels. 1.
Cyclotrimethylenetrinitramine, desensitized. See High explosive.								
Cyclotrimethylenetrinitramine, wet with not less than 10% water. See High explosive.								
⑧ Cylinder, empty (*including "lon tanks") previously having contained any hazardous material.*				173.29.				1,2.
2,4-D. *See* 2,4-Dichlorophenoxyacetic acid.								
⑧ DDT or Dichlorodiphenyltrichloroethane.	ORM-A	None		173.505, 173.510.				
Dead oil. See Creosote, Coal tar.								
Decaborane	Flammable solid, 41.	Flammable solid and Poison.	Flammable solid; Flammable solid and Poison.	No exemption, 173.236.	25 pounds	Not permitted.	25 pounds	1,2.
Decahydronaphthalene	Combustible liquid, 30.	None	Flammable liquid.	173.118,a 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Decalin. See Decahydronaphthalene.								
Decanoyl peroxide	Organic peroxide, 58.	Organic peroxide.						
Delay electric igniter	Class C explosive, 15.	Explosive C		No exemption, 173.106.	150 pounds	50 pounds	150 pounds	1,3.

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Denatured alcohol. *See* Alcohol, n.o.s.								
Depth bomb. *See* Explosive bomb.								
Detonating fuze, Class A explosive, *with or without radioactive components.*	Class A explosive, 19.	Explosive A		No exemption, 173.60.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Detonating fuze, Class C explosive.	Class C, explosive, 15.	Explosive C		No exemption, 173.118.	150 pounds	50 pounds	150 pounds	1,3.
Detonating primer	Class A explosive, 19.	Explosive A		No exemption, 173.63.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Diacetone alcohol	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Diacetone alcohol peroxide solution, *not over 57% peroxide with not over 9% hydrogen peroxide and not less than 26% diacetone alcohol.*	Organic peroxide, 53.	Organic peroxide.						
Diacetyl	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ⓐ Diazinon	ORM—A	None		173.505, 173.510.				
Diazodinitrophenol. *See* Initiating explosive.								
Dibenzyl peroxydicarbonate solution not over 87% peroxide.	Organic peroxide, 50.	Organic peroxide.						
Ⓐ Dibromodifluoromethane	ORM—A	None		173.505, 173.510, 173.605.		10 gallons	55 gallons	
Ⓑ 1,2, dibromoethane. *See* ethylene dibromide.								
Dicetyl peroxydicarbonate	Organic peroxide, 58.	Organi peroxide.						
Dichloroacetic acid	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245.	1 quart	1 quart	1 quart	1,2. Glass caroby in hampers not permitted under deck.
Dichloroacetyl Chloride	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.247.	1 gallon	1 quart	1 gallon	1. Keep dry. Not permitted on passenger vessels.
Ⓐ Dichlorobenzene, ortho, liquid.	ORM-A	None	Poison	173.505, 173.510.				
Ⓐ Dichlorobenzene, para, solid.	ORM-A	None	M.D.S., none	173.505, 173.510.				
2,4-dichlorobenzoyl peroxide solution, *not over 76% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
2,4-dichlorobenzoyl peroxide paste, *not over 52% peroxide.*	Organic peroxide. 57.	Organic peroxide.						
2,4-Dichlorobenzoyl peroxide solution, not over 52% peroxide.	Organic peroxide, 57.	Organic peroxide.						
Dichlorobutene. *See* Corrosive liquid, n.o.s.	Corrosive material, 83.							
Ⓐ Dichlorodifluoroethylene	ORM-A	None		173.505, 173.510, 173.605.		10 gallons	55 gallons	
Dichlorodifluoromethane	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.304, 173.314, 173.315.	300 pounds	150 pounds	300 pounds	1,2.
Dichlorodifluoromethane-dichlorotetrafluoroethane mixture.	Nonflammable gas, 20.	Nonflammable gas.		173.306, 173.304, 173.314, 173.315.	300 pounds	150 pounds	300 pounds	1,2.
Dichlorodifluoromethane-monochlorodifluoromethane mixture.	Nonflammable gas, 20.	Nonflammable gas.		173.306, 173.304, 173.314.	300 pounds	150 pounds	300 pounds	1,2.
Dichlorodifluoromethane-trichloromonofluoromethane-monochloro difluoromethane mixture.	Nonflammable gas, 20	Nonflammable gas.		173.306, 173.304, 173.314.	300 pounds	150 pounds	300 pounds	1,2.
Dichlorodifluoromethane-trichlorotrifluoroethane mixture.	Nonflammable gas, 20.	Nonflammable gas.		173.306, 173.304, 173.314.	300 pounds	150 pounds	300 pounds	1,2.
*Dichlorodifluoromethane-trichloromonofluoromethane mixture.	Nonflammable gas, 20.	Nonflammable gas.		173.306, 173.314, 173.315.	300 pounds	150 pounds	300 pounds	1,2.
Dichlorodifluoromethane and difluoroethane mixture (*constant boiling mixture*).	Nonflammable gas, 20.	Nonflammable gas.		173.306, 173.304, 173.314, 173.315.	300 pounds	150 pounds	300 pounds	1,2.
Dichlorodiphenyltrichloroethane. *See* DDT.								
Dichloroethylene	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	1 gallon	1,2. Passenger vessels: 1.
Dichloroisopropyl ether	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
Ⓐ Dichloromethane or methylene chloride.	ORM-A	None	M.D.S., none	173.505, 173.510, 173.605.		10 gallons	55 gallons	

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*Dichloropentane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. *See* § 176.300.
Ⓐ 2,4-Dichlorophenoxyacetic acid.	ORM-A.	None		173.505, 173.510.				
Dichlorophenyltrichlorosilane.	Corrosive material, 80.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry.
Dichlorpropane and propylene dichloride mixture.	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
Dicumyl peroxide, dry	Organic peroxide, 57.	Organic peroxide.	Organic peroxide.					
Dicumyl peroxide solid not over 40% peroxide.	Organic peroxide, 57.	Organic peroxide.	Organic peroxide.					
Dicyclohexyl peroxydicarbonate.	Organic peroxide, 58.	Organic peroxide.	Organic peroxide.					
Dicyclohexyl peroxydicarbonate solution, not over 91% peroxide.	Organic peroxide, 58.	Organic peroxide.	Organic peroxide.					
Ⓐ Dieldrin	ORM-A	None		173.505, 173.510.				
Diethyl cellosolve. *See* Ethylene glycol diethyl ether.								
Diethylamine	Flammable liquid, 31.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119 (m).	10 gallons	Not permitted.	5 pints	1,2. Keep cool. Not permitted on passenger vessels.
Diethyl dichlorosilane	Flammable liquid, 31.	Flammable liquid.	Corrosive	No exemption, 173.135.	10 gallons	Not permitted.	10 gallons	1. Keep dry. Separate longitudinally by an intervening complete hold or compartment from explosives. Segregation same as for explosives.
Diethylene glycol dinitrate				Forbidden, 173.51(d).				
Di-(2-ethylhexyl) peroxydicarbonate.	Organic peroxide, 58.	Organic peroxide.						
Di-(2-ethylhexyl) peroxydicarbonate solution *not over 47% peroxide.*	Organic peroxide, 58.	Organic peroxide.						
Di - (2- ethylhexyl) phosphoric acid.	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
Diethyl ketone	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Diethyl peroxydicarbonate solution, not over 27% peroxide.	Organic peroxide, 58.	Organic peroxide.						
1,1-difluoro 1-chloroethane. *See* Difluoromonochloroethane.								
Difluoroethane	Flammable gas, 23.	Flammable gas.	Flammable gas.	173.306, 173.304, 173.314, 173.315.	300 pounds	Not permitted.	300 pounds	1,2. Passenger vessels: 1.
Difluoromonochloroethane *(1,1-difluoro 1-chloroethane).*	Flammable gas, 23.	Flammable gas.	Flammable gas.	173.306, 173.304.	300 pounds	Not permitted.	300 pounds	1,2. Passenger vessels: 1.
Difluorophosphoric acid, anhydrous.	Corrosive material, 82.	Corrosive	Corrosive	No exemption, 173.275.	1 gallon	Not permitted.	1 gallon	1,2.
Dihydropyran	Flammable liquid, 30.	Flammable liquid.		No exemption, 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Not permitted on passenger vessels.
Diisobutyl ketone	Combustible liquid, 30.	None	Flammable liquid.	173.118a 173.119b.		10 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Di iso octyl acid phosphate	Corrosive material, 80	Corrosive	Corrosive	173.244, 173.296.	1 quart	1 quart	1 quart	1,2. Glass carboys in hampers not permitted under deck.
Diisopropylamine	Flammable liquid, 30.	Flammable	Flammable	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Diisopropylbenzene hydroperoxide solution, *not over 72% peroxide.*	Organic peroxide, 59.	Organic peroxide.						*
Diisopropylethanolamine	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2.
Diisopropylether	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	No exemption, 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Dimethylamine, anhydrous.	Flammable gas, 24.	Flammable gas.	Flammable gas.	173.306, 173.304, 173.314, 173.315.	300 pounds	Not permitted.	300 pounds	1,2. Not permitted on passenger vessels.
Dimethylamine, aqueous solution.	*Flammable liquid, 31.*	*Flammable liquid.*	*Flammable liquid.*	*173.118, 173.119. (m)*	*10 gallons*	*1 quart*	*10 gallons*	*1,2. Passenger vessels: 1.*
2,3-Dimethylbutane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool, Not permitted on passenger vessels.
Dimethyl carbonate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
1,4-Dimethylcyclohexane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
2,5-dimethyl-2, 5-bis-(2-ethyl hexanoyl peroxy) hexane.	Organic peroxide, 58.	Organic peroxide.						
Dimethyldichlorosilane	Flammable liquid, 31.	Flammable liquid.	Flammable liquid.	No exemption, 173.135.	10 gallons	Not permitted.	5 pints	1,2. Passenger vessels: 1.
2,5-dimethyl-2, 5-bis(t-butyl-peroxy) hexane.	Organic peroxide, 57.	Organic peroxide.						
2,5-dimethyl-2, 5-bis(t-butyl-peroxy) hexyne-3.	Organic peroxide, 59.	Organic peroxide.						

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2,5-dimethyl-2, 5-bis(t-butyl-peroxy) hexyne-3, solid, *not over 58% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
2,5-dimethyl-2, 5-di (benzoyl-peroxy) hexane).	Organic peroxide, 59.	Organic peroxide.						
2,5-dimethyl-2, 5-di (benzoyl-peroxy) hexane, solid, not over 82% peroxide.	Organic peroxide, 59.	Organic peroxide.						
2,5-dimethyl-2, 5-dihydroperoxy hexane solution, *not over 82% peroxide.*	Organic peroxide, 59.	Organic peroxide.						
Dimethyl ether	Flammable gas, 23.	Flammable gas.	Flammable gas.	173.306, 173.304, 173.314, 173.315.	300 pounds.	Not permitted.	300 pounds.	1,2. Passenger vessels: 1.
Dimethylhydrazine, unsymmetrical (*UDMH*).	Flammable liquid, 36.	Flammable liquid and Poison.	Flammable liquid.	No exemption, 173.145.	5 pints.	Not permitted.	5 pints.	1,2. Passenger vessels: 1. Keep dry. Separate from corrosive and oxidizing materials, and organic peroxides.
Dimethyl sulfate	Extremely toxic, 67.	Poison and Flammable liquid.	Poison.	No exemption, 173.255.	Not permitted.	Not permitted.	1 quart.	1. Keep cool. Not permitted on passenger vessels.
Dimethyl sulfide	Flammable liquid, 32.	Flammable liquid and Poison.	Flammable liquid.	No exemption, 173.119.	10 gallons.	Not permitted.	10 gallons.	1,2. Not permitted on passenger vessels.
Dinitrobenzene, solid, or dinitrobenzol, solid.	Highly toxic, 60.	Poison.	Poison.	173.364, 173.371.	200 pounds.	50 pounds.	200 pounds.	1,2.
*Dinitrobenzene solution	Highly toxic.	Poison.	Poison.	173.345, 173.346.	55 gallons.	1 quart.	55 gallons.	1,2.
Dinitrochlorbenzol, solid	Highly toxic, 60.	Poison.	Poison.	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
ⓐ Dinitrocyclohexylphenol	ORM-A.	None.		173.505, 173.510.				
*Dinitrophenol solution	Highly toxic.	Poison.	Poison.	173.345, 173.362a.	65 pounds.	1 quart.	65 pounds.	1,2. Stow away from heavy metals and their compounds. If flash point is 141° F. or less segregation same as for flammable liquids.
Dioxane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons.	Not permitted.	10 gallons.	1,2. Passenger vessels: 1.
Dioxolane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons.	Not permitted.	10 gallons.	1,2. Passenger vessels: 1.
Di-n-propyl peroxydicarbonate.	Organic peroxide, 59.	Organic peroxide.						
Di-n-propyl peroxydicarbonate solution, not over 97% peroxide.	Organic peroxide.	Organic peroxide.						
Diphenylaminechloroarsine (*DM*).	Irritating material, 65.	Irritant.	Poison.	No exception, 173.382.	75 pounds.	Not permitted.	75 pounds.	1. Not permitted on passenger vessels.
Diphenyl dichlorosilane	Corrosive material, 83.	Corrosive.	Corrosive.	No exception, 173.280.	10 gallons.	Not permitted.	10 gallons.	1. Keep dry.
Diphenyl methyl bromide, solid.	Corrosive material, 80.	Corrosive.	Corrosive.	173.244, 173.245b.	100 pounds.	25 pounds.	100 pounds.	1. Not permitted on passenger vessels.
*Diphenyl methyl bromide solution.	Corrosive material, 80.	Corrosive.		173.244, 173.247.	1 gallon.	1 quart.	1 gallon.	1,2.
Diphosgene. See Phosgene.								
Di-(sec-butyl) peroxydicarbonate.	Organic peroxide, 59.	Organic peroxide.						
Di-(sec-butyl) peroxydicarbonate solution, *not over 52% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
*Disinfectant, liquid	Combustible liquid, 30.	None.		173.118a, 173.119b.		15 gallons.	55 gallons.	*See* §176.300. Passenger vessels: 1,2.
*Disinfectant, liquid	Corrosive material.	Corrosive.		173.244, 173.245.	10 gallons.	1 quart.	10 gallons.	1. Not permitted on passenger vessels.
*Disinfectant, liquid	Highly toxic.	Poison.		173.345, 173.346.	55 gallons.	1 quart.	55 gallons.	1,2. Passenger vessels: 1.
*Disinfectant, solid	Highly toxic.	Poison.		173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2. Passenger vessels: 1.
Dispersant gas				173.314(c), Table, Note 13, 173.315(a), Table, Note 9.				
*Distillate (*petroleum or coal tar*).	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons.	1 quart.	10 gallons.	1,2. Passenger vessels: 1.
Divinyl ether	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons.	Not permitted.	10 gallons.	1,2. Keep cool. Not permitted on passenger vessels.
Dodecyl trichlorosilane	Corrosive material, 85.	Corrosive.	Corrosive.	No exemption, 173.280.	10 gallons.	Not permitted.	10 gallons.	1. Keep dry.
*Dressing leather	Combustible liquid, 30.	None.	Flammable liquid.	173.118a, 173.119b.		15 gallons.	55 gallons.	*See* § 176.300. Passenger vessels 1,2.
*Dressing, leather	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons.	1 quart.	10 gallons.	1,2. Passenger vessels: 1.
Drier. See Paint drier, liquid.								
Drill cartridge				173.55				
*Drugs, n.o.s.	Combustible liquid, 30.	None.		173.118a, 173.119b.		15 gallons.	55 gallons.	*See* § 176.300. Passenger vessels: 1,2.
*Drugs, n.o.s., liquid	Corrosive material.	Corrosive.		173.244, 173.245.	1 quart.	1 quart.	1 quart.	1,2.
*Drugs, n.o.s., solid	Corrosive material, 80.	Corrosive.		173.244, 173.245b.	100 pounds.	25 pounds.	100 pounds.	1,2. Keep dry.

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*Drugs, n.o.s.	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Drugs, n.o.s.	Flammable solid.	Flammable solid.		173.153, 173.154.	100 pounds	25 pounds	100 pounds.	1,2.
*Drugs, n.o.s.	Oxidizing material.	Oxidizer		173.153, 173.154.	100 pounds	25 pounds	100 pounds.	1,2.
*Drugs, n.o.s., liquid	Highly toxic	Poison		173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2. Passenger vessels: 1. Keep cool.
*Drugs, n.o.s., solid	Highly toxic	Poison		173.364	200 pounds	50 pounds	200 pounds.	1,2. Keep cool.
Ⓦ Drum, empty (*previously having contained hazardous materials*).				173.29				1,2.
Dry ice. *See* Carbon dioxide, solid.								
Dusts, by-product, poisonous. *See* Arsenical dust.								
*Dye intermediate, liquid	Corrosive material, 80.	Corrosive	Poison	173.244, 173.245, 173.249a.	10 gallons	1 quart	10 gallons	1,2. Segregation same as for poisons
Dynamite. See High explosive.								
Electric blasting caps. *See* Blasting caps, electric.								
Electric squib	Class C explosive, 15.	Explosive C		No exemption, 173.106.	150 pounds	50 pounds	150 pounds.	1,3.
Electric storage battery, wet. *See* Battery, electric storage, wet.								
Electrolyte (*acid*), battery fluid.	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.257.	5 gallons	1 quart	5 gallons	1,2. Passenger vessels: Glass carboys in hampers not permitted under deck.
Electrolyte (*acid*), *or* alkaline (*corrosive*) battery fluid packed with dry-storage battery.	Corrosive material, 80.	Corrosive	Corrosive	No exemption, 173.258.	2 gallons	Not permitted.	5 pints	1,2.
Electrolyte (*acid*), *or* alkaline (*corrosive*) battery fluid packed with battery charger, radio current supply device, *or* electronic equipment and actuating device.	Corrosive material, 80.	Corrosive		No exemption, 173.259.	6 quarts	Not permitted.	5 pints	1,2.
Empty cartridge bag with black powder igniter.	Class C explosive, 15.	Explosive C		No exemption, 173.106.	150 pounds	50 pounds	150 pounds.	1,3.
Empty cartridge case, primed.	Class C explosive, 15.	Explosive C		No exemption, 173.107.	150 pounds	50 pounds	150 pounds.	1,3.
*Enamel. *See* *Paint, enamel, lacquer, etc.								
Engine starting fluid	Flammable gas, 23.	Flammable gas.		No exemption, 173.304.	60 pounds	Not permitted.	60 pounds	1,2. Not permitted on passenger vessels.
Engine, internal combustion.				173.120				1,2. Not permitted in unventilated containers.
*Eradicator, paint *or* grease, liquid.	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Etching acid, liquid, n.o.s.	Corrosive material.	Corrosive		No exemption, 173.299.	10 pounds	Not permitted.	10 pounds	1. Not permitted on passenger vessels.
Ethane	Flammable gas, 23.	Flammable gas.	Flammable gas	173.306, 173.304.	300 pounds	Not permitted.	300 pounds	1,2. Not permitted on passenger vessels.
Ether, (*ethyl*)	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	No exemption, 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Ethyl acetate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ethyl acrylate, inhibited	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ethyl alcohol. *See* Alcohol, n.o.s.								
Ethyl aldehyde. *See* Acetaldehyde.								
Ethyl benzene	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1. See § 176.300.
Ethyl borate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep dry. Passenger vessels: 1.
Ethyl bromide	Corrosive material, 81.	Corrosive	M.D.S., none	No exemption, 173.245.	10 gallons	1 quart	10 gallons	1,2. Stow away from food stuffs and living quarters.
Ethyl butyl acetate	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* §176.300. Passenger vessels: 1,2.
Ethyl butyl ether	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ethyl butyraldehyde	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ethyl butyrate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. *See* § 176.300.
Ethyl chloride	Flammable liquid, 31.	Flammable liquid.	Flammable gas	No exemption, 173.123.	300 pounds in cylinders; 15 pounds in other packagings.	Not permitted.	300 pounds in cylinders; 15 pounds in other packagings.	1,2. Passenger vessels: 1. Segregation same as for flammable gases.

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Ethyl chloroacetate	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		1 quart	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Ethyl chloroformate (*chlorocarbonate*).	Flammable liquid, 32.	Flammable liquid and Poison.	Flammable liquid; Flammable liquid, poison, and Corrosive.	No exemption, 173.288.	5 pints	Not permitted.	5 pints	1,2. Passenger vessels: 1.
Ethyl chlorothioformate	Highly toxic, 61.	Poison		173.345, 173.346.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ethyl crotonate	Flammable liquid, 31.	Flammable liquid.	Flammable liquid and Corrosive.	173.118, 173.119 (m).	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ethyl dichlorosilane	Flammable liquid, 31.	Flammable liquid.	Flammable liquid.	No exemption, 173.135.	10 gallons	Not permitted.	5 pints	1,2. Passenger vessels: 1.
Ethylene	Flammable gas, 23.	Flammable gas	Flammable gas	173.306, 173.304.	300 pounds	Not permitted.	300 pounds	1,2. Not permitted on passenger vessels.
Ethylene chlorohydrin	Highly toxic, 61.	Poison	Flammable liquid.	173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2. Passenger vessels: 1. Segregation same as for flammable liquids.
Ethylene diamine	Flammable liquid, 32.	Flammable liquid and Poison.	Corrosive	No exemption, 173.119.	10 gallons	1 quart	10 gallons	1,2. Stow away from oxidizing materials.
Ⓐ Ⓦ Ethylene dibromide (1, 2 dibromethane).	ORM-A	None	Poison	173.505, 173.620.		1 quart	55 gallons	1,2. Stow away from living quarters.
Ethylene dichloride	Flammable liquid, 31.	Flammable liquid.	Flammable liquid.	173.118, 173.119 (m).	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ethylene glycol diethyl ether (*diethyl "Cellosolve"*).	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Ethylene glycol monoethyl ether (*"Cellosolve"*).	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Ethylene glycol monoethyl ether acetate (*"Cellosolve acetate"*).	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Ethylene glycol monomethyl ether (*methyl "Cellosolve"*).	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Ethylene glycol monomethyl ether acetate (*methyl "Cellosolve" acetate"*).	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Ethylene imine, inhibited	Flammable liquid, 36.	Flammable liquid and Poison.	Flammable liquid; Flammable liquid and Poison.	No exemption, 173.189.	Not permitted.	Not permitted.	5 pints	1,2. Passenger vessels: 1.
Ethylene oxide	Flammable liquid, 35.	Flammable liquid.	Flammable gas	No exemption, 173.124.	300 pounds in cylinders; 15 pounds in other packagings.	Not permitted.	300 pounds in cylinders; 15 pounds in other packagings.	1,2. Passenger vessels: 1. Segregation same as for flammable gases
Ethyl ether. See Ether.								
Ethyl formate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Ethylhexaldehyde	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Ethyl lactate	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Ethyl mercaptan	Flammable liquid, 30.	Flammable liquid.		No exemption, 173.141.	10 gallons	Not permitted.	10 gallons	1,2. Passenger vessels: 1.
Ethyl methyl ether	Flammable liquid, 30.	Flammable liquid.	Flammable gas	173.118(a), 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Passenger vessels: 1. Keep cool. Segregation same as for flammable gases.
Ethyl methyl ketone	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ethyl nitrate (*nitric ether*)	Flammable liquid, 34.	Flammable liquid.		173.118(a), 173.119.	10 gallons	Not permitted.	Not permitted.	1,2. Passenger vessels: 1.
Ethyl nitrite (*nitrous ether*)	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons	Not permitted.	Not permitted.	1,2. Keep cool. Not permitted on passenger vessels.
Ethyl phenyl dichlorosilane	Corrosive material, 83.	Corrosive		No exemption, 173.250.	10 gallons	Not permitted.	10 gallons	1. Not permitted on passenger vessels.
Ethyl phosphonothioic dichloride, anhydrous.	Corrosive material, 80.	Corrosive		173.244, 173.245, 173.245a.	5 pints	1 quart	1 quart	1. Not permitted on passenger vessels.
Ethyl phosphonous dichloride, anhydrous.	Corrosive material, 83.	Corrosive		173.244, 173.245, 173.245a.	5 pints	1 quart	1 quart	1. Not permitted on passenger vessels.
Ethyl phosphorodichloridate.	Corrosive material, 80.	Corrosive		173.244, 173.245, 173.245a.	5 pints	1 quart	1 quart	1. Not permitted on passenger vessels.
Ethyl propionate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ethyl silicate	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Ethyl trichlorosilane	Flammable liquid, 31.	Flammable liquid.	Flammable liquid.	No exemption, 173.135.	10 gallons	Not permitted.	5 pints	1,2. Passenger vessels: 1.
Etiologic agent, n.o.s.	Etiologic agent.	Etiologic agent (173.388).		173.386, 173.387.	4 liters	173.386(d)†	4 liters	Not permitted except under specific conditions approved by the Department.
Ⓦ Excelsior (shredded wood) *when dry, clear, and free from oil.*	ORM-C	None		173.505, 173.980.				1,2. Keep cool. Stow away from organic, corrosive, or oxidizing materials.

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(W) Exothermic ferrochrome	ORM-C	None		173.505, 173.985.				1.
(W) Exothermic ferromanganese. *See* Exothermic ferrochrome.								
(W) Exothermic silicon chrome. *See* Exothermic ferrochrome.								
Explosive auto alarm	Class C explosive, 15.	Explosive C		No exemption, 173.111.	150 pounds	50 pounds	150 pounds	1,2.
Explosive bomb	Class A explosive, 19.	Explosive A		No exemption, 173.56.	Not permitted.	Not permitted.	Not permitted.	Magazine or 1,2. No other cargo may be stowed in the same hold with these items. Not permitted on passenger vessels.
Explosive cable cutter	Class C explosive, 15.	Explosive C		No exemption, 173.102.	150 pounds	50 pounds	150 pounds	1,3.
Explosives, Class A				173.53				
Explosives, Class B				173.88				
Explosives, Class C				173.100				
Explosive mine	Class A explosive, 19.	Explosive A		No exemption, 173.56.	Not permitted.	Not permitted.	Not permitted.	Magazine or 1,2. No other cargo may be stowed in the same hold with this material. Not permitted on passenger vessels.
Explosive power device, Class B.	Class B explosive, 17.	Explosive B		No exemption, 173.94	150 pounds	Not permitted.	150 pounds	1,2. Not permitted on passenger vessels.
Explosive power device, Class C.	Class C explosive, 15.	Explosive C		No exemption, 173.102.	150 pounds	50 pounds	150 pounds	1,3.
Explosive projectile	Class A explosive, 19.	Explosive A		No exemption, 173.56.	Not permitted.	Not permitted.	Not permitted.	Magazine or 1,2. No other cargo may be stowed in the same hold with this material. Not permitted on passenger vessels.
Explosive release device	Class C explosive, 15.	Explosive C		No exemption, 173.102.	150 pounds	50 pounds	150 pounds	1,3.
Explosive rivet	Class C explosive, 15.	Explosive C		No exemption, 173.100 (g).	150 pounds	50 pounds	150 pounds	1,2.
Explosive, sample for laboratory examination.				173.86		Not permitted.	173.86	
Explosive torpedo	Class A explosive, 19.	Explosive A		No exemption, 173.56.	Not permitted.	Not permitted.	Not permitted.	Magazine or 1,2. No other cargo may be stowed in the same hold with this material. Not permitted on passenger vessels.
*Extract, liquid, flavoring	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.116, 173.119.	10 gallons	1 quart	10 gallons	1, 2. Passenger vessels: 1. *See* § 176.300.
Extremely toxic material, n.o.s.	Extremely toxic.	Poison		No exemption, 173.328.	Not permitted.	Not permitted.	Not permitted.	1. Not permitted on passenger vessels.
Fabric with animal or vegetable oil. See Fibers or fabric containing not more than 5% animal or vegetable fat.								
(A) (W) Feed, wet, mixed	ORM-C	None		173.505, 173.990.		Not permitted.	Not permitted.	3. Stow in cool, dry, well ventilated compartment. Do not stow bags *over ten tiers high* without flooring off. Do not overstow.
(W) Felt, waste. *See* Cotton waste.								
Felt, Waste, wet. *See* Waste wool, wet.								
Ferric arsenate, solid	*Highly toxic, 60.*	Poison	*Poison*	*173.364, 173.365.*	*200 pounds*	*50 pounds*	*200 pounds*	*1,2.*
Ferric arsenite, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
(A) Ferric chloride, solid, *anhydrous.*	ORM-B	None	Corrosive	173.505, 173.510.		25 pounds	100 pounds	
(W) Ferrophosphorus	ORM-A	None		173.505, 173.635.				1,2. Keep dry. Stow away from living quarters.
(A) (W) Ferrosilicon, *containing 50% or more but not more than 70% silicon.*	ORM-A	None	Dangerous when wet; Dangerous when wet and Poison.	173.505, 173.510, 173.645.		Not permitted. 9	25 pounds	1,2. Keep dry. Stow away from living quarters. Segregation same as for flammable solids labeled Dangerous When Wet.
Ferrous arsenate (*iron arsenate*), solid.	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Fertilizer ammoniating solution *containing free ammonia.* (*more than 25.3 p.s.i.g.*).	Nonflammable gas.	Nonflammable gas.	Nonflammable gas.	173.306, 173.304, 173.314.	300 pounds	Not permitted.	300 pounds	1,2. Not permitted on passenger vessels.
Fertilizer, tankage. *See* Garbage, tankage.								
Fibers, burnt	Flammable solid, 40.	Flammable solid.	Spontaneously combustible.	No exemption, 173.169.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
(W) Fibers (*jute, hemp, flax, sisal, coir, kapok, and similar vegetable fibers*).	ORM-C	None	Flammable solid; none.	173.505, 173.965.				1,2. Stow away from animal or vegetable oils. Segregation same as for flammable solids.
Fibers or fabric, containing not more than 5% animal or vegetable oil.	Flammable solid, 40.	Flammable solid.	Spontaneously combustible.	No exemption, 173.170.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Film (nitrocellulose)	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.177, 173.178, 173.180.	200 pounds.	50 pounds.	200 pounds.	1,2. Keep cool. Stow away from other flammable cargo or substances.
Film, photographic, (including scrap film), safety, nonflammable, or slow burning.				Not subject to 49 Parts 170 to 189 of this subchapter.				
Film scrap sample, nitrocellulose.	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.197.	25 pounds.	Not permitted.	Not permitted.	1. Keep cool. Stow away from other flammable cargo or substances. Not permitted on passenger vessels.
Film scrap, nitrocellulose (*other than sample*).	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.195.	Not permitted.	Not permitted.	Not permitted.	1. Keep cool. Stow away from other flammable cargo or substances. Not permitted on passenger vessels.
Firecracker. See Fireworks, common or special.								
Firecracker salute. See Fireworks, common or special.								
Fire extinguisher charge *containing sulfuric acid.*	Corrosive material, 60.	Corrosive	Corrosive	173.261	1 gallon	1 quart	1 gallon	1,2.
Fire extinguisher charge containing not more than 50 grains of propellant explosive per unit.				173.88(g), Note 1.				
*Fire extinguisher	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306	300 pounds.	150 pounds.	300 pounds.	1,2.
Fireworks, common	Class C explosive, 15	Explosive C		No exemption, 173.100 (z), 173.108.	200 pounds.	50 pounds.	200 pounds.	1,2. Passenger vessels. 1,2, in metal lockers only. Keep cool.
Fireworks, exhibition display piece. See Fireworks, special.								
Fireworks, special	Class B explosive, 17.	Explosive B		No exemption, 173.88(d), 173.91.	200 pounds.	Not permitted.	200 pounds.	2. Passenger vessels: 2, in metal lockers only. Keep cool. Toy torpedoes must not be packed with other special fireworks.
Ⓦ Fish meal or fish scrap containing at least 6% and not more than 12% moisture.	ORM-C	None	Spontaneously combustible.	173.505, 173.995.				1,2. Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. *Use double strip stowage* for cargo 6–12 percent moisture containing not more than 12 percent fat. *Use single strip stowage* for cargo 6–11 percent moisture containing more than 12 percent, but not more than 15 percent fat.
Fish meal or fish scrap containing less than 6% or more than 12% moisture.	Flammable solid, 40.	Flammable solid.	Spontaneously combustible.	No exemption, 173.171.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
Fissile radioactive material. *See* Radioactive material, fissile.								
*Flame retardant compound liquid.	Corrosive material.	Corrosive		173.244, 173.291.	10 gallons	1 quart	10 gallons	1,2.
Flammable liquid, n.o.s.	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Flammable solid, n.o.s.	Flammable solid.	Flammable solid.	Flammable solid.	173.153, 173.154.	25 pounds.	25 pounds.	25 pounds.	1,2.
Flare. See Fireworks, common.								
Flare, airplane. See Fireworks, special.								
Flash cartridge. See Fireworks, special *or* Black powder.								
Flash cracker. See Fireworks, common *or* special.								
Flash powder. See Fireworks, special *or* Black powder.								
Flax. See Fibers.								
Flexible linear shaped charge, metal clad.	Class C explosive, 15.	Explosive C		No exemption, 173.104.	300 pounds.	50 pounds.	300 pounds.	1,2.
Flowers of sulfur. *See* Sulfur.								
Flue dust, poisonous.	Highly toxic, 60.	Poison		173.364, 173.368.	200 pounds.	50 pounds.	200 pounds.	1,2.
Fluoboric acid	Corrosive material, 60.	Corrosive	Corrosive	173.244, 173.264(a).	1 gallon	1 quart	1 gallon	1,2.
Fluoric acid. *See* Hydrofluoric acid.								
Fluorophosphoric acid, anhydrous. *See* Monofluorophosphoric acid, anhydrous.								
Fluorosilicic acid. *See* Hydrofluosilicic acid.								

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Fluorine	Flammable gas, 27.	Poison and Oxidizer.	Nonflammable gas; Poison gas and Oxidizer.	No exemption, 173.302.	6 pounds	Not permitted.	Not permitted.	1. Segregation same as for nonflammable gas. Stow away from foodstuffs, living quarters and organic materials. Not permitted on passenger vessels.
Fluosulfonic acid	Corrosive material, 84.	Corrosive	Corrosive	No exemption, 173.274.	10 pints	Not permitted.	1 gallon	1. Keep dry. Not permitted on passenger vessels.
*Formaldehyde solution or formalin.	Combustible liquid, 30.	None		173.118a, 173.149b.		10 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2. Stow away from foodstuffs.
Formalin. *See* Formaldehyde solution.								
Formic acid	Corrosive material, 83.	Corrosive	Corrosive	173.244, 173.245, 173.289.	5 gallons	1 quart	5 gallons	1,2. Glass carboys in hampers not permitted under deck.
*Formic acid solution	Corrosive material.	Corrosive		173.244, 173.245, 173.289.	5 gallons	1 quart	5 gallons	1,2.
*Fuel, aviation, turbine engine.	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1. *See* § 176.300.
*Fuel oil	Combustible liquid, 30.	None		173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Fuel oil, C.S. No. 1	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Fuel oil, C.S. No. 2, 4, or 5	Combustible liquid, 30.	None		173.118a, 173.119a.		15 gallons	55 gallons	See § 176.300. Passenger vessels: 1,2.
Fulminate of mercury, dry				Forbidden				
Fulminate of mercury, wet. *See* Initiating explosive.								
Fumaryl chloride	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245.	1 quart	1 quart	1 quart	1. Passenger vessels: 1. Glass car boys not permitted.
Fumigant				173.152(a), note 1.				
*Furfural	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passsenger vessels: 1, 1,2.
Fuse igniter	Class C explosive, 15.	Explosive C		No exemption, 173.106.	150 pounds	50 pounds	150 pounds	1,3.
Fuse, instantaneous	Class C explosive, 15.	Explosive C		173.100(m)	150 pounds	50 pounds	150 pounds	1,2.
Fuse lighter	Class C explosive, 15	Explosive C		No exemption, 173.106	150 pounds	50 pounds	150 pounds	1,3.
Fuse, mild detonating, metal clad.	Class C explosive, 15.	Explosive C		No exemption 173.104.	300 pounds	50 pounds	300 pounds	1,2.
Fuse, safety	Class C explosive, 15.	Explosive C		173.100(o)		50 pounds	300 pounds	1,2.
Fusee (*railway or highway*)	Flammable solid, 40.	Flammable solid.		No exemption 173.154a.	200 pounds	50 pounds	200 pounds	1,3.
Fusel oil	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300: Passenger vessels: 1,2.
Fuze, combination	Class C explosive 15.	Explosive C		No exemption, 173.105.	150 pounds	50 pounds	150 pounds	1,3.
Fuze, detonating	Class A explosive, 19.	Explosive A		No exemption, 173.69	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Fuze, detonating, radioactive.	Class A explosive, 19.	Explosive A		No exemption, 173.69.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Fuze, detonating, Class C explosive.	Class C explosive, 15.	Explosive C		No exemption, 173.113.	150 pounds	50 pounds	150 pounds	1,3.
Fuze, percussion, nondetonating.	Class C explosive, 15.	Explosive C		No exemption, 173.105.	150 pounds	50 pounds	150 pounds	1,3.
Fuze, time, non-detonating	Class C explosive, 15.	Explosive C		No exemption, 173.105.	150 pounds	50 pounds	150 pounds	1,3.
Fuze, tracer, non-detonating	Class C explosive, 16.	Explosive C		No exemption, 173.105.	150 pounds	50 pounds	150 pounds	1,3.
Ⓦ Garbage tankage *containing 8% or more moisture.*	ORM-C	None		173.505, 173.1000.				1,2.
Garbage tankage, containless than 8% of moisture.	Flammable solid, 40.	Flammable solid.		No exemption, 173.209.	Not permitted.	Not permitted.	Not permitted.	1. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
Gas cylinder, empty. *See* cylinder, empty.								
*Gas drips, hydrocarbon	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Gas drips, hydrocarbon	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Passenger vessels: 1.
*Gas identification set	Extremely toxic.	Poison		No exemption, 173.331.	173.331	Not permitted.	Not permitted.	1. Not permitted on passenger vessels.
*Gas identification set	Irritating material, 05.	Irritant		No exemption, 173.331.	173.331	Not permitted.	Not permitted.	1. Not permitted on passenger vessels.
Gas mine. *See* Explosive projectile.								
Gas oil. *See* Fuel oil.								
Gasoline (*including casinghead and natural*).	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Not permitted on passenger vessels.
Gelatine Dynamite. *See* High explosive.								

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Germane	Flammable gas, 29.	Flammable gas and poison.		No exemption, 173.328.	Not permitted.	Not permitted.	Not permitted.	1. Not permitted on passenger vessels.
Grenade, empty, primed	Class C explosive, 15.	Explosive C		No exemption, 173.107.	150 pounds	50 pounds	150 pounds	1,3.
Grenade, hand or rifle, explosive (*with or without gas, smoke, or incendiary material.*)	Class A explosive, 19.	Explosive A		No exemption, 173.56.	Not permitted.	Not permitted.	Not permitted.	Magazine or 1,2. No other cargo may be stowed in the same hold with these items. Not permitted on passenger vessels.
Grenade without bursting charge:								
With incendiary material (Special fireworks).	Class B explosive, 17.	Explosive B		173.91	50 pounds	Not permitted.	Not permitted.	2. Passenger vessels: 2, in metal lockers only. Keep cool.
With smoke charge (Smoke grenade).	Class C explosive, 15.	Explosive C		173.108	200 pounds	50 pounds	150 pounds	1,2. Keep cool.
With extremely toxic gas charge.	Extremely toxic.	Poison		173.330	Not permitted.	Not permitted.	Not permitted.	*See* correct shipping name of applicable extremely toxic material for stowage, special handling, and special segregation requirements.
With highly toxic gas charge.	Highly toxic	Poison		173.360	Not permitted.	Not permitted.	Not permitted.	*See* correct shipping name of applicable Highly Toxic material for stowage special handling, and special segregation requirements.
Grenade, tear gas	Irritating, material, 65.	Irritant		No exemption, 173.385.	75 pounds	Not permitted.	75 pounds	1,2. Passenger vessels: 1.
Guanidine nitrate	Oxidizing material, 54.	Oxidizer	M.D.S., none	173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2. Separate from nitro-compounds, chlorates, and acids.
Guanyl nitrosamino guanylidene hydrazine. See Initiating explosive.								
Guanyl nitrosamino guanyl tetrazene. See Initiating explosive.								
Guided missile with warhead. See Rocket ammunition with explosive, illuminating, gas, incendiary, or smoke projectile.								
Guided missile, without warhead. See Rocket motor, Class A explosive or Rocket motor, class B explosive.								
Guncotton. See High explosive.								
Hafnium metal, dry (*See* Note 3, § 173.214).	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.214.	75 pounds	Not permitted.	75 pounds	1. Not permitted on passenger vessels.
Hafnium metal, wet	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.214.	150 pounds	Not permitted.	150 pounds	1,2. Not permitted on passenger vessels.
Hair, wet	Flammable solid, 40.	Flammable solid.		No exemption, 173.172.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
Hand signal device	Class C explosive, 15.	Explosive C		No exemption, 173.108.	200 pounds	50 pounds	200 pounds	1,2.
Ⓦ Hay	ORM-C	None	Flammable solid.	173.505, 173.1005.				1,2. Segregation same as for flammable solids. Stow away from animal or vegetable oils.
Ⓦ Hay or straw (*loose, wet, or damp*).								Forbidden for water shipment.
Heater for refrigerator car, liquid fuel type (*containing fuel*).	Flammable liquid, 30.	Flammable liquid.		173.146		Not permitted.	Not permitted.	1,2. Passenger vessels: 1.
Helium	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.302, 173.314.	300 pounds	150 pounds	300 pounds	1,2.
Helium-oxygen mixture	Nonflammable gas, 22.	Oxidizer		173.306, 173.302.	300 pounds	150 pounds	300 pounds	1,2.
Ⓐ Heptachlor	ORM-A	None		173.505, 173.510.				
Heptane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ⓦ *Hessian. See* Burlap cloth.								
Ⓦ Hexachloroethane	ORM-A	None		173.505, 173.650.				1,2.
Hexadecyltrichlorosilane	Corrosive material.	Corrosive	Corrosive	No exemption: 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry.
Hexadiene	Flammable liquid, 30.	Flammable liquid.		No exemption. 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Not permitted on passenger vessels.
Hexaethyl tetraphosphate and compressed gas mixture.	Nonflammable gas, 26.	Nonflammable gas and Poison.	Poison: Poison and Nonflammable gas.	No exemption, 173.334.	Not permitted.	Not permitted.	Not permitted.	1. Shade from radiant heat. Not permitted on passenger vessels.
Hexaethyl tetraphosphate, liquid.	Highly toxic, 60.	Poison	Poison	173.345, 173.358a.	1 quart	Not permitted.	1 quart	1. Not permitted on passenger vessels.

(1) Hazardous materia	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
*Hexaethyl tetraphosphate mixture, dry (containing not more than 2% hexaethyl tetraphosphate).	Highly toxic, 60.	Poison		173.377a, 173.377b.	200 pounds	50 pounds	200 pounds	1,2. Not permitted on passenger vessels.
Hexaethyl tetraphosphate mixture, dry (*containing more than 2% hexaethyl tetraphosphate*).	Highly toxic, 60.	Poison		173.377a	200 pounds	Not permitted.	200 pounds	1,2. Not permitted on passenger vessels.
*Hexaethyl tetraphosphate mixture, liquid (containing not more than 25% hexaethyl tetraphosphate).	Highly toxic	Poison		173.359a	1 quart	1 quart	1 quart	1,2. Not permitted on passenger vessels.
Hexaethyl tetraphosphate mixture, liquid (*containing more than 25% hexaethyl tetraphosphate*).	Highly toxic	Poison		173.359a	1 quart	Not permitted.	1 quart	1,2. Not permitted on passenger vessels.
Hexafluorophosphoric acid	Corrosive material, 81.	Corrosive	Corrosive	No exemption, 173.275.	1 gallon	Not permitted.	1 gallon	1,2.
Hexafluoropropylene	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas; Poison gas.	173.306, 173.304, 173.314, 173.315.	300 pounds	150 pounds	300 pounds	1. Not permitted on passenger vessels.
Hexaldehyde	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
3,3,6,6,9,9-hexamethyl-1,2,4,5-tetroxonane.	Organic peroxide, 59.	Organic peroxide.						
3,3,6,6,9,9-hexamethyl-1,2,4,5-tetroxonane solid, *not over 52% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
3,3,6,6,9,9-hexamethyl-1,2,4,5-tetroxonane solution, *not over 42% peroxide.*	Organic peroxide, 57.	Organic peroxide.						
Hexamethylene diamine, solid.	Corrosive material, 80.	Corrosive		173.244, 173.245b.	100 pounds	25 pounds	100 pounds	1,2.
*Hexamethylene diamine solution.	Corrosive material.	Corrosive	Corrosive material; Corrosive and Poison.	173.244, 173.249.	10 gallons	1 quart	10 gallons	1,2.
Hexamethylene imine	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	1 quart	1,2.
Hexane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Hexanoic acid	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	1 quart	1,2.
Hexyltrichlorosilane	Corrosive material, 88.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry.
High explosive	Class A explosive, 19.	Explosive A		No exemption, 173.61 to 173.87, inclusive.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
High explosive, liquid	Class A explosive, 19.	Explosive A		No exemption, 173.62.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
*Hydraulic accumulator. *See* Accumulator, pressurized.								
Hydrazine, anhydrous	Flammable liquid, 36.	Flammable liquid and *Poison.*	Corrosive material, Corrosive; and *Poison*	No exemption, 173.276.	5 pints	Not permitted.	5 pints	1. Segregation same as for corrosives. Not permitted on passenger vessels.
Hydrazine solution (*containing 50% or more hydrazine*).	Corrosive material, 85.	Corrosive	Corrosive material; Corrosive and Poison.	No exemption, 173.276.	5 pints	Not permitted.	5 pints	1. Not permitted on passenger vessels.
Hydriodic acid	Corrosive material, 80.	Corrosive	Corrosive	173.244(a)(1), 173.245.	1 gallon	Not permitted.	1 gallon	1. Glass carboys not permitted on passenger vessel.
*Hydorbromic acid not more than 49% strength.	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.262.	1 gallon	1 quart	1 gallon	1. Glass carboys not permitted on passenger vessel.
Hydrobromic acid, *more than 49% strength.*	Corrosive material, 80.	Corrosive	Corrosive	No exemption, 173.262.	1 gallon	Not permitted.	Not permitted.	1. Glass carboys not permitted on passenger vessel.
Hydrobromic acid, anhydrous *See* Hydrogen bromide.								
Hydrocarbon gas, liquefied	Flammable gas, 23.	Flammable gas	Flammable gas	173.306, 173.304, 173.314.	300 pounds	Not permitted.	300 pounds	1,2. Passenger vessels: 1.
Hydrocarbon gas, nonliquefied.	Flammable gas, 23.	Flammable gas	Flammable gas	173.306, 173.302.	300 pounds	Not permitted.	300 pounds	1,2. Passenger vessels: 1.
Hydrochloric (*muriatic*) acid.	Corrosive material, 80.	Corrosive	Corrosive	173.244(a)(1), 173.263.	10 pints	1 quart	1 gallon	1. Glass carboys not permitted on passenger vessel.
Hydrochloric acid, anhydrous *See* Hydrogen chloride.								
*Hydrochloric acid mixture.	Corrosive material.	Corrosive		173.244, 173.263.	10 pints	1 quart	1 gallon	1. Glass carboys not permitted on passenger vessel.
*Hydrochloric acid solution, inhibited.	Corrosive material, 80.	Corrosive		173.244, 173.263.	10 pints	1 quart	1 gallon	1. Glass carboys not permitted on passenger vessel.

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Hydrocyanic acid, liquefied	Flammable gas, 29.	Flammable gas and Poison.	Flammable gas, Flammable gas and Poison gas.	No exemption, 173.332.	Not permitted.	Not permitted.	Not permitted.	1. Not permitted on passenger vessels.
Hydrocyanic acid (*prussic*), solution.	Flammable gas, 29.	Flammable gas and Poison.	Poison	No exemption, 173.332.	Not permitted.	Not permitted.	Not permitted.	1. Shade from radiant heat. Aqueous solutions containing more than 20 percent hydrogen cyanide are not permitted in transportation by water. Not permitted on passenger vessels.
Hydrocyanic acid (*prussic*), unstabilized.				Forbidden.				
Hydrocyanic acid solution, more than 5% hydrocyanic acid.	Extremely toxic, 62.	Poison	Poison	No exemption, 173.351.	25 pounds	Not permitted.	25 pounds	1. Shade from radiant heat. Not permitted on passenger vessels.
Hydrofluoric acid solution	Corrosive material.	Corrosive	Corrosive	173.244(a)(1), 173.264.	10 pints	1 quart	1 gallon	1. Keep cool. Not permitted on passenger vessels.
Hydrofluoric acid, anhydrous. *See* Hydrogen fluoride.								
Hydrofluoric and sulfuric acids, mixture.	Corrosive material, 84.	Corrosive	Corrosive	No exemption, 173.290.	10 pints	Not permitted.	1 gallon	1. Not permitted on passenger vessels.
Hydrofluoroboric acid. *See* Fluoboric acid.								
Hydrofluosilicic acid	Corrosive material, 84.	Corrosive	Corrosive	No exemption, 173.265.	10 pints	1 quart	1 gallon	1,2.
Hydrogen	Flammable gas, 23.	Flammable gas	Flammable gas	173.306, 173.302, 173.314.	300 pounds	Not permitted.	300 pounds	1,2. Not permitted on passenger vessels.
Hydrogen bromide	Nonflammable gas, 21.	Nonflammable gas.	Nonflammable gas; Poison gas and Corrosive.	173.306, 173.304.	300 pounds	Not permitted.	300 pounds	1. Stow away from foodstuffs. Not permitted on passenger vessels.
Hydrogen chloride	Nonflammable gas, 21.	Nonflammable gas.	Nonflammable gas; Poison gas and Corrosive.	173.306, 173.304.	300 pounds	Not permitted.	300 pounds	1. Stow away from foodstuffs. Not permitted on passenger vessels.
Hydrogen fluoride	Corrosive material, 84.	Corrosive	Nonflammable gas; Poison gas and Corrosive.	No exemption, 173.264 (b).	110 pounds	Not permitted.	110 pounds	1. Segregation same as for nonflammable gases. Stow away from foodstuffs. Not permitted on passenger vessels.
Hydrogen, cryogenic liquid	Flammable gas, 23.	Flammable gas	Flammable gas	No exemption, 173.316.	Not permitted.	Not permitted.	Not permitted.	Not permitted in transportation by water.
Hydrogen iodide solution. *See* Hydriodic acid.								
Hydrogen peroxide solution containing more than 8% but not more than 40% hydrogen peroxide.	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.244, 173.266.	1 gallon	1 quart	1 gallon	1,2. Passenger vessels: 1. Shade from radiant heat. Separate from permanganates. Keep away from powdered metals.
Hydrogen peroxide solution containing more than 40% but not more than 52% hydrogen peroxide.	Oxidizing material, 50.	Oxidizer	Oxidizing material; Oxidizer and Corrosive.	173.244, 173.266.	1 gallon	Not permitted.	Not permitted.	1. Shade from radiant heat. Separate from permanganates. Keep away from powdered metals. Not permitted on passenger vessels.
Hydrogen peroxide solution *containing more than 52% hydrogen peroxide.*	Oxidizing material, 54.	Oxidizer	Oxidizing material; Oxidizer and Corrosive.	No exemption, 173.266.	1 gallon	Not permitted.	Not permitted.	1. Shade from radiant heat. Separate from permanganates. Keep away from powdered metals. Not permitted on passenger vessels. Concentrations greater than 60% hydrogen peroxide not permitted on any vessel except under conditions approved by the Department.
Hydrogen selenide	Flammable gas, 29.	Flammable gas and Poison.		No exemption, 173.328	Not permitted.	Not permitted.	Not permitted.	1. Not permitted on passenger vessels.
Hydrogen sulfate. *See* sulfuric acid.								
Hydrogen sulfide	Flammable gas, 29.	Flammable gas and Poison.	Flammable gas; Flammable gas and Poison gas.	No exemption, 173.304, 173.314.	300 pounds	Not permitted.	300 pounds	1. Stow away from foodstuffs. Not permitted on passenger vessels.
Hydrosilicofluoric acid. *See* Hydrofluosilicic acid.								
bis (1-hydroxy cyclohexyl) peroxide.	Organic peroxide, 57.	Organic peroxide.						
④ Hypochlorite solution containing not more than 7% available chlorine *by weight.*	ORM-B	None	Corrosive	173.505, 173.510.				
Hypochlorite solution *containing more than 7% available chlorine by weight.*	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.277.	4 gallons	1 quart	4 gallons	1,2. Glass carboys in hampers not permitted under deck. Passenger vessels: 1.
Igniter	Class C explosive, 15.	Explosive C		No exemption. 173.106.	150 pounds	50 pounds	150 pounds	1,3.
Igniter cord	Class C explosive, 15.	Explosive C		No exemption, 173.100(s).	150 pounds	50 pounds	150 pounds	1,3.
Igniter fuse, metal clad	Class C explosive, 15.	Explosive C		No exemption, 173.106.	150 pounds	50 pounds	150 pounds	1,3.

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*Igniter, jet thrust (jato)	Class A explosive, 19.	Explosive A		No exemption, 173.79.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
*Igniter, jet-thrust (jato)	Class B explosive, 17.	Explosive B		No exemption, 173.92.	550 pounds.	Not permitted.	550 pounds.	1,3. Not permitted on passenger vessels.
*Igniter, rocket motor	Class A explosive, 19.	Explosive A		No exemption, 173.79.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
*Igniter, rocket motor	Class B explosive, 17.	Explosive B		No exemption, 173.92.	550 pounds.	Not permitted.	550 pounds.	1,3. Not permitted on passenger vessels.
*Illuminating projectile. See Fireworks, special.								
Iminobispropylamine	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	1 quart	1,2.
Initiating explosive (see following list for specific regulations).	Class A explosive.	Explosive A		No exemption, 173.70 to 173.78 inclusive.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Diazodinitrophenol				173.70				
Fulminate of mercury				173.71				
Guanyl nitrosamino guanylidene hydrazine.				173.72				
Lead azide, dextrinated type only.				173.73				
Lead mononitroresorcinate.				173.70				
Lead styphnate (*lead trinitroresorcinate*).				173.74				
Nitro mannite				173.75				
Nitrosoguanidine				173.76				
Pentaerythrite tetranitrate.				173.77				
Tetrazene (*guanyl nitrosamine guanyl tetrazene*).				173.78				
*Ink	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.144.	10 gallons	1 quart	10 gallons	1,2. Passenger vessel: 1.
*Ink	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Insecticide, dry, n.o.s.	Highly toxic	Poison	Poison	173.354, 173.355.	200 pounds.	50 pounds.	200 pounds.	1,2.
*Insecticide, liquid, n.o.s.	Highly toxic	Poison	Poison	173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2.
Insecticide, liquefied gas, (*containing no Extremely or Highly Toxic material*).	Nonflammable Gal.	Nonflammable Gas.		173.306, 173.304.	300 pounds.	150 pounds.	300 pounds.	1,3.
Insecticide, liquefied gas, containing Extremely Toxic material or Highly Toxic material.	Nonflammable gas, 26.	Nonflammable gas and Poison.	Poison gas	No exemption, 173.329, 173.334.	Not permitted.	Not permitted.	Not permitted.	1. Shade from radiant heat. Not permitted on passenger vessel.
*Insecticide, liquid	Combustible liquid 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Insecticide, liquid	*Flammable* liquid.	*Flammable* liquid.	Flammable liquid; Flammable liquid and Poison.	*173.118*, 173.119.	*10* gallons	*1* quart	*10* gallons	1,2. Passenger vessels: 1.
Ⓜ Insulation tape (*varnished cloth type*). *See* Oiled textiles.								
Iodine monochloride	Corrosive material 81.	Corrosive	Corrosive	No exemption, 173.293.	1 quart	Not permitted.	1 quart	1. Keep dry. Not permitted on passenger vessels.
Iodine pentafluoride	Oxidizing material, 53.	Oxidizer and Poison.		No exemption, 173.246.	100 pounds.	Not permitted.	100 pounds.	1. Keep dry.
Iron chloride, solid. *See* Ferric chloride, solid.								
Iron mass or sponge spent.	Flammable solid, 40.	Flammable solid.	Spontaneously combustible material.	No exemption, 173.174.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
Iron mass or sponge, *not properly oxidized.*	Flammable solid 40.	Flammable solid.		No exemption. 173.174.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
Ⓐ Iron oxide, spent	ORM-C	None	Spontaneously combustible material.			Not permitted.	Not permitted.	
Iron sesquichloride, solid. *See* Ferric chloride.								
Irritating agent, n.o.s.	Irritating material 65.	Irritant		173.382	75 pounds.	Not permitted.	75 pounds.	1. Stow away from living quarters.
Isobutane or Liquefied petroleum gas. *See* Liquefied petroleum gas.								
Isobutyl acetate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Isobutylamine	Flammable liquid 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Isobutylene or Liquefied petroleum gas. *See* Liquefied petroleum gas.								

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Isobutyric acid	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	1 quart	1,2.
Isobutyric anhydride	Corrosive material 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	1 quart	1,2.
Isononanoyl peroxide *or* Isononanoyl peroxide solution.	Organic peroxide, 58.	Organic peroxide.						
Isooctane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Isooctene	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Isopentane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Isopentanoic acid	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	1 quart	1,2.
Isoprene	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons	Not permitted.	1 gallon	1,2. Keep cool. Not permitted on passenger vessels.
*Isopropanol. *See* Alcohol, n.o.s.								
Isopropyl acetate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Isopropyl acid phosphate solid.	Corrosive material, 80.	Corrosive		173.244, 173.245b	100 pounds	25 pounds	100 pounds	1,2.
Isopropylamine	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	No exemption, 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Isopropyl mercaptan	Flammable liquid 30.	Flammable liquid.		No exemption, 173.141.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Isopropyl nitrate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Isopropyl peroxydicarbonate, stabilized.	Organic peroxide, 59.	Organic peroxide.						
Isopropyl peroxydicarbonate solution, *not over 52% peroxide.*	Organic peroxide, 58.	Organic peroxide.						
Isopropyl phosphoric acid, solid *See* Isopropyl acid phosphate, solid.								
Jet thrust igniter. *See* Igniter, jet thrust.								
*Jet thrust unit (*jato*)	Class A explosive, 19.	Explosive A		No exemption, 173.79.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
*Jet thrust unit (*jato*)	Class B explosive, 17.	Explosive B		No exemption, 173.92.	550 pounds	Not permitted.	550 pounds	1,3. Not permitted on passenger vessels.
Ⓦ *Jute. See* Fibers.								
Ⓦ *Kapok. See* Fibers.								
Kerosene	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* §176.300. Passenger vessels: 1,2.
*Lacquer. *See* *Paint, enamel, lacquer, stain, etc.								
*Lacquer base, liquid. *See* *Paint, enamel, lacquer, stain, etc.								
*Lacquer base, or lacquer chips, dry.	Flammable solid, 40.	Flammable solid.	Flammable solid.	173.153, 173.175.	100 pounds	25 pounds	100 pounds	1.
*Lacquer base or lacquer chips, plastic (*wet with alcohol or solvent*).	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.127.	25 pounds	1 quart	25 pounds	1,2. Passenger vessels: 1. *See* §176.300.
*Lacquer removing, reducing, or thinning compound. *See* Compound, lacquer, paint, or varnish, *etc.*, removing, reducing or thinning liquid.								
Lauroyl peroxide	Organic peroxide, 57.	Organic peroxide.	Organic peroxide.					
Lead arsenite, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Lead azide. See Initiating explosive.								
Ⓐ Lead chloride	ORM-B	None		173.505, 173.510, 173.800.		25 pounds	100 pounds	
Lead cyanide	Highly toxic, 60.	Poison	Poison	173.370	No limit	25 pounds	No limit	1,2. Stow away from acids.
Ⓦ Lead dross	ORM-C	None	Corrosive	173.505, 173.1010.				1,2. Segregation same as for corrosive materials.
Lead mononitroresorcinate. See Initiating explosive.								
Lead nitrate	Oxidizing material, 50.	Oxidizer	Oxidizing, material; Oxidizer and Poison.	173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2. Stow away from foodstuffs.
Lead peroxide	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.154.	100 pounds	25 pounds	100 pounds	1,2. Stow away from foodstuffs.
Ⓦ Lead scrap. *See* Lead dross.								
Lead styphnate (lead trinitroresorcinate). See Initiating explosive.								
Lead sulfate, solid (*containing more than 3% free acid*).	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245b.	100 pounds	25 pounds	100 pounds	1,2.
*Leather bleach or dressing	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.

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*Leather bleach or dressing	Combustible liquid.	None		173.118a, 173.119b.		15 gallons	55 gallons	*See* §176.300. Passenger vessels: 1,2.
Lighter fluid	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Lime-nitrogen. See calcium cyanamide, not hydrated, etc.								
Lime, unslaked. *See* Calcium oxide.								
Ⓐ Lindane	ORM-A	None		173.505, 173.510				
Liquefied hydrocarbon gas. *See* Hydrocarbon gas, liquefied.								
Liquefied nonflammable gas (*charged with nitrogen, carbon dioxide, or air*).	Nonflammable gas.	Nonflammable gas.	Nonflammable gas.	173.306, 173.304.	300 pounds	30 pounds	30 pounds	1,2.
Liquefied petroleum gas	Flammable gas, 23.	Flammable gas.	Flammable gas.	173.306, 173.304, 173.314, 173.315.	300 pounds	Not permitted.	300 pounds	1,2. Passenger vessels: 1.
Liquid other than one classed as flammable, corrosive, extremely or highly toxic or irritating, charged with nitrogen, carbon dioxide, or air								
See Compressed gas n.o.s.								
Lithium acetylide-ethylene diamine complex.	Flammable solid, 46.	Flammable solid and Dangerous when wet.		No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solid labeled Dangerous When Wet. Not permitted on passenger vessels.
Lithium aluminum hydride	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solid labeled Dangerous When Wet. Not permitted on passenger vessels.
Lithium aluminum hydride, ethereal.	Flammable liquid, 30.	Flammable liquid.	Dangerous when wet, Dangerous when wet and Flammable liquid.	No exemption, 173.137.	1 quart	Not permitted.	1 quart	1. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Lithium amide, powdered	Flammable solid, 40.	Flammable solid.	Dangerous when wet.	173.153(a), 173.168.	100 pounds	25 pounds	100 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Lithium borohydride	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Lithium ferro silicon	Flammable solid, 44.	Flammable solid and Dangerous when wet.		No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Lithium hydride	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Lithium hydride in fused solid form.	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.206.	100 pounds	Not permitted.	100 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Lithium hypochlorite compound, dry (*containing more than 39% available chlorine*).	Oxidizing material, 51.	Oxidizer	Oxidizing material.	173.153, 173.217.	100 pounds	50 pounds	100 pounds	1,2.
Lithium metal	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Lithium metal, in cartridges.	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	173.206	25 pounds	1 pound	25 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Lithium nitride	Flaromable solid, 40.	Flammable solid and Dangerous when wet.		No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Lithium peroxide	Oxidizing material 51.	Oxidizer	Oxidizing material.	173.153(a), 173.154.	100 pounds	25 pounds	100 pounds	1,2. Keep dry.
Lithium silicon	Flammable solid, 44.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet.
London purple, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Low explosive. See Black powder.								
Low blasting explosive. See black powder.								
Lye. See Sodium hydroxide, solid.								
Magnesium aluminum phosphide.	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet.
Magnesium arsenate, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.367.	200 pounds	50 pounds	200 pounds	1,2.

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Magnesium dross, wet or hot.				Forbidden, 173.173.				
*Magnesium, metallic (*powdered, pellets, turnings, or ribbons*).	Flammable solid, 44.	Flammable solid and Dangerous when wet.	Dangerous when wet.	173.153(a), 173.220.	100 pounds.	25 pounds.	100 pounds.	1,2. Segregation same as for flammable solids labeled Dangerous When Wet.
Magnesium nitrate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.182.	100 pounds.	25 pounds.	100 pounds.	1,2.
Magnesium perchlorate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.154.	100 pounds.	25 pounds.	100 pounds.	1,3. Stow away from powdered metals.
Magnesium peroxide, solid	Oxidizing material, 51.	Oxidizer	Oxidizing material.	173.153, 173.154.	100 pounds.	25 pounds.	100 pounds.	1,2. Keep dry.
*Magnesium scrap (*borings, clippings, shavings, sheet, turnings, or scalpings*).	Flammable solid, 44.	Flammable solid and Dangerous when wet.	Dangerous when wet.	173.153(a), 173.220.	100 pounds.	Not permitted.	Not permitted.	1,2. Segregation same as for flammable solids labeled Dangerous When Wet.
Ⓐ Magnetized material	ORM-C	Magnetized material.		No exemption, 173.1020.				
Ⓐ Malathion	ORM-A	None		173.505, 173.510.				
Ⓐ Manganese dioxide	ORM-B	None		173.505, 173.510.				
Matches, block. See Matches, strike anywhere.								
Matches, safety, *book, card, or strike-on-box.*	Flammable solid, 40.	Flammable solid.	Flammable solid.	173.176(g)	50 pounds.	50 pounds.	50 pounds.	1,2. Passenger vessels: 1.
Matches, strike anywhere	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.176.	60 pounds.	Not permitted.	Not permitted.	1,2. Passenger vessels: 1.
Matting acid. *See* Sulfuric acid.								
*Medicines, n.o.s.	Combustible liquid, 30.	None		173.118a, 173.119b.		15 gallons.	55 gallons.	*See* § 176.300. Passenger vessels: 1,2.
*Medicines, n.o.s., liquid	Corrosive material.	Corrosive		173.244, 173.245.	1 quart.	1 quart.	1 quart.	1,2.
*Medicines, n.o.s., solid	Corrosive material, 80.	Corrosive		173.244, 173.245b.	100 pounds.	25 pounds.	100 pounds.	1,2. Keep dry.
*Medicines, n.o.s.	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons.	1 quart.	10 gallons.	1,2. Passenger vessels: 1.
*Medicines, n.o.s.	Flammable solid.	Flammable solid.		173.153, 173.154.	100 pounds.	25 pounds.	100 pounds.	1,2.
*Medicines, n.o.s.	Oxidizing material.	Oxidizer		173.153, 173.154.	100 pounds.	25 pounds.	100 pounds.	1,2.
*Medicines, n.o.s., liquid	Highly toxic	Poison		173.345, 173.346.	55 gallons.	1 quart.	55 gallons.	1,2. Passenger vessels: 1. Keep cool.
*Medicines, n.o.s., solid	Highly toxic	Poison		173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2. Keep cool.
Memtetrahydro phthalic anhydride.	Corrosive material, 80.	Corrosive		No exemption, 173.298.	1 quart.	Not permitted.	1 quart.	1,2. Passenger vessels: 1.
*Mercaptan mixture, aliphatic.	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		Not permitted. (See § 173.141(b)).	10 gallons.	*See* § 176.300. Passenger vessels: 1,2.
*Mercaptan mixture, aliphatic.	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	No exemption, 173.141.	10 gallons.	Not permitted (See § 173.141(b)).	10 gallons.	1,2. Keep cool Not permitted on passenger vessels (See § 173.141 (b)).
Mercuric acetate	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Mercuric-ammonium chloride, solid.	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Mercuric benzoate, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Mercuric bromide, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	Not permitted.	25 pounds.	1,2.
Mercuric chloride, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.372.	200 pounds.	Not permitted.	25 pounds.	1,2.
Mercuric cyanide, solid	Highly toxic, 60.	Poison	Poison	173.370	200 pounds.	25 pounds.	200 pounds.	1,2. Stow away from acids.
Mercuric iodide, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Mercuric iodide solution	Highly toxic, 60.	Poison		173.345, 173.346.	55 gallons.	1 quart.	55 gallons.	1,2.
Mercuric oleate, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Mercuric oxide, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Mercuric oxycyanide, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	25 pounds.	200 pounds.	1,2. Stow away from acids.
Mercuric-potassium cyanide, solid.	Highly toxic, 60.	Poison	Poison	173.364, 173.365, 173.370.	200 pounds.	25 pounds.	200 pounds.	1,2. Stow away from acids.
Mercuric-potassium iodide, solid.	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Mercuric salicylate solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Mercuric subsulfate, solid	Highly toxic, 60.	Poison		173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Mercuric sulfate, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Mercuric sulfo cyanate, solid or mercuric thiocyanate, solid.	Highly toxic,	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Mercurol, or mercury nucleate, solid.	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.

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Mercurous acetate, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Mercurous bromide, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Mercurous gluconate, solid	Highly toxic, 60.	Poison		173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Mercurous iodide, solid	Highly toxic, 60.	Poison		173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Mercurous nitrate, solid	Oxidizing material, 50.	Oxidizer	Poison	173.153(a) 173.154.	100 pounds	50 pounds	100 pounds	1,2.
Mercurous oxide, black, solid.	Highly toxic, 60.	Poison		173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Mercurous sulfate, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
*Mercury compound, n.o.s., solid.	Highly toxic	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Mercury fulminate. See Initiating explosive.								
Ⓐ Mercury, metallic	ORM-B	None		No exemption, 173.360.		173.360	173.360	
Mesityl oxide	Flammable liquid, 32.	Flammable liquid and Poison.	Flammable liquid.	No exemption, 173.119.	10 gallons	1 quart	10 gallons	1,2. *See* §176.300.
Ⓜ Metal borings, shavings, turnings, or cuttings.	ORM-C	None		173.505, 173.1025.				1,2. Keep dry. Not permitted if temperature of material is at or above 130° F.
Methane	Flammable gas, 23.	Flammable gas.	Flammable gas.	173.306, 173.302.	300 pounds	Not permitted.	300 pounds	1,2. Not permitted on passenger vessels.
Methanol. *See* Methyl alcohol.								
Methyl acetate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Methyl acetone	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Methylacetylene-propadiene, stabilized.	Flammable gas, 23.	Flammable gas.		173.306, 173.304, 173.314, 173.315.	300 pounds	Not permitted.	300 pounds	1,2. Passenger vessels: 1.
Methyl acrylate, inhibited	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Methylal	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	No exemption, 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep Cool. Not permitted on passenger vessels.
Methyl alcohol	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Methyl amyl acetate	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* §176.300. Passenger vessels: 1,2.
Methyl amyl ketone	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* §176.300. Passenger vessels: 1,2.
Methyl bromide and more than 2% chloropicrin mixture, liquid.	Extremely toxic, 62.	Poison	Poison	No exemption, 173.353.	Not permitted.	Not permitted.	Not permitted.	1. Shade from radiant heat. Not permitted on passenger vessels.
Methyl bromide and ethylene dibromide mixture, liquid.	Highly toxic, 60.	Poison	Poison	No exemption, 173.353.	55 gallons	Not permitted.	55 gallons	1.
Methyl bromide and nonflammable, nonliquefied compressed gas mixture, liquid.	Nonflammable gas, 26.	Nonflammable gas and Poison.		No exemption, 173.353.	Not permitted.	Not permitted.	Not permitted.	1. Stow away from living quarters. Not permitted on passenger vessels.
Methyl bromide, liquid (*bromomethane*) (*including up to 2% chloropicrin*).	Highly toxic, 60.	Poison	Nonflammable gas; Poison gas.	No exemption, 173.353.	55 gallons	Not permitted.	55 gallons	1. Stow away from living quarters. Segregation same as for nonflammable gas. Not permitted on passenger vessels.
Methyl butene	Flammable liquid, 30.	Flammable liquid.		No exemption, 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Not permitted on passenger vessels.
Methyl butyrate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Methyl cellosolve. See Ethylene glycol monomethyl ether.								
Methyl cellosolve acetate. See Ethylene glycol monomethyl ether acetate.								
Methyl chloride	Flammable gas, 23.	Flammable gas.	Flammable gas.	173.306, 173.304, 173.314, 173.315.	300 pounds	Not permitted.	300 pounds	1,2. Not permitted on passenger vessels.
Methyl chloride-methylene chloride mixture.	*Flammable gas, 23.*	*Flammable gas.*	*Flammable gas.*	173.306, 173.304, 173.314.	300 pounds	Not permitted.	300 pounds	1,2. Not permitted on passenger vessels.
Methyl chlorocarbonate. *See* Methyl chloroformate.								
Ⓐ Methyl chloroform	ORM-A	None		173.505, 173.510, 173.605.		10 gallons	55 gallons	
Methyl chloroformate	Flammable liquid, 32.	Flammable liquid and Poison.	Flammable liquid; Flammable liquid, Poison, *and Corrosive.*	No exemption, 173.288.	5 pints	Not permitted.	5 pints	1,2. Passenger vessels; 1.
Methylchloromethyl ether, anhydrous.	Flammable liquid, 32.	Flammable liquid and Poison;	Flammable liquid.	No exemption, 173.143.	Not permitted.	Not permitted.	Not permitted.	1. Keep cool. Not permitted on passenger vessels.

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Methylcyclohexane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels; 1.
Methylcyclopentane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Methyl dichloroacetate	Corrosive material, 80.	Corrosive		173.244, 173.245.	1 quart	1 quart	1 quart	1,2.
Methyldichloroarsine	Extremely toxic, 62.	Poison		No exemption, 173.328.	Not permitted.	Not permitted.	Not permitted.	1. Shade from radiant heat. Not permitted on passenger vessels.
Methyl dichlorosilane	Flammable liquid, 31.	Flammable liquid.	Flammable liquid: Flammable liquid and Corrosive	No exemption, 173.136.	10 gallons	Not permitted.	5 pints	1,2. Passenger vessels; 1.
Methylene chloride. *See* Dichloromethane.								
Methyl ethyl ketone	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels; 1.
Methyl ethyl ketone peroxide solution, *not over 60% peroxide.*	Organic peroxide, 59.	Organic peroxide.	Organic peroxide.					
Methyl ethyl pyridine	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	1 quart	1,2.
Methyl formate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Methylfuran	Flammable liquid, 30.	Flammable liquid.		173.118(a) 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Methyl hydrate. *See* Alcohol, n.o.s.								
Methylhydrazine	Flammable. liquid, 36	Flammable liquid and Poison.	Flammable liquid: Flammable liquid and Corrosive	No exemption, 173.145.	5 pints	Not permitted.	5 pints	1,2. Passenger vessels; 1. Stow separate from oxidizing materials and corrosives.
Methyl isobutyl ketone peroxide solution, *not over 68% peroxide.*	Organic peroxide, 57.	Organic peroxide.	Organic peroxide.					
Methyl isopropenyl ketone, inhibited.	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	1 gallon	1,2. Passenger vessels: 1.
Methyl magnesium bromide in ethyl ether *not over 40% concentration.*	Flammable liquid, 30.	Flammable liquid.	Spontaneously combustible material.	No exemption, 173.149.	Not permitted.	Not permitted.	Not permitted.	1. Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials or organic peroxides.
Methyl mercaptan	Flammable gas, 24.	Flammable gas	Flammable gas	173.306, 173.304, 173.314, 173.315.	300 pounds	Not permitted.	300 pounds	1,2. Passenger vessels: 1.
Methyl methacrylate monomer, inhibited.	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Methyl methacrylate monomer, uninhibited (*high purity, if acceptable under § 173.21 of this subchapter*).	Flammable liquid, 34.	Flammable liquid.		173.118, 173.119.	10 gallons	Not permitted.	Not permitted.	1,2. Passenger vessels: 1.
Methyl norbornene dicarboxylic anhydride. *See* Mentetrahydro phthalic anhydride.								
Methyl parathion, liquid	Highly toxic, 60.	Poison	Poison	No exemption, 173.358a.	1 quart	Not permitted.	1 quart	1,2. Shade from radiant heat.
*Methyl parathion mixture, dry (containing not more than 2% methyl parathion).	Highly toxic, 60.	Poison		173.377a, 173.372b.	200 pounds	50 pounds	200 pounds	1,2.
Methyl parathion mixture, dry, (*containing over 2% methyl parathion*).	Highly toxic	Poison		No exemption, 173.377a.	200 pounds	Not permitted.	200 pounds	1,2.
Methyl parathion mixture, liquid, (containing 25% or less methyl parathion).	Highly toxic	Poison		173.359a	1 quart	½ pint	1 quart	1,2.
Methyl parathion mixture, liquid, (*containing over 25% methyl parathion*).	Highly toxic	Poison		No exemption, 173.359a.	1 quart	Not permitted.	1 quart	1,2. Shade from radiant heat.
Methylpentadiene	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Passenger vessels: 1.
Methyl pentane	Flammable liquid, 30.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Methyl phosphonothioic dichloride, anhydrous.	Corrosive material, 81.	Corrosive		173.244, 173.245, 173.245a	5 pints	1 quart	5 pints	1. Not permitted on passenger vessels.
Methyl phosphonous dichloride. *See* Corrosive liquid, n.o.s.	Corrosive material, 81.	Corrosive		173.244, 173.245, 173.245a.	5 pints	1 quart	5 pints	1. Not permitted on passenger vessels.
Methyl propionate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Passenger vessels: 1.
Methyl propyl ketone	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Passenger vessels: 1.
Methyl sulfate. *See* Dimethyl sulfate.								
Methyl sulfide	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	No exemption, 173.119.	10 gallons	Not permitted.	10 gallons	1,2.Not permitted on passenger vessels. Keep cool.
Methyltrichlorosilane	Flammable liquid, 31.	Flammable liquid.	Flammable liquid; Flammable liquid and Corrosive.	No exemption, 173.135.	10 gallons	Not permitted.	5 pints	1,2. Passenger vessels; 1.

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Methyl vinyl ketone, inhibited.	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.147	10 gallons	4 ounces	1 gallon	1,2. Passenger vessels: 1.
Mild detonating fuse, metal clad. See Fuse, mild detonating, metal clad.								
Mine rescue equipment containing carbon dioxide.	Nonflammable gas, 20.	Nonflammable gas.		173.306(a)(2).	300 pounds	150 pounds	300 pounds	1,2.
Mine, empty				173.55				
Mine, explosive, with gas material. See Explosive mine.								
*Mining reagent, liquid (containing 40% or more cresylic acid).	Corrosive material.	Corrosive		173.244, 173.245, 173.249a.	10 gallons	1 quart	1 quart	1,2.
Ⓐ Mipafox	ORM-A	None		173.505, 173.510.				
Mixed acid. See Nitrating (mixed) acid.								
Ⓐ Molybdenum pentachloride.	ORM-B	None		173.505, 173.510, 173.800.		25 pounds	100 pounds	
Monobromotrifluoromethane.	Nonflammable gas, 20.	Nonflammable gas.		173.306, 173.304, 173.314.	300 pounds	150 pounds	300 pounds	1,2.
*Monochloroacetic acid solution.	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.294.	1 quart	1 quart	1 quart	1,2. Glass carboys in hampers not permitted under deck.
Monochlorodifluoromethane.	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.304, 173.314, 173.315.	300 pounds	150 pounds	300 pounds	1,2.
Monochloroethylene. See Vinyl chloride.								
Monochloropentafluoroethane.	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.304.	300 pounds	150 pounds	300 pounds	1,2.
Monochlorotetrafluoroethane.	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.304, 173.314.	300 pounds	150 pounds	300 pounds	1,2.
Monochlorotrifluoromethane.	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.304.	300 pounds	150 pounds	300 pounds	1,2.
Monoethylamine	Flammable liquid, 31.	Flammable liquid.	Flammable gas.	173.118(a), 173.148.	10 gallons	Not permitted.	5 pints	1,2. Segregation same as for flammable gas. Not permitted on passenger vessels.
Monoethanolamine	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	1 quart	1,2.
*Monoethanolamine solution.	Corrosive material.	Corrosive		173.244, 173.245.	10 gallons	1 quart	1 quart	1,2.
Monofluorophosphoric acid, anhydrous.	Corrosive material, 80.	Corrosive	Corrosive	No exemption, 173.275.	1 gallon	Not permitted.	1 gallon	1,2. Keep dry.
Monomethylamine, anhydrous.	Flammable gas, 24.	Flammable gas.	Flammable gas.	173.306, 173.304, 173.314, 173.315.	300 pounds	Not permitted.	300 pounds	1,2. Not permitted on passenger vessels.
*Monomethylamine, aqueous solution.	Flammable liquid, 31.	Flammable liquid.	Flammable liquid.	173.118, 173.119 (m).	10 gallons	1 quart	5 pints	1,2. Keep cool. Stow away from mercury and its compounds. Not permitted on passenger vessels.
Mortar stain, liquid	Combustible liquid.	None		173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Motar stain, liquid	Flammable liquid.	Flammable liquid.		173.118, 173.128.	55 gallons	1 quart	55 gallons	1, 2. Passenger vessels: 1.
Moth balls. See Naphthalene.								
Motion picture film. See Film.								
Motor fuel antiknock compound.	Extremely toxic, 67.	Poison	Poison	No exemption, 173.354.	55 gallons	Not permitted.	55 gallons	1. If flashpoint less than 141°F., segregation same as for flammable liquids. Not permitted on passenger vessels.
*Motor fuel n.o.s.	Combustible liquid, 30.	None		173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Motor fuel, n.o.s.	Flammable liquid, 30.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Motor, internal combustion				173.120.				
Motor vehicle, *etc., including automobile, motorcycle, truck, tractor, and other self-propelled vehicle or equipment powered by internal combustion engine, when offered new or used for transportation and which contain fuel in the engine or fuel tank or the electric storage battery is connected to either terminal of the electrical system.*				173.257, 173.306.				1,2. Not permitted in nonventilated containers.
Muriatic acid. See Hydrochloric (muriatic) acid.								
*Naphtha	Combustible liquid, 30.	None		173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Naphtha	Flammable liquid, 30.	Flammable liquid.		173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Naphtha distillate	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Naphtha distillate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119,	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.

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Ⓐ Ⓦ Naphthalene or Naphthalin.	ORM-A	None	Flammable solid.	173.505, 173.655.		25 pounds	300 pounds	1,2. Segregation same as for flammable solids.
*Naphtha, petroleum: See *Petroleum naphtha.								
*Naphtha, solvent	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	See § 176.300. Passenger vessels: 1,2.
*Naphtha, solvent	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Natural gasoline. See Gasoline.								
Neohexane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Neon	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.302.	300 pounds	150 pounds	300 pounds	1,2.
New explosive or explosive device.				173.51(g), 173.86.				
Nickel carbonyl	Extremely toxic, 65	Poison and Flammable liquid.	Flammable liquid: Flammable liquid and Poison.	No exemption, 173.126.	Not permitted.	Not permitted.	Not permitted.	1. Keep cool. Not permitted on a vessel carrying explosives. Segregation same as for flammable liquids. Not permitted on passenger vessels.
Nickel catalyst, wet, *finely divided, activated, or spent.*	Flammable solid.	Flammable solid.	Spontaneously combustible material.	No exemption, 173.233.	100 pounds	Not permitted.	100 pounds	1,2. Passenger vessels: 1. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
Nickel cyanide, solid	Highly toxic, 60.	Poison	Poison	173.370	200 pounds	25 pounds	200 pounds	1,2. Stow away from acids.
Nicotine hydrochloride	Highly toxic, 62.	Poison	Poison	173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2.
Nicotine, liquid	Extremely toxic, 62.	Poison	Poison	No exemption, 173.358.	Not permitted.	Not permitted.	55 gallons	1,2.
Nicotine salicylate	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
*Nicotine sulfate, liquid	Highly toxic, 60.	Poison	Poison	173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2.
Nicotine sulfate, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Nicotine tartrate	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Nitrate of ammonia explosives. See High explosive.								
*Nitrate, n.o.s.	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2.
Nitrating (*mixed*) acid	Oxidizing material, 51.	Oxidizer	Corrosive	No exemption, 173.267.	2½ pints	Not permitted.	1 quart	1. Segregation same as for corrosive materials. Not permitted on passenger vessels.
Nitrating (*mixed*) acid, spent.	Oxidizing material, 51.	Oxidizer	Corrosive	No exemption, 173.248.	1 quart	Not permitted.	1 quart	1. Segregation same as for corrosive materials. Not permitted on passenger vessels.
Nitric acid	Oxidizing material, 53.	Oxidizer and Corrosive.	Corrosive	No exemption, 173.268.	5 pints	Not permitted.	5 pints	1. Segregation same as for corrosive materials. Stow away from hydrazine, separated from diethylenetriamine. Not permitted on passenger vessels.
Nitric acid, fuming	Oxidizing material, 53.	Oxidizer and Corrosive.	Corrosive material; Corrosive and Oxidizer.	No exemption. 173.268.	Not permitted.	Not permitted.	Not permitted.	1. Segregation same as for corrosive materials. Stow away from hydrazine, separated from diethylenetriamine. Not permitted on passenger vessels.
Nitric ether. See Ethyl nitrate.								
Nitric oxide	Nonflammable gas, 26	Nonflammable gas and Poison.	Nonflammable gas; Poison gas and Oxidizer.	No exemption, 173.337.	Not permitted.	Not permitted.	Not permitted.	1. Not permitted on passenger vessels.
Nitrobenzol, liquid (*oil of mirbane, nitrobenzene*).	Flammable liquid, 34.	Flammable liquid.	Poison	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Segregation same as for poisons.
Nitro carbo nitrate	Oxidizing material, 54.	Oxidizer		173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2.
Nitrocellulose, colloided, granular or flake, wet with not less than 20% alcohol or solvent, or block, wet with not less than 25% alcohol.	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118, 173.127.	25 pounds	1 quart	25 pounds	1,2. Passenger vessels: 1.
Nitrocellulose, colloided, granular or flake, wet with not less than 20% water.	Flammable solid, 40.	Flammable solid.	Flammable solid.	173.153, 173.184.	100 pounds	25 pounds	100 pounds	1.
Nitrocellulose, dry. See High explosive.								
Nitrocellulose flakes, wet with not less than 20% alcohol or solvent.	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118, 173.127.	25 pounds	1 quart	25 pounds	1,2. Passenger vessels: 1.
Nitrocellulose, wet with not less than 30% alcohol or solvent.	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118, 173.127.	25 pounds	1 quart	25 pounds	1,2. Passenger vessels: 1.
Nitrocellulose, wet with not less than 20% water.	Flammable solid, 40.	Flammable solid.	Flammable solid.	173.153, 173.184.	100 pounds	25 pounds	100 pounds	1. Not permitted on passenger vessels.
Nitrochlorobenzene, ortho, liquid.	Highly toxic, 60.	Poison	Poison	173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2.
Nitrochlorobenzene, meta or para, solid.	Highly toxic, 60.	Poison	Poison	173.364, 173.374.	200 pounds	50 pounds	200 pounds	1,2.
Nitrogen	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.302, 173.314.	300 pounds	150 pounds	300 pounds	1,2.

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Nitrogen dioxide, liquid	Oxidizing material, 53.	Oxidizer and Poison.	Nonflammable gas; Poison gas and Oxidizer.	No exemption, 173.336	Not permitted.	Not permitted.	Not permitted.	1. Segregation same as for nonflammable gases. Stow away from organic materials. Not permitted on passenger vessels.
Nitrogen fertilizer solution	Nonflammable gas.	Nonflammable gas.		173.306, 173.304, 173.314.	300 pounds.	150 pounds.	300 pounds.	1,3.
Nitrogen, cryogenic liquid	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	No exemption, 173.304.	300 pounds.	Not permitted.	300 pounds.	1,3.
Nitrogen peroxide, liquid	Oxidizing material, 53.	Oxidizer and Poison.	Nonflammable gas; Poison gas and Oxidizer.	No exemption, 173.336.	Not permitted.	Not permitted.	Not permitted.	1. Segregation same as for nonflammable gas. Stow away from organic materials. Not permitted on passenger vessels.
Nitrogen tetroxide, liquid	Oxidizing material, 53.	Oxidizer and Poison.	Nonflammable gas; Poison gas and Oxidizer.	No exemption, 173.336.	Not permitted.	Not permitted.	Not permitted.	1. Segregation same as for nonflammable gases. Stow away from organic materials. Not permitted on passenger vessels.
Nitrogen tetroxide-nitric oxide mixture, *containing up to 33.2% by weight nitric oxide.*	Oxidizing material, 53.	Oxidizer and Poison.	Nonflammable gas; Poison gas and Oxidizer.	No exemption, 173.336.	Not permitted.	Not permitted.	Not permitted.	1. Segregation same as for nonflammable gases. Stow away from organic materials. Not permitted on passenger vessels.
Nitroglycerin, liquid, undesensitized.				Forbidden, 173.51(d).				
Nitroglycerin, liquid, desensitized. See High explosive, liquid.								
Nitroglycerin, spirits of. See Spirits of nitroglycerin.								
Nitroguanidine, dry. See High explosive.								
Nitroguanidine, wet with not less than 20% water.	Flammable solid, 40.	Flammable solid.	Flammable solid.	173.153, 173.154.	100 pounds.	25 pounds.	100 pounds.	1,2. Not permitted on passenger vessels.
Nitrohydrochloric acid	Corrosive material, 80.	Corrosive	Corrosive	No exemption, 173.278.	5 pints	Not permitted.	5 pints	1. Not permitted on passenger vessels.
*Nitrohydrochloric acid, diluted.	Corrosive material, 80.	Corrosive		No exemption, 173.278.	5 pints	Not permitted.	5 pints	1. Not permitted on passenger vessels.
Nitromannite. See High explosive.								
Nitromethane	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118, 173.149a.	10 gallons	1 quart	10 gallons	1,2. *See* § 173.300.
Nitromuriatic acid. *See* Nitrohydrochloric acid.								
Nitrosoguanidine. *See* Initiating explosive.								
Nitrostarch, dry. *See* High explosive.								
Nitrostarch, wet with not less than 30% alcohol or solvent.	Flammable liquid, 34.	Flammable liquid.		173.118, 173.127.	25 pounds	1 quart	25 pounds	1,2. Passenger vessels: 1.
Nitrostarch, wet with not less than 20% water.	Flammable solid, 48.	Flammable solid.	Flammable solid.	173.153, 173.154.	100 pounds.	25 pounds.	100 pounds.	1. Not permitted on passenger vessels.
Nitrosyl chloride	Nonflammable gas, 21.	Nonflammable gas.	Nonflammable gas; Poison gas and Corrosive.	173.306, 173.304, 173.314.	300 pounds.	Not permitted.	300 pounds.	1. Not permitted on passenger vessels.
Nitrourea. See High explosive.								
Nitrous oxide	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas; Nonflammable gas and Oxidizer.	173.306, 173.304, 173.315.	300 pounds.	150 pounds.	300 pounds.	1,2. Under deck stowage must be in well-ventilated space.
Nitroxylol	Highly toxic, 60.	Poison		173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2. Passenger vessels: 1.
Nonliquefied gas. See Compressed gas, n.o.s.								
Nonliquefield hydrocarbon gas.	Flammable gas, 23.	Flammable gas.	Flammable gas.	173.306, 173.302.	300 pounds.	Not permitted.	300 pounds.	1,2. Passenger vessels: 1.
Nonyl trichlorosilane	Corrosive material, 83.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry.
Nordhausen acid. *See* Sulfuric acid.								
® Oakum	ORM-C	None		173.505, 173.1030.				1,2.
Octadecyltrichlorosilane	Corrosive material, 83.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry.
Octane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
n-octanoyl peroxide	Organic peroxide, 58.	Organic peroxide.						
Octyl trichlorosilane	Corrosive material, 83.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry.
*Oil, *described as oil*, oil, n.o.s., petroleum oil, *or* petroleum oil, n.o.s.	Combustible liquid, 30.	None		173.118a, 173.119a.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Oil, *described as oil*, oil, n.o.s., petroleum oil, *or* petroleum oil, n.o.s.	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.

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Oiled clothing (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material.								
Oiled paper (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material.								
Ⓐ Ⓦ Oiled material (*manufactured article properly dried to prevent spontaneous heating*).	ORM-C	None		173.505, 173.1035.				1,2. Keep cool.
Oil of mirbane. *See* Nitrobenzol, liquid.								
Oil of vitriol. *See* Sulfuric acid.								
Oil well cartridge	Class C explosive, 15.	Class C explosive.		No exemption, 173.112.	150 pounds	50 pounds	150 pounds	1,3.
Oleum (*sulfuric acid fuming*)	Corrosive material, 84.	Corrosive	Corrosive	No exemption, 173.272.	10 pints	Not permitted.	5 pints	1,2. Passenger vessels: 1. Under deck stowage must be in metal drums only. Keep dry.
*Organic phosphate liquid, n.o.s.	Extremely toxic.	Poison	Poison	No exemption, 173.358.	Not permitted.	Not permitted.	1 quart	1,2. Not permitted on passenger vessels.
*Organic phosphate liquid, n.o.s.	Highly toxic	Poison	Poison	No exemption, 173.358a.	1 quart	Not permitted.	1 quart	1,2. Not permitted on passenger vessels.
*Organic phosphate compound mixture, dry, n.o.s. (containing not more than 2% organic phosphate).	Highly toxic	Poison	Poison	173.377a, 173.377b.	200 pounds	50 pounds	200 pounds	1,2. Not permitted on passenger vessels.
*Organic phosphate compound mixture, dry, n.o.s. (*containing more than 2% organic phosphate*).	Extremely toxic.	Poison	Poison	No exemption, 173.377.	Not permitted.	Not permitted.	200 pounds	1,2. Not permitted on passenger vessels.
*Organic phosphate compound mixture, dry, n.o.s. (*containing more than 2% organic phosphate*).	Highly toxic	Poison	Poison	No exemption, 173.377a.	200 pounds	Not permitted.	200 pounds	1,2. Not permitted on passenger vessels.
Organic phosphate compound, dry, n.o.s. *See appropriate entry:* "Organic phosphate compound mixture, dry, n.o.s."								
*Organic phosphate compound mixture, liquid, n.o.s.	Extremely toxic.	Poison	Poison	No exemption, 173.359.	Not permitted.	Not permitted.	1 quart	1,2. Not permitted on passenger vessels.
*Organic phosphate compound mixture, liquid, n.o.s.	Highly toxic	Poison	Poison	No exemption, 173.359a.	1 quart	Not permitted.	1 quart	1,2. Not permitted on passenger vessels.
*Organic phosphate compound mixture, liquid, n.o.s., containing 25% or less organic phosphate.	Highly toxic	Poison		173.359a	1 quart	½ pint	1 quart	1,2. Not permitted on passenger vessels.
*Organic phosphate compound mixture, liquid, n.o.s., containing 25% or less organic phosphate.	Extremely toxic.	Poison		No exemption, 173.359.	Not permitted.	Not permitted.	1 quart	1,2. Not permitted on passenger vessels.
*Organic phosphate, n.o.s. mixed with compressed gas.	Nonflammable gas, 26.	Nonflammable gas and Poison.		No exemption, 173.334.	Not permitted.	Not permitted.	Not permitted.	1. Shade from radiant heat. Not permitted on passenger vessels.
Orthonitroaniline	Highly toxic, 60.	Poison	Poison	173.364, 173.373.	200 pounds	50 pounds	200 pounds	1,2.
Ⓐ Other Regulated Materials, Group A, n.o.s.	ORM-A	None		173.505, 173.510.				
Ⓐ Other Regulated Material, Group B, n.o.s.	ORM-B	None		173.525, 173.510.				
Ⓐ Other Regulated Material, Group D.	ORM-D	None		173.510 and applicable section according to class	65 pounds	65 pounds	65 pounds	
Oxide, spent. *See* Iron mass or sponge, spent.								
Oxidizing material, n.o.s.	Oxidizing material.	Oxidizer	Oxidizing material.	173.153, 173.154, 173.152(a)	25 pounds	25 pounds	25 pounds	1,2.
Oxidizing material packed with other articles.								
Oxygen	Nonflammable gas, 22.	Oxidizer	Nonflammable gas; Nonflammable gas and Oxidizer.	173.306, 173.302, 173.314.	300 pounds	150 pounds	300 pounds	1,2. Under deck stowage must be in well ventilated space.
Oxygen, cryogenic liquid	Nonflammable gas, 22.	Oxidizer	Nonflammable gas; Nonflammable gas and Oxidizer.	No exemption, 173.304.	300 pounds	Not permitted.	Not permitted.	1,3. Stow separate from acetylene. Do not overstow with other cargo.
*Paint drier, liquid	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Paint drier, liquid	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.128.	55 gallons	1 quart	55 gallons	1,2. Passenger vessels: 1.
*Paint, enamel, lacquer, stain, shellac, or varnish; aluminum, bronze, gold, wood filler, liquid or lacquer base, liquid.	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.

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*Paint, enamel, lacquer stain, shellac, or varnish; aluminum, bronze, gold, wood filler, liquid, or lacquer base, liquid.	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.128.	55 gallons	1 quart	55 gallons	1,2. Passenger vessels: 1.
*Paint, reducing or thinning compound. See *Compound, lacquer, paint, or varnish, reducing or thinning liquid, etc.								
Paper caps. See Toy caps.								
Ⓜ Paper scrap (when dry, clean, and free from oil).	ORM-C	None		173.505, 173.1075.				1,2.
Paper stock, wet	Flammable solid, 40.	Flammable solid.	Spontaneously combustible material.	No exemption, 173.185.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
Paper waste, wet. See Waste paper, wet.								
Paper waste (when dry, clean, and free from oil). See Paper scrap.								
p-chlorobenzoyl peroxide paste, not over 52% concentration.	Organic peroxide, 57.	Organic peroxide.						
p-chlorobenzoyl peroxide solution, not over 52% concentration.	Organic peroxide, 57.	Organic peroxide.						
p-chlorobenzoyl peroxide, wet, not over 75% concentration.	Organic peroxide, 57.	Organic peroxide.						
Paraldehyde	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	55 gallons	1 quart	55 gallons	1,2. See § 176.300.
Paramenthane hydroperoxide.	Organic peroxide, 57.	Organic peroxide.	Organic peroxide.					
Paranitraniline or paranitroaniline, solid.	Highly toxic, 60.	Poison	Poison	173.364, 173.373.	200 pounds	50 pounds	200 pounds	1,2.
Parathion and compressed gas mixture.	Nonflammable gas, 20.	Nonflammable gas and Poison.	Poison	No exemption, 173.334.	Not permitted.	Not permitted.	Not permitted.	1,2. Shade from radiant heat.
Parathion, liquid	Extremely toxic, 64.	Poison	Poison	No exemption, 173.358.	Not permitted.	Not permitted.	1 quart	1,2. Shade from radiant heat.
*Parathion mixture, dry, (containing not more than 2% parathion).	Highly toxic, 60.	Poison	Poison	173.377a, 173.377b	200 pounds	50 pounds	200 pounds	1,2. Shade from radiant heat.
Parathion mixture, dry (containing more than 2% parathion).	Extremely toxic, 62.	Poison	Poison	No exemption, 173.377.	Not permitted.	Not permitted.	200 pounds	1,2. Shade from radiant heat.
Parathion mixture, liquid	Extremely toxic.	Poison	Poison	No exemption, 173.359.	Not permitted.	Not permitted.	1 quart	1,2. Shade from radiant heat.
Paris green, solid. See Copper acetoarsenite, solid.								
Pelargonyl peroxide	Organic peroxide, 58.	Organic peroxide.						
Pentaborane	Extremely toxic, 65.	Poison and flammable liquid.	Spontaneously combustible material.	No exemption, 173.188.	Not permitted.	Not permitted.	Not permitted.	1. Segregation same as for flammable solids. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
Pentachlorophenol	Highly toxic, 60.	Poison	Poison	173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2.
Pentaerythrite tetranitrate. See Initiating explosive.								
Pentaerythrite tetranitrate, desensitized, wet. See High explosive.								
Pentane	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118(a), 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Pentolite, dry. See High explosive.								
Peracetic acid solution, not over 43% peracetic acid and not over 6% hydrogen peroxide.	Organic peroxide, 57.	Organic peroxide.	Organic peroxide; Organic peroxide Corrosive.	173.223	5 pints	1 pint	5 pints	1. Shade from radiant heat. Not permitted on passenger vessels.
*Perchlorate, n.o.s.	Oxidizing material.	Oxidizer	Oxidizing material.	173.153, 173.154.	100 pounds	25 pounds	100 pounds	1,3. Stow away from powdered metals.
Perchloric acid exceeding 72% strength.				Forbidden				
Perchloric acid, exceeding 50% but not exceeding 72% strength.	Oxidizing material, 55.	Oxidizer	Corrosive material; Corrosive and Oxidizer.	No exemption, 173.269.	5 pints	Not permitted.	5 pints	1. Not permitted on passenger vessels. Segregation same as for corrosive materials. Stow away from hydrazine.
*Perchloric acid, not exceeding 50% strength.	Oxidizing material, 55.	Oxidizer	Corrosive material; Corrosive and Oxidizer.	173.244(a)(1), 173.269.	5 pints	Not permitted.	5 pints	1. Segregation same as for corrosive materials. Stow away from hydrazine.
Perchloro-methyl-mercaptan.	Extremely toxic, 62.	Poison	Poison	173.345, 173.360.	Not permitted.	Not permitted.	10 pounds	1. Not permitted on passenger vessels.
Percussion cap	Class C explosive, 15.	Explosive C		No exemption, 173.107.	150 pounds	50 pounds	150 pounds	1,3.
Percussion fuze	Class C explosive, 15.	Explosive C		No exemption, 173.105.	150 pounds	50 pounds	150 pounds	1,3.

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Ⓐ Perfluoro-2-butene	ORM-A	None		173.505, 173.510, 173.605.		10 gallons	55 gallons	
Permanganate of potash. See Potassium permanganate.								
*Permanganate, n.o.s.	Oxidizing material.	Oxidizer	Oxidizing material.	173.153, 173.154.	100 pounds	25 pounds	100 pounds	1,2. Separate from ammonium compounds, hydrogen peroxide, and acids.
Ⓦ Pesticide, water reactive, *including but not limited to fungicides, and herbicides, etc., which contain manganese ethylenebisdithio carbamate.*	ORM-C	None		173.505, 173.1040.				2. Keep dry.
Ⓦ Petroleum coke (calcined).	ORM-C							Not subject to Parts 170-189 of this subchapter if shipped below 130° F. Shipments are permitted at higher temperatures only when specifically authorized in writing by the Department.
Ⓦ Petroleum coke (*uncalcined*).	ORM-C	None		173.505, 173.1045.				1,2. Not permitted if temperature of material is at or above 130° F.
Petroleum crude. See Crude oil.								
*Petroleum distillate	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	See § 176.300. Passenger vessels: 1,2.
*Petroleum distillate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Petroleum ether	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Petroleum gas, liquefied. See Liquefied petroleum gas.								
*Petroleum naphtha	Combustible liquid.	None		173.118a, 173.119a.		15 gallons	55 gallons	See § 176.300. Passenger vessels: 1,2.
*Petroleum naphtha	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ⓐ Phencapton	ORM-A	None		173.505, 173.510.				
Phenol. See Carbolic acid.								
Ⓐ Phenylenediamine, meta or para, solid.	ORM-A	None	Poison	173.505, 173.510.				
Phenyl trichlorosilane	Corrosive material, 83.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry.
Phosgene (diphosgene)	Nonflammable gas, 29.	Nonflammable gas and Poison.	Nonflammable gas; Poison gas and Corrosive.	No exemption, 173.333.	Not permitted.	Not permitted.	Not permitted.	1. Not permitted on passenger vessels.
Phosphine	Flammable gas, 29.	Flammable gas and Poison.		No exemption, 173.328.	Not permitted.	Not permitted.	Not permitted.	1. Not permitted on passenger vessels.
*Phosphoric acid (ortho) or Phosphoric acid solution.	Corrosive material, 80.	Corrosive	M.D.S., none	173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2. Glass carboys in hampers not permitted under deck.
Phosphoric acid triethylenolmine. *See* Tris-(1-aziridinyl phosphine oxide).								
Phosphoric anhydride (*phosphorus pentoxide*).	Corrosive material, 82.	Corrosive	Corrosive	No exemption, 173.188.	100 pounds	Not permitted.	100 pounds	1,2. Keep dry. Glass bottles not permitted under deck.
Phosphorus, amorphous, red.	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.189.	11 pounds	Not permitted.	11 pounds	1,2.
Phosphorus bromide. *See* Phosphorus tribromide.								
Phosphorus chloride. *See* Phosphorus trichloride.								
Phosphorus heptasulfide	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.225.	10 pounds	Not permitted.	10 pounds	1,2. Passenger vessels: 1 Separate from oxidizing materials.
Phosphorus oxybromide	Corrosive material, 82.	Corrosive	Corrosive	No exemption, 173.271.	1 quart	Not permitted.	1 quart	1. Keep dry. Glass carboys not permitted on passenger vessels.
Phosphorus oxychloride	Corrosive material, 82.	Corrosive	Corrosive	No exemption, 173.271.	1 quart	Not permitted.	1 quart	1. Keep dry. Glass carboys not permitted on passenger vessels.
Phosphorus pentachloride, solid.	Corrosive material, 84.	Corrosive	Corrosive	No exemption, 173.191.	5 pounds	Not permitted.	5 pounds	1. Keep dry.
Phosphorus pentasulfide	Flammable solid, 45.	Flammable solid, Poison, and Dangerous when wet.	Flammable solid.	No exemption, 173.225.	25 pounds	Not permitted.	11 pounds	1,2. Separate from oxidizing materials.
Phosphorus sesquisulfide	Flammable solid, 45.	Flammable solid, Poison and Dangerous when wet.	Flammable solid.	No exemption, 173.225.	11 pounds	Not permitted.	11 pounds	1,2. Passenger vessels: 1 Separate from oxidizing materials.
Phosphorus tribromide	Corrosive material, 82.	Corrosive	Corrosive	No exemption, 173.270.	1 quart	Not permitted.	1 quart	1. Keep dry. Glass carboys not permitted on passenger vessels.
Phosphorus trichloride	Corrosive material, 84.	Corrosive	Corrosive	No exemption, 173.271.	1 quart	Not permitted.	1 quart	1. Keep dry. Glass carboys not permitted on passenger vessels.
Phosphorus trisulfide	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.225.	10 pounds	Not permitted.	10 pounds	1,2. Passenger vessels: 1. Separate from oxidizing materials.

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Phosphorus, white or yellow, dry.	Flammable solid, 43.	Flammable solid and Poison.	Spontaneously combustible material.	No exemption, 173.190.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
Phosphorus, white or yellow, in water.	Flammable solid, 43.	Flammable solid and Poison.	Spontaneously combustible material.	No exemption, 173.190, 173.222.	25 pounds.	Not permitted.	25 pounds.	1,2. Separate from flammable gases or liquids, oxidizing materials or organic peroxides. Not permitted on passenger vessels.
Phosphoryl chloride. *See* Phosphorus oxychloride.								
Photographic film. *See* Film.								
Photographic flash lamp. (*Capable upon breakage of igniting flammable vapors or finely divided combustible substances.*)	ORM-C	None		No exemption, 173.1050.				1,2. Passenger vessels: 1.
Photographic flash powder. *See* Fireworks, special or Black powder.								
Picrate, dry. *See* High explosive.								
Picrate of ammonia. *See* High explosive.								
Picric acid, dry. *See* High explosive.				173.192.				
Picric acid, wet, not exceeding 16 ounces in one outside package.								
Picric acid, wet, with not less than 10% water, over 25 pounds. *See* High explosive.								
Picric acid, wet, with not less than 10% water, *in excess of 16 ounces but not exceeding 25 pounds in one outside package.*	Flammable solid, 48.	Flammable solid.	Flammable solid.	No exemption, 173.193	25 pounds.	1 pound.	25 pounds.	1. Under deck stowage permitted on cargo vessels if wet with more than 30% water. Not permitted on passenger vessels. Stow away from heavy metals and their compounds.
Pinane hydroperoxide.	Organic peroxide, 57.	Organic peroxide.						
Pine oil	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons.	55 gallons.	*See* § 176.300. Passenger vessels: 1,2.
Pinwheels. *See* Fireworks, common.								
Pivaloyl chloride. *See* Trimethyl acetylchloride.								
*Plastic solvent, n.o.s.	Combustible liquid, 30.	None		173.118a, 173.119b.		15 gallons.	55 gallons.	*See* § 176.300. Passenger vessels: 1,2.
*Plastic solvent, n.o.s.	Flammable liquid.	Flammable liquid.		173.118, 173.119.	10 gallons.	1 quart.	10 gallons.	1,2. Passenger vessels: 1.
*Plutoniumnitrate solution.	Radioactive material, 79.	Radioactive. (See § 172.403.)	Radioactive.	173.393, 173.395, 173.396.				1,2.
Poisonous liquid, n.o.s.	Highly toxic.	Poison	Poison	173.345, 173.346.	55 gallons.	1 quart.	55 gallons.	1,2. Passenger vessels: 1.
Poisonous solid, n.o.s.	Highly toxic.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2. Passenger vessels: 1.
*Polish, metal, stove, furniture or wood, liquid.	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons.	55 gallons.	*See* § 176.300. Passenger vessels: 1,2
*Polish, metal, stove, furniture or wood, liquid.	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.129.	55 gallons.	1 quart.	55 gallons.	1,2. Passenger vessels: 1.
**Polymerizable material.*				173.21(b).				
*Polystyrene beads	Flammable solid, 40.	Flammable solid.		173.153, 173.154.	25 pounds.	Not permitted.	25 pounds.	1,2.
Potassium arsenate, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Potassium arsenite, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
*Potassium bifluoride solution. *See* *Potassium hydrogen fluoride solution.								
Potassium bromate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.154.	100 pounds.	25 pounds.	100 pounds.	1,2. Separate from ammonium compounds. Stow away from powdered metals.
Potassium chlorate (*potash chlorate*).	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.163.	100 pounds.	25 pounds.	100 pounds.	1,2. Separate from ammonium compounds. Stow away from powdered metals.
Potassium cyanide, solid	Highly toxic, 60.	Poison	Poison	173.370	200 pounds.	25 pounds.	200 pounds.	1,2. Stow away from acids.
*Potassium cyanide solution.	Highly toxic, 60.	Poison	Poison	173.345, 173.352.	55 gallons.	1 quart.	55 gallons.	1,2. Stow away from acids.
Potassium dichloro-s-trinzinetrione, *dry (containing more than 39% available chlorine).*	Oxidizing material, 54.	Oxidizer		173.153, 173.217.	100 pounds.	50 pounds.	100 pounds.	1,2.
Ⓐ Potassium dichromate	ORM-A	None	M.D.S., none	173.505, 173.510.				
Ⓐ Potassium fluoride	ORM-A	None	Poison; Poison and Corrosive.	173.505, 173.510.				
*Potassium fluoride solution.	Corrosive material.	Corrosive		173.244, 173.249.	5 gallons	1 quart	5 gallons	1,2.
Potassium hydrate. *See* Caustic potash, dry, etc.								
*Potassium hydrogen fluoride solution.	Corrosive material.	Corrosive		173.244, 173.249.	5 gallons	1 quart	5 gallons	1,2.

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Ⓐ Potassium hydrogen sulfate, solid.	ORM–B	None		173.505, 173.510, 173.300.		25 pounds	100 pounds	
Potassium hydroxide, dry solid, flake, bead, *or* granular.	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245b.	100 pounds	25 pounds	100 pounds	1,2. Keep dry. Do not stow with metals or alloys such as brass, copper, tin, zinc, aluminum solder, or lead.
*Potassium hydroxide, liquid *or* solution.	Corrosive material.	Corrosive	Corrosive	173.244, 173.249.	10 gallons	1 quart	10 gallons	1,2.
*Potassium hypochlorite solution. *See* Hypochlorite solutions containing more than 7% available chlorine by weight.								
Ⓐ Potassium metabisulfite	ORM–B	None		173.505, 173.510.				
Potassium, metallic	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Potassium, metallic liquid alloy.	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.202.	1 pound	Not permitted.	1 pound	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Potassium nitrate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2.
Potassium nitrate mixed (*fused*) with sodium nitrite.	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.183.	100 pounds	25 pounds	100 pounds	1,2. Separate from ammonium compounds and cyanides. Stow away from foodstuffs.
Potassium nitrite	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.154.	100 pounds	25 pounds	100 pounds	1,2. Separate from ammonium compounds and cyanides. Stow away from foodstuffs.
Potassium perchlorate	Oxidizing material, 54.	Oxidizer	Oxidizing material.	173.153, 173.219.	100 pounds	25 pounds	100 pounds	1,3. Stow away from powdered metals.
Potassium permanganate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.154, 173.194.	100 pounds	25 pounds	100 pounds	1,2. Separate from ammonium compounds and hydrogen peroxide.
Potassium peroxide	Oxidizing material, 51.	Oxidizer	Oxidizing material.	No exemption, 173.154.	100 pounds	Not permitted.	100 pounds	1,2. Keep dry.
Potassium sulfide	Flammable solid, 40.	Flammable solid.	Spontaneously combustible material.	173.153, 173.207.	300 pounds	25 pounds	300 pounds	1,2. Separate from liquid acids, flammable gases or liquids, oxidizing materials or organic peroxides.
Pressurized product. See Compressed gas, n.o.s.								
Primer. See Cannon primer, combination primer, or small-arm primer.								
Primer, detonating. See Detonating primer.								
Projectile, explosive. See Explosive projectile.								
Projectile, gas, nonexplosive. See Chemical ammunition, containing Extremely Toxic, Highly Toxic, or Irritating Material.								
Projectile, gas, smoke, or incendiary, with burster or booster with or without detonating fuze. See Explosive projectile.								
Projectile, illuminating, incendiary or smoke, with expelling charge but without bursting charge. See Fireworks, special.								
Projectile, sand-loaded, empty or solid.				173.55				
Propane or Liquefied petroleum gas. See Liquefied petroleum gas.								
*Propellant explosive	Class A explosive, 19.	Explosive A		No exemption, 173.64 (d).	173.86	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
*Propellant explosive, liquid.	Class B explosive, 17.	Explosive B		No exemption, 173.93.	10 pounds	Not permitted.	10 pounds	Magazine or 1,2. Not permitted on passenger vessels.
*Propellant explosive, solid.	Class B explosive, 17.	Explosive B		No exemption, 173.93.	10 pounds	Not permitted.	10 pounds	Magazine or 1,3. Not permitted on passenger vessels.
Propellant explosive (*solid, Class B, and small-arms primer*). *See* *Propellant explosive, solid.								
Propellant explosive in water (*smokeless powder*).	Class B explosive, 17.	Explosive B		No exemption, 173.93.	Not permitted.	Not permitted.	Not permitted.	Magazine or 1,3. Not permitted on passenger vessels.
Propellant explosive in water, unstable, condemned, or deteriorated (*smokeless powder*):	Class B explosive, 17.	Explosive B		No exemption, 173.93.	Not permitted.	Not permitted.	Not permitted.	Magazine or 1,3. Not permitted on passenger vessels.
Propionaldehyde	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.

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Propionic acid	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245.	5 gallons	1 quart	5 gallons	1,2. Separated by a complete compartment or hold from organic peroxides. Separate longitudinally by a complete compartment or hold from explosives.
*Propionic acid solution	Corrosive material.	Corrosive	Corrosive	173.244, 173.245.	10 gallons	1 quart	10 gallons	1,2. Separated by a complete compartment or hold from organic peroxides. Separate longitudinally by a complete compartment or hold from explosives.
Propionic anhydride	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245.	10 gallons	1 quart	1 quart	1,2. Keep dry. Passenger vessels: 1.
Propionyl peroxide solution, *not over 25% concentration.*	Organic peroxide, 55.	Organic peroxide.						
Propyl acetate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Propylamine	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	No exemption, 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
*Propyl alcohol. *See* Alcohol, n.o.s.								
Propyl chloride	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	No exemption, 173.119.	10 gallons	Not permitted.	10 gallons	1,2. Keep cool. Not permitted on passenger vessels.
Propylene or Liquefied petroleum gas. *See* Liquefied petroleum gas.								
Propylene diamine	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	1 quart	1,2.
Propylene dichloride	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Propylene imine, inhibited	Flammable liquid, 24.	Flammable liquid.	Flammable liquid.	No exemption, 173.139.	5 pints	Not permitted.	5 pints	1,2. Passenger vessels: 1.
Propylene oxide	Flammable liquid, 35.	Flammable liquid.	Flammable liquid.	173.118, 173.119 (m).	10 gallons	Not permitted.	1 gallon	1,2. Keep cool. Not permitted on passenger vessels.
Propyl formate	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Propyl mercaptan	Flammable liquid, 30.	Flammable liquid.		No exemption, 173.141.	10 gallons	Not permitted.	10 gallons	1,2. Not permitted on passenger passenger vessels.
Propyl trichlorosilane	Corrosive material, 83.	Corrosive	Corrosive	No exemption, 173.280.	10 gallons	Not permitted.	10 gallons	1. Keep dry. Separate longitudinally by intervening compartment or hold from explosives.
Prussic acid. See Hydrocyanic acid (*prussic*), liquid *or* unstablized.								
Pyridine	Flammable liquid, 30.	Flammable liquid.	Flammable liquid; Flammable liquid and Poison.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Pyrophoric liquid, n.o.s.	Flammable liquid, 38.	Flammable liquid.		No exemption, 173.134.	70 pounds	Not permitted.	Not permitted.	1. Shade from radiant heat. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
Pyrophoric solid, n.o.s.	Flammable solid.	Flammable solid.		No exemption, 173.154.	70 pounds	Not permitted.	Not permitted.	1. Shade from radiant heat. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
Pyro sulfuryl chloride	Corrosive material, 82.	Corrosive	Corrosive	173.244, 173.247.	1 quart	1 quart	1 quart	1. Keep dry. Glass carboys not permitted on passenger vessels.
Pyroxylin plastic scrap	Flammable solid, 40.	Flammable solid.		No exemption, 173.195.	173.195(c)	Not permitted.	Not permitted.	1. Shade from radiant heat. Not permitted on passenger vessels.
Pyroxylin plastics, rods, sheets, rolls, or tubes.	Flammable solid, 40.	Flammable solid.		173.197	350 pounds	50 pounds	350 pounds	1,3. Passenger vessels: 1. Keep cool.
*Pyroxylin solution	Combustible liquid, 30.	None	Flammable solid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Pyroxylin solution	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Pyroxylin solvent, n.o.s.	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels 1,2.
*Pyroxylin solvent, n.o.s.	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Pyrrolidine	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Quicklime. *See* Calcium oxide.								
Radioactive device, n.o.s.	Radioactive material (None).	None	Radioactive: None.	173.391(b)				1,2.
*Radioactive material, fissile, n.o.s.	Radioactive material 70 or 71 (§ 172.100(b)(1)).	Radioactive. (*See* § 172.403.)		173.393, 173.396.				1,2.
*Radioactive material, low specific activity *or* LSA, n.o.s.	Radioactive material 70 or 71 (§172. 100 (b)(1)).	Radioactive. (See §172.403.)	Radioactive; Radioactive Full load: No label.	173.392, 173.393.				1,2.

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*Radioactive material, n.o.s.	Radioactive material 70 or 71 (172.100 (b) (1)).	Radioactive (See §172.403.)		173.393, 173.395.				1,2.
Radioactive material, small quantity, n.o.s.	Radioactive material (none).	None	Radioactive; None.	173.391(a)				1,2.
* Radioactive material, special form, n.o.s.	Radioactive material 70 or 71 (§172.100 (b)(1)).	Radioactive. (See §172.403.)	Radioactive. Radioactive.	173.393, 173.394.				1,2.
Rags, oily	Flammable solid, 40.	Flammable solid.	Spontaneously combustible material.	No exemption, 173.199.	Not permitted.	Not permitted.	Not permitted.	1,2. Keep dry, Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
Ⓜ Rags, scrap (*when dry and free from oil*).	ORM-C	None		173.505, 173.1055.				1,3.
Rags, wet	Flammable solid 40.	Flammable solid.	Spontaneously combustible material.	No exemption, 173.200.	Not permitted.	Not permitted.	Not permitted.	1. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
Railway fusee. See Fusee. Railway torpedo. *See* Torpedo, railway. Range oil. *See* Fuel oil.								
**Reducing compound, paint, varnish, lacquer, etc. See* *Compound, lacquer, paint, or varnish, etc., removing, reducing, or thinning, liquid.								
Refrigerant gas				173.314(c) Table, Note 13; 173.315 (a) Table Note 9.				
*Refrigerating machine	Nonflammable gas.	Nonflammable gas.		173.306(e)				1,3.
*Refrigerating machine	Flammable gas.	Flammable gas.		173.306(e)				1,3.
*Refrigerating machine	Flammable liquid.	Flammable liquid.		173.130 173.306 (e).				1,2. Passenger vessels: 1.
**Removing compound, paint, varnish, lacquer, etc., See* *Compound, lacquer, paint, or varnish, etc., removing reducing, or thinning, liquid.								
*Resin solution (*resin compound, liquid*).	Combustible liquid, 30.	None	Flammable liquid.	173.118a 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Resin solution (*resin compound, liquid*).	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	55 gallons	1 quart	55 gallons	1,2. Passenger vessels; 1.
Rifle grenade. See Grenade, hand or rifle, explosive. *Rifle powder. See* *Propellant explosive, or Black powder. Road asphalt or tar (*when heated to or above its flash point*). *See* Asphalt. Road asphalt or tar, liquid. *See* Asphalt, cut back.								
*Road oil	Combustible liquid, 30.	None		173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
Rocket fireworks. See Fireworks, common.								
Rocket ammunition with empty projectile.	Class B explosive, 17.	Explosive B		No exemption, 173.90.	Not permitted.	Not permitted.	Not permitted.	1,3. Not permitted on passenger vessels.
Rocket ammunition with explosive projectile.	Class A explosive, 19.	Explosive A		No exemption, 173.57.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Rocket ammunition with gas projectile.	Class A explosive, 19.	Explosive A		No exemption, 173.57.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Rocket ammunition with illuminating projectile.	Class A explosive, 19.	Explosive A		No exemption, 173.57.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Rocket ammunition with incendiary projectile.	Class A explosive, 19.	Explosive A		No exemption, 173.57.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Rocket ammunition with inert loaded projectile.	Class B explosive, 17.	Explosive B		No exemption, 173.90.	Not permitted.	Not permitted.	Not permitted.	1,3. Not permitted on passenger vessels.
Rocket ammunition with smoke projectile.	Class A explosive, 19.	Explosive A		No exemption, 173.57.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Rocket ammunition with solid projectile.	Class B explosive, 17.	Explosive B		No exemption, 173.90.	Not permitted.	Not permitted.	Not permitted.	1,3. Not permitted on passenger vessels.
Rocket body, with electric primer or electric squib.				173.55				
Rocket engine, liquid	Class B explosive, 17.	Explosive B		No exemption, 173.95.	Not permitted.	Not permitted.	Not permitted.	Magazine or 1,2. Not permitted on passenger vessels.

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Rocket head. *See* Explosive projectile.								
*Rocket motor	Class A explosive, 19.	Explosive A		No exemption, 173.79.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
*Rocket motor	Class B explosive 17.	Explosive B		No exemption, 173.92.	550 pounds.	Not permitted.	550 pounds.	1,3. Not permitted on passenger vessels.
Roman candle. See Fireworks, common.								
® Rosin (*colophony*) or Resin.	ORM-C	None		173.505, 173.1060.				1,2.
*Rough ammoniate tankage (*less than 7% moisture content*).	Flammable solid.	Flammable solid.		No exemption, 173.210.	Not permitted.	Not permitted.	Not permitted.	1. Not permitted on passenger vessels.
*Rough ammoniate tankage 7% or more moisture content.	Flammable solid.	Flammable solid.		No exemption, 173.210.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
® Rubber curing compound (*solid*).	ORM-C	None		173.505, 173.1065.				1,2.
Rubber scrap or rubber buffings.	Flammable solid, 40.	Flammable solid.	Flammable solid.	173.153, 173.201.	10 pounds.	10 pounds.	10 pounds.	1,2.
*Rubber shoddy, regenerated rubber, or reclaimed	Flammable solid, 40.	Flammable solid.	Flammable solid.	173.153, 173.201.	10 pounds.	10 pounds.	10 pounds.	1,2.
Rubidium metal	Flammable solid, 46.	Flammable solid and *Dangerous* when wet.	Dangerous when wet.	No exemption, 173.206.	25 pounds.	Not permitted.	25 pounds.	1,2. Segregation same as for flammable solid labeled Dangerous *when wet*. Not permitted on passenger vessels.
Rubidium metal, in cartridges.	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	173.206	25 pounds.	1 pound.	25 pounds.	1,2. Segregation same as for flammable solid labeled Dangerous when wet. Not permitted on passenger vessels.
Rum, denatured	Flammable liquid, 30.	Flammable liquid.		173.118, 173.119.	10 gallons.	1 quart.	10 gallons.	1,2. Passenger vessels: 1.
*Rust preventive coating	Combustible liquid, 30.	None		173.118a, 173.119b.		*15 gallons.*	*55 gallons.*	*See* § 176.300. Passenger vessels: 1,2.
Shell, fireworks. *See* Fireworks, common or special.								
Ship, distress signal. See Fireworks, special.								
Signal flare	Class C explosive, 15.	Explosive C		No exemption, 173.108.	200 pounds.	50 pounds.	200 pounds.	1,2.
Silicofluoric acid. *See* Hydrofluosilicic acid.								
Silicon chloride *or* silicon tetrachloride.	Corrosive material, 82.	Corrosive	Corrosive	173.244(a)(1), 173.247.	1 gallon.	1 quart.	1 gallon.	1. Keep dry. Glass carboys not permitted on passenger vessels.
Silicon chrome, exothermic. See Exothermic silicon-chrome.								
Silicon tetrafluoride	Nonflammable gas, 21.	Nonflammable gas.	Nonflammable gas; Poison gas and Corrosive.	173.306, 173.302.	300 pounds.	Not permitted.	300 pounds.	1. Stow away from foodstuffs. Not permitted on passenger vessels.
Silver cyanide	Highly toxic, 60.	Poison	Poison	173.370		25 pounds.		1,2. Stow away from acids.
Silver nitrate	Oxidizing material, 51.	Oxidizer	Oxidizing material.	173.153, 173.182.	100 pounds.	25 pounds.	100 pounds.	1,2. Stow away from *foodstuffs*.
Safety fuse. *See* Fuse, safety.								
Safety squib	Class C explosive, 15.	Explosive C		No exemption, 173.106.	150 pounds.	50 pounds.	150 pounds.	1,3.
Salute. See Fireworks common *or* special.								
Sample of explosive				*173.86*	*173.86*	*Not* permitted	*Not* permitted	
Sand acid. *See* Hydrofluosilicic acid.								
® Sawdust (*when dry, clean, and free from oil*).	ORM-C	None		173.505, 173.1070				1,2. Keep dry.
Selenic acid, liquid	Corrosive material, 80.	Corrosive		No exemption, *173.245.*	5 pints.	Not permitted.	5 pints.	1,2.
Self-lighting cigarette	Flammable solid.	Flammable solid.	Flammable solid.	173.21(d)	Not permitted.	Not permitted.	Not permitted.	1,2. Keep dry.
Self-propelled vehicle				173.120, 173.257, 173.306.				
Shaped charge, commercial. *See* High explosive				173.65(h)				
Shellac. See *Paint, enamel, lacquer, stain, shellac, varnish, etc.								
Sisal. See Fibers.								
**Sludge acid. See* Acid, sludge.								
Small arms ammunition	Class C explosive, 15.	Explosive C		No exemption, 173.101.	150 pounds.	50 pounds.	150 pounds.	1,3.
Small arms ammunition, irritating (*tear gas*) cartridge.	Class C explosive, 15.	Irritant		No exemption, 173.101.	150 pounds.	Not permitted.	150 pounds.	1,3.
Small arms primer	Class C explosive, 15.	Explosive C		No exemption, 173.107.	150 pounds.	50 pounds.	150 pounds.	1,3.

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Smoke generator. See Chemical ammunition, Extremely toxic or Highly Toxic Material.								
Smoke candle	Class C explosive, 15.	Explosive C		No exemption, 173.108.	200 pounds	50 pounds	200 pounds	1,3.
Smoke grenade	Class C explosive, 15.	Explosive C		No exemption, 173.108.	200 pounds	50 pounds	150 pounds	1,3.
Smokeless powder for cannon or small arms. See Propellant explosive, Class A or B.								
Smokeless powder for small arms (*100 pounds or less.*)	Flammable solid, 40.	Flammable solid.		173.88(f), 173.197a	8 pounds	Not permitted.	Not permitted.	1,3. Segregation same as for explosives.
Smoke pot	Class C explosive, 15.	Explosive C		No exemption, 173.108.	200 pounds	50 pounds	200 pounds	1,3.
Smoke projectile with bursting charge. See Explosive projectile.								
Smoke projectile with expelling charge but without bursting charge. See Fireworks, special.								
Smoke signal	Class C explosive, 15.	Explosive C		No exemption, 173.108.	200 pounds	50 pounds	200 pounds	1,3.
Soda amatol. See High explosive.								
Soda lime, solid	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245b.	100 pounds	25 pounds	100 pounds	1,2. Keep dry.
Ⓐ Sodium aluminate, solid	ORM-B	None		173.505, 173.510, 173.800.		25 pounds	100 pounds	
Sodium aluminate solution	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.249.	5 gallons	1 quart	5 gallons	1,2.
Sodium aluminum hydride	Flammable solid, 46.	Flammable solid and Dangerous when wet.		No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Sodium amide	Flammable solid, 40.	Flammable solid.	Dangerous when wet.	No exemption, 173.206.	25 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solid labeled Dangerous When Wet. Not permitted on passenger vessels.
Sodium arsenate	Highly toxic, 60.	Poison	Poison	173.364, 173.365, 173.368.	300 pounds	50 pounds	200 pounds	1,2.
*Sodium arsenite (*solution*), liquid	Highly toxic, 60.	Poison	Poison	173.345, 173.346.	55 gallons	1 quart	55 gallons	1,2.
Sodium azide	Highly toxic, 60.	Poison	Poison	173.364, 173.375.	100 pounds	50 pounds	100 pounds	1,2. Stow away from heavy metals, especially lead and their compounds. Stow separate from acids.
Sodium bisulfate, solid or solution. *See appropriate* Sodium hydrogen sulfate entry.								
Sodium bisulfite, solid. *See* Sodium hydrogen sulfite, solid.								
Sodium bromate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.164.	100 pounds	25 pounds	100 pounds	1,2. Stow separate from ammonium compounds. Stow away from powdered metals.
Sodium chlorate (*soda chlorate*).	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.163.	100 pounds	25 pounds	100 pounds	1,2. Stow separate from ammonium compounds. Stow away from powdered metals.
Sodium chlorite	Oxidizing material, 54.	Oxidizer	Oxidizing material.	No exemption, 173.160.	100 pounds	Not permitted.	100 pounds	1,2. Stow separate from ammonium compounds. Stow away from powdered metals.
Sodium chlorite solution (*not exceeding 42% sodium chlorite*).	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.263.	4 gallons	1 quart	4 gallons	1,2. Glass carboys in hampers not permitted under deck. Passenger vessels; 1.
Sodium cyanide, solid	Highly toxic, 60.	Poison	Poison	173.370	200 pounds	25 pounds	200 pounds	1,2. Stow away from acids.
*Sodium cyanide solution	Highly toxic	Poison	Poison	173.345, 173.352.	55 gallons	1 quart	55 gallons	1,2. Stow away from acids.
Sodium dichloro-s-triazinetrione.	Oxidizing material, 54.	Oxidizer		173.153, 173.217.	100 pounds	50 pounds	100 pounds	1,2.
Ⓐ Sodium dichromate	ORM-A	None	Oxidizing material.	173.505, 173.510.				
Ⓐ Sodium fluoride, solid	ORM-A	None	Poison	173.505, 173.510.				
*Sodium fluoride solution	Corrosive material.	Corrosive	Poison; Poison and Corrosive.	173.244, 173.245.	5 gallons	1 quart	5 gallons	1,2. Stow away from acids.
Sodium hydrate. *See* Caustic soda, dry, etc.								
Sodium hydride	Flammable solid, 44.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.198.	50 pounds	Not permitted.	25 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Ⓐ Sodium hydrogen sulfate, solid.	ORM-B	None		173.505, 173.510, 173.800.		25 pounds	100 pounds	

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*Sodium hydrogen sulfate solution.	Corrosive material.	Corrosive	Corrosive	173.244, 173.245.	1 gallon	1 quart	1 gallon	1,2.
Ⓐ Sodium hydrogen sulfite, solid.	ORM-B	None		173.505, 173.510, 173.800.		25 pounds	100 pounds.	
Sodium hydrosulfite (*sodium dithionite*).	Flammable solid, 40.	Flammable solid.	Spontaneously combustible material.	173.153, 173.204.	100 pounds.	25 pounds.	100 pounds.	1,2. Keep dry. Below deck stowage in metal drums only. Separate from flammable gases, liquids, oxidizing materials, or organic peroxides.
Sodium hydroxide, dry solid, flake, bead, *or* granular.	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245b.	100 pounds.	25 pounds.	200 pounds.	1,2. Keep dry.
*Sodium hydroxide, liquid *or solution.*	Corrosive material.	Corrosive	Corrosive	173.244, 173.249.	10 gallons	1 quart	5 gallons	1,2.
Ⓐ Sodium metabisulfite	ORM-B	None		173.505, 173.510.				
Sodium, metallic	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.206.	25 pounds.	Not permitted.	25 pounds.	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Sodium, metallic, dispersion in organic solvent.	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.230.	10 pounds.	Not permitted.	10 pounds.	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Sodium, metallic liquid alloy.	*Flammable* solid, 46.	Flammable solid and Dangerous when wet.	*Dangerous* when wet.	*No exemption,* 173.202.	1 pound	Not permitted.	1 pound	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
*Sodium methylate, alcohol mixture.	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Sodium methylate, alcohol mixture.	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
*Sodium methylate, alcohol mixture.	Corrosive material.	Corrosive		173.244, 173.145.	10 gallons	1 quart	1 quart	1,2.
Sodium methylate, dry	Flammable solid, 40.	Flammable solid.	Dangerous when wet.	173.153, 173.154.	100 pounds.	25 pounds.	100 pounds.	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Passenger vessels: 1.
Sodium monoxide, solid	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245b.	100 pounds.	25 pounds.	100 pounds.	1,2. Keep dry.
Sodium nitrate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.182.	100 pounds.	25 pounds.	100 pounds.	1,2.
Sodium nitrate bags. See Bags, sodium nitrate, empty and unwashed.								
Sodium nitrite	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.154, 173.234.	100 pounds.	25 pounds.	100 pounds	1,2. Stow separate from ammonium compounds and cyanides. Stow away from foodstuffs. Bagged material not permitted on passenger vessels.
Sodium nitrite mixed (*fused*) with potassium nitrate.	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.153,	100 pounds.	25 pounds.	100 pounds.	1,2. Stow separate from ammonium compounds and cyanides. Stow away from foodstuffs.
Sodium nitrite mixture (*sodium nitrate, sodium nitrite, and potassium nitrate*).	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.234.	100 pounds.	25 pounds.	100 pounds.	1,2. Stow separate from ammonium compounds and cyanides. Stow away from foodstuffs.
Ⓐ Sodium pentachlorophenate.	ORM-A	None		173.505, 173.510.				
Sodium permanganate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.154.	100 pounds.	25 pounds.	100 pounds.	1,2. Separate from ammonium compounds and hydrogen peroxide.
Sodium peroxide	Oxidizing material, 51.	Oxidizer	Oxidizing material.	No exemption, 173.187.	100 pounds.	Not permitted.	100 pounds.	1,2. Passenger vessels: 1. Keep dry. Stow away from powdered metals, permanganates, combustible packing of other cargo, and combustible foodstuffs.
Sodium phenolate, solid	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245b.	100 pounds.	25 pounds.	25 pounds.	1,2.
Sodium phosphide	Flammable solid., 45.	Flammable solid and Dangerous when wet.	Dangerous when wet; Dangerous when wet and Poison.	No exemption, 173.154.	25 pounds.	Not permitted.	25 pounds.	1. Not permitted on passenger vessels.
Sodium picramate, wet *with* at least 20% of water.	Flammable solid, 48.	Flammable solid.	Flammable solid.	No exemption, 173.205.	25 pounds.	Not permitted.	25 pounds.	1,2. Stow away from heavy metals, especially lead, and their compounds. Not permitted on passenger vessels.
Sodium potassium alloy	Flammable solid, 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.206.	25 pounds.	Not permitted.	25 pounds.	1,2. Under deck stowage must be readily accessible. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Sodium sulfate, acid. *See appropriate* Sodium hydrogen sulfate entry.								
*Sodium sulfide, anhydrous	Flammable *solid,* 40.	Flammable *solid.*	Spontaneously *combustible* material.	173.153, 173.207.	300 pounds.	25 pounds.	300 pounds.	1,2. Stow separate from liquid acids. Separate *from flammable* gases or liquids, oxidizing materials or organic peroxides.
*Solvent, n.o.s.	Combustible liquid, 30.	None	Flammable liquid.	173.405, 173.425.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels: 1,2.
*Solvent, n.o.s.	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	15 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.

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*Sparklers. *See* Fireworks, common.								
Spent iron mass. See Iron mass, spent.								
Spent iron sponge. See Iron sponge, spent.								
Spent mixed acid. See Nitrating acid.								
Spent oxide. See Oxide, spent.								
Spent sulfuric acid. See sulfuric acid, spent.								
Spirits of nitroglycerin, (*1 to 10%*)	Flammable liquid, 34.	Flammable liquid.	Explosive	No exemption, 173.153.	6 quarts	Not permitted.	6 quarts	1,2. Segregation same as for explosives. Not permitted on passenger vessels.
Spirits of nitroglycerin, not exceeding 1% nitroglycerin by weight.	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.153.	6 quarts	1 quart	6 quarts	1,2. Passenger vessels: 1.
Spirits of salt. *See* Hydrochloric acid.								
Sporting powder. See Black powder *or* Propellant explosive, solid, Class B explosive.								
Spray starting fluid. See Engine starting fluid.								
Spreader cartridge. See Fireworks, special.								
Squib, electric or safety. See Electric squib or Safety squib.								
Stain. See * Paint, enamel, lacquer, stain, shellac, varnish, etc.								
Stannic phosphide	Flammable solid 46.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.154.	25 pounds	Not permitted.	25 pounds	1. Segregation same as for flammable solid labeled Dangerous when wet. Not permitted on passenger vessels.
Ⓐ Stannous chloride, solid	ORM-B	None	Corrosive	173.505, 173.510.				
*Starter cartridge	Class B explosive 17.	Explosive B		No exemption, 173.92.	200 pounds	Not permitted.	200 pounds	1,3. Not permitted on passenger vessels.
*Starter cartridge	Class C explosive, 15.	Explosive C		No exemption, 173.102.	150 pounds	50 pounds	150 pounds	1,3.
Storage battery wet. See Battery, electric storage, wet.								
Straw. *See* Hay.								
Strontium arsenite, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Strontium chlorate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.163.	100 pounds	25 pounds	100 pounds	1,2. Stow separate from ammonium compounds. Stow away from powdered metals.
*Strontium chlorate, wet	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.163.	200 pounds	25 pounds	200 pounds	1,2. Stow separate from ammonium compounds. Stow away from powdered metals.
Strontium nitrate	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.182.	100 pounds	25 pounds	100 pounds	1,2.
Strontium peroxide	Oxidizing material, 50.	Oxidizer	Oxidizing material.	173.153, 173.154.	100 pounds	25 pounds	100 pounds	1,2. Keep dry.
*Strychnine, solid	Extremely toxic, 62.	Poison	Poison	No exemption, 173.377.	Not permitted.	Not permitted.	200 pounds	1,2.
*Strychnine salt, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds	50 pounds	200 pounds	1,2.
Styphnate of lead. See Initiating explosive.								
Ⓐ Ⓜ Styrene monomer, inhibited.	Combustible liquid, 34.	None		173.118a, 173.119a.		1 gallon	55 gallons	*See* § 176.300, Passenger vessels: 1,2.
Succinic acid peroxide, dry	Organic peroxide, 59.	Organic peroxide.	Organic peroxide; Organic peroxide and Explosive.					
Ⓜ Sulfur, solid	ORM-C	None	Flammable solid.	173.505, 173.1080.				1,2. Protect from sparks and open flame. Stow separate from oxidizing materials. Segregation same as for flammable solids.
Sulfur chloride (*mono and di*).	Corrosive material, 82.	Corrosive	Corrosive	No exemption, 173.247.	1 gallon	Not permitted.	1 gallon	1. Keep dry. Glass carboys not permitted on passenger vessels.
Sulfur dioxide	Nonflammable gas, 21.	Nonflammable gas.	Poison gas	173.306, 173.304, 173.314, 173.315.	300 pounds	Not permitted.	300 pounds	1,2. Stow away from living quarters. Not permitted on passenger vessels.
Sulfur flower. *See* Sulfur.								
Sulfur hexafluoride	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.304.	300 pounds	150 pounds	300 pounds	1,2.
Sulfuric acid (*oil of vitriol*) (*For fuming sulfuric acid, see Oleum*).	Corrosive material, 84.	Corrosive	Corrosive	173.244, 173.272.	10 pints	1 quart	1 gallon	1. Keep dry. Under deck stowage is permitted on cargo vessels only in metal drums.
Sulfuric acid, spent	Corrosive material, 84.	Corrosive	Corrosive	No exemption, 173.248.	1 quart	Not permitted.	1 quart	1. Under deck stowage is permitted on cargo vessels only in metal drums.
Sulfuric anhydride. *See* Sulfur trioxide, stabilized.								

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Sulfurous acid	Corrosive material, 81.	Corrosive	Corrosive	173.244, 173.245.	2 gallons	2 gallons	2 gallons	1,2. Glass carboys in hampers not permitted under deck. Passenger vessels: 1.
Sulfur trioxide, stabilized	Corrosive material, 84.	Corrosive	Corrosive	173.244(a), 173.272.	1 gallon	Not permitted.	1 gallon	1,2. Keep dry. Glass bottles not permitted under deck.
Sulfuryl chloride	Corrosive material, 82.	Corrosive	Corrosive	173.244(a), 173.247.	1 quart	Not permitted.	1 quart	1. Keep dry. Glass carboys not permitted on passenger vessels.
Sulfuryl fluoride	Nonflammable gas, 21.	Nonflammable gas.		173.304, 173.306, 173.314.	300 pounds	150 pounds	300 pounds	1,3. Passenger vessels: 1.
Sulphur. *See* Sulfur.								
Supplementary charge (explosive)	Class A explosive, 19.	Explosive A		No exemption, 173.69.	Not permitted.	Not permitted.	Not permitted.	Magazine. Not permitted on passenger vessels.
Tankage. See Garbage tankage.								
*Tankage fertilizer	Flammable solid.	Flammable solid.		No exemption, 173.209.	Not permitted.	Not permitted.	Not permitted.	1. Keep dry. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
*Tankage, rough ammoniate	Flammable solid.	Flammable solid.		No exemption, 173.210.	Not permitted.	Not permitted.	Not permitted.	1. Keep dry. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
Tank car, containing residual phosphorus and filled with water or inert gas				173.232				
Ⓦ Tank car, empty (*previously used for a hazardous material*)				173.29				
Tank car empty (*previously used for an extremely toxic material*)				172.506, 173.29.				
Tank truck, empty				173.505, 173.29.				
Ⓦ Tank, portable, empty (*previously used for a hazardous material*)				172.505, 173.29.				
*Tar, liquid	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119b.		15 gallons	55 gallons	*See* § 176.300. Passenger vessels; 1,2.
*Tar, liquid	Flammable liquid 30.	Flammable liquid.	Flammable liquid.	173.118, 173.131.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Tear gas ammunition. See Chemical ammunition (containing an irritant material).								
Tear gas candle	Irritating material, 05.	Irritant	Poison	No exemption, 173.385.	75 pounds	Not permitted.	75 pounds	1. Stow away from living quarters. Not permitted on passenger vessels.
Tear gas cartridge. See Small arms ammunition irritating (*tear gas*) cartridge.								
Tear gas grenade. See Grenade, tear gas.								
Tertiary alcohol. See Alcohol, n.o.s.								
Ⓐ Ⓦ Tetrachloroethane	ORM-A	None	Poison	173.505, 173.620.		1 quart	10 gallons	1,2.
○ Tetrachloroethylene	ORM-A	None	M.D.S., none	173.505, 173.510, 173.605.		10 gallons	55 gallons	
Tetraethyl dithio pyrophosphate and compressed gas mixture	Extremely toxic, 26.	Nonflammable gas and Poison.	Poison; Poison and Nonflammable gas.	No exemption, 173.334.	Not permitted.	Not permitted.	Not permitted.	1. Shade from radiant heat. Stow away from living quarters. Segregation same as for nonflammable gases. Not permitted on passenger vessels.
Tetraethyl dithio pyrophosphate, liquid	Extremely toxic, 64.	Poison	Poison	No exemption, 173.368a.	Not permitted.	Not permitted.	1 quart	1. Not permitted on passenger vessels.
*Tetraethyl dithio pyrophosphate mixture, dry (containing not more than 2% tetraethyl dithio pyrophosphate)	Highly toxic, 60.	Poison	Poison	173.377a, 173.377b.	200 pounds	50 pounds	200 pounds	1. Not permitted on passenger vessels.
Tetraethyl dithio pyrophosphate mixture, dry (*containing more than 8% tetraethyl dithio pyrophosphate*)	Extremely toxic, 62.	Poison	Poison	No exemption, 173.377.	Not permitted.	Not permitted.	Not permitted.	1. Not permitted on passenger vessels.
Tetraethyl dithio pyrophosphate mixture, liquid	Extremely toxic.	Poison	Poison	No exemption, 173.359.	Not permitted.	Not permitted.	1 quart	1. Not permitted on passenger vessels.
1,2,3,6-Tetrahydrobenzaldehyde	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	quart	1,2.
Tetraethyl lead, liquid (*including flash point for export shipment by water*)	Extremely toxic, 67.	Poison	Poison	No exemption, 173.354.	Not permitted.	Not permitted.	55 gallons	1. If flash point is 141° F. or less, segregation must be the same as for flammable liquids. Not permitted on passenger vessels.
Tetraethyl pyrophosphate, liquid	Extremely toxic, 64.	Poison		No exemption, 173.358.	Not permitted.	Not permitted.	1 quart	1,2. Not permitted on passenger vessels.
*Tetraethyl pyrophosphate, mixture, dry (containing not more than 2% tetraethyl pyrophosphate)	Highly toxic, 60.	Poison		173.377a, 173.377b.	200 pounds	50 pounds	200 pounds	1,2. Not permitted on passenger vessels.

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Tetraethyl pyrophosphate mixture, dry (*containing more than 2% tetraethyl pyrophosphate*).	Extremely toxic, 62.	Poison		No exemption, 173.377.	Not permitted.	Not permitted.	200 pounds.	1,2. Not permitted on passenger vessels.
Tetraethyl pyrophosphate mixture, liquid.	Extremely toxic.	Poison		No exemption, 173.359.	Not permitted.	Not permitted.	1 quart.	1,2. Not permitted on passenger vessels.
Tetraethyl pyrophosphate and compressed gas mixture.	Extremely toxic, 26.	Nonflammable gas and Poison.	Poison; Poison and Nonflammable gas.	No exemption, 173.334.	Not permitted.	Not permitted.	Not permitted.	1. Shade from radiant heat. Stow away from living quarters. Segregation same as for nonflammable gases. Not permitted on passenger vessels.
Tetrafluoroethylene, inhibited	Flammable gas, 23.	Flammable gas.	Nonflammable gas.	173.306, 173.304.	300 pounds.	Not permitted.	300 pounds.	1,2. Stow away from living quarters. Segregation same as for nonflammable gas.
Tetrahydrofuran	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	No exemption, 173.119.	10 gallons.	Not permitted.	10 gallons.	1,2. Keep cool. Not permitted on passenger vessels.
Tetralinehydroperoxide	Organic peroxide, 57.	Organic peroxide.						
Tetramethyl ammonium hydroxide, liquid.	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245.	10 gallons.	1 quart.	1 quart.	1,2.
1,1,3,3-tetramethyl butyl hydroperoxide.	Organic peroxide, 57.	Organic peroxide.						
1,1,3,3-tetramethyl butyl peroxy-3-ethyl hexanoate.	Organic peroxide, 58.	Organic peroxide.						
Ⓐ Tetramethyl methylene diamine.	ORM-A	None		173.505, 173.510.				
Tetranitromethane	Oxidizing material, 55.	Oxidizer	Oxidizing material.	No exemption, 173.203.	25 pounds.	Not permitted.	Not permitted.	1. Shade from radiant heat. Stow away from foodstuffs. Not permitted on passenger vessels.
Tetrazene (guanyl nitrosaminoguanyl tetrazene). See Initiating explosive.								
Tetryl. See High explosive.								
*Textile treating compound mixture, liquid.	Corrosive material.	Corrosive		173.244, 173.245, 173.249a.	10 gallons.	1 quart.	1 quart.	1,2.
Textile waste. See Cotton waste.								
Textile waste, wet	Flammable solid, 40.	Flammable solid.	Spontaneously combustible material.	No exemption, 173.211.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
*Thallium salt, solid, n.o.s.	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Thallium sulfate, solid	Highly toxic, 60.	Poison	Poison	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Thinner for rust preventive coating. See * Rust preventive coating.								
Thinning compound, paint, varnish, lacquer, etc. See *Paint, enamel, lacquer, stain, shellac, varnish, etc.								
Thiocarbonyl chloride. See Thiophosgene.								
Thioglycolic acid	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245.	1 gallon.	1 quart.	1 gallon.	1,2. Glass carboys in hampers not permitted under deck.
Thionyl chloride	Corrosive material, 81.	Corrosive	Corrosive	No exemption, 173.247.	1 gallon.	Not permitted.	1 gallon.	1. Keep dry. Glass carboys not permitted on passenger vessels.
Thiophosgene	Highly toxic, 60.	Poison		No exemption, 173.356.	1 gallon.	Not permitted.	1 gallon.	1. Shade from radiant heat. Not permitted on passenger vessels.
Thiophosphoryl chloride	Corrosive material, 83.	Corrosive	Corrosive	No exemption, 173.271.	1 quart	Not permitted.	1 quart.	1. Keep dry. Glass carboys not permitted on passenger vessels.
Ⓐ Thiram	ORM-A	None		173.505, 173.510.				
*Thorium metal, pyrophoric.	Radioactive material, 74.	Radioactive (See §172.403).	Radioactive	173.392, 173.393.				1,2.
*Thorium nitrate	Radioactive material, 72.	Radioactive. (See §172.403).	Radioactive	173.392, 173.393.				1,2. Separate longitudinally by a complete hold or compartment from explosives.
Time fuze. See Fuze, time, non-detonating.								
Tin chloride, fuming, See Tin tetrachloride, anhydrous.								
* Tinning flux. See * Zinc chloride solution.								
Tin perchloride. See Tin tetrachloride, anhydrous.								
Tin tetrachloride, anhydrous.	Corrosive material, 82	Corrosive	Corrosive	173.244(a)(1), 173.247.	1 quart.	1 quart.	1 quart.	1. Keep dry. Glass carboys not permitted on passenger vessels.
Titanium metal powder, dry or wet *with less than 20% water.*	Flammable solid, 44.	Flammable solid and Dangerous when wet.	Flammable solid.	No exemption, 173.208.	75 pounds.	Not permitted.	75 pounds.	1,2. Not permitted on passenger vessels.
Titanium metal powder, wet with more than 20% water.	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.208.	150 pounds.	Not permitted.	150 pounds.	1,2. Not permitted on passenger vessels.
Titanium sulfate solution *containing not more than 45% sulfuric acid.*	Corrosive material, 80.	Corrosive		173.244, 173.297.	1 gallon.	1 quart.	1 gallon.	1. Keep cool and dry. Not permitted on passenger vessels.

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Titanium tetrachloride	Corrosive material, 82.	Corrosive	Corrosive	173.244, 173.247.	10 gallons	1 quart	10 gallons	1. Keep dry. Glass carboys not permitted on passenger vessels.
Toluene (*toluol*)	Flammable liquid, 30.	Flammable liquid:	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ⓐ 2,4-toluenediamine	ORM-A	None	Poison	173.505, 173.510.				
2,4-toluene diisocyanate	Highly toxic, 60.	Poison		173.344, 173.345.	55 gallons	Not permitted	55 gallons	1. Shade from radiant heat. Not permitted on passenger vessels.
Toluene sulfonic acid, liquid.	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	1 quart	1,2.
Torch. See Fireworks, common.								
Torpedo, cap. See Fireworks, special.								
Torpedo, explosive. See Explosive torpedo.								
Torpedo, railway	Class B explosive, 17.	Explosive B		No exemption, 173.91.	200 pounds	Not permitted.	200 pounds	1,2. Passenger vessels: 1,2. in metal lockers only.
Toxaphene. *See* Camphene								
Toy caps	Class C explosive, 15.	Explosive C		No exemption, 173.100 (g), 173.109.	150 pounds	50 pounds	150 pounds	1,3.
Toy propellant device	Class C explosive, 15.	Explosive C		No exemption, 173.111.	150 pounds	50 pounds	150 pounds	1,3.
Toy smoke device	Class C explosive, 15.	Explosive C		No exemption, 173.111.	150 pounds	50 pounds	150 pounds	1,3.
Toy torpedo. See Fireworks, special.								
Tracer	Class C explosive, 15.	Explosive C		No exemption, 173.105.	150 pounds	50 pounds	150 pounds	1,3.
Tracer fuze	Class C explosive, 15.	Explosive C		No exemption, 173.105.	150 pounds	50 pounds	150 pounds	1,3.
Tractor				173.120.				
Trailer or truck body with refrigerating or heating equipment.				173.120(c), 173.306.				
Treated paper (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material.								
Treated textile (*manufactured article properly dried to prevent spontaneous heating*). *See* Oiled material.								
Trichloroacetic acid, solid	Corrosive material, 80.	Corrosive	Corrosive	173.244, 173.245b.	100 pounds	25 pounds	100 pounds	1,2. Passenger vessels: 1.
*Trichloroacetic acid solution	Corrosive material.	Corrosive		173.244, 173.245.	1 quart	1 quart	1 quart	1,2. Glass carboys in hampers not permitted under deck.
Ⓐ Trichloroethylene	ORM-A	None	M.D.S., none	173.505, 173.510, 173.605.		10 gallons	55 gallons	
Trichloro-s-triazinetrione	Oxidizing material, 54.	Oxidizing material.		173.153, 173.217.	100 pounds	50 pounds	100 pounds	1,2. Keep cool and dry.
[(mono-(Trichloro) tetra-(monopotassium dichloro)]-penta-s-triazinetrione.	Oxidizing material, 54.	Oxidizing material.		173.153, 173.217.	100 pounds	50 pounds	100 pounds	1,2. Keep cool and dry.
Trichlorosilane	Flammable liquid, 31.	Flammable liquid.	Dangerous when wet; Flammable liquid and Dangerous when wet.	No exemption, 173.136.	10 gallons	Not permitted.	5 pints	1. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Trick matches	Class C explosive, 15.	Explosive C		No exemption, 173.111.	150 pounds	Not permitted.	Not permitted.	1,3.
Trick noise maker, explosive.	Class C explosive, 15.	Explosive C		No exemption, 173.111.	150 pounds	50 pounds	150 pounds	1,3.
Triethylamine	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Trifluorochloroethylene	Flammable gas, 23.	Flammable gas	Flammable gas	173.306, 173.304, 173.314.	300 pounds	Not permitted.	10 gallons	1,2. Passenger vessels: 1.
Trimethyl acetyl chloride	Combustible material, 80.	Corrosive		173.244, 173.247.	1 gallon	1 quart	1 quart	1,2.
Trimethylamine, anhydrous.	Flammable gas, 24.	Flammable gas	Flammable gas; Flammable gas and Poison gas.	173.306, 173.304, 173.314, 173.315.	300 pounds	Not permitted.	300 pounds	1. Not permitted on passenger vessels.
*Trimethylamine, aqueous solution.	Flammable liquid, 31.	Flammable liquid.	Flammable liquid.	173.118, 173.119 (m).	10 gallons	1 quart	5 pints	1,2. Passenger vessels: 1. Stow away from mercury and mercury compounds.
Trimethylchlorosilane	Flammable liquid, 31.	Flammable liquid.	Flammable liquid; Flammable liquid and Corrosive.	No exemption, 173.135.	10 gallons	Not permitted.	5 pints	1,2. Passenger vessels: 1.

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Trinitrobenzene, dry. See High explosive.								
*Trinitrobenzene, wet *containing at least 10% water.*	Flammable solid, 48.	Flammable solid.	Flammable solid.	173.212	1 pound	1 pound	1 pound	1. Stow away from heavy metals and their compounds. Not permitted on passenger vessels.
Trinitrobenzoic acid, dry. See High explosive.								
*Trinitrobenzoic acid, wet *with not less than 10% water.*	Flammable solid, 48.	Flammable solid.	Flammable solid.	No exemption, 173.192, 173.193.	25 pounds	1 pound	25 pounds	1. Stow away from heavy metals and their compounds. Not permitted on passenger vessels.
Trinitrobenzoic acid wet with not less than 10% water, over 25 pounds in one outside packaging. See High explosive.								
Trinitroresorcinol. See High explosive.								
Trinitrotoluene, dry. See High explosive.								
Trinitrotoluene, wet *with not less than 10% water.*	Flammable solid 48.	Flammable solid.	Flammable solid.	173.212	1 pound	1 pound	1 pound	1. Stow away from heavy metals and their compounds Not permitted on passenger vessels.
Tris-(1-aziridinyl) phosphine oxide.	Corrosive material, 81.	Corrosive		173.244, 173.290a.	1 gallon	1 quart	1 gallon	1. Keep dry. Glass carboys not permitted on passenger vessels.
*Turpentine	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	*See* §176.300. Passenger vessels; 1,2.
*Turpentine	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2.
*Turpentine substitute	Combustible liquid, 30.	None	Flammable liquid.	173.118a, 173.119a.		15 gallons	55 gallons	*See* §176.300. Passenger vessels: 1,2.
*Turpentine substitute	Flammable liquid.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Ⓦ Twisted jute packing (*rope*) (*treated or untreated*). *See* Oakum.								
*Uranium hexafluoride, low specific activity (*containing 0.7% or less U-235*).	Radioactive material, 78.	Radioactive, (See)172.403).		173.392, 173.393.				1,2.
*Uranium hexafluoride, fissile (containing more than 0.7% U-235).	Radioactive material, 78.	Radioactive, (See §172.403).		173.393, 173.396.				1,2.
*Uranium metal, pyrophoric.	Radioactive material, 74.	Radioactive (See §172.403).	Radioactive.	173.392, 173.393, 173.396.				1,2.
*Uranyl nitrate, solid	Radioactive material, 72.	Radioactive, (See §172.403.)	Radioactive.	173.392, 173.393, 173.396.				1,2. Separate longitudinally by an intervening hold or compartment from explosives.
*Uranyl nitrate hexahydrate solution.	Radioactive material, 78.	Radioactive. (See §172.403.)	Radioactive.	173.392, 173.393, 173.395, 173.396.				1,2.
Urea nitrate, dry. See High explosive.								
*Urea nitrate, wet *with not less than 10% water.*	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.192, 173.193.	25 pounds	1 pound	25 pounds	1,2.
Urea nitrate, wet with not less than 10% water, over 25 pounds in one outside packaging. See High explosive.								
Urea peroxide	Organic peroxide, 57.	Organic peroxide.						
Valeric acid	Corrosive material, 80.	Corrosive		173.244, 173.245.	10 gallons	1 quart	1 quart	1,2.
Valeryl chloride	Corrosive material, 80.	Corrosive		173.244, 173.245.	1 gallon	1 quart	1 gallon	1,2.
Vanadium oxytrichloride	Corrosive material, 80.	Corrosive		173.244, 173.247a.	25 pounds	Not permitted.	1 quart	1. Shade from radiant heat. Not permitted on passenger vessels.
Vanadium tetrachloride	Corrosive material, 80.	Corrosive		173.244(a)-(1), 173.247a.	25 pounds	Not permitted.	1 quart	1. Shade from radiant heat. Not permitted on passenger vessels.
Varnish. See *Paint, enamel, lacquer, stain, shellac, varnish, etc.								
Varnish drier. See *Paint drier, liquid.								
Varnish remover or reducer. See *Compound, lacquer, paint or varnish removing, reducing, or thinning liquid.								
Varnish thinning compound. See *Compound, lacquer, paint, or varnish removing, reducing, or thinning liquid.								
Very signal cartridge	Class C explosive, 15.	Explosive C		No exemption, 173.103.	200 pounds	50 pounds	200 pounds	1,3.
Vinyl acetate	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons	1 quart	10 gallons	1,2. Passenger vessels: 1.
Vinyl chloride	Flammable gas, 23.	Flammable gas.	Flammable gas.	173.306, 173.314, 173.315.	300 pounds	Not permitted.	300 pounds	1,2. Passenger vessels: 1. Stow away from living quarters.

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Vinyl ethyl ether, inhibited	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	No exemption, 173.119.	Not permitted.	Not permitted.	Not permitted.	1,2. Keep cool. Not permitted on passenger vessels.
Vinyl fluoride, inhibited	Flammable gas, 23.	Flammable gas.	Flammable gas.	173.306, 173.304, 173.314, 173.315.	300 pounds.	Not permitted.	300 pounds.	1,2. Stow away from living quarters. Not permitted on passenger vessels.
Vinylidene chloride, inhibited.	Flammable liquid, 34.	Flammable liquid.	Flammable liquid.	173.118, 173.119,	10 gallons.	1 quart.	10 gallons.	1,2. Keep cool. Not permitted on passenger vessels.
Vinyl isobutyl ether	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons.	1 quart.	10 gallons.	1,2. Passenger vessels: 1.
Vinyl methyl ether, inhibited.	Flammable gas, 28.	Flammable gas.	Flammable gas.	173.306, 173.304, 173.314.	20 pounds.	Not permitted.	20 pounds.	1,2. Passenger vessels: 1. Stow away from living quarters.
Vinyl trichlorosilane	Flammable liquid, 31.	Flammable liquid.	Flammable liquid; Flammable liquid and Corrosive.	No exemption, 173.135.	10 gallons.	Not permitted.	5 pints.	1,2. Passenger vessels: 1.
Vitrol, oil of. *See* Sulfuric acid.								
War head. See Explosive projectile.								
Waste paper, wet	Flammable solid, 40.	Flammable solid.		No exemption, 173.186.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gas or liquids, oxidizing materials, or organic peroxides.
Waste textile, wet	Flammable solid, 40.	Flammable solid.	Spontaneously combustible material.	No exemption, 173.211.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
Waste wool, wet	Flammable solid, 40.	Flammable solid.	Spontaneously combustible material.	No exemption, 173.213.	Not permitted.	Not permitted.	Not permitted.	1,2. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides.
Water reactive solid, n.o.s.	Flammable solid.	Flammable solid and Dangerous when wet.		173.153(a), 173.154.	25 pounds.	Not permitted.	25 pounds.	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
*Water treatment compounds, liquid.	Corrosive material.	Corrosive.		173.244, 173.249.	10 gallons.	1 quart.	10 gallons.	1.
*Wax, liquid	Combustible liquid, 30.	None.		173.118a, 173.119a.		15 gallons.	55 gallons.	*See* § 176.300. Passenger vessels: 1,2.
Wet hair. See Hair, wet.								
Wet textile waste. See Waste textile, wet.								
White acid (*ammonium bifluoride and hydrochloric acid mixture*).	Corrosive material, 80.	Corrosive.		173.244, 173.264 (a).	1 gallon.	1 quart.	1 gallon.	1.
Wood filler. See *Paint, varnish, lacquer, stain, shellac, enamel, etc.								
Wood shavings (*when dry, clean and free from oil*). *See* Sawdust.								
Wool waste. *See* Cotton waste.								
Wool waste, wet. See Waste wool, wet.								
X-ray film. See Film.								
Xenon	Nonflammable gas, 20.	Nonflammable gas.	Nonflammable gas.	173.306, 173.302.	300 pounds.	150 pounds.	300 pounds.	1,2.
*Xylene (Xylol)	Combustible liquid, 30.	None.	Flammable liquid.	173.118a, 173.119a.		15 gallons.	55 gallons.	*See* § 176.300. Passenger vessels: 1,2.
*Xylene (*xylol*)	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	173.118, 173.119.	10 gallons.	1 quart.	10 gallons.	1,2. Passenger vessels: 1.
Xylyl bromide	*Irritant material*, 05.	*Irritant.*	*Poison.*	*No exemption*, 173.382.	*75 pounds.*	*Not permitted.*	75 pounds.	1. Stow away from living quarters. Not permitted on passenger vessels.
@ Yeast, active, *in liquid or pressed form.*	ORM-C.	None.		No exemption, 173.1085.				
Zinc ammonium nitrite	Oxidizing material, 50.	Oxidizer.	This material may be forbidden in water transportation by certain countries.	No exemption, 173.228.	100 pounds.	25 pounds.	100 pounds.	1,2. Keep cool. Not permitted on passenger vessels.
Zinc arsenate	Highly toxic, 60.	Poison.	Poison.	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Zinc arsenite, solid	Highly toxic, 60.	Poison.	Poison.	173.364, 173.365.	200 pounds.	50 pounds.	200 pounds.	1,2.
Zinc chlorate	Oxidizing material 50.	Oxidizer.	Oxidizing material.	173.153, 173.163.	100 pounds.	25 pounds.	100 pounds.	1,2. Stow separate from ammonium compounds and away from powdered metals.
*Zinc chloride solution	Corrosive material, 80.	Corrosive.	Corrosive.	173.244, 173.245.	1 quart.	1 quart.	1 quart.	1,2.
Zinc cyanide	Highly toxic, 60.	Poison.	Poison.	173.370.		25 pounds.		1,2. Stow away from acids.
Zinc ethyl. See Pyrophoric liquids, n.o.s.								
*Zinc muriate solution. *See* Zinc chloride solution.								
Zinc nitrate. See Nitrates, n.o.s.								
Zinc permangante	Oxidizing material 50.	Oxidizer.	Oxidizing material.	173.153, 173.154.	100 pounds.	25 pounds.	100 pounds.	1,2. Separate from ammonium compounds and hydrogen peroxide.
Zinc peroxide	Oxidizing material, 50.	Oxidizer.	Oxidizing material.	173.153, 173.154.	100 pounds.	25 pounds.	100 pounds.	1,2. Keep dry.

(1) Hazardous material	(2) Classification and hazard information number	(3) Label(s) required (if not exempt)	(4) UN class and label(s)	(5) Exemptions and packaging (see sec.)	(6) Maximum quantity in one package (a) Express railcar	(b) Passenger-carrying railcar or aircraft	(c) Cargo-only aircraft	(7) Vessels, stowage, special handling, and special segregation
Zinc phosphide	Flammable solid 46.	Flammable solid and Dangerous when wet.	Poison	No exemption, 173.154.	25 pounds	Not permitted.	25 pounds	1,2. Stow away from acids and oxidizing materials. Segregation same as for poisons.
Zirconium hydride	Flammable solid, 44.	Flammable solid and Dangerous when wet.	Dangerous when wet.	No exemption, 173.206.	150 pounds	Not permitted.	150 pounds	1,2. Segregation same as for flammable solids labeled Dangerous When Wet. Not permitted on passenger vessels.
Zirconium metal, dry, *chemically produced, finer than 20 mesh particle size.*	Flammable solid, 42.	Flammable solid.	Spontaneously combustible material.	No exemption, 173.214.	75 pounds	Not permitted.	75 pounds	1. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
Zirconium metal, dry, *mechanically produced, finer than 270 mesh particle size.*	Flammable solid, 42.	Flammable solid.	Spontaneously combustible material.	No exemption, 173.214.	75 pounds	Not permitted.	75 pounds	1. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
Zirconium metal, wet, *chemically produced, finer than 20 mesh particle size.*	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.214.	150 pounds	Not permitted.	150 pounds	1,2. Not permitted on passenger vessels.
Zirconium metal, wet *mechanically produced, finer than 270 mesh particle size.*	Flammable solid, 40.	Flammable solid.	Flammable solid.	No exemption, 173.214.	150 pounds	Not permitted.	150 pounds	1,2. Not permitted on passenger vessels.
Zirconium, metallic, liquid, suspensions.	Flammable liquid, 30.	Flammable liquid.	Flammable liquid.	No exemption, 173.140.	5 pounds	Not permitted.	5 pounds	1. Keep cool. Not permitted on passenger vessels.
Zirconium picramate, wet *with at least 20% of water.*	Oxidizing material 54.	Oxidizer	Oxidizing material.	No exemption, 173.216.	25 pounds	Not permitted.	25 pounds	1. Stow away from heavy metals and their salts.
*Zirconium scrap (*borings, clippings, shavings, sheets, or turnings*).	Flammable solid 42.	Flammable solid.	Spontaneously combustible material.	173.153, 173.220.	100 pounds	Not permitted.	Not permitted.	1. Separate from flammable gases or liquids, oxidizing materials, or organic peroxides. Not permitted on passenger vessels.
Zirconium tetrachloride, solid.	Corrosive material, 80.	Corrosive		173.244, 173.245b.	100 pounds	25 pounds	100 pounds	1,2.

PART 173—SHIPPERS

A. Part 173 heading would remain the same.

B. In Part 173 Table of Contents, §§ 173.4, 173.5, 173.10, 173.179, 173.181, 173.196, 173.335, 173.343, 173.384, 173.425, 173.427, 173.430, 173.431, and Subpart I would be deleted; §§ 173.1, 173.2, 173.3, 173.6, 173.27, 173.29, 173.64, 173.69, 173.79, 173.115, 173.125, 173.128, 173.129, 173.132, 173.134, 173.135, 173.144, 173.145, 173.146, 173.153, 173.164, 173.170, 173.174, 173.178, 173.180, 173.206, 173.217, 173.225, 173.237, 173.247, 173.249, 173.264, 173.280, 173.284, 173.291, 173.306, 173.326, 173.327, 173.328, 173.334, 173.344, 173.345, 173.346, 173.357, 173.358, 173.359, 173.363, 173.364, 173.365, 173.370, 173.377, 173.381, 173.382, 173.426 and Subparts A, C, D, G, and H would be amended; §§ 173.18, 173.116a, 173.118a, 173.119a, 173.119b, 173.149a, 173.149b, 173.151a, 173.307, 173.308, 173.326a, 173.326b, 173.358a, 173.359a, 173.377a, 173.377b, 173.500, 173.505, 173.510, 173.605, 173.615, 173.620, 173.625, 173.630, 173.635, 173.645, 173.650, 173.655, 173.800, 173.850, 173.860, 173.905, 173.910, 173.915, 173.920, 173.925, 173.930, 173,931, 173.945, 173.948, 173.955, 173.960, 173.965, 173.970, 173.975, 173.980, 173.985, 173.990, 173.995, 173.1000, 173.1005, 173.1010, 173.1020, 173.1025, 173.1030, 173.1035, 173.1040, 173.1045, 173.1050, 173.1055, 173.1060, 173.1065, 173.1070, 173.1075, 173.1080, 173.1085, and Subparts J, K, and L and Appendix A would be added to read as follows:

Sec.
173.1070 Sawdust or wood shavings.
173.1075 Scrap paper or waste.
173.1080 Sulfur.
173.1085 Yeast, active (in liquid or compressed form).

Appendix I—Method of Testing for Corrosion to Skin

c. Section 173.1 would be amended to read as follows:

§ 173.1 Purpose.

The regulations in this part are prescribed to define hazardous materials for transportation purposes and to state the requirements that must be observed by the shipper in preparing them for transportation by air, highway, railroad, or water. Shipments that are not in compliance with the regulations in this part must not be offered for transportation by air, highway, railroad, or water.

D. Section 173.2 would be amended to read as follows:

§ 173.2 Classification of a material having more than one hazard as defined in this part.

(a) A hazardous material, other than an explosive (all required to be classed by the Bureau of Explosives), an etiologic agent (these are specifically identified in § 173.386 as those items listed in 42 CFR 72.25(c)), or an organic peroxide (these are all specifically identified and classed in § 172.101 of this subchapter), having more than one hazard as defined in this part, must be classified according to the following priority of hazards reading from the top as follows:

(1) Radioactive material.
(2) Flammable or nonflammable gas.
(3) Extremely toxic liquid or solid.
(4) Flammable liquid.
(5) Oxidizing material.
(6) Flammable solid.
(7) Corrosive material (liquid).
(8) Highly toxic liquid or solid.
(9) Irritating material.
(10) Corrosive material (solid).
(11) Combustible liquid.

E. Section 173.3 would be deleted and a new § 173.3 added to read as follows:

§ 173.3 Packaging and exemptions.

(a) The packaging for shipments to be offered for transportation by air, highway, rail, and water must be as specified in this Part.

(b) The regulations describing packaging in the sections regarding exemptions apply to all modes of transportation unless otherwise specifically stated. When a section requires specific packaging for a material, these requirements apply to quantities of the material in excess of those allowed by the exemptions. For example, the restriction in § 173.249(b) to express rail car and cargo-only aircraft applies only to quantities in excess of those allowable under § 173.244. Quantities covered under § 173.244 may also be shipped by express rail car and cargo-only aircraft subject to the quantity and packaging limitations of § 173.244.

§§ 173.4, 173.5 [Deleted]

F. Sections 173.4 and 173.5 would be deleted.

G. Section 173.6 would be deleted and a new § 173.6 added to read as follows:

§ 173.6 Shipments by air.

(a) *General shipping requirements.* When the regulations prohibit a hazardous material from shipment by cargo-only aircraft, the material is also prohibited from shipment by any passenger-carrying aircraft.

(b) *General packaging requirements.* (1) In addition to the requirements of this part and Part 178, each packaging must be designed and constructed to prevent leakage that may be caused by changes in altitude and temperature during air transportation.

(2) Inner receptacles which are breakable (such as earthenware, glass, or brittle plastic), and which consist of a separate rigid inner receptacle which may stand alone, must be packaged with adequate cushioning and absorbent material to prevent breakage and leakage under conditions normally incident to transportation (which include, but are not limited to, a 4-foot drop of the completed packaging in the position most likely to cause damage). Cushioning and absorbent materials must not be capable of reacting dangerously with the contents. Where any plastic packaging is specified in this part, a plastic bag or pouch is not permitted unless specifically authorized.

(3) Sufficient outage (ullage) to prevent liquid contents from completely filling the packaging at 130° F. must be provided for any packaging containing liquid. The primary packaging (which may include composite packaging), for which retention of the liquid is the basic function, must be capable of withstanding an internal gauge pressure of at least 0.75 kg/sq. cm. (11 lbs./sq. in.) and shall not leak. In addition, for liquids or solids having an absolute vapor pressure exceeding 16 p.s.i. at 100° F., the primary packaging must be capable of withstanding, without any leakage, an internal pressure equivalent to the sum of the absolute vapor pressure of the contents at 130° F. and the atmospheric pressure at sea level.

(4) Stoppers, corks, or other such friction-type closures must be held securely, tightly, and effectively in place with wire, tape, or other positive means. Each screw-type closure on any inside plastic packaging must be taped, banded, or otherwise secured to prevent the closure from loosening.

(5) Bags permitted by the regulations as outside packaging for transportation aboard aircraft must be water resistant.

(6) Packaging incorporating valves, and containing any compressed gas, must be provided with sufficient protection to prevent operation and damage to such valves during transportation, by one of the following methods:

(i) By equipping each packaging with securely attached caps, or

(ii) By boxing or crating of the compressed gas packaging.

(7) Tank cars and tank motor vehicles containing hazardous materials are not permitted to be transported by air.

(c) *Special labeling requirements.* See § 172.101 (magnetized materials), and § 173.18(a) of this subchapter.

§ 173.7 [Amended]

H. In § 173.7, paragraph (b) would be amended by changing chapter in the last sentence to read "subchapter."

§ 173.8 [Unchanged]

I. Section 173.2 would remain as now written.

J. Section 173.9 would be amended to read as follows:

§ 173.9 Import and export shipments.

(a) Import shipments of hazardous materials offered in the United States in original packages for transportation must comply with all requirements of the regulations in Parts 170–189 of this subchapter. Except for shipments from Canada conforming with § 173.8, the importer must furnish with the order to the foreign shipper, and also to the forwarding agent at the port of entry, full and complete information as to the packing, marking, labeling, and other requirements, as prescribed in Parts 170–189 of this subchapter. The forwarding agent must file with the initial carrier in the United States a properly certified shipping order or other shipping papers as prescribed in this part. Except for the requirements of § 177.817 and the placarding requirements of Part 172 of this subchapter, the provisions of Parts 170–189 of this subchapter do not apply to such transportation by motor vehicle or water as may be necessary to effect transfer of import shipments from place of discharge to other places within the same port area or delivery to a water carrier within the same port area (including contiguous harbors). Further transportation of such import shipments by connecting water carrier is subject to Part 176 of this subchapter.

(b) For shipments of hazardous materials offered for transportation by carrier by water from the United States, its insular possessions, or dependencies destined to such insular possessions or territory, dependencies, or to a foreign country, must be packaged, marked, labeled, and described in accordance with the International Dangerous Goods Code of the Inter-governmental Maritime Consultative Organization or as prescribed in Parts 170–189 of this subchapter.

(c) Outside shipping containers for export shipments offered for transportation by carriers subject to Parts 170–189 of this subchapter may have specification markings prescribed for containers plainly and legibly shown on labels or tags securely fastened thereto in place of marking requirements as prescribed for containers by Part 178 of this subchapter.

(d) Except for cylinders, outside shipping containers for import shipments offered for transportation to carriers subject to Parts 170–189 of this subchapter may have specification markings pre-

scribed for containers plainly and legibly shown on labels or tags securely fastened thereto in place of the markings prescribed in Part 178 of this subchapter. All the following requirements apply to these packagings.

(1) The packaging must meet the complete specification, including tests, as prescribed in Part 178 of this subchapter except that the markings need not be permanently applied;

(2) The user of the packaging must register the packagings with the Office of Hazardous Materials, Department of Transportation, Washington, D.C. 20590, and obtain a registration number (M * * * *). This number must appear on the label or tag referenced above.

(3) The United States shipper or importer must have on file the complete specifications, testing procedures, and testing results for each container.

(4) The records for each container must be readily available for inspection by a representative of the Department.

§ 173.10 [Deleted]

K. Section 173.10 would be deleted.

Subpart A—Preparation of Hazardous Materials for Transportation by Carriers by Rail, Highway, Air, or Water

L. Subpart A would be amended as follows:

a. Section 173.18 would be added to read as follows:

§ 173.18 Banding, palletizing, or use of a shipping unit overpack for air shipment.

(a) Packages of hazardous materials which may be stowed together according to the regulations in this subchapter may be assembled by banding, palletizing, or packaging together in an additional outside shipping unit, with or without other materials, unless otherwise provided in this subchapter (for transport containers, see § 172.504 of this subchapter).

(1) The assembly may not include any materials not permitted on passenger-carrying aircraft unless the shipping unit is conspicuously labeled on at least two sides with the "Cargo-Only Aircraft" label as described in § 172.462 of this subchapter.

(2) The total net weight of each class of hazardous material in the assembly must be conspicuously marked in one location on the outside of the assembly.

(3) Any DOT label or special handling instruction on interior packages must be fully visible when the assembly is completed or it must be reproduced on the outside of the completed unit.

(4) Not more than 65 pounds gross weight of hazardous materials (not including ORM materials) may be placed in one assembled unit except as follows:

(i) *Solid carbon dioxide (Dry ice).* No assembled unit may contain more than 440 pounds of solid carbon dioxide.

(ii) *Nonflammable compressed gas.* No assembled unit may contain more than 300 pounds gross weight of nonflammable compressed gas.

(iii) *Radioactive material.* The sum of all Transport Indexes of radioactive material in one assembled unit may not exceed 10.

(5) No material bearing a corrosive label may be packed in the same unit with other hazardous materials bearing any label prescribed in this subchapter. This restriction does not apply to a material bearing only the magnetized materials label.

B. In § 173.21, paragraphs (a) and (d) would be amended to read as follows:

§ 173.21 Prohibited packing.

(a) The offering of packages of hazardous materials in outside packages containing in the same compartment interior packages, the mixture of contents of which would be liable to cause a dangerous evolution of heat or gas or produce corrosive materials, is prohibited for transportation except as specified in §§ 173.152(a), 173.242(a), (b) and 173.301(a).

* * * * *

(d) The offering for transportation of any package containing a cigarette lighter or other similar ignition device charged with fuel and equipped with an ignition element, or any self-lighting cigarette, is forbidden unless the design of the device and its packing insofar as they affect safety in transportation have been:

(1) Examined by the Bureau of Explosives, and

(2) A report of the results of this examination has been sent to the Department, together with the Bureau of Explosives' approval for the shipment of the device. For butane lighters, also see § 173.308.

§§ 173.22, 173.23 [Amended]

C. Sections 173.22 through 173.25 would remain as now written, except that in §§ 173.22(a), 173.23 (a), (b), and (c), 173.24(d), the word chapter would be amended to read "subchapter."

D. In § 173.26 paragraph (a), first sentence, chapter would be amended to read "subchapter"; paragraph (b) would be amended to read as follows:

§ 173.26 Quantity limitations.

* * * * *

(b) When quantity limitations do not appear in the packaging requirements of this part or § 172.101 of this subchapter, the permitted gross weight or capacity authorized for a container to be offered for transportation is as shown in the container specification. (See also § 173.27.)

E. Section 173.27 would be amended to read as follows:

§ 173.27 Express rail car and aircraft quantity limitations.

(a) The maximum quantity of any hazardous material that may be offered for transportation in one outside packaging by express or passenger rail car, cargo-only aircraft, or passenger-carrying aircraft must not exceed that quantity prescribed in § 172.101 of this subchapter.

(b) Except as provided for a shipping unit overpack in § 173.18, when several different classes of hazardous materials are placed in one outside packaging in compliance with the regulations in this subchapter, the combined quantity of any one class of materials may not exceed the lowest quantity limit prescribed in § 172.101 of this subchapter for any one of the materials in that class which is included in the package.

F. In § 173.28, the word chapter would be changed to read "subchapter" each time it appears in paragraphs (a), (a)(1), (h), (h)(1)(i), and (j); paragraph (n) would be redesignated paragraph (o) and a new paragraph (n) would be added to read as follows:

§ 173.28 Reuse of containers.

* * * * *

(n) A single trip packaging (STC) may be reused for the shipment of any corrosive solid, ORM-A, ORM-B, ORM-C, or any material not required by this subchapter to be shipped in DOT specification packaging. Paragraph (m) of this section does not apply to this packaging.

* * * * *

G. Section 173.29 would be amended to read as follows:

§ 173.29 *Empty packagings,* portable tanks, cargo tanks, and tank cars.

(a) A person may not offer for transportation, and a carrier may not transport, any empty packaging, portable tank, cargo tank, or tank car that previously contained hazardous material unless—

(1) Each opening therein is tightly closed; and

(2) Except as otherwise specified in this subchapter, it is offered for transportation in the same manner as was required when it previously contained a greater quantity of a hazardous material.

(b) This subchapter does not apply to any—

(1) Empty packaging that has been cleaned or purged of all hazardous material residue; or

(2) Packaging, portable tank, cargo tank, or tank car when reloaded with a material not subject to this subchapter. However, if the mixing of two or more materials, including residues thereof, forms a hazardous material, the package, portable tank, cargo tank, or tank car may not be offered for transportation except in accordance with this subchapter.

H. Section 173.30 would be amended to read as follows:

§ 173.30 *Loading and unloading* of transport vehicles.

A person who loads or unloads hazardous materials into or from a transport vehicle or vessel shall comply with the applicable loading and unloading requirements of Parts 174, 175, 176, and 177 of this subchapter as pertinent.

I. In § 173.31 the word chapter would be amended to read "subchapter" in paragraph (d) Table footnote n and (d)(9); the Heading would be amended and paragraph (b)(5) would be added to read as follows:

§ 173.31 Qualification, testing, maintenance, and use of tank cars.

* * * * *

(b) * * *

(5) When a tank car is authorized in this subchapter for the shipment of a hazardous material, this tank car may be offered for transportation by water only when it is in accordance with the requirements of Part 176 of this subchapter and only on board the following vessels under conditions as follows (for definitions of types of vessels, see § 176.22 (h) of this subchapter):

(i) Carfloats, barges, or trainships if the specific material is permitted in § 172.101 of this subchapter on board a cargo vessel.

(ii) Railroad car ferry vessels if the specific material is permitted in § 172.101 of this subchapter on board a passenger vessel. Also see § 176.22(h) of this subchapter.

* * * * *

J. In § 173.32, the word chapter would be amended to read "subchapter" in paragraphs (e)(1)(ii), (iii), and (2)(i); paragraph (a)(2) would be amended; paragraph (a)(3) would be added to read as follows:

§ 173.32 Qualification, testing, maintenance, and use of portable tanks.

(a) * * *

(2) No portable tank container, offered for transportation by water, may exceed a gross weight of 20,000 pounds unless a higher weight has been expressly authorized by the Commandant of the U.S. Coast Guard.

(3) No portable tank or DOT specification series 106A or 110A tank may be offered for transportation on board a passenger vessel (including passenger ferry vessels) when the tank contains any flammable or nonflammable gas, flammable liquid, flammable solid, oxidizing material, organic peroxide, extremely or highly toxic material, or irritating substance, unless the following conditions are met (for definition of types of vessels, see §176.22(h) of this subchapter):

(i) The vessel is operating under a change of character certification as described in § 176.22(h) of this subchapter; and

(ii) The specific material is permitted to be transported on board a passenger vessel in § 172.101 of this subchapter.

* * * * *

K. In § 173.33, the word chapter would be amended to read "subchapter" in paragraphs (b) and (b)(1); paragraph (a)(1) would be added to read as follows:

§ 173.33 Cargo tank use authorization.

(a) * * *

(1) When a cargo tank is authorized in this subchapter for the shipment of a hazardous material, this cargo tank may be offered for transportation by water only when it is in accordance with the requirements of Part 176 of this subchapter and only on board the following vessels under conditions as follows (for definitions of types of vessels, see § 176.22(h) of this subchapter):

(i) Carfloats, barges, or trailerships if the specific material is permitted in § 172.101 of this subchapter on board a cargo vessel.

(ii) Passenger ferry vessels or railroad car ferry vessels if the specific material is permitted in § 172.101 of this subchapter on board a passenger vessel. Also see § 176.22(h) of this subchapter.

* * * * *

L. In § 173.34, the word chapter would be amended to read "subchapter" in paragraphs (a)(1), (d)(1) Note 1, (e)(9), (h), and (i)(4); paragraph (d)(3) would be amended to read as follows:

§ 173.34 Qualification, maintenance, and use of cylinders.[1]

* * * * *

(d) * * *

(3) Safety relief devices are prohibited on cylinders charged with an extremely toxic gas or liquid.

* * * * *

Subpart B—Explosives; Definitions and Preparation

§ 173.50 [Unchanged]

A. Section 173.50 would remain the same as now written.

B. In § 173.51, paragraph (a) would be amended to read as follows:

§ 173.51 Forbidden explosives.

(a) Unless otherwise provided in Parts 170–189 of this subchapter, the offering of the following explosives for transportation is forbidden:

* * * * *

C. In § 173.52, the introductory text of paragraph (a) would be amended to read as follows:

§ 173.52 Acceptable explosives.

(a) For the purposes of Parts 170–189 of this subchapter, acceptable explosives are divided into three classes as follows (acceptable military explosives must be transported on board vessels in accordance with 46 CFR 146.29):

* * * * *

§ 173.53 [Unchanged]

D. Section 173.53 would remain as now written.

E. In § 173.54, paragraph (b) would be amended; paragraph (c) would be deleted.

§ 173.54 Ammunition for cannon.

* * * * *

(b) Each outside package must be plainly marked "AMMUNITION FOR CANNON WITH EXPLOSIVE PROJECTILES," "AMMUNITION FOR CANNON WITH GAS PROJECTILES," "AMMUNITION FOR CANNON WITH SMOKE PROJECTILES," "AMMUNITION FOR CANNON WITH INCENDIARY PROJECTILES," or "AMMUNITION FOR CANNON WITH ILLUMINATING PROJECTILES," as appropriate.

(c) [Deleted]

[1] Requirements covering cylinders are also applicable to spherical pressure vessels.

§ 173.55 [Unchanged]

F. Section 173.55 would remain as now written.

G. In § 173.56, paragraph (g) would be amended; paragraph (i) would be deleted as follows:

§ 173.56 Ammunition, projectiles, grenades, bombs, mines, gas mines, and torpedoes.

* * * * *

(g) Bombs, projectiles, grenades, ammunition for cannon with gas projectiles, or other packagings loaded with an extremely toxic gas or liquid, and an explosive charge, either boxed or unboxed (see paragraph c of this section) must bear "Nonflammable gas" and "Poison" labels.

* * * * *

(i) [Deleted]

H. In § 173.57, paragraph (b) would be amended to read as follows:

§ 173.57 Rocket ammunition.

* * * * *

(b) Each outside package must be plainly marked "ROCKET AMMUNITION WITH EXPLOSIVE PROJECTILES," "ROCKET AMMUNITION WITH GAS PROJECTILES," "ROCKET AMMUNITION WITH SMOKE PROJECTILES," "ROCKET AMMUNITION WITH INCENDIARY PROJECTILES," or "ROCKET AMMUNITION WITH ILLUMINATING PROJECTILES," as appropriate.

* * * * *

I. In § 173.58, paragraph (c) would be deleted as follows:

§ 173.58 Ammunition for small arms.

* * * * *

(c) [Deleted]

J. In § 173.59, paragraph (b) would be deleted as follows:

§ 173.59 Chemical ammunition, explosive.

* * * * *

(b) [Deleted]

K. In § 173.60, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraphs (e)(2) and (f) would be deleted as follows:

§ 173.60 Black powder and low explosives.

* * * * *

(e) * * *

(2) [Deleted]

(f) [Deleted]

§ 173.61 [Amended]

L. Section 173.61 would remain as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

M. In § 173.62, the word chapter would be amended to read "subchapter" each time it appears in paragraph (a); paragraph (b) would be deleted as follows:

§ 173.62 High explosives, liquid.

* * * * *

(b) [Deleted]

N. In § 173.63, the word chapter would be amended to read "subchapter" each

time it appears in paragraphs (a), (b), (c), (d), and (e); paragraph (g) would be deleted as follows:

§ 173.63 High explosive with liquid explosive ingredient.

* * * * *

(g) [Deleted]

O. In § 173.64, the Heading would be amended; the word chapter would be amended to read "subchapter" in paragraphs (a) (1), (2), (3), and (7); paragraph (c) would be deleted as follows:

§ 173.64 High explosives with no liquid explosive ingredient and propellant explosives, Class A.

* * * * *

(c) [Deleted]

* * * * *

P. In § 173.65, the word chapter would be amended to read "subchapter" each time it appears in the section; the introductory text of paragraph (d) would be amended; paragraph (k) would be deleted as follows:

§ 173.65 High explosives with no liquid explosive ingredient nor any chlorate.

* * * * *

(d) The following materials may be shipped dry, in quantity not exceeding 4 ounces in one outside package, by rail freight or highway, as drugs, n.o.s., or medicines, n.o.s., without any other requirement when in securely closed bottles or jars cushioned to prevent breakage:

* * * * *

(k) [Deleted]

Q. In § 173.66, the word chapter would be amended to read "subchapter" each time it appears in the section; Note 1 following paragraphs (d) (1) and (e) (1), and paragraph (i) would be deleted as follows:

§ 173.66 Blasting caps, blasting caps with safety fuse, blasting caps with metal clad mild detonating fuse, and electric blasting caps.

* * * * *

(d) * * *

(1) * * *

NOTE 1: [Deleted]

(e) * * *

(1) * * *

NOTE 1: [Deleted]

* * * * *

(i) [Deleted]

R. In § 173.67, the word chapter would be amended to read "subchapter" in paragraph (a) (1); paragraph (c) would be deleted as follows:

§ 173.67 Blasting caps with safety fuse and blasting caps with metal clad mild detonating fuse.

* * * * *

(c) [Deleted]

S. In § 173.68, the word chapter would be amended to read "subchapter" in paragraph (a) (1); paragraph (c) would be deleted as follows:

§ 173.68 Detonating primers.

* * * * *

(c) [Deleted.]

T. In § 173.69, the heading would be amended; paragraph (d) would be deleted as follows:

§ 173.69 Detonating fuzes, Class A, with or without radioactive components, detonating fuze parts containing an explosive, boosters, bursters, or supplementary charges.

* * * * *

(d) [Deleted.]

U. In § 173.70, the word chapter would be amended to read "subchapter" in paragraph (b); paragraph (a) would be amended; paragraph (e) would be deleted as follows:

§ 173.70 Diazodinitrophenol or lead mononitroresorcinate.

(a) The offering of diazodinitrophenol or lead mononitroresorcinate in a dry condition for transportation is forbidden, except as a component of manufactured articles such as percussion caps, detonators, blasting caps, and exploders.

* * * * *

(e) [Deleted.]

V. In § 173.71, the word chapter would be amended to read "subchapter" in paragraph (b); paragraph (a) would be amended; paragraph (e) would be deleted as follows:

§ 173.71 Fulminate of mercury.

(a) The offering of fulminate of mercury in a dry condition for transportation is forbidden, except as a component of manufactured articles such as percussion caps, detonators, blasting caps, and exploders.

* * * * *

(e) [Deleted.]

W. In § 173.72, the word chapter would be amended to read "subchapter" in paragraph (b); paragraph (a) would be amended; paragraph (e) would be deleted as follows:

§ 173.72 Guanyl nitrosamino guanylidene hydrazine.

(a) The offering of guanyl nitrosamino guanylidene hydrazine in a dry condition for transportation is forbidden, except as a component of manufactured articles such as percussion caps, detonators, blasting caps, and exploders.

* * * * *

(e) [Deleted.]

X. In § 173.73, the word chapter would be amended to read "subchapter" in paragraph (b); paragraph (a) would be amended; paragraph (e) would be deleted as follows:

§ 173.73 Lead azide.

(a) The offering of lead azide in a dry condition for transportation is forbidden, except as a component of manufactured articles such as percussion caps, detonators, blasting caps, and exploders.

* * * * *

(e) [Deleted]

Y. In § 173.74, the word chapter would be amended to read "subchapter" in paragraph (b); paragraph (a) would be amended; paragraph (e) would be deleted as follows:

§ 173.74 Lead styphnate.

(a) The offering of lead styphnate (lead trinitroresorcinate) in a dry condition for transportation is forbidden, except as a component of manufactured articles such as percussion caps, detonators, blasting caps, and exploders.

* * * * *

(e) [Deleted]

Z. In § 173.75, the word chapter would be amended to read "subchapter" in paragraph (b) and (b) (1); paragraph (a) would be amended; paragraph (e) would be deleted as follows:

§ 173.75 Nitro mannite.

(a) The offering of nitro mannite in a dry condition for transportation is forbidden, except as a component of manufactured articles such as percussion caps, detonators, blasting caps, and exploders.

* * * * *

(e) [Deleted]

AA. In § 173.76, the word chapter would be amended to read "subchapter" in paragraph (b); paragraph (a) would be amended; paragraph (e) would be deleted as follows:

§ 173.76 Nitrosoguanidine.

(a) The offering of nitrosoguanidine in a dry condition for transportation is forbidden, except as a component of manufactured articles such as percussion caps, detonators, blasting caps, and exploders.

* * * * *

(d) [Deleted]

BB. In § 173.77, the word chapter would be amended to read "subchapter" in paragraph (b); paragraph (a) would be amended; paragraph (e) would be deleted as follows:

§ 173.77 Pentaerythrite tetranitrate.

(a) The offering of pentaerythrite tetranitrate in a dry condition for transportation is forbidden, except as a component of manufactured articles such as percussion caps, detonators, blasting caps, and exploders.

* * * * *

(e) [Deleted]

CC. In § 173.78, the word chapter would be amended to read "subchapter" in paragraph (b); paragraph (a) would be amended; paragraph (e) would be deleted as follows:

§ 173.78 Tetrazene.

(a) The offering of tetrazene (guanyl nitrosamino guanyl tetrazene) in a dry condition for transportation is forbidden, except as a component of manufactured articles such as percussion caps, detonators, blasting caps, and exploders.

* * * * *

(e) [Deleted]

DD. In § 173.79, the word chapter would be amended to read "subchapter" in paragraph (a) (1); the heading and the introductory text of paragraph (a) would be amended; paragraph (e) would be deleted as follows:

§ 173.79 Jet thrust units (jato), Class A explosives; rocket motors, Class A explosives; igniters, jet thrust (jato), Class A explosives; and igniters, rocket motor, Class A explosives.

(a) Jet thrust units (jato), rocket motors, jet thrust (jato) igniters, and rocket motor igniters, which are Class A explosives must be packaged as follows:

* * * * *

(e) [Deleted]

EE. In § 173.80, paragraph (a) would be amended; paragraph (f) would be deleted as follows:

§ 173.80 Charged oil well jet perforating guns.

(a) Charged oil well jet perforating guns may be transported by highway only by private carriers engaged in oil well operations. When the total weight of the explosive contents of the shaped charges assembled to guns being transported does not exceed 20 pounds in the motor vehicle, these guns may be classed as Class C explosives. See § 173.110.

* * * * *

(f) [Deleted]

FF. In § 173.86, the word chapter would be amended to read "subchapter" in paragraphs (a), (d) (1) and (2); the introductory text of paragraph (d) and paragraphs (d) (4) and (6) would be amended to read as follows:

§ 173.86 New explosives and samples for laboratory examination.

* * * * *

(d) *Samples of explosives and explosive articles for transportation by rail freight, express rail car, cargo-only aircraft, or highway.* Samples of explosives (except liquid nitroglycerin), including fireworks and explosive devices for examination in a laboratory only and not intended for use or demonstration, may be offered for transportation by rail freight, express rail car, cargo-only aircraft (Class C explosives) only or highway provided they fulfill the following requirements:

* * * * *

(4) Not more than 20 half-pound samples of explosives for laboratory examination may be packed in one outside package or transported in a single transport vehicle at one time.

* * * * *

(6) Each package containing a sample of an explosive for laboratory examination must be clearly marked on the outside of the package with the words "SAMPLE FOR LABORATORY EXAMINATION," and labeled in accordance with § 172.411 of this subchapter.

§ 173.87 [Amended]

GG. In § 173.87, the word chapter would be amended to read "subchapter" in paragraph (a).

§ 173.88 [Unchanged]

HH. Section 173.88 would remain as now written.

II. In § 173.89, paragraph (c) would be deleted as follows:

§ 173.89 Ammunition for cannon with empty projectiles, inert-loaded projectiles, solid projectiles, or without projectiles or shell.

* * * * *

(c) [Deleted]

JJ. In § 173.90, paragraph (c) would be deleted as follows:

§ 173.90 Rocket ammunition with empty, inert-loaded, or solid projectiles.

* * * * *

(c) [Deleted]

§§ 173.91, 173.92 [Amended]

KK. Sections 173.91 and 173.92 would remain as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

LL. In § 173.93, the word chapter would be amended to read "subchapter" each time it appears in the section; the introductory text of paragraphs (a) and (g) and paragraph (d) (5) would be amended to read as follows:

§ 173.93 Propellant explosives (solid) for cannon, small arms, rockets, guided missiles, or other devices, and propellant explosives (liquid).

(a) Propellant explosives (solid) for cannon, small arms, rockets, guided missiles, or other devices, when offered for transportation by carriers by rail freight, highway, or water, must be packed in containers complying with the following specifications (see paragraphs (g) (1) and (2) of this section for shipments by express rail car and cargo-only aircraft):

* * * * *

(d) * * *

(5) Propellant explosives (unstable, condemned, or deteriorated smokeless powder for cannon or small arms) must not be offered for transportation by express rail car or cargo-only aircraft.

* * * * *

(g) Propellant explosives when offered for transportation by express rail car or cargo-only aircraft must be packaged as follows (also authorized for transportation by carriers by rail freight, highway, or water):

* * * * *

MM. In § 173.94, the word chapter would be amended to read "subchapter" in paragraph (a) (1); paragraph (d) would be deleted as follows:

§ 173.94 Explosive power devices, Class B.

* * * * *

(d) [Deleted]

NN. In § 173.95, the word chapter would be amended to read "subchapter" in paragraph (a) (1); the introductory text of paragraph (a) would be amended; paragraph (e) would be deleted as follows:

§ 173.95 Rocket engines (liquid), Class B explosives.

(a) Class B explosives liquid rocket engines must be packaged as follows:

* * * * *

(e) [Deleted]

§ 173.100 [Unchanged]

OO. § 173.100 would remain as now written.

PP. § 173.101, paragraphs (c) and (d) would be amended to read as follows:

§ 173.101 Small-arms ammunition.

* * * * *

(c) Packages containing small arms ammunition are exempt from the label prescribed in § 172.411 of this subchapter, but the outside of each package must be plainly marked "SMALL ARMS AMMUNITION."

(d) Each package containing cartridges loaded with an Irritating Material must in addition to marking prescribed herein be marked "IRRITATING AGENT" and must bear the irritant label.

* * * * *

§§ 173.101a, 173.102 [Unchanged]

QQ. §§ 173.101a and 173.102 would remain as now written.

RR. In § 173.103, paragraph (b) would be deleted as follows:

§ 173.103 Blasting caps, blasting caps with safety fuse, blasting caps with metal clad mild detonating fuse, and electric blasting caps, not exceeding 1,000 caps.

(b) [Deleted]

§§ 173.104–173.109 [Amended]

SS. Sections 173.104 through 173.109 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

TT. In § 173.110, paragraph (b) would be amended to read as follows:

§ 173.110 Charged oil well jet perforating guns, total explosive content in guns not exceeding 20 pounds per motor vehicle.

* * * * *

(b) Charged oil well jet perforating guns may be offered for transportation and transported only by private carrier by highway.

§§ 173.111–173.114 [Amended]

UU. §§ 173.111 through 173.114 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

VV. Subpart C would be amended as follows:

Subpart C—Flammable and Combustible Liquids; Definition and Preparation

A. In § 173.115, the heading and text of paragraph (b) would be amended to read as follows:

§ 173.115 Flammable and combustible liquids; definition.

* * * * *

(b) Any liquid having a flash point and which is thermally unstable is classed as a flammable liquid and must be packaged according to § 173.119(b) through

(m) according to its properties other than flash point.

* * * * *

B. In § 173.116, paragraphs (a) and (b) would be amended to read as follows:

§ 173.116 Outage.

(a) Outage for packagings offered for transportation, except as otherwise specifically provided in this part, must be as prescribed in paragraphs (b) to (h) of this section.

(b) Packagings must not be completely filled. Sufficient outage must be provided so that the packaging will not be liquid full at 130°F.

* * * * *

C. Section 173.116a would be added to read as follows:

§ 173.116a Flammable and combustible liquids; shippers by water.

(a) Regulations regarding flammable and combustible liquids in this subchapter do not apply to any liquid that has a flash point above 80°F. on board any cargo vessel or barge.

(b) Regulations regarding flammable liquids in this subchapter do not apply to any liquid that has a flash point above 80°F. on board any passenger vessel; instead, regulations regarding combustible liquids apply to such liquids.

(c) For the purposes of this section, flash points must be determined by Tagliabue's open-cup tester, ASTM test D 1310.

NOTE: If a liquid has a flash point above 80°F. and its packaging is identified as flammable for the purposes of transportation by air or land, the package should be marked with contents' flash point or other clarifying information, if it is desired to avoid its being treated as a flammable liquid on vessels. Liquids that have flash points above 150°F. should be marked with their flash points and the words "Not combustible for transportation on vessels."

§ 173.117 [Unchanged]

D. Section 173.117 would remain as now written.

E. Section 173.118 would be amended to read as follows:

§ 173.118 Exemptions for flammable liquids.

(a) A flammable liquid, having a hazard information number 30, except one for which no exemption is provided as indicated by a "No exemption" statement in § 172.101 of this subchapter is, unless otherwise provided, exempt from the specification requirements of the Part if packed:

(1) In metal receptacles not over 1 quart capacity each, packed in strong outside packagings;

(2) In receptacles having a capacity not over 1 pint or 16 ounces by weight each, packed in strong outside packaging; or

(3) In inside packagings having a rated capacity of one gallon or less if the material has a flash point of 73°F. or higher. Strong outside packagings are required.

(b) A flammable liquid having a hazard information number 30, having a flash point of 73°F. or higher in a packaging having a capacity of less than 110 gallons is not subject to the specification packaging requirements of this Part if the flash point is marked on the outside packaging when transported by rail or highway.

(c) A flammable liquid meeting the conditions specified in paragraph (a) of this section may be reclassed as an ORM–D material when shipped in accordance with Subpart I of this part and the gross weight of each package does not exceed 65 pounds.

F. Section 173.118a would be added to read as follows:

§ 173.118a Exemptions for combustible liquids.

(a) The regulations in this subchapter do not apply to a material classed as a combustible liquid in a packaging having a rated capacity of 110 gallons or less when transported by highway, rail, or by cargo vessel.

(b) A combustible liquid, when offered for transportation by aircraft, and unless otherwise provided in § 172.101 of this subchapter, is exempt from specification packaging when packaged in inside packagings having a rated capacity of one gallon or less, further overpacked in a strong outside packaging. When transported by water, any combustible liquid (See § 176.300 of this subchapter) in these packagings is not subject to Parts 170 to 189 of this subchapter.

(c) A combustible liquid in a portable tank, cargo tank, or tank car tank is exempt from the requirements of this subchapter for transportation by highway and rail except those that pertain to:

(1) Shipping papers, waybills, switching orders, or other billing;

(2) Marking and placarding of portable tanks;

(3) Marking and placarding of motor vehicles and tank car tanks, and

(4) Reporting incidents as prescribed in §§ 171.15 and 171.16 of this subchapter.

G. In § 173.119, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraphs (a)(1), (3), (b), (b)(7), (h)(1)(i), (k)(3), (4), (m)(1), (5), and (8) would be amended to read as follows:

§ 173.119 Flammable liquids not specifically provided for.

(a) * * *

(1) Specification 1A, 1C, or 1D (§§ 178.1, 178.3, 178.4 of this subchapter). Carboys, glass, boxed or in barrels or kegs, capacity not over 5 gallons, except capacity not over 6.5 gallons authorized for Spec. 1D. Must be closed, and when reused must be reconditioned and tested, as provided in the specification. Not authorized for transportation by aircraft.

* * * * *

(3) Specification 17E (§ 178.116 of this subchapter). Metal drums (single-trip) with openings not over 2.3 inches in diameter. Drums with a marked capacity of more than 5 gallons but not more than 30 gallons must be constructed of 19-gauge body and head sheets. Drums with a marked capacity in excess of 30 gallons must be constructed of 18-gauge body and head sheets. Drums with a marked capacity of more than 5 gallons are not authorized by express rail car or aircraft.

* * * * *

(b) *Flammable liquids with flash point above 20° F. to 73° F. and flammable liquids with flash point of 73° F. or higher having a hazard information number other than 30 except as provided by paragraph (m) of this section.* A flammable liquid with a flash point above 20° F. to 73° F. and any flammable liquid with a flash point of 73° F. or higher having a hazard information number other than 30 except as provided by paragraph (m) of this section, and having vapor pressure (Reid [1] test) not over 16 p.s.i.a. at 100° F., other than those for which special requirements are prescribed in this Part, must be packaged in packagings of a design and constructed of materials that will not react dangerously with or be decomposed by the chemical packed therein, as follows:

* * * * *

(7) Specification 37P (§ 178.133 of this subchapter). Steel drums with polyethylene liner (nonreusable container). Authorized only for materials that will not react with polyethylene and result in container failure. Not authorized for transportation by aircraft.

* * * * *

(h) * * *

(1) * * *

(i) *Bung label.* A flammable liquid as described in paragraph (e) or (f) of this section, shipped in a metal drum or barrel, in addition to the flammable liquid label, must be labeled near the bung with a white rectangular label or tag measuring 5 by 3 inches, bearing the wording as displayed below:

* * * * *

(k) * * *

(3) Specification 37A or 37B (§ 178.131, 178.132 of this subchapter). Metal drums (single-trip) not over 5 gallons with welded side seams. Not authorized for transportation by aircraft.

* * * * *

(l) *Viscous flammable liquids with flash point above 20° F. to 73° F. and flammable liquids with flash point of 73° F. or higher having a hazard information number other than 30 except as provided by paragraph (m) of this section, and having a vapor pressure which does not exceed 18 pounds per square inch absolute at 100° F.* A viscous flammable liquid with a flash point above 20° F. to 73° F. and any flammable liquid with a flash point of 73° F. or higher having a hazard information number other than 30 except as provided by paragraph (m) of this section, and having a vapor pressure which does not exceed 18 p.s.i.a. at 100° F. must be packaged as follows:

* * * * *

[1] ASTM Test D323.

(m) * * *

(1) Specification 1A, 1D, or 1EX (single-trip) (§ 178.1, 178.4, 178.6 of this subchapter). Glass carboys, boxed or in plywood drums, capacity not over 5 gallons for specification 1A. Not authorized for transportation by aircraft.

* * * * *

(5) Specification 37P (§ 178.133 of this subchapter). Steel drums, not over 5-gallons capacity, with polyethylene liner (non-reusable container). Drums exceeding 1 gallon capacity must be constructed of at least 24-gauge metal. Authorized only for materials that will not react with polyethylene and result in container failure. Not authorized for transportation by aircraft.

* * * * *

(8) Specification 12P (§ 178.211 of this subchapter). Fiberboard boxes with inside specification 2U (§ 178.24 of this subchapter) polyethylene containers not over 5 gallons capacity each. Authorized only for material which will not react dangerously with or cause decomposition of polyethylene. Not authorized for transportation by aircraft.

* * * * *

H. Section 173.119a would be added to read as follows:

§ 173.119a Certain flammable liquids and combustible liquids not specifically provided for. (See § 170.8 of this subchapter)

(a) A flammable liquid having a flash point of 73°F. or higher and any combustable liquid, having the hazard information number 30, other than those for which specific requirements are prescribed in the Part, when offered for transportation by aircraft or passenger vessel, must be packaged as follows:

(1) As prescribed in § 173.119.

(2) Specification 37B (§ 178.132 of this subchapter). Metal drum with inside glass packagings not over 9 pints capacity each.

(3) Wooden or fiberboard box with inside metal packagings, not over 200 pounds gross weight.

(4) Uniform Freight Classification (UFC), Rule 40, section 5, metal barrel or drum. Single trip specification drum built to UFC Rule 40, section 5 is not authorized.

I. Section 173.119b would be added to read as follows:

§ 173.119b Certain combustible liquids specifically named in § 172.101 of this subchapter. (See § 170.8 of this subchapter)

(a) The following combustible liquids must be packaged as provided in this section:

Alcohol, n.o.s.
Antifreeze compound, liquid
Antifreeze preparation, liquid
Asphalt, cut back
Benzaldehyde
Compound cleaning, liquid
Compound, lacquer, paint, or varnish removing, reducing or thinning, liquid
Cosmetics, n.o.s.
Creosote, coal tar
Decahydronaphthalene
Diisobutyl ketone
Disinfectant, liquid
Dressing, leather
Drugs, n.o.s.
Ethyl butyl acetate
Ethyl chloroacetate
Ethylene glycol diethyl ether
Ethylene glycol monoethyl ether
Ethlene glycol monoethyl ether acetate
Ethylene glycol monomethyl ether
Ethylene glycol monomethyl ether acetate
Ethylhexaldehyde
Ethyl lactate
Ethyl silicate
Furfural
Hexaldehyde
Ink
Insecticide, liquid
Kerosene
Leather bleach
Medicines, n.o.s.
Mercaptan mixture, aliphatic
Methyl amyl acetate
Methyl amyl ketone
Mortar stain, liquid
Paint drier, liquid
Paint, enamel, lacquer, stain, shellac, varnish, aluminum, bronze, gold, wood filler, liquid, or lacquer base, liquid
Pine oil
Plastic solvent, n.o.s.
Polish, metal, stove, furniture, or wood, liquid
Pyroxylin solvent, n.o.s.
Resin solution
Road oil
Rust preventive coating
Sodium methylate, alcohol mixture
Tar, liquid

(b) A combustible liquid named in paragraph (a) of this section, when offered for transportation by aircraft or passenger vessel, must be packaged as follows:

(1) As prescribed in § 173.119a.

(2) Wooden or fiberboard box with inside packagings, not over 200 pounds gross weight.

(3) Uniform Freight Classification (UFC), Rule 41, sections 2 and 3. Fiberboard box with inside packagings, not over 90 pounds gross weight.

J. In § 173.120, paragraph (a) and (c) would be amended; paragraph (d) would be added to read as follows:

§ 173.120 Automobiles, motorcycles, tractors, or other self-propelled vehicles.

(a) Automobiles, motorcycles, tractors, or other self-propelled vehicles, equipped with flammable liquid fuel tanks, provided these tanks are securely closed are not subject to any other requirements for transportation by rail or highway. For transportation by water, see Part 176 of this subchapter. For transportation by air, see paragraph (d) of this section.

* * * * *

(c) *Truck bodies or trailers on flat cars.* Truck bodies or trailers with automatic heating or refrigerating equipment of the flammable liquid type may be shipped with fuel tanks filled and equipment operating or inoperative, when used for the transportation of other freight and loaded on flat cars as part of a joint rail-highway movement, provided the equipment and fuel supply are of a type approved by the Bureau of Explosives. The heating or refrigerating units are not subject to any other requirements of this subchapter and are considered as carriers equipment, not as shipments.

(d) Except as provided in § 175.205 of this subchapter, each automobile, motorcycle, tractor, or other self-propelled vehicle, powered by an internal combustion engine fueled by a flammable or combustible liquid, when offered for transportation by air, must have the fuel tank drained of all fuel and have the tank opening tightly closed.

K. In § 173.121, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (b) would be deleted as follows:

§ 173.121 Carbon bisulfide (disulfide).

* * * * *

(b) [Deleted.]

L. In § 173.122, the word chapter would be amended to read "subchapter" each time it appears in the section; the introductory text of paragraph (a) and paragraph (a) (3) would be amended to read as follows:

§ 173.122 Acrolein, inhibited.

(a) Acrolein must be inhibited when shipped and when offered for transportation must be packaged as follows:

* * * * *

(3) Specification 105A300W (§§ 179.100, 179.101 of this subchapter) tank car.

(i) Each tank car must be stenciled DOT–105A200W, and must be equipped with the 150 p.s.i.g. safety relief valve required by that specification.

(ii) Each tank car must be marked "ACROLEIN" in accordance with the requirements of § 172.310 of this subchapter.

* * * * *

§ 173.123 [Amended]

M. In § 173.123, the word chapter would be amended to read "subchapter" each time it appears in the section.

N. In § 173.124, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a) (5) (i) would be added to read as follows:

§ 173.124 Ethylene oxide.

(a) * * *

(5) * * *

(i) Each tank car must be marked "ETHYLENE OXIDE" in accordance with the requirements of § 172.310 of this subchapter.

* * * * *

O. In § 173.125, the word chapter would be amended to read "subchapter" in paragraphs (a) (5) and (6); the Heading and introductory text of paragraph (a), and paragraph (a) (7) would be amended; paragraph (a) (3) and (4) would be deleted as follows:

§ 173.125 Alcohol (flammable liquid).

(a) Except as otherwise provided in this part, alcohol having a flash point of 100°F. or below must be packaged as follows:

* * * * *

(3) [Deleted]

(4) [Deleted]

* * * * *

(7) Spec. 12P (§ 178.211 of this subchapter). Fiberboard box with inside Spec. 2U (§ 178.24 of this subchapter) polyethylene container not over 5 gallons capacity each. Wire staples are not authorized for assembly or closure of boxes, except when polyethylene container is completely enclosed in inside boxes free of wire staples or other projections that could cause failures. Not authorized for transportation by aircraft.

P. In § 173.126, paragraph (b) would be deleted as follows:

§ 173.126 Nickel carbonyl.

* * * * *

(b) [Deleted]

§ 173.127 [Amended]

Q. In § 173.127, the word chapter would be amended to read "subchapter" each time it appears in the section.

R. In § 173.128, the word chapter would be amended to read "subchapter" in paragraph (b) (1); the Heading and introductory text of paragraph (a) and paragraphs (a) (2), (3) and (4), and paragraph (c) would be amended; paragraph (c) (1) would be deleted as follows:

§ 173.128 Paints and related materials (Flammable liquids).

(a) Except as otherwise provided in this Part, a liquid having a flash point of 100°F. or below and which is a paint, enamel, lacquer, stain, shellac, varnish, liquid aluminum, liquid bronze, liquid gold, liquid wood filler, liquid lacquer base, or a thinning, reducing, or removing compound therefor, or a liquid drier therefor, must be packaged as follows:

* * * * *

(2) Spec. 37A or 37B (§ 178.131, § 178.132 of this subchapter). Metal drums (single-trip) not over 5 gallons capacity with welded side seams for drums over 2 gallons capacity, irrespective of flash point or viscosity. Spec. 37A metal drums constructed with 26-gauge body sheets, 24-gauge removable heads, and 26-gauge bottom heads are authorized for not over 80 pounds gross weight. Not authorized for transportation by aircraft.

(3) Specification 52,[1] or 57 (§§ 178.251, 178.253 of this subchapter). Metal portable tank. Not authorized for transportation by water.

(4) Spec. 37C (§ 178.135 of this subchapter). Metal drums (non-reusable containers) not over 5 gallons capacity each. Authorized only for materials having flash point above 20°F. Not authorized for transportation by aircraft.

* * * * *

(c) The flammable liquids identified in paragraph (a) of this section, in glass packagings of not over 1 quart capacity each, or in metal packagings of not over 5 gallons capacity each, further overpacked in a strong outside packaging are exempt from the specification packaging requirements of this Part. The gross weight of each completed package may not exceed 65 pounds.

(1) [Deleted]

S. In § 173.129, the Heading, introductory text of paragraph (a), paragraphs (a) (2) and (b) would be amended to read as follows:

§ 173.129 Polishes, metal, stove, furniture, and wood, liquid (flammable liquids).

(a) Except as otherwise provided in this Part, a liquid having a flash point of 100°F. or below and which is a metal, stove, furniture, or wood polish must be packaged as follows:

* * * * *

(2) Specification 37A or 37B (§ 178.131, § 178.132 of this subchapter). Metal drums (single-trip) not over 5 gallons capacity with welded side seams, irrespective of flash point or viscosity. Not authorized for transportation by aircraft.

(b) Liquid metal, stove, furniture, and wood polish, in glass packagings not over 1 quart capacity each, or metal packagings not over 5 gallons each, further overpacked in a strong outside packaging is exempt from the specification packaging requirements of this Part. The gross weight of each completed package may not exceed 65 pounds.

T. Section 173.130 would be amended be read as follows:

§ 173.130 Refrigerating machines.

Refrigerating machines assembled for shipment and containing not over 15 pounds of a flammable liquid for their operation are exempt from the specification packaging requirements of this Part and may be released as ORM–D materials if shipped in accordance with Subpart I of this part.

§ 173.131 [Unchanged]

U. Section 173.131 would remain as now written.

V. In § 173.132, the word chapter would be amended to read "subchapter" in paragraph (a) (1); the Heading, introductory text of paragraph (a), paragraphs (a) (2), (3), and (b) would be amended; Note 1 following paragraph (a) (1) would be deleted as follows:

§ 173.132 Cement liquid, n.o.s.; container cement; linoleum cement; pyroxylin cement; rubber cement; tile cement; wallboard cement; coating solution (flammable liquids).

(a) Except as otherwise provided in this Part, a liquid having a flash point of 100° F. or below and which is a liquid cement, n.o.s., a container cement, linoleum cement, pyroxylin cement, rubber cement, tile cement, wallboard cement, or a coating solution must be packaged as follows:

(1) * * *

NOTE 1: [Deleted.]

(2) Specification 52,[1] or 57 (§§ 178.251, 178.253 of this subchapter). Metal portable tank. Authorized for materials irrespective of flash point but only those defined as viscous liquids. Not authorized for transportation by water.

(3) Specification 37C (§ 178.135 of this subchapter). Metal drums (nonreusable container) not over 5 gallons capacity each. Authorized only for materials having flash point above 20°F. Not authorized for transportation by aircraft.

(b) The cements identified in paragraph (a) of this section, except any cement containing carbon bisulfide, in glass or leakproof packagings consisting of a fiberboard body and metal tops and bottoms of not over 1 quart capacity each, or metal packagings of not over 5 gallons capacity each, further overpacked in a strong outside packaging are exempt from the specification packagings of this Part. The gross weight of each package may not exceed 65 pounds.

W. In § 173.133, the word chapter would be amended to read "subchapter" each time it apepears in the section; Note 1 following paragraph (a) (1) would be deleted as follows:

§ 173.133 Spirits of nitroglycerin.

(a) * * *

(1) * * *

NOTE 1: [Deleted.]

* * * * *

X. In § 173.134, the word chapter would be amended to read "subchapter" each time it appears in the section; the Heading and paragraph (b) would be amended to read as follows:

§ 173.134 Pyrophoric liquids, n.o.s.

* * * * *

(b) Pyrophoric liquids, n.o.s., when offered for transportation by express rail car must be packaged as prescribed by paragraph (a) (1), (2), or (3) of this section.

Y. In § 173.135, the word chapter would be amended to read "subchapter" each time it appears in the section; the Heading, the introductory text of paragraph (a), and paragraph (a) (5) would be amended to read as follows:

§ 173.135 Diethyl dichlorosilane; dimethyl dichlorosilane; ethyl dichlorosilane, ethyl trichorosilane; methyl trichlorosilane; trimethyl chlorosilane; vinyl trichlorosilane.

(a) Diethyl dichlorosilane, dimethyl dichlorosilane, ethyl dichlorosilane, ethyl trichlorosilane, methyl trichlorosilane, trimethyl chlorosilane, and vinyl trichlorosilane must be packaged as follows:

* * * * *

(5) Specifications 5, 5B, 5C, and 17E (single-trip) (§§ 178.80, 178.82, 178.83, 178.116 of this subchapter). Metal drums. These packagings not authorized for shipment by express rail car or aircraft.

* * * * *

Z. In § 173.136, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a) (3) would be amended to read as follows:

§ 173.136 Methyl dichlorosilane and trichlorosilane.

(a) * * *

[1] Use of existing tanks authorized. Construction not authorized after May 31, 1972.

[1] Use of existing tanks authorized. Construction not authorized after May 31, 1972.

(3) Specification 5A, 5B, or 5C (§§ 178.81, 178.82, 178.83 of this subchapter). Metal drums not over 55 gallons capacity each. Specification 5B drums must have no opening exceeding 2.3 inches in diameter. These packagings not authorized for shipment by express rail car or aircraft.

(4) Specification 5F (§ 178.85 of this subchapter). Metal drums not over 11 gallons capacity. This packaging not authorized for shipment by express rail car or aircraft.

* * * * *

§ 173.137 [Amended]

AA. In § 173.137, the word chapter would be amended to read "subchapter" each time it appears in the section.

BB. In § 173.138, paragraph (b) would be deleted as follows:

§ 173.138 Pentaborane.

* * * * *

(b) [Deleted]

CC. In § 173.139, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a)(4)(i) would be added to read as follows:

§ 173.139 Ethylene imine, inhibited, and propylene imine, inhibited.

(a) * * *

(4) * * *

(i) Each tank car must be marked "ETHYLENE IMINE" in accordance with the requirements of § 176.310 of this subchapter.

* * * * *

§§ 173.140, 173.141 [Amended]

DD. In §§ 173.140 and 173.141, the word chapter would be amended to read "subchapter" each time it appears in the sections:

EE. In § 173.143, the word chapter would be amended to read "subchapter" in paragraphs (a)(1) and (2); paragraph (b) would be deleted as follows:

§ 173.143 Methylchloromethyl ether, anhydrous.

* * * * *

(b) [Deleted]

FF. In § 173.144, the word chapter would be amended to read "subchapter" in paragraphs (a)(2); the heading, the introductory text of paragraph (a) and paragraphs (a)(2) and (b) would be amended to read as follows:

§ 173.144 Ink (flammable liquid).

(a) Except as otherwise provided in this part, ink having a flash point of 100°F. or lower must be packaged as follows:

* * * * *

(3) Specification 37C (§ 178.135 of this subchapter). Metal drums (nonreusable container) not over 5 gallons capacity each. Authorized only for material having flash point over 20°F. Not authorized for transportation by aircraft.

(b) Ink in glass packagings not over 1 quart capacity each, or in metal packagings not over 5 gallons capacity each, further overpacked in a strong outside packaging are exempt from the specification requirements of this part. The gross weight of each package may not exceed 65 pounds.

GG. In § 173.145, the word chapter would be amended to read "subchapter" each time it appears in the section; the heading and paragraph (a)(1) would be amended to read as follows:

§ 173.145 Dimethylhydrazine, unsymmetrical, and methyl hydrazine.

(a) * * *

(1) Specification 1D (§ 178.4 of this subchapter). Boxed glass carboys. Not authorized for transportation by aircraft.

* * * * *

HH. In § 173.146, the heading and paragraph (b) would be amended to read as follows:

§ 173.146 Heaters for refrigerator cars, flammable liquid fuel type.

* * * * *

(b) Heaters of the liquid fuel type for refrigerator cars must have their flammable liquid fuel tanks completely drained if offered for transportation or transported in less-than-carload or less-than-truckload lots.

II. In § 173.147, paragraph (b) would be amended to read as follows:

§ 173.147 Methyl vinyl ketone, inhibited.

* * * * *

(b) Inhibited methyl vinyl ketone, in a glass or metal inside receptacle containing no more than 4 fluid ounces with no more than one such receptacle securely closed and efficiently cushioned in a strong outside packaging, is exempt from the specification packaging requirements of this part. Inhibited methyl vinyl ketone so packaged, may be reclassed as an ORM–D material if shipped in accordance with Subpart I of this part.

§§ 173.148, 173.149 [Amended]

JJ. Sections 173.148 and 173.149 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

KK. Section 173.149a would be added to read as follows:

§ 173.149a Nitromethane.

Nitromethane must be packaged as specified in § 173.119(b) except that shipment in cargo tanks, tank cars, and portable tanks is prohibited.

LL. Section 173.149b would be added to read as follows:

§ 173.149b Formaldehyde.

(a) Formaldehyde, when offered for shipment by aircraft or passenger vessel, must be packaged as follows:

(1) Specification 5C (§ 178.83 of this subchapter) steel barrel or drum.

(2) Specification 42B or 42C (§§ 178.107, 178.108 of this subchapter) aluminum barrels or drums.

(3) Specification 12B (§ 178.205 of this subchapter). Fiberboard box with inside containers.

(4) Specification 1A or 1C (§§ 178.1, 178.3 of this subchapter). Carboy, glass, boxed or in a keg, not over 13 gallons capacity. Not authorized for transportation by aircraft.

(5) Specification 1D (§ 178.4 of this subchapter). Boxed glass carboy not over 6.5 gallons capacity. Not authorized for transportation by aircraft.

(6) Wooden box with inside containers, not over 200 pounds gross weight.

(7) Steel drum, lined, of not over 110 gallons capacity.

A. Subpart D would be amended as follows:

Subpart D—Flammable Solids, Oxidizing Materials, and Organic Peroxides; Definitions and Preparation

§ 173.150 [Amended]

B. Section 173.150 would remain as now written except the word chapter would be amended to read "subchapter" in the first sentence of paragraph (a).

C. Section 173.151 would be amended to read as follows:

§ 173.151 Oxidizing material; definition.

An oxidizing material for the purpose of this subchapter is a substance such as a chlorate, permanganate, inorganic peroxide, nitro, carbo nitrate, or a nitrate that yields oxygen readily to stimulate the combustion of organic matter.

D. Section 173.151a would be added to read as follows:

§ 173.151a Organic peroxide; definition.

An organic compound containing the bivalent –0–0– structure and which may be considered a derivative of hydrogen peroxide where one or more of the hydrogen atoms have been replaced by organic radicals must be classed as an organic peroxide.

§ 173.152 [Unchanged]

E. Section 173.152 would remain as now written.

F. Section 173.153 would be amended to read as follows:

§ 173.153 Exemptions for flammable solids, oxidizing materials, and organic peroxides.

(a) Flammable solids and oxidizing materials, except those for which no exemptions are provided as indicated by a "No exemption" statement in § 172.101 of this subchapter are, unless otherwise provided, exempt from the specification packaging requirements of this Part if packaged in inside receptacles containing not over 1 pound net weight each, further overpacked in strong outside packagings.

(b) Liquid or solid organic peroxides, except acetyl benzoyl peroxide, solid, and benzoyl peroxide, are, unless otherwise provided, exempt from the specification packaging requirements of this Part if packaged as follows:

(1) In inside receptacles which must be securely packed and cushioned with noncombustible cushioning material (except that cushioning material is not required when the liquid is contained in strong, securely closed plastic packagings

of not over 1 ounce by volume capacity each), further overpacked in strong outside packagings containing not over 1 pint or 1 pound net weight of the material.

(2) In not more than 24 inside fiberboard containers each having not more than 70 securely closed tubes having a maximum fluid capacity each of ⅛ ounce and securely packed in noncombustible cushioning material. Each fiberboard container may not contain more than 1 pint of liquid.

(c) A flammable solid, oxidizing material, or organic peroxide, meeting the conditions specified in paragraph (a) or (b) of this section may be reclassed as ORM-D materials if shipped in accordance with Subpart I of this part and the gross weight of the package does not exceed 65 pounds.

§§ 173.154, 173.154a, 173.155, 173.156, 173.158 [Amended]

G. Sections 173.154, 173.154a, 173.155, 173.156, and 173.158 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections. Section 173.157 would remain the same as now written.

§ 173.157 [Unchanged]

H. Section 173.159 would be amended to read as follows:

§ 173.159 Burnt cotton.

(a) "Burnt cotton" is cotton that has been on fire and from which the burnt portions have not been removed by repicking. It must not be offered for transportation until at least 10 days have elapsed since the last evidence of fire in it. It must be described on shipping papers as "Burnt cotton, 40, flammable solid."

(b) When burnt cotton is picked and baled, the separated cotton is subject to the same regulations as cotton that has not been involved in a fire. See § 172.101 of this subchapter.

§§ 173.160, 173.161 [Amended]

I. Sections 173.160 and 173.161 would remain as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

J. In § 173.162, the introductory text of paragraph (a) and paragraph (a) (9) would be amended; the word chapter would be amended to read "subchapter" in paragraph (1); paragraph (f) (4) would be deleted as follows:

§ 173.162 Charcoal.

(a) Charcoal, as described in this paragraph, is exempt from the specification packaging requirements of this part and may be reclassed as an ORM–D material when shipped in accordance with subpart I of this part, in packaging not over 65 pounds gross weight.

* * * * *

(9) When offered for transportation by express rail car or aircraft, charcoal must be packaged in boxes.

* * * * *

(f) * * *

(4) [Deleted]

* * * * *

§ 173.163 [Amended]

K. Section 173.163 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

L. In § 173.164, the word chapter would be amended to read "subbchapter" each time it appears in the section; the Heading and introductory text of paragraph (a) and paragraph (a) (2) would be amended to read as follows:

§ 173.164 Chromic acid or chromic acid mixture, dry.

(a) Chromic acid and chromic acid mixture, dry must be packaged as follows:

* * * * *

(2) Specification 17H or 37A (§§ 178.118, 178.131 of this subchapter) metal drums. A specification 37A metal drum constructed from 22-gauge thick steel throughout is authorized for a gross weight of not over 490 pounds when it is shipped in a carload or truckload lot.

* * * * *

§§ 173.165, 173.166 [Amended]

M. Sections 173.165 and 173.166 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in § 173.166.

N. In § 173.167, paragraph (b) would be deleted as follows:

§ 173.167 Cotton waste, oily.

* * * * *

(b) [Deleted]

§ 173.168 [Amended]

O. Section 173.168 would remain as now written except the word chapter would be amended to read "subchapter" in paragraph (a) (2).

P. In § 173.169, paragraph (b) would be deleted as follows:

§ 173.169 Fiber, burnt.

* * * * *

(b) [Deleted]

Q. In § 173.170, the heading would be amended; paragraph (b) would be deleted as follows:

§ 173.170 Fibers or fabrics impregnated, saturated, or coated.

* * * * *

(b) [Deleted]

R. In § 173.171, paragraph (b) would be deleted as follows:

§ 173.171 Fish scrap or fish meal.

* * * * *

(b) [Deleted]

S. In § 173.172, paragraph (b) would be deleted as follows:

§ 173.172 Hair, wet.

* * * * *

(b) [Deleted]

§ 173.173 [Unchanged]

T. Section 173.173 would remain the same as now written.

U. In § 173.174, the heading would be amended; paragraphs (b) and (d) would be deleted as follows:

§ 173.174 Iron sponge; spent oxide; spent iron mass; spent iron sponge.

* * * * *

(b) [Deleted]

* * * * *

(d) [Deleted]

§ 173.175 [Unchanged]

V. Section 173.175 would remain as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

W. In § 173.176, the word chapter would be amended to read "subchapter" each time it appears in the section; the introductory texts of paragraphs (d), (e), and (g) would be amended; paragraph (g) (1) would be deleted; paragraph (h) would be added to read as follows:

§ 173.176 Matches.

* * * * *

(d) Matches, unless exempted in paragraph (g) or (h) of this section, must be packaged as follows:

* * * * *

(e) Any packagings containing strike-anywhere matches, when offered for transportation by express rail car or aircraft, must be further overpacked as follows:

* * * * *

(g) Matches, strike-on-box, book, and card packed in outside fiberboard or wooden boxes are classed as ORM–D materials when shipped in accordance with Subpart I of this part.

(1) [Deleted]

(h) Matches, strike-on-box, book, and card may be packed in the same outside packaging with nonflammable materials when packaged in outside fiberboard or wooden boxes. They must be compactly packed in tightly closed inside packagings or securely wrapped to prevent accidental ignition. When so packed, they are exempt from the specification packaging requirements of this section and may be reclassed as ORM–D materials. The outside of each package must be marked "BOOK MATCHES," "STRIKE-ON-BOX MATCHES," or "CARD MATCHES," as appropriate.

X. In § 173.177, the word chapter would be amended to read "subchapter" each time it appears in the section; the Note following paragraph (a) (4) would be deleted as follows:

§ 173.177 Motion-picture film and X-ray film.

(a) * * *

(4) * * *

NOTE: [Deleted]

* * * * *

Y. In § 173.178, the word chapter would be amended to read "subchapter" each time it appears in the section; the heading and the introductory text of paragraph (a) would be amended to read as follows:

§ 173.178 Motion-picture film, old and worn out (not scrap) (Nitrocellulose-base).

(a) Motion-picture film, old and worn out (not scrap), nitrocellulose-base, must be packaged as follows:

* * * * *

§ 173.179 [Deleted]

Z. Section 173.179 would be deleted.

AA. In § 173.180, the word chapter would be amended to read "subchapter" each time it appears in the section; the Heading and the introductory text of paragraph (a) would be amended; paragraph (b) would be deleted as follows:

§ 173.180 Motion-picture film and X-ray film, unexposed (nitrocellulose base).

(a) Motion-picture film and X-ray film, unexposed (nitrocellulose base), must be packaged as follows:

* * * * *

(b) [Deleted]

§ 173.181 [Deleted]

BB. Section 173.181 would be deleted.

CC. Section 173.182 would be amended to read as follows:

§ 173.182 Nitrates.

NOTE: Calcium nitrate ($5Ca(NO_3)_2 \cdot NH_4NO_3 \cdot 10H_2O$) with 15.5 to 15.6 percent nitrogen and at least 12 percent water is not subject to the regulations in this subchapter.

(a) Aluminum nitrate, ammonium nitrate, ammonium nitrate (organic coating), ammonium nitrate—carbonate mixture, ammonium nitrate—phosphate,[1] ammonium nitrate fertilizer, containing 90 percent or more ammonium nitrate with no organic coating, ammonium nitrate mixed fertilizer,[1] barium nitrate, calcium nitrate, guanidine nitrate, lead nitrate, magnesium nitrate, nitrates, n.o.s., nitrate of soda and potash, nitro carbo nitrate (see Note 1), potassium nitrate, silver nitrate, sodium nitrate, and strontium nitrate must be packaged as follows:

(1) In wooden or fiberboard boxes with glass, metal, or other strong inside containers; in metal or fiber drums; in kegs or barrels; or in strong metal cans. When so packed, they are exempt from the specification packaging requirements of this part.

* * * * *

(b) Aluminum nitrate, ammonium nitrate, ammonium nitrate (organic coating), ammonium nitrate—carbonate mixture, ammonium nitrate—phosphate,[1] ammonium nitrate fertilizer, containing 90 percent or more ammonium nitrate with no organic coating, ammonium nitrate mixed fertilizer,[1] barium nitrate, calcium nitrate, guanidine nitrate, nitrate of soda and potash, potassium nitrate, sodium nitrate, and strontium nitrate, in addition to containers prescribed in paragraph (a) of this section, may be packaged as follows:

[1] Applies only to materials classed as dangerous under definition in § 173.151.

(1) In bulk in tight closed freight cars. (See § 174.510 of this subchapter for loading requirements.)

(2) In bulk in sift proof closed or open type motor vehicles. (See § 177.838(f) of this subchapter for loading requirements.)

(3) [Deleted]

(4) In burlap bags not exceeding 200 pounds net weight, water-resistant, made tight against sifting, and made of not less than 7½ ounce burlap. (See §§ 174.510 and 177.838 of this subchapter for loading requirements.)

(5) In multi-wall paper bags not exceeding 110 pounds net weight, of at least 4-ply construction including moisture-barrier ply, and made tight against sifting. Completed package, filled to weight with product and closed for shipment, must be capable of withstanding three 4-foot drops on face or back onto solid concrete without rupture. (See §§ 174.510 and 177.838 of this subchapter for loading requirements).

(6) Spec. 44P (§ 178.241 of this subchapter). All plastic bags. Authorized net weight not over 81 pounds. Authorized only for ammonium nitrate mixed fertilizer, and ammonium nitrate fertilizer containing 90 percent or more ammonium nitrate with no organic coating. (See §§ 174.510 and 177.838 of this subchapter for loading requirements.)

(c) Nitro carbo nitrate, in addition to the packagings prescribed in paragraph (a) of this section, may be packaged as follows:

(1) In burlap bags not exceeding 100 pounds net weight, water-resistant, made tight against sifting, and made of not less than 7½ ounce burlap. (See §§ 174.510 and 177.838 of this subchapter for loading requirements.)

(2) In multi-wall paper bags not exceeding 100 pounds net weight, made of at least 4-ply construction including moisture-barrier ply, and made tight against sifting. Completed package, filled to weight with product and closed as for shipment, must be capable of withstanding three 4-foot drops on the face or back onto solid concrete without rupture. (See §§ 174.510 and 177.838 of this subchapter for loading requirements.)

§§ 173.183, 173.184 [Amended]

DD. Sections 173.183 and 173.184 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

EE. In § 173.185, paragraph (b) would be deleted as follows:

§ 73.185 Paper stock, wet.

* * * * *

(b) [Deleted.]

FF. In § 173.186, Note 1 following paragraph (a) and paragraph (b) would be deleted as follows:

§ 173.186 Paper waste, wet.

(a) * * *

NOTE 1: [Deleted]

(b) [Deleted.]

§ 173.187 [Amended]

GG. Section 173.187 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

HH. In § 173.188, the word chapter would be amended to read "subchapter" each time it appears in the section; Note 1 following paragraph (a)(1) would be deleted as follows:

§ 173.188 Phosphoric anhydride.

(a) * * *

(1) * * *

NOTE 1: [Deleted.]

* * * * *

§ 173.189 [Amended]

II. Section 173.189 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

JJ. In § 173.190, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a), the introductory text of paragraph (c), and the last sentence of paragraph (b) would be amended; paragraph (b)(3)(i) would be added; paragraph (e) would be deleted as follows:

§ 173.190 Phosphorus, white or yellow.

(a) Phosphorus, white or yellow, when offered for transportation by rail freight, highway, or water, must be packed in water or dry, as follows:

(b) * * *

(3) * * * After unloading, the tank must be filled to its entire capacity with an inert gas or to its entire capacity and the dome to not more than 50 percent of its capacity with water having a temperature not exceeding 140° F. and placarded with "EMPTY-FLAMMABLE" placards as described in § 172.527 of this subchapter before the car is offered for return movement.

(i) Each tank car must be marked "PHOSPHORUS" in accordance with the requirements of § 172.310 of this subchapter.

* * * * *

(c) Phosphorus, white or yellow, when offered for transportation by express rail car or aircraft, must be packed in water in packaging as follows (also authorized for transportation by rail freight, highway, or water):

* * * * *

(e) [Deleted.]

§§ 173.191, 173.192, 173.193 [Amended]

KK. Sections 173.191, 173.192, and 173.193 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

LL. In § 173.194, paragraph (a)(2) would be amended to read as follows:

§ 173.194 Potassium permanganate.

(a) * * *

(2) In bulk in sift-proof, self-clearing, covered hopper or bottom outlet steel

cars or in sift-proof all steel flat bottom gondola cars with fixed sides and ends equipped with water-proof and dust-proof wooden or steel covers well secured in place for all openings, or in bulk in motor vehicles with steel, sift-proof, self-clearing hopper-type or dump-type bodies, with water-proof and dust-proof covers, well secured in place. Such cars, when used exclusively in this service and stencilled "FOR POTASSIUM PERMANGANATE ONLY," are not subject to the requirements of § 174.515 of this subchapter.

MM. In § 173.195, the word chapter would be amended to read "subchapter" each time it appears in the section; the introductory text of paragraph (a) would be amended; paragraph (a) (4) would be deleted; paragraph (c) would be added to read as follows:

§ 173.195 Pyroxylin plastic scrap, photographic-film scrap, X-ray film scrap, motion-picture film scrap, or pieces of exposed or unexposed film.

(a) Pyroxylin plastic scrap, and nitrocellulose-base photographic film scrap, X-ray film scrap, motion-picture film scrap, and pieces of exposed or unexposed film, must be packaged as follows:

* * * * *

(4) [Deleted]

* * * * *

(c) Samples for laboratory examination may be shipped by express rail car when packaged as follows:

(1) Specification 15A, 15B, or 15C (§§ 178.168, 178.169, 178.170 of this subchapter). Wooden boxes with inside metal container, hermetically sealed by soldering or with tape. Net weight must not exceed 25 pounds. Each package must be marked: "SAMPLE (name of material) FOR LABORATORY EXAMINATION."

§ 173.196 [Deleted]

NN. Section 173.196 would be deleted.

OO. In § 173.197, the word chapter would be amended to read "subchapter" each time it appears in the section; the introductory text of paragraph (a) would be amended to read as follows:

§ 173.197 Pyroxylin plastics, in sheets, rolls, rods, or tubes.

(a) Pyroxylin plastics, in sheets, rolls, rods, or tubes containing nitrocellulose are not subject to this subchapter when offered for transportation by rail freight or highway but when offered for transportation by express rail car, aircraft, or water must be packaged as follows in addition to all the other requirements applicable to flammable solids.

* * * * *

PP. Sections 173.197a and 173.198 would remain the same as now written except the word chapter would be amended to read "subchapter" in § 173.198.

QQ. In § 173.199, paragraph (b) would be deleted as follows:

§ 173.199 Rags, oily.

* * * * *

(b) [Deleted]

RR. In § 173.200, paragraph (b) would be deleted as follows:

§ 173.200 Rags, wet.

* * * * *

(b) [Deleted]

§§ 173.201, 173.202, 173.203 [Amended]

SS. Sections 173.201, 173.202, and 173.203 would remain the same as now written, except the word chapter would be amended to read "subchapter" each time it appears in the section.

TT. In § 173.204, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a) (4) would be amended; Note 1 following paragraph (a) (7) would be deleted as follows:

§ 173.204 Sodium hydrosulfite.

(a) * * *

(4) Specification 37A or 37B (§ 178.131, 178.132 of this subchapter). Metal drums. Not authorized for transportation by air or water.

* * * * *

(7) * * *

NOTE 1: [Deleted]

§ 173.205 [Amended]

UU. Section 173.205 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

VV. In § 173.206, the word chapter would be amended to read "subchapter" each time it appears in the section; the heading, introductory text of paragraph (a), paragraphs (a) (2), (d) and (e) would be amended to read as follows:

§ 173.206 Sodium or potassium, metallic; sodium amide; sodium potassium alloys; sodium aluminum hydride; lithium metal; lithium silicon; lithium ferro silicon; lithium hydride; lithium borohydride; lithium aluminum hydride; lithium acetylide-ethylene diamine complex; aluminum hydride; cesium metal; rubidium metal; zirconium hydride, powdered.

(a) Metallic sodium or potassium, sodium amide, sodium potassium alloys, sodium aluminum hydride, lithium metal, lithium silicon, lithium ferro silicon, lithium hydride, lithium borohydride, lithium aluminum hydride, lithium acetylide-ethylene diamine complex, aluminum hydride, cesium metal, rubidium metal, and powdered zirconium hydride must be packaged as follows:

* * * * *

(2) Specification 5, 6A, 6B, or 6C (§§ 178.80, 178.97, 178.98, 178.99 of this subchapter). Metal barrels or drums. Not authorized for lithium aluminum hydride or aluminum hydride.

* * * * *

(d) Lithium metal in cartridges or rubidium metal in cartridges is exempt from specification packaging requirements when packaged and described as follows:

(1) In inside hermetically sealed metal cartridges not exceeding 18 grams net weight each, packed in strong outside packagings with net weight of lithium or rubidium metal not exceeding one pound; which outside packagings may be further overpacked in strong wooden boxes or fiber drums, provided total net weight of lithium or rubidium metal in one outside box or drum does not exceed one pound.

(e) Lithium metal or rubidium metal in cartridges, containing more than 18 grams but not more than 120 grams of lithium or rubidium, must be packed in specification packagings as follows:

(1) Specification 15A or 15B (§§ 178.168, 178.169 of this subchapter). Wooden boxes, not over 75 pounds gross weight, with air-tight inside copper cartridges. Cartridges having less than 0.022 inch wall thickness must be separated or securely cushioned in the boxes. Each cartridge must have a minimum thickness of 0.02 inch.

§§ 173.207, 173.208 [Amended]

WW. Sections 173.207 and 173.208 remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

XX. In §§ 173.209, 173.210, and 173.211, paragraph (b) would be deleted as follows:

§ 173.209 Tankage, garbage, and tankage fertilizers.

* * * * *

(b) [Deleted]

§ 173.210 Tankages, rough ammoniate.

* * * * *

(b) [Deleted]

§ 173.211 Textile, waste, wet.

* * * * *

(b) [Deleted]

§ 173.212 [Amended]

YY. Section 173.212 would remain the same as written except the reference in the last sentence would be amended to read: "Parts 170–189 and 397 Chapter III of this title.

ZZ. In § 173.213, paragraph (b) would be deleted as follows:

§ 173.213 Wood, waste, wet.

* * * * *

(b) [Deleted]

§§ 173.214, 173.216 [Amended]

AAA. Sections 173.214 and 173.216 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

BBB. In § 173.217, the word chapter would be amended to read "subchapter" each time it appears in the section; the heading, introductory text of paragraph (a) and paragraph (b) would be amended to read as follows:

§ 173.217 Calcium hypochlorite compound, dry; lithium hypochlorite compound, dry; mono-(trichloro) tetra - (monopotassium dichloro)-penta-s-triazinetrione, dry; potassium dichloro-s-triazinetrione, dry; sodium dichloro-s-triazinetrione, dry; trichloro-s-triazinetrione, dry.

(a) Calcium hypochlorite compound, dry, lithium hypochlorite compound, dry, mono-(trichloro) tetra-(monopotassium dichloro) - penta - s - triazinetrione, dry, potassium dichloro-s-triazinetrione, dry, sodium dichloro-s-triazinetrione, dry, and trichloro-s-triazinetrione, dry, each containing more than 39 percent available chlorine must be packaged as follows:

* * * * *

(b) Strong outside wooden or fiberboard packages with inside packagings of glass not over five pounds capacity each, or with inside metal packagings or plastic bottles not over ten pounds capacity each, are exempt from the specification packaging requirements of this part.

§§ 173.218, 173.219 [Amended]

CCC. Sections 173.218 and 173.219 would remain the same as now written except the word chapter would be amended to read "subchapter" in § 173.218(a)(1).

DDD. In § 173.220, paragraphs (a)(2) and (b)(1) would be amended to read as follows:

§ 173.220 Magnesium or zirconium scrap consisting of borings, clippings, shavings, sheets, turnings, or scalpings, and magnesium metallic (other than scrap), powdered, pellets, turnings, or ribbon.

(a) * * *

(2) Magnesium or zirconium scrap consisting of clippings, scalpings, or scrap sheets in closed metal drums, wooden barrels, or wooden boxes, unless otherwise provided, is exempt from the specification packaging, marking, and labeling requirements of this part.

(b) * * *

(1) Magnesium metallic (other than scrap), pellets, turnings, or ribbon in fiberboard boxes with inside glass bottles not over 1 pound capacity each, with not more than 25 pounds net weight of product in each outside fiberboard box, in closed metal drums, metal pails, fiber drums, or wooden boxes with inside packagings are, unless otherwise provided, exempt from the specification packaging requirements of this part.

§§ 173.221, 173.222 [Amended]

EEE. Sections 173.221, and 173.222 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

FFF. In § 173.223, paragraph (b) would be amended to read as follows:

§ 173.223 Peracetic acid.

* * * * *

(b) Peracetic acid solutions not exceeding 40 percent strength packed in strong wooden or fiberboard boxes, with not more than one inside glass packaging not exceeding 1 pint or 1 pound capacity, cushioned with sterile absorbent cotton or other cushioning material which will not react with the contents to generate heat, and with such cushioning material in sufficient quantity to completely absorb the contents of the bottle are exempt from the specification packaging requirements of this part.

§ 173.224 [Amended]

GGG. Section 173.224 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

HHH. In § 173.225, the word chapter would be amended to read "subchapter" each time it appears in the section; the heading and introductory text of paragraph (a) would be amended to read as follows:

§ 173.225 Phosphorus trisulfide; phosphorus sesquisulfide; phosphorus heptasulfide; phosphorus pentasulfide.

(a) Phosphorus trisulfide, phosphorus sesquisulfide, and phosphorus heptasulfide must be packaged as follows:

* * * * *

III. In § 173.226, in paragraph (a) the word chapter would be amended to read "subchapter" and paragraph (b) would be amended to read as follows:

§ 173.226 Thorium metal, powdered.

* * * * *

(b) Thorium metal powder packed in tightly and securely closed metal cans, cushioned with incombustible material in strong outside wooden or fiberboard boxes, and not exceeding 4 ounces net weight in one outside packaging, is exempt from the specification packaging requirements of this part.

(1) Thorium metal powder packed as specified in paragraph (b) of this section, may be reclassed as an ORM-D material if shipped in accordance with Subpart I of this part.

§§ 173.227, 173.228 [Amended]

JJJ. Sections 173.227 and 173.228 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

KKK. In § 173.229, paragraph (b)(5) would be amended by changing the word chapter to read "subchapter" within the parentheses; the introductory text of paragraph (b) and paragraph (c) would be amended to read as follows:

§ 173.229 Chlorate and borate mixtures or chlorate and magnesium chloride mixtures.

* * * * *

(b) Chlorate and borate mixtures or chlorate and magnesium chloride mixtures containing no other hazardous additives and containing less than 50 percent chlorate are exempt from the specification requirements of this part when packaged as follows:

* * * * *

(c) Chlorate and borate mixtures or chlorate and magnesium chloride mixtures containing no other hazardous additives and containing less than 50 percent chlorate may be reclassed as ORM-D materials if packaged in accordance with paragraph (b) of this section and shipped in accordance with Subpart I of this part.

§§ 173.230, 173.231 [Amended]

LLL. Sections 173.230 and 173.231 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

MMM. Section 173.232 would be amended to read as follows:

§ 173.232 Tank cars containing residual phosphorus.

Tank cars from which phosphorus has been unloaded and from which all residual phosphorus has not been removed by thorough cleaning must be shipped filled with water or an inert gas and must be placarded by the shipper with EMPTY-FLAMMABLE placards bearing the Hazard Information number 43 as prescribed in Part 172 of this subchapter.

§§ 173.233, 173.234, 173.235, 173.236 [Amended]

NNN. Sections 173.233, 173.234, 173.235, and 173.236 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

OOO. Section 173.237 would be amended to read as follows:

§ 173.237 Chlorine dioxide hydrate, frozen; chloric acid.

(a) Chlorine dioxide hydrate, frozen and chloric acid must be packed in specification packagings as follows:

(1) Specification 12B (§ 178.205 of this subchapter). Fiberboard boxes, with inside packages of polyethylene or other suitable material. Fiberboard boxes must be reinforced and insulated and sufficient dry ice must be used to maintain the hydrate or acid in a frozen state during transportation. Shipments are authorized for transportation by private or contract carrier by motor vehicle only.

(2) Containers and means of refrigeration providing equal efficiency, when approved by the Bureau of Explosives, are authorized for shipments by private carrier by motor vehicle.

PPP. In § 173.238, the word chapter would be amended to read "subchapter" in paragraph (a)(1); the introductory text of paragraph (a) would be amended to read as follows:

§ 173.238 Aircraft rocket engines (commercial) and/or aircraft rocket engine igniters (commercial).

(a) Aircraft rocket engines (commercial) and their igniters may be offered for transportation when of a type approved by the Bureau of Explosives to be so described and classed, and when packaged as follows:

* * * * *

§§ 173.239, 173.239a [Amended]

QQQ. Sections 173.239 and 173.239a would remain as written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

Subpart E—Corrosive Materials; Definition and Preparation

A. In § 173.240, paragraph (a) would be amended to read as follows:

§ 173.240 Corrosive materials; definition.[1]

(a) For the purpose of Parts 170–189 of this subchapter, a corrosive material is a liquid or solid that causes visible destruction or irreversible alternations in human skin tissue at the site of contact, or in the case of leakage from its packaging, a liquid that has a severe corrosion rate on steel.

(1) A material is considered to be destructive or to cause irreversible alternation in human skin tissue if when tested on the intact skin of the albino rabbit by the technique described in 16, CFR 1500.41, the structure of the tissue at the site of contact is destroyed or changed irreversibly after an exposure period of 4 hours or less.

(2) A liquid is considered to have a severe corrosion rate if its corrosion rate exceeds 0.250 inch per year (IPY) on steel (SAE 1020) at a test temperature of 130°F. An acceptable test is described in NACE Standard TM–01–69.

* * * * *

B. In § 173.241, the introductory text of paragraph (a) and paragraph (a)(2) would be amended to read as follows:

§ 173.241 Outage.

(a) The outage (ullage) for packagings containing corrosive liquids, when offered for transportation, must be in accordance with the following requirements:

* * * * *

(2) *General outage requirements.* Packagings must not be completely filled. Sufficient outage must be provided so that the packaging will not be liquid full at 130°F.

* * * * *

C. In § 173.242, paragraph (c) would be amended to read as follows:

§ 173.242 Bottles containing corrosive liquids.

* * * * *

(c) Corrosive liquid solutions in securely closed bottles, in quantities necessary for preparing photographic processing mixtures and efficiently cushioned, may be packed in the same outside shipping container with required amounts of packaged dry chemicals not classed as hazardous materials by these regulations, provided no dangerous reaction would occur should the contents of bottles be mixed with the dry chemicals. Marking prescribed in Part 172 of this subchapter is not required.

[1] A corrosive material, not subject to the definition previously in effect in § 173.240, packaged before December 31, 1973, may be shipped and transported without being subject to any of the requirements in 49 CFR Parts 170 to 179 until December 31, 1974. As of January 1, 1975, these materials may not be shipped or transported unless they are in compliance with 49 CFR 170 to 179.

§ 173.243 [Unchanged]

D. Section 173.243 would remain the same as now written.

E. In § 173.244, paragraphs (a) and (b) would be amended to read as follows:

§ 173.244 Exemptions for corrosive materials.

(a) A material classed as a corrosive liquid, except one for which no exemption is provided as indicated by a "No exemption" statement in § 172.101 of this subchapter:

(1) Is exempt from the specification packaging requirements of this Part if in metal or plastic inside packagings (bags not authorized) not exceeding 32 ounces water capacity that are packaged in strong outside packagings;

(2) May be reclassed as an ORM–D material when packed in packagings not exceeding 16 ounces water capacity when shipped in accordance with Subpart I of this part, if the gross weight of each package does not exceed 65 pounds.

(b) A material classed as a corrosive solid, except one for which no exemption is provided as indicated by a "No exemption" statement in § 172.101 of this subchapter:

(1) Is exempt from the specification packaging requirements of this subchapter if packaged:

(i) In glass or paper packagings of not more than five pounds capacity which are packed in strong outside packagings. The gross weight of each package may not exceed 30 pounds.

(ii) In rigid fiber, metal, plastic, or composition cans or cartons of not more than 10 pounds capacity which are packed in strong outside packagings. The gross weight of each package may not exceed 65 pounds.

(2) May be reclassed as an ORM–D material if packaged according to the provisions of paragraph (b)(1) of this section and in accordance with Subpart I of this part.

* * * * *

F. In § 173.245, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraphs (a)(1), (3), (17), (19), (20), (21), (22), and (b) would be amended to read as follows:

§ 173.245 Corrosive liquids not specifically provided for.

(a) * * *

(1) Specification 1A, 1B, 1C, or 1E (§§ 178.1, 178.2, 178.3, 178.7 of this subchapter). Glass Carboys in boxes, kegs, or plywood drums. Not authorized for transportation by aircraft.

* * * * *

(3) Specification 1D (§ 178.4 of this subchapter). Boxed glass carboys of not over 6.5 gallons nominal capacity which must be closed, and when reused must be reconditioned and tested, as provided in the specification; means must be provided so that accumulated pressure in bottles shall not exceed 10 pounds per square inch gauge at 130°F., or shall vent at a pressure not to exceed 10 pounds per square inch gauge. Not authorized for transportation by aircraft.

* * * * *

(17) Specification 17H, 37A, or 37B (§§ 178.118, 178.131, or 178.132 of this subchapter), metal drums (single-trip), with welded side seams, not over 5 gallons capacity each. Drums must be lined throughout with a pliable plastic material impervious to the lading. Specification 37A and 37B metal drums must be at least 24 gauge steel. Specification 37A and 37B metal drums not authorized for transportation by aircraft.

* * * * *

(19) Specification 37P (§ 178.133 of this subchapter). Steel drum with polyethylene liner (nonreusable container). Authorized only for materials that will not react with polyethylene and result in container failure. Not authorized for transportation by aircraft.

(20) Specification 16D (§ 178.187 of this subchapter). Wirebound wooden overwrap, with inside specification 2T, 2TL, 2S, or 2SL (§§ 178.21, 178.27, 178.35, 178.35a of this subchapter) polyethylene container. Not authorized for transportation by aircraft.

(21) Specification 12P (§ 178.211 of this subchapter). Fiberboard boxes with inside specification 2U (§ 178.24 of this subchapter) polyethylene containers not over 5 gallons capacity each. Wire staples are not authorized for assembly or closure of boxes, except when polyethylene container is completely enclosed in inside boxes free of wire staples or other projections that could cause failures. Not authorized for transportation by aircraft.

(22) Specification 16A (§ 178.185 of this subchapter). Wirebound wooden box (see § 178.195–22 of this subchapter) with inside specification 2U (§ 178.24 of this subchapter) polyethylene container. The polyethylene container must be separated from the wooden box by a complete corrugated fiberboard liner and top and bottom pads. Not authorized for transportation by aircraft.

* * * * *

(b) If a material classed as corrosive is corrosive to steel according to § 173.240 (a)(2) and is not corrosive to skin according to § 173.240(a)(1), it is not subject to any requirements of this subchapter or rail or highway when transported in a tank car tank or cargo tank constructed entirely of materials that will not react dangerously with or be decomposed by the commodity being transported.

§§ 173.245a, 173.245b, 173.246 [Amended]

G. Sections 173.245a, 173.245b, and 173.246 would remain as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

H. In § 173.247, the word chapter would be amended to read "subchapter" each time it appears in the section, the heading, paragraph (a)(3) and (16) would be amended to read as follows:

§ 173.247 Acetic anhydride; acetyl bromide; acetyl chloride; acetyl iodide; antimony pentrachloride; benzoyl chloride; boron trifluoride-acetic acid complex, chromyl chloride; dichloroacetyl chloride; diphenylmethyl bromide solution; pyro sulfuryl chloride; silicon chloride; sulfur chloride (mono and di); sulfuryl chloride; thionyl chloride; tin tetrachloride (anhydrous); titanium tetrachloride; trimethyl acetyl chloride.

(a) * * *

(3) Specification 1A, 1C, 1D, 1E, or 1K (§§ 178.1, 178.3, 178.4, 178.7, 178.14 of this subchapter). Glass carboys in boxes, kegs or plywood drums (not permitted for antimony pentachloride or tin tetrachloride, anhydrous). Not authorized for transportation by aircraft.

* * * * *

(16) Specification 106A500X or 110A500W (§§ 179.300, 179.301) tanks. Authorized only for antimony pentachloride and titanium tetrachloride (anhydrous). Tanks containing titanium tetrachloride (anhydrous) must not be equipped with safety devices. (See § 177.834(m) of this subchapter for special requirements for highway shipments.)

* * * * *

I. In § 173.248, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a) and (a)(1) would be amended to read as follows:

§ 173.248 Acid sludge, sludge acid, spent sulfuric acid, or spent mixed acid.

(a) Acid sludge, sludge acid, spent sulfuric acid, or spent mixed acid, resulting from the use of sulfuric acid in various processes, not containing hydrofluoric acid, must be packaged as follows:

(1) Specification 1A, 1D, or 1E (§§ 178.1, 178.4, 178.7 of this subchapter). Carboys in boxes or plywood drums. Authorized only for spent sulfuric acid. Not authorized for transportation by aircraft.

* * * * *

J. In § 173.249, the word chapter would be amended to read "subchapter" each time it appears in the section; the heading, paragraphs (a)(3), (b), (b)(1), (c), and (d) would be amended; paragraphs (a)(5) and (9) would be deleted; paragraph (b)(4) would be added to read as follows:

§ 173.249 Alkaline corrosive liquids, n.o.s.; alkaline caustic liquids, n.o.s.; alkaline corrosive battery fluid; potassium fluoride solution; potassium hydrogen fluoride solution; sodium aluminate, liquid

(a) * * *

(3) Specification 5 (§ 178.80 of this subchapter) metal drums. Openings must not exceed 2.3 inches in diameter.

* * * * *

(5) [Deleted]

* * * * *

(9) [Deleted.]

* * * * *

(b) Alkaline corrosive liquids, n.o.s., alkaline caustic liquids, n.o.s., alkaline corrosive battery fluids, and liquid sodium aluminate, when offered for transportation by express rail car and cargo-only aircraft, must be packaged as follows (also authorized for transportation by rail freight, highway, or water):

(1) In packagings as prescribed in paragraph (a) (8), (10), and (11) of this section and § 173.245(a) (7) and (12).

* * * * *

(4) Specification 15A, 15B, 15C, 16A, or 19A (§§ 178.168, 178.169, 178.170, 178.185, 178.190 of this subchapter). Wooden boxes with inside packagings of polyethylene (not bags) having a capacity not over 1 gallon each.

(c) Alkaline corrosive liquids, n.o.s., alkaline caustic liquids, n.o.s., alkaline corrosive battery fluids, and liquid sodium aluminate in inside packagings of not more than 8-fluid ounces capacity each, packed in strong outside packagings, and cushioned with absorbent material in sufficient quantity to completely absorb liquid contents in the event of breakage, are exempt from specification packaging requirements of this part.

(d) Alkaline corrosive liquids, n.o.s., alkaline caustic liquids, n.o.s., alkaline corrosive battery fluids, and liquid sodium aluminate may be reclassed as ORM–D materials if packaged according to the provisions of paragraph (c) of this section and in accordance with Subpart I of this part.

K. In § 173.250, paragraph (a) would be amended to read as follows:

§ 173.250 Automobiles or other self-propelled vehicles, engines or other mechanical apparatus.

(a) Automobiles and other self-propelled vehicles equipped with electric storage batteries, wet, and electric storage batteries, wet when included in carload or truckload shipments of automobile parts or assembled material in accordance with paragraphs (a) (1), (2) and (3) of this section are exempt from any other requirements of this subchapter unless other hazardous materials are being transported on the vehicle. In this case, the regulations covering these other materials apply.

(1) When batteries are removed from automobiles and loaded into car or motor vehicle therewith, the batteries must be so loaded, blocked, and braced in car as to prevent movement therein during transit, and the load must be so arranged that loose articles cannot come into contact with the batteries.

(2) When wet batteries or batteries shipped dry in the same container with electrolyte (acid) are shipped with automobile parts or assembly material, the batteries must be boxed or crated and so loaded, blocked, and braced in the car or motor vehicle as to prevent movement therein during transit, and the load must be so arranged that loose articles cannot come in contact with the batteries.

(3) When batteries are installed in the vehicle, they must be completely protected so that short circuits will be prevented and so secured that leakage of acid will not occur under conditions normal to transportation.

* * * * *

§ 173.251 [Amended]

L. Section 173.251 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

M. In § 173.252, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a)(3)(i) would be added; paragraph (g)(2) and (3) would be amended to read as follows:

§ 173.252 Bromine.

(a) * * *

(3) * * *

(i) Each tank car must be marked "BROMINE" in accordance with the requirements of § 172.310 of this subchapter.

* * * * *

(g) * * *

(2) Specification 12A (§ 178.210 of this subchapter). Fiberboard boxes, constructed of at least 275 test (Mullen or Cady) double-wall corrugated fiberboard having not more than six inside glass bottles of not over 1-quart capacity. Each inside glass bottle must be surrounded by a sheet of polyethylene foam at least seven-sixteenths inch thick (see Note 1), and approximately the same height as the bottle, and must also be separated by partitions made of corrugated fiberboard at least 275-pound test (Mullen or Cady). The box must be provided with inside top and bottom pads of polyethylene foam at least 1⅛ inches thick (see Note 1). Shipper must have established that the completed package closed as for shipment with inside packagings filled with liquid of same specific gravity as commodity to be shipped is capable of withstanding tests prescribed by § 178.210–10 of this subchapter. Not authorized for transportation by aircraft.

NOTE 1: Other materials of equal efficiency and compatibility are also authorized.

(3) Specification 12A (§ 178.210 of this subchapter). Fiberboard box with inside glass bottles having closures meeting the requirements of paragraph (d) of this section. Each bottle must be enclosed in a tinplate slipcover metal can surrounded by incombustible cushioning material. No box may contain any bottle of a capacity greater than 1 quart. Each box may contain not more than four bottles having a capacity not exceeding 1 quart, or 12 bottles having a capacity not exceeding 8 fluid ounces. The shipper must have established that the completed package closed for shipment, with inside bottles filled with a liquid of the same specific gravity and similar viscosity as bromine, is capable of withstanding the tests prescribed in § 178.210–10 of this subchapter. Not authorized for transportation by aircraft.

N. In § 173.253, the word chapter would be amended to read "subchapter" each time it appears in the section; para-

graph (a) (4) would be deleted as follows:

§ 173.253 Chloroacetyl chloride.

(a) * * *

(4) [Deleted]

* * * * *

§§ 173.254, 173.255 [Amended]

O. Sections 173.254 and 173.255 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

P. In § 173.256, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a) (4) would be amended to read as follows:

§ 173.256 Compounds, cleaning, liquid.

(a) * * *

(4) Specification 16A (§ 178.185 of this subchapter). Wirebound wooden box (see § 178.185-22 of this subchapter) with inside specification 2U (§ 178.24 of this subchapter) polyethylene container. The polyethylene container shall be separated from the wooden box by a complete corrugated fiberboard liner and top and bottom pads. Not authorized for transportation by aircraft.

* * * * *

Q. In § 173.257, the word chapter would be amended to read "subchapter" each time it appears in the section; the introductory text of paragraph (a) and paragraph (a) (8) and (12) would be amended to read as follows:

§ 173.257 Electrolyte (acid) or corrosive battery fluid.

(a) Electrolyte (acid) must not be over 47 percent strength (39° Baume). Electrolyte or corrosive battery fluid must be packaged as follows (packaging utilizing a bag to contain the electrolyte or battery fluid is not authorized for transportation aboard aircraft):

* * * * *

(8) Specification 1EX (§ 178.6 of this subchapter). Carboys in plywood drums. Not authorized for transportation by aircraft.

* * * * *

(12) Specification 37P (§ 178.133 of this subchapter). Steel drums with polyethylene liner (nonreusable container). Not authorized for transportation by aircraft.

* * * * *

R. In § 173.258, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a) (3) would be amended to read as follows:

§ 173.258 Electrolyte, acid, or alkaline corrosive battery fluid, packed with storage batteries.

(a) * * *

(3) Specification 12B (§ 178.205 of this subchapter). Fiberboard boxes with not more than 12 inside packagings of polyethylene or other material resistant to the lading, not over 64-ounce capacity each. Polyethylene packagings that are not rigid or semi-rigid in nature must be contained in other strong inside packagings; minimum thickness of polyethylene or other plastic material shall be not less than 0.003 inch for any film sheet for multi-wall packagings or not less than 0.006 inch for single-wall packagings. Inside packagings must be adequately separated from the storage battery. Authorized gross weight not over 65 pounds. (See § 178.205-33 of this subchapter.) Not authorized for transportation by aircraft.

§ 173.259 [Amended]

S. Section 173.259 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

T. In § 173.260, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (e) (1) would be deleted; paragraphs (d) and (f) and the introductory text of paragraph (e) would be amended to read as follows:

§ 173.260 Electric storage batteries, wet.

* * * * *

(d) Electric storage batteries, containing electrolyte or corrosive battery fluid, of the nonspillable type, must be protected against short circuits, and if completely and securely boxed are not subject to any other requirements of this subchapter.

(e) Electric storage batteries containing electrolyte or battery fluid are exempt from Parts 170-189 of this subchapter for carriage by highway if:

(1) [Deleted.]

* * * * *

(f) Electric storage batteries containing electrolyte or corrosive battery fluid, other than those of the nonspillable type, when shipped in less-than-carload and less-than-truckload lots, must be marked and labeled as described in § 173.25 and Part 172 of this subchapter.

* * * * *

U. In § 173.261, the word chapter would be amended to read "subchapter" each time it appears in the section; the introductory text of paragraph (b) would be amended to read as follows:

§ 173.261 Fire-extinguisher charges.

* * * * *

(b) Fire-extinguisher charges as described in paragraph (b) (1) through (3) of this section are exempt from the specification packaging requirements of this part and may be reclassed as ORM-D materials when shipped in accordance with Subpart I of this part.

* * * * *

V. In § 173.262, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a) (1) and (8) would be amended to read as follows:

§ 173.262 Hydrobromic acid.

(a) * * *

(1) Specification 1A, 1C, 1D, or 1E (§§ 178.1, 178.3, 178.4, 178.7 of this subchapter). Carboys in boxes, kegs, or plywood drums. Not authorized for transportation by aircraft.

* * * * *

(8) Specification 37P (§ 178.133 of this subchapter). Steel drum, not over 5 gallons capacity, with polyethylene liner (non-reusable container). A drum exceeding 1 gallon capacity must be constructed of at least 24 gauge metal. Not authorized for transportation by aircraft.

* * * * *

W. In § 173.263, the word chapter would be amended to read "subchapter" each time it appears in the section; Note 1 following paragraph (a) (9) would be deleted; paragraphs (a) (5), (7), (14), (18), (23), (24), and (b) (2) would be amended to read as follows:

§ 173.263 Hydrochloric (muriatic) acid, hydrochloric (muriatic) acid mixtures, hydrochloric (muriatic) acid solution, inhibited, sodium chlorite solution (not exceeding 42 percent sodium chlorite), and cleaning compounds, liquid, containing hydrochloric (muriatic) acid.

(a) * * *

(5) Specification 1A, 1C, or 1K (§ 178.1, 178.3, 178.14 of this subchapter). Carboys in boxes or kegs. Not authorized for transportation by aircraft.

* * * * *

(7) Specification 1D, 1E, or 1EX (single-trip) (§§ 178.4, 178.7, 178.6 of this subchapter). Glass carboys in boxes or plywood drums, of not over 6.5 gallons nominal capacity. Means must be provided so that accumulated total pressure in bottle shall not exceed 10 p.s.i. gauge at 130°F. or shall vent at a pressure not to exceed 10 p.s.i.g. Not authorized for transportation by aircraft.

* * * * *

(9) * * *

NOTE 1: [Deleted]

* * * * *

(14) Specification 17H, 37A, or 37B (§§ 178.118, 178.131, 178.132 of this subchapter). Metal drums (single-trip) not over 5 gallons capacity each. Authorized only for hydrochloric (muriatic) acid solution, inhibited, containing not to exceed 15 percent hydrochloric (muriatic) acid. Drums must be lined throughout with a pliable plastic material impervious to the solution. Specifications 37A and 37B metal drums must be at least 24 gauge steel. Specifications 37A and 37B are not authorized for transportation by aircraft.

* * * * *

(18) Specification 37P (§ 178.133 of this subchapter). Steel drums constructed of at least 24-gauge metal for drums exceeding 1 gallon capacity, with polyethylene liner (nonreusable container). Not authorized for transportation by aircraft.

* * * * *

(23) Specification 12P (§ 178.211 of this subchapter). Fiberboard boxes with inside specification 2U (§ 178.24 of this

subchapter) polyethylene containers not over 5 gallons capacity each. Wire staples are not authorized for assembly or closure of boxes, except when polyethylene container is completely enclosed in inside boxes free of wire staples or other projections that could cause failures. Not authorized for transportation by aircraft.

(24) Specification 16A (§ 178.185 of this subchapter). Wirebound wooden box (see § 178.185–22 of this subchapter) with inside specification 2U (§ 178.24 of this subchapter) polyethylene container. The polyethylene container must be separated from the wooden box by a complete corrugated fiberboard liner and top and bottom pads. Not authorized for transportation by aircraft.

* * * * *

(b) * * *

(2) Inside packaging of not more than 8-fluid ounces capacity each, packed in strong outside packagings, and cushioned with absorbent material in sufficient quantity to completely absorb liquid contents in the event of breakage, are exempt from the specification packaging requirements of this part.

* * * * *

X. In § 173.264, the word chapter would be amended to read "subchapter" each time it appears in the section; Note 4 following paragraph (a) (7) and paragraph (b) (5) would be deleted; subdivision (i) would be added following paragraph (a) (8) and (b) (2); the heading, Note 3 following paragraph (a) (10) and paragraphs (a) (8) and (b) (6) would be amended to read as follows:

§ 173.264 Fluoboric acid; hydrofluoric acid; white acid.

(a) * * *

(7) * * *

NOTE 4. [Deleted]

* * * * *

(8) Spec. 103A,[1] 103A–W, 105A100,[1] 105A100–W, 111A100–F–2, 111A100–W–2, 111A100–W–4, or ARA–IV [1] (§§ 179.100, 179.101, 179.200, 179.201, of this subchapter). Unlined metal tanks which have been subjected to adequate passivity or neutralization process. (See Note 1 to paragraph (a) (7) of this section). Authorized only for hydrofluoric acid of 60 to 80 percent strength. If tanks are washed out with water they must be resubjected to passivity before reshipment.

(i) Each tank car must be marked "HYDROFLUORIC ACID" in accordance with the requirements of § 172.310 of this subchapter.

* * * * *

(10) * * *

NOTE 3: Drums must be lined with material at least as thick as the sample material tested.

(b) * * *

(2) * * *

(i) Each tank car must be marked "HYDROGEN FLUORIDE" in accordance with the requirements of § 172.310 of this subchapter.

* * * * *

(5) [Deleted]

(6) Specification 106A500X or 110A–500W (§§ 179.300, 179.301 of this subchapter) tanks. Tanks may not be equipped with safety devices of any type and valves must be protected by metal caps. Tanks must not be filled to a density in excess of 85 percent of the water weight capacity of the tank. (See § 177.834(m) of this subchapter for special requirements for highway shipments.)

* * * * *

Y. In § 173.265, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraphs (a) (4), (c) (1) and (4) would be amended to read as follows:

§ 173.265 Hydrofluosilicic acid.

(a) * * *

(4) Specification 16A (§ 178.185 of this subchapter). Wirebound wooden box (see § 178.185–22 of this subchapter) with inside specification 2U (§ 178.24 of this subchapter) polyethylene container. The polyethylene container must be separated from the wooden box by a complete corrugated fiberboard liner and top and bottom pads. Not authorized for transportation by aircraft.

* * * * *

(c) * * *

(1) Specification 1A, 1C, 1D, or 1E (§§ 178.1, 178.3, 178.4, 178.7 of this subchapter). Carboys in boxes, in kegs, or plywood drums, for which the use of rubber stoppers and gaskets is also authorized. Not authorized for transportation by aircraft.

* * * * *

(4) Specification 37P (§ 178.133 of this subchapter). Steel drums, not over 5-gallons capacity, with polyethylene liner (non-reusable container). Not authorized for transportation by aircraft.

* * * * *

Z. In § 173.266, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (f) (1) (i) would be added; the introductory text of paragraphs (b) and (d), paragraphs (c) (c) (1) and (3) would be amended to read as follows:

§ 173.266 Hydrogen peroxide solution in water.

* * * * *

(b) Hydrogen peroxide solution in water containing not over 52 percent hydrogen peroxide by weight must be packaged as prescribed in paragraph (a) of this section or as follows (vented packagings are not permitted aboard aircraft):

* * * * *

(c) Hydrogen peroxide solution in water containing over 8 percent hydrogen peroxide by weight and not exceeding 37 percent must be packaged as prescribed in paragraph (a) or (b) of this section or as follows (vented packagings are not permitted aboard aircraft):

(1) Specification 1A (§ 178.1 of this subchapter). Glass carboys. The cushioning must be incombustible mineral material, elastic wooden-strip packing, or large elastic cushions such as corks fastened securely in position. The use of hay, excelsior, ground cork, or similar material, whether treated or untreated, is prohibited. The carboy stoppers must be vented so as to prevent accumulation of internal pressure; use of cork gasket impregnated with paraffin is authorized. Not authorized for transportation by aircraft.

* * * * *

(3) Specification 1D or 1E (§ 178.4, 178.7 of this subchapter). Glass carboys in boxes or plywood drums of not over 6.5 gallons nominal capacity. Means must be provided so that accumulated pressure in bottle shall not exceed 10 pounds p.s.i. gauge at 130°F. or shall vent at a pressure not to execed 10 pounds p.s.i. gauge. The cushioning must be incombustible mineral material, elastic wood-strip packaging, or large elastic cushions such as corks fastened securely in position. The use of hay, excelsior, ground cork, or similar material, whether treated or untreated, is prohibited. Not authorized for transportation by aircraft.

(d) Hydrogen peroxide solution in water containing over 8 percent hydrogen peroxide by weight and not exceeding 10 percent must be packaged as prescribed in paragraph (a), (b), or (c) of this section or as follows (vented packagings are not permitted aboard aircraft):

* * * * *

(f) * * *

(1) * * *

(i) Each tank car must be marked "HYDROGEN PEROXIDE" in accordance with the requirements of § 172.310 of this subchapter.

* * * * *

AA. In § 173.267, the word chapter would be amended to read "subchapter" each time it appears in the section; the introductory text of paragraph (c) would be amended to read as follows:

§ 173.267 Mixed acid (nitric and sulfuric acid) (nitrating acid).

* * * * *

(c) Mixed acid (nitric and sulfuric acid) (nitrating acid), when offered for transportation by express rail car or aircraft must be packaged as follows (also authorized for transportation by rail freight, highway, and water):

* * * * *

BB. In § 173.268, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a) (1) would be added; the introductory text of paragraphs (i) and (j), and paragraph (b) (4) would be amended to read as follows:

§ 173.268 Nitric acid.

(a) * * *

(1) Each tank car must be marked "NITRIC ACID" in accordance with the requirements of § 172.310 of this subchapter.

[1] Use of existing tank cars authorized, but new construction not authorized.

(b) * * *

(4) Specification 5C (§ 178.83 of this subchapter). Metal barrels or drums. Authorized for concentrations of nitric acid as limited by § 178.83–3(c) of this subchapter. Containers weighing less than 85 percent of their original marked weight are not authorized.

* * * * *

(i) *Nitric acid of any concentration,* when offered for transportation by express rail car or aircraft must be packaged as follows (also authorized for transportation by rail freight, highway, and water):

* * * * *

(j) Nitric acid of not over 50 percent concentration, when offered for transportation by express rail car or aircraft, may in addition to the provisions of paragraph (i) of this section be packaged as follows (also authorized for transportation by rail freight, highway, and water):

* * * * *

CC. In § 173.269, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a)(2) would be amended to read as follows:

§ 173.269 Perchloric acid.

(a) * * *

(2) Specification 1A, 1C, 1D, 1E, or 1K (§§ 178.1, 178.3, 178.4, 178.7, 178.14 of this subchapter). Glass carboys in boxes, kegs, or plywood drums. Not authorized for transportation by aircraft.

* * * * *

§§ 173.270, 173.271 [Amended]

DD. Sections 173.270 and 173.271 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

EE. In § 173.272, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraphs (b), (i)(10), (11), (15), and (16) would be amended to read as follows:

§ 173.272 *Sulfuric acid.*

* * * * *

(b) Sulfuric acid solutions of not over 25 percent concentration, in inside packagings of not over 8 fluid ounces capacity each, packed in strong outside packagings and cushioned with absorbent material in sufficient quantity to completely absorb liquid contents in event of breakage, are exempt from the specification packaging requirements of this part.

* * * * *

(i) * * *

(10) Specification 16A (§ 178.185 of this subchapter). Wirebound wooden box (see § 178.185–22 of this subchapter) with an inside specification 2U (§ 178.24 of this subchapter) polyethylene container. The polyethylene container must be separated from the wooden box by a complete corrugated fiberboard liner and *top and bottom pads. Not authorized for* transportation by aircraft.

(11) Specification 12P (§ 178.211 of this subchapter). Fiberboard boxes with an inside specification 2U (§ 178.24 of this subchapter) polyethylene container not over 5-gallon capacity each. Wire staples are not authorized for assembly or closure of boxes, except when polyethylene container is completely enclosed in an inside box free of wire staples or other projections that could cause failures. Not authorized for transportation by aircraft.

* * * * *

(15) Specification 1A, 1C, or 1K (§§ 178.1, 178.3, 178.14 of this subchapter). Carboys in boxes or kegs. Not authorized for transportation by aircraft.

(16) Specification 1D or 1E (§§ 178.4, 178.7 of this subchapter). Glass carboys in boxes or plywood drums, of not over 6.5 gallons nominal capacity. Not authorized for transportation by aircraft.

* * * * *

FF. In § 173.273, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a)(4)(i) would be added to read as follows:

§ 173.273 Sulfur trioxide, stabilized.

(a) * * *

(4) * * *

(i) Each tank car must be marked "SULFUR TRIOXIDE" in accordance with the requirements of § 172.310 of this subchapter.

* * * * *

§§ 173.274 and 173.275 [Amended]

GG. §§ 173.274, and 173.275 would remain as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

HH. In § 173.276, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a)(1) would be amended to read as follows:

§ 173.276 Anhydrous hydrazine and hydrazine solution.

(a) * * *

(1) Specification 1D (§ 178.4 of this subchapter). Boxed glass carboys. Not authorized for transportation by aircraft.

* * * * *

II. In § 173.277, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraphs (a)(2) and (5), (e), and the introductory text of paragraph (d) would be amended; paragraph (g) and (f) would be added to read as follows:

§ 173.277 Hypochlorite solutions.

(a) * * *

(2) Specification 1A, 1C, 1D, or 1E (§§ 178.1, 178.3, 178.4, 178.7 of this subchapter). Glass carboys in boxes, kegs, or plywood drums. Not authorized for transportation by aircraft.

* * * * *

(5) Specification 12P (§ 178.211 of this subchapter). Fiberboard boxes with inside specification 2U (§ 178.24 of this subchapter) polyethylene container not over 5 gallons capacity each. Wire staples are not authorized for assembly or closure of boxes, except when polyethylene container is completely enclosed in inside boxes free of wire staples or other projections that could cause failures. Not authorized for transportation by aircraft.

* * * * *

(d) Glass inside packaging of not more than 4-fluid ounce capacity each, packed in strong outside packaging, and cushioned with absorbent material in sufficient quantity to completely absorb liquid contents in the event of breakage, are exempt from the specification packaging requirements of this Part.

* * * * *

(e) Polyethylene pouches not over 2½ ounces capacity each, heat sealed, and formed of polyethylene, or other suitable plastic, not less than 0.0035 inch in thickness to which must be laminated a 0.0015-inch, 25-pound basis weight white sulphate paper, when securely packed not more than 144 pouches in a strong fiberboard box, are exempt from the specification requirements of this Part.

(f) Hypochlorite solutions packaged as prescribed in paragraph (d) or (e) of this section may be reclassed as ORM–D materials when shipped in accordance with subpart I of this Part.

(g) Shipments by tank motor vehicle are not subject to any requirements of this subchapter.

JJ. In § 173.278, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (b)(2) would be amended to read as follows:

§ 173.278 Nitrohydrochloric acid.

* * * * *

(b) * * *

(2) Specification 1A, 1D, or 1E (§§ 178.1, 178.4, 178.7 of this subchapter). Glass carboys in boxes or plywood drums, not over 5 gallons nominal capacity for specification 1A and not over 6.5 gallons nominal capacity for specifications 1D and 1E. Not authorized for transportation by aircraft.

KK. In § 173.279, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (b) would be amended to read as follows:

§ 173.279 Anisoyl chloride.

* * * * *

(b) Inside packagings of not over 8 fluid ounces capacity each, packed in strong outside packaging, and cushioned with absorbent material in sufficient quantity to completely absorb liquid contents in the event of breakage, are exempt from the specification packaging requirements of this Part.

LL. In § 173.280, the word chapter would be amended to read "subchapter" each time it appears in the section; the Heading, introductory text of paragraph (a) and paragraph (a)(5) would be amended to read as follows:

§ 173.280 Allyl trichlorosilane, amyl trichlorosilane, butyl trichorosilane, chlorophenyl trichlorosilane, cyclohexenyl trichlorosilane, cyclohexyl trichlorosilane, dichlorophenyltrichlorosilane, diphenyl dichlorosilane, dodecyl trichlorosilane, ethyl phenyl dichlorosilane, hexadecyl trichlorosilane, hexyl trichlorosilane, nonyl trichlorosilane, octadecyl trichlorosilane, octyl trichlorosilane, phenyl trichlorosilane, and propyl trichlorosilane.

(a) Allyl trichlorosilane, amyl trichlorosilane, butyl trichlorosilane, chlorophenyl trichlorosilane, cyclohexenyl trichlorosilane, cyclohexyl trichlorosilane, dichlorophenyltrichlorosilane, diphenyl dichlorosilane, dodecyl trichlorosilane, ethyl phenyl dichlorosilane, hexadecyl trichlorosilane, hexyl trichlorosilane, nonyl trichlorosilane, octadecyl trichlorosilane, octyl trichlorosilane, phenyl trichlososilane, and propyl trichlorosilane must be packaged as follows:

* * * * *

(5) Specification 5, 5B, 5C, and 17E single-trip §§ 178.80, 178.82, 178.83, 178.116 of this subchapter). Metal drums. These containers not authorized for shipment by express rail car or aircraft.

* * * * *

§§ 173.281, 173.282 and 173.283 [Amended]

MM. Sections 173.281, 173.282, 173.283 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

NN. In § 173.284, the word chapter would be amended to read "subchapter" in paragraph (a)(1); the Heading and the introductory text of paragraph (a) would be amended to read as follows:

§ 173.284 Bromine pentafluoride; iodine pentafluoride.

(a) Bromine pentafluoride and iodine pentafluoride must be packaged as follows:

* * * * *

§ 173.285 [Amended]

OO. Section 173.285 would remain the same as now written except in paragraph (a)(1) and (3) the word chapter would be amended to read "subchapter."

PP. In § 173.286, the word chapter would be amended to read "subchapter" each time it appears in the section; the introductory text of paragraph (b) would be amended; paragraph (d) would be added to read as follows:

§ 173.286 Chemical kits.

* * * * *

(b) Chemical kits containing corrosive liquids in inside packagings of not over 6 fluid ounces capacity each are exempt from the specification packaging requirements of this part if all the following requirements are complied with:

* * * * *

(d) Chemical kits containing corrosive liquids may be reclassed as ORM-D materials if the requirements of paragraph (b) of this section are complied with and if they are shipped in accordance with subpart I of this part.

QQ. In § 173.287, the word chapter would be amended to read "subchapter" each time it appears in the section; the introductory text of paragraph (b) and (b)(1) would be amended to read as follows:

§ 173.287 Chromic acid solution.

* * * * *

(b) Chromic acid solutions must be packaged in specification containers as follows:

(1) Specification 1A (§ 178.1 of this subchapter). Glass carboy in a box. Not authorized for transportation by aircraft.

* * * * *

RR. In § 173.288, the word chapter would be amended to read "subchapter" each time it appears in the section; the introductory text of paragraph (a) and paragraph (a)(2) would be amended to read as follows:

§ 173.288 Allyl chloroformate, benzyl chloroformate, ethyl chloroformate, and methyl chloroformate.

(a) Allyl chloroformate, benzyl chloroformate, ethyl chloroformate, and methyl chloroformate must be packaged as follows:

* * * * *

(2) Specification 1A (§ 178.1 of this subchapter). Boxed carboys. Glass bottles having nominal capacity of 3 gallons also authorized when packed and tested in accordance with requirements of specification 1A (§ 178.1 of this subchapter); necks must be protected during shipment. Not authorized for transportation by aircraft.

SS. In § 173.289, the word chapter would be amended to read "subchapter" each time it apears in the section; paragraphs (a)(7) and (9) would be amended to read as follows:

§ 173.289 Formic acid and formic acid solutions.

(a) * * *

(7) Specification 17H (§ 178.118 of this subchapter). Metal drums (single-trip) equipped with bag type liners of material and construction approved by the Department. Each drum must have two diametrically opposite vent holes ¼ inch diameter in the side wall at each end in close proximity to the top curl and bottom chime. Interior of welded side seam must be covered or otherwise treated to provide a non-abrasive surface. Not authorized for transportation by aircraft.

* * * * *

(9) Specification 1EX (§ 178.6 of this subchapter). Carboys in plywood drums. Not authorized for transportation by aircraft.

* * * * *

§ 173.290 [Amended]

TT. Section 173.290 would remain as now written except the word chapter would be amended to read "subchapter" in paragraph (a)(1).

UU. In § 173.291, the word chapter would be amended to read "subchapter" each time it appears in the section; the Heading and paragraphs (a) and (a)(1) and (2) would be amended to read as follows:

§ 173.291 Flame retardant compound.

(a) Flame retardant compound, liquid, must be packaged as follows:

(1) Specification 1A, 1B, or 1C (§§ 178.1, 178.2, 178.3 of this subchapter). Carboys in boxes or kegs which must be closed, and when reused must be reconditioned and tested, as provided in the specification. Not authorized for transportation by aircraft.

(2) Specification 1D or 1E (§§ 178.4, 178.7 of this subchapter). Glass carboys in boxes or plywood drums of not over 6.5 gallons nominal capacity. Means must be provided so that accumulated pressure in bottle shall not exceed 10 pounds per square inch gauge at 130° F., or shall vent at a pressure not to exceed 10 p.s.i.g. Not authorized for transportation by aircraft.

* * * * *

§§ 173.292, 173.293 and 173.294 [Amended]

VV. Sections 173.292, 173.293, and 173.294 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

WW. In § 173.295, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a)(3) would be amended to read as follows:

§ 173.295 Benzyl chloride.

(a) * * *

(3) Specification 1A, 1C, 1D, or 1E (§§ 178.1, 178.3, 178.4, 178.7 of this subchapter). Glass carboys in boxes, kegs or plywood drums. Not authorized for transportation by aircraft.

* * * * *

§§ 173.296 and 173.297 [Amended]

XX. Sections 173.296 and 173.297 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

YY. In § 173.298, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a)(4) would be amended to read as follows:

§ 173.298 Memtetrahydro phthalic anhydride.

(a) * * *

(4) Specification 37P (§ 178.133 of this subchapter). Steel drums with polyethylene liner (nonreusable container). Authorized only for materials that will not react with polyethylene and result in a packaging failure. Not authorized for transportation by aircraft.

§§ 173.299 and 173.299a [Amended]

ZZ. Sections 173.299 and 173.299a would remain the same as now written except the word chapter would be amended to read "subchapter" in § 173.299.

Subpart F—Compressed Gases: Definition and Preparation

§ 173.300 [Amended]

A. Section 173.300 would remain the same as now written except in the material following the Heading the word chapter would be amended to read "subchapter."

B. In § 173.301, the introductory text of paragraph (g) and paragraph (g) (4) would be amended to read as follows:

§ 173.301 General requirements for shipment of compressed gases in cylinders.[2]

* * * * *

(g) *Container valve protection.* A container charged with a flammable gas, corrosive gas, an extremely toxic or highly toxic gas (including an extremely or highly toxic material charged with any compressed gas), must have its valves protected by one of the following methods.

* * * * *

(4) By loading the containers compactly in an upright position and securely bracing them in a car or motor vehicle, when the containers are to be loaded by the consignor and unloaded by the consignee. This method is not permitted to be used with packages containing an extremely toxic gas or an extremely toxic material charged with any compressed gas.

* * * * *

§§ 173.302 and 173.303 [Amended]

C. Sections 173.302, and 173.303 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

D. In § 173.304, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a) (1) would be amended to read as follows:

§ 173.304 Charging of cylinders with liquefied compressed gas.

(a) * * *

(1) Specification 3,[2] 3A, 3AA, 3B, 3BN, 3D, 3E, 4, 4A, 4B, 4BA, 4B–ET, 9,[2] 25,[1] 26,[2] 38,[1] 39, 40,[2] or 41[1] (§§ 178.36, 178.37, 178.38, 178.39, 178.41, 178.42, 178.48, 178.49, 178.50, 178.51, 178.55, 178.61, 178.65 of this subchapter), except that no specification 9, 39, 40, or 41 packaging may be charged and shipped with a mixture containing a pyrophoric liquid, carbon bisulfide (disulfide), ethyl chloride, ethylene oxide, spirits of nitroglycerin, or an extremely or highly toxic material or irritating material, unless specifically authorized in this part.

* * * * *

E. In § 173.305, the word chapter would be amended to read "subchapter" in paragraph (c) (1); paragraph (d) would be amended to read as follows:

§ 173.305 Charging of cylinders with a mixture of compressed gas and other material.

* * * * *

(d) *Poisonous mixtures.* A mixture containing any poisonous material, which is extremely or highly toxic, in such proportions that the mixture would be classed as poisonous under § 173.326 or § 173.326a must be shipped in packagings as prescribed for these poisonous materials.

F. § 173.306 would be amended to read as follows:

§ 173.306 Exemptions from packaging requirements.

(a) *General exemptions.* Compressed gases, except poisonous gases as defined by § 173.326 and except those for which no exemptions are provided as indicated by the "No exemption" statement in §§ 172.101 of this subchapter, when in accordance with one of the following subparagraphs are, unless otherwise provided, exempt from the specification packaging requirements of this Part.

(1) When in receptacles of not more than 4-fluid ounces water capacity (7.22 cubic inches or less).

(2) When in metal receptacles filled with a material that is not classed as a hazardous material to not more than 90 percent of capacity at 70°F. then charged with nonflammable, nonliquefied gas. Each receptacle must be tested to three times the pressure at 70°F. and, when refilled, be retested to three times the pressure of the gas at 70°F. Also, one of the following conditions must be met:

(i) Receptacle is not over 1 quart capacity and charged to not more than 170 p.s.i.g. at 70°F. and must be packed in a strong outside packaging.

(ii) Receptacle is not over 30 gallons capacity and charged to not more than 75 p.s.i.g. at 70°F.

(3) When in a metal receptacle charged with a solution of materials and compressed gas or gases which is nonpoisonous, provided all of the following conditions are met:

(i) Capacity must not exceed 50 cubic inches (27.7 fluid ounces). See Note 1.

(ii) Pressure in the receptacle must not exceed 180 p.s.i.g. at 130°F. If the pressure exceeds 140 p.s.i.g. at 130°F., but does not exceed 160 p.s.i.g. at 130°F., a specification DOT 2P (§ 178.33 of this subchapter) inside metal receptacle must be used; if the pressure exceeds 160 p.s.i.g. at 130°F., a specification DOT 2Q (§ 178.33a of this subchapter) inside metal receptacle must be used. In any event, the metal receptacle must be *capable of withstanding without bursting* a pressure of one and one-half times the equilibrium pressure of the content at 130°F.

(iii) Liquid content of the material and gas must not completely fill the receptacle at 130°F.

(iv) The receptacle must be packed in strong outside packagings.

(v) Each completed receptacle filled for shipment must have been heated until the pressure in the receptacle is equivalent to the equilibrium pressure of the content at 130°F. without evidence of leakage, distortion, or other defect.

NOTE 1: Compressed gases contained in nonrefillable inside metal receptacles exceeding 35 cubic inches (19.3 fluid ounces) but not exceeding 50 cubic inches (27.7 fluid ounces) packaged in accordance with subparagraph (a) (3) of this section must be packaged in outside packagings marked with the name of contents and labeled as prescribed in Part 172 of this subchapter. The outside of each package must be plainly marked "INSIDE PACKAGINGS COMPLY WITH PRESCRIBED REGULATIONS."

(b) *Exemptions for foodstuffs, soap, biologicals, electronic tubes, and audible fire alarm systems.* Compressed gases, except poisonous gases as defined by § 173.326 and except those for which no exemptions are provided as indicated by the "No exemption" statement in § 172.101 of this subchapter, when in accordance with one of the following subparagraphs are, exempt from the specification packaging requirements of this part, unless otherwise provided.

(1) Foodstuffs or soaps in a nonrefillable metal receptacle not exceeding 50 cubic-inch capacity (27.7 fluid ounces) (see Note 1), with soluble or emulsified compressed gas, provided the pressure in the receptacle does not exceed 140 p.s.i.g. at 130°F. The metal receptacle must be capable of withstanding without bursting a pressure of one and one-half times the equilibrium pressure of the content at 130°F.

(i) Receptacles must be packed in strong outside packagings.

(ii) Liquid content of the material and gas must not completely fill the receptacle at 130°F.

NOTE 1: Compressed gases contained in nonrefillable metal receptacles exceeding 35 cubic inches (19.3 fluid ounces) but not exceeding 50 cubic inches (27.7 fluid ounces) packaged in accordance with subparagraph (b) (1) of this section must be packaged in outside packagings marked with the name of contents and labeled as prescribed in Part 172 of this subchapter. The outside of each package must be plainly marked "INSIDE PACKAGINGS COMPLY WITH PRESCRIBED REGULATIONS."

(2) Cream in refillable metal receptacles with soluble or emulsified compressed gas. Receptacles must be of such design that they will hold pressure without permanent deformation up to 375 p.s.i.g. and must be equipped with a device designed so as to release pressure without bursting of the receptacle or dangerous projection of its parts at higher pressures. This exemption applies *to shipments offered for transportation* by refrigerated motor vehicles only.

(3) Nonrefillable metal receptacles charged with a solution containing biological products or a medical preparation which could be deteriorated by heat, and compressed gas or gases, which is

[1] Requirements covering cylinders are also applicable to spherical pressure vessels.

[2] Use of existing cylinders authorized, but new construction not authorized.

nonpoisonous and nonflammable. The capacity of each receptacle may not exceed 35 cubic inches (19.3 fluid ounces). The pressure in the receptacle may not exceed 140 p.s.i.g. at 130° F., and the liquid content of the product and gas must not completely fill the receptacles at 130° F. One completed receptacle out of each lot of 500 or less, filled for shipment, must be heated, until the pressure in the receptacle is equivalent to the equilibrium pressure of the content at 130° F. There must be no evidence of leakage, distortion, or other defect. Receptacle must be packed in strong outside packagings.

(4) Electronic tubes, each having a volume of not more than 30 cubic inches and charged with gas to a pressure of not more than 35 p.s.i.g. and packed in strong outside packagings.

(5) Audible fire alarm systems powered by a compressed gas contained in an inside metal container when shipped under the following conditions:

(i) Each inside container must have contents which are not flammable, poisonous, or corrosive as defined under this part;

(ii) Each inside container may not have a capacity exceeding 35 cubic inches (19.3 fluid ounces);

(iii) Each inside container may not have a pressure exceeding 70 p.s.i.g. at 70° F. and the liquid portion of the gas may not completely fill the inside container at 130° F., and

(iv) Each inside container must be designed and fabricated with a burst pressure of not less than five times its charged pressure at 130° F.

(c) *Fire extinguishers.* Fire extinguishers charged with a compressed gas to not more than 240 p.s.i.g. at 70° F. are exempt from the specification packaging requirements of this part when shipped under the following conditions:

(1) Each fire extinguisher must be shipped as an inside packaging;

(2) Each fire extinguisher must have contents which are not flammable, poisonous, or corrosive as defined under this Part;

(3) Each fire extinguisher under stored pressure may not have an internal volume exceeding 1,100 cubic inches. For fire extinguishers not exceeding 35 cubic inches capacity, the liquid portion of the gas plus any additional liquid or solid must not completely fill the container at 130° F. Fire extinguishers exceeding 35 cubic inches capacity may not contain any liquefied compressed gas;

(4) Each fire extinguisher must be designed and fabricated with a burst pressure of not less than six times its charged pressure at 70° F. when shipped;

(5) Each fire extinguisher must be tested, without evidence of failure or damage, to at least three times its charged pressure at 70° F. but not less than 120 p.s.i.g. before initial shipment. For any subsequent shipment, each fire extinguisher must be in compliance with the retest requirements of the Occupational Safety and Health Administration regulations of the Department of Labor, 29 CFR 1910.157(d), and

(6) Each fire extinguisher manufactured after (effective date of amendment) and filled and shipped under this paragraph must be legibly and durably marked "THIS EXTINGUISHER MEETS ALL REQUIREMENTS OF 49 CFR 173.306(c)."

(7) When specification 2P or 2Q packagings are used, subparagraphs (4) through (6) of this paragraph are not applicable provided each packaging meets the requirements of paragraph (a) of this section.

(d) *Truck bodies or trailers on flat cars; automobiles, motorcycles, tractors, or other self-propelled vehicles.* (1) Truck bodies or trailers with automatic heating or refrigerating equipment of the gas burning type may be shipped with fuel tanks filled and equipment operating or inoperative, when used for the transportation of other freight and loaded on flat cars as part of a joint rail-highway movement, provided the equipment and fuel supply are of a type approved by the Bureau of Explosives. The heating or refrigerating units are not subject to any other requirements of this subchapter and are to be considered as carriers equipment not as shipments.

(2) Automobiles, motorcycles, tractors, or other self-propelled vehicles equipped with liquefied petroleum gas or other fuel tanks, provided such tanks are securely closed, are not subject to any other requirements for transportation by rail or highway. For transportation by water see Part 176. For transportation by air, the fuel tank must be removed.

(e) *Refrigerating machines.* (1) Refrigerating machines or components thereof which are to be shipped only once to a point of installation are exempt from the specification packaging requirements of this Part if they meet the following conditions:

(i) Each pressure vessel may not contain more than 1,000 pounds of Group I refrigerant as classified in American National Standard B9.1 or not more than 50 pounds of refrigerant other than Group I.

(ii) Machines or components having two or more charged vessels may not contain an aggregate of more than 2,000 pounds of Group I refrigerant or more than 100 pounds of refrigerant other than Group I.

(iii) Each pressure vessel must be equipped with a safety device meeting the requirements of American National Standard B9.1.

(iv) Each pressure vessel must be equipped with a shut-off valve at each opening except openings used for safety devices and with no other connection. These valves must be closed prior to and during transportation.

(v) Pressure vessels must be manufactured, inspected and tested in accordance with American National Standard B9.1, or when over 6 inches internal diameter, in accordance with the ASME Code.

(vi) All parts subject to refrigerant pressure during shipment must be tested in accordance with American National Standard B9.1.

(vii) The liquid portion of the refrigerant, if any, may not completely fill any pressure vessel at 130° F.

(viii) The amount of refrigerant, if liquefied, may not exceed the filling density prescribed in § 173.304.

(f) *Hydraulic accumulators.* The following apply to hydraulic accumulators containing nonliquefied, nonflammable gas, and nonflammable liquids, fabricated from materials which will not fragment upon rupture:

(1) Hydraulic accumulators installed in motor vehicles, construction equipment, and assembled machinery and designed and fabricated with a burst pressure of not less than five times their charged pressure at 70° F., when shipped, are exempt from the requirements of Parts 170–189 of this subchapter.

(2) Hydraulic accumulators charged to not more than 200 p.s.i. at 70° F. are exempt from the specification packaging requirements of this Part when shipped under the following conditions:

(i) Each accumulator must be shipped as an inside packaging;

(ii) Each accumulator may not have a gas space exceeding 2,500 cubic inches under stored pressure, and

(iii) Each accumulator must be tested, without evidence of failure or damage, to at least three times its charged pressure at 70° F., but not less than 120 p.s.i. before initial shipment and before each refilling and reshipment.

(3) Hydraulic accumulators with a charging pressure exceeding 200 p.s.i. at 70° F. are exempt from specification packaging requirements when shipped under the following conditions:

(i) Each accumulator must be in compliance with the requirements stated in subparagraphs (a)(2), (i), (ii), and (iii) of this section, and

(ii) Each accumulator must be designed and fabricated with a burst pressure of not less than five times its charged pressure at 70° F. when shipped.

G. Section 173.307 would be added to read as follows:

§ 173.307 Exemptions and reclassification of compressed gases.

(a) The following materials are not subject to Parts 170–189 of this subchapter.

(1) Carbonated beverages.

(2) Inflated tires and balls used for sports.

(3) Air conditioners containing not more than 25 pounds of nonflammable liquefied gas.

(b) Compressed gases covered by the following sections may be reclassified ORM–D materials when shipped within the limitations specified and in compliance with subpart I of this Part.

(1) Section 173.306(a)(1).

(2) Sections 173.306(a)(3), (b)(1), (2), (3), and (5); limited to metal receptacles not exceeding 35 cubic inches (19.3 fluid ounces).

(3) Sections 173.306(b)(4), (d), (d)(2), (e), and (f)(2).

H. Section 173.308 would be added to read as follows:

§ 173.308 Cigarette lighter or other similar device charged with fuel.

(a) In addition to the requirements of § 173.21(d), a cigarette lighter or other similar device charged with butane, a butane mixture, or other gaseous mixture having similar properties must be shipped in accordance with the following:

(1) No more than 2.3 fluid ounces of liquefied gas may be loaded into each device;

(2) The pressure in each device may not exceed 140 p.s.i.g. at 130°F.

(3) The liquid portion of the gas may not exceed 85 percent of the volumetric capacity of each fluid chamber at 60°F.

(4) Each device, including closures, must be capable of withstanding an internal pressure of at least 275 p.s.i.g.

(5) Devices must be overpacked in packaging that is designed or arranged to prevent movement of the device itself.

I. In § 173.314, the word chapter would be amended to read "subchapter" in paragraph (b)(4); paragraphs (b)(5) and (6) would be added to read as follows:

§ 173.314 Requirements for compressed gases in tank cars.

* * * * *

(b) * * *

(5) Each tank car, except series 106A*** or 110A*** containing a flammable compressed gas or flammable compressed gas mixture must be marked with the name of contents (§ 172.101) in accordance with the requirements of § 172.310 of this subchapter or as otherwise approved by the Department.

(6) Each tank car containing anhydrous ammonia or chlorine must be marked "ANHYDROUS AMMONIA" or "CHLORINE," as appropriate, in accordance with the requirements of § 172.310 of this subchapter.

§§ 173.315 and 173.316 [Amended]

J. Sections 173.315 and 173.316 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

K. Subpart G would be amended as follows:

Subpart G—Extremely and Highly Toxic Materials, Etiologic Agents, and Radioactive Materials, Defiintino ad Preparation

A. Section 173.325 would be amended to read as follows:

§ 173.325 Classes of poisonous materials.

(a) Poisonous materials for the purpose of this subchapter are divided into three groups according to the degree of hazard in transportation.

(1) Extremely toxic materials;

(2) Highly toxic material;

(3) Irritating material.

B. Section 173.326 would be deleted and a new § 173.326 would be added to read as follows:

§ 173.326 Extremely toxic materials; definition.

(a) For the purpose of this subchapter, a substance is considered to be an extremely toxic material if it falls within any one of the following categories when tested on laboratory animals according to the test procedures described in this paragraph:

(1) *Ingestion (oral).* Any material that has a single dose LD_{50}[1] of 5 milligrams or less per kilogram of body weight when administered orally to both male and female white rats (young adults);

(2) *Inhalation.* Any material that has an LC_{50}[1] of 50 parts per million or less by volume of a gas or vapor, or 0.50 milligram or less of mist or dust per liter of air when administered by continuous inhalation for 1 hour to both male and female white rats (young adults). If the material is administered to the animals as a dust or mist, more than 90 percent of the particles available for inhalation in the test must have a diameter of 10 microns or less, provided it is reasonably foreseeable that such concentrations could be encountered by man in transportation;

(3) *Skin absorption.* Any material that has an LD_{50} of 20 milligrams or less per kilogram of body weight when administered by continuous contact for 24 hours with the bare skin of rabbits according to the test procedures described in Appendix I to this part.

(b) If human experience or other data indicate that the hazard of a given material encountered during an accidental exposure in transportation is greater or less than indicated by the data from the specified animal tests, the Board may revise the classification for the specific material.

C. Section 173.326a would be added to read as follows:

§ 173.326a Highly toxic materials; definition.

(a) For the purpose of this subchapter, a substance is considered to be a highly toxic material if it falls within any one of the following categories when tested on laboratory animals according to the test procedures described in this paragraph:

(1) *Ingestion (oral).* Any material that has a single dose LD_{50}[1] of more than 5 milligrams but not more than 50 milligrams per kilogram of body weight when orally administered to both male and female white rats (young adults);

(2) *Inhalation.* Any material that has an LC_{50}[1] of more than 50 parts per million by volume of gas or vapor but not more than 200 parts per million or more than 0.50 milligram, but not more than 2 milligrams of mist or dust per liter of air when administered by continuous inhalation for 1 hour or less to both male and female white rats (young adults). If the product is administered to the animals as a dust or mist, more than 90 percent of the particles available for inhalation in the test must have a diameter of 10 microns or less provided it is reasonably foreseeable that such concentrations could be encountered by man in transportation.

(3) *Skin absorption.* Any material that has an LD_{50} of greater than 20 milligrams but not more than 200 milligrams per kilogram of body weight when administered by continuous contact for 24 hours with the bare skin of rabbits, according to the test procedures described in Appendix I to this Part.

(b) If human experience or other data indicate that the hazard of a given material encountered during an accidental exposure in transportation is greater or less than indicated by the data from the specified animal tests, the Board may revise the classification for the specific material.

D. Section 173.326b would be added to read as follows:

§ 173.326b Irritating materials; definition.

For the purpose of this subchapter, a substance is considered to be an irritating material if it causes reversible local irritant effects on eyes, nose, or throat temporarily impairing a person's ability to function to the degree that he cannot take necessary emergency action in the event of leakage.

E. In § 173.327, the heading and paragraphs (c) and (d) would be amended; paragraph (e) would be added to read as follows:

§ 173.327 General packaging requirements for extremely toxic materials.

* * * * *

(c) The transportation of an extremely toxic material is not permitted if there is any type of interconnection between packagings.

(d) No packaging used for the transportation of any liquid material may be completely filled. Sufficient space must be left empty of liquid to prevent leakage from distortion of the packaging caused by expansion of the contents due to rise in temperature during transportation. This free space must be sufficient in each packaging so that it will not become entirely filled with liquid at 130°F.

(e) Each tank car except series 106A*** and 110A*** must be marked with the name of contents (§ 172.101) in accordance with the requirements of § 172.310 of this subchapter.

F. Section 173.328 would be deleted and a new § 173.328 would be added to read as follows:

§ 173.328 Extremely toxic materials not specifically provided for.

(a) Extremely toxic materials, as defined in § 173.326, other than those for which special packaging requirements are prescribed in this part, must be packaged as follows:

(1) Specification 33,[2] or 3D (§ 178.41 of this subchapter). Metal cylinders of not over 125 pounds water capacity (nominal). Gaskets, if used between the pro-

[1] LD_{50}, LC_{50}: That dose (LD) or concentration (LC) which will cause death within 14 days to one half of the test animals.

[2] Use of existing cylinders authorized, but new construction not authorized.

tection cap and neck of cylinder must be renewed for each shipment even though they may appear to be in good condition. Cylinders not fitted with valve protection extension ring must be packed in wooden boxes complying as to construction, marking, and labeling, with the requirements of § 173.25.

(2) Specification 3A1800, 3AA1800, or 3E1800 (§§ 178.36, 178.37, 178.42 of this subchapter) cylinders.

(i) Specification 3A and 3AA cylinders must not exceed 125 pounds water capacity (nominal). Cylinders must have valve protection or be packed in strong wooden or metal boxes as described in § 173.327 (a) (2) of this subchapter.

(ii) Specification 3E1800 cylinders must be packed in strong wooden or metal boxes.

§ 173.329 [Amended]

G. § 173.329 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

H. In § 173.330, paragraph (a) would be amended to read as follows:

§ 173.330 Chemical ammunition.

(a) Projectiles, shells, bombs, and grenades containing extremely toxic gases or liquids, but not equipped or packaged with ignition elements, bursting charges, detonating fuzes, or explosive components, may be shipped only by, for, or to the Department of Defense. Each shipment must be packaged, marked, and labeled as required by their regulations. Each package must be labeled with the "Poison" and "nonflammable gas" labels, marked "NONEXPLOSIVE," and marked with the name of contents. (See §§ 173.53(r) and 173.59 for explosive chemical ammunition.)

* * * * *

I. Section 173.331 would be amended to read as follows:

§ 173.331 Gas identification sets.

(a) Gas identification sets containing extremely toxic materials, irritating materials, and chlorine must be packaged in specification 15A or 15B (§§ 178.168, 178.169 of this subchapter). Wooden boxes, under the following conditions:

(1) Gas identification sets containing extremely toxic materials and irritating materials may be shipped in amounts not exceeding 5 cubic centimeters, if a liquid, or 5 grams, if a solid, when mixed with or absorbed in activated charcoal or silica gel, or other absorbent medium, and packed in strong glass bottles of not less than 4 fluid ounces capacity. The extremely toxic material and chlorine may be shipped if the gas itself is absorbed in activated charcoal or silica gel, or other absorbent medium, this material to be filled into 4-ounce bottles as above. Each bottle as herein specified must be surrounded with appropriate absorbent cushioning material, and enclosed in a hermetically sealed metal can. Each can must be surrounded on all sides by at least 1 inch of dry, fine sawdust or wood pulp. The cans must be packed in an outside wooden box, specification 15A or 15B (§§ 178.168, 178.169 of this subchapter). The bottles must be closed with ground-in glass stoppers securely fastened. The cushioning material around the bottle must be at least 1 inch thick. The cans must be made from metal of thickness not less than 30 gauge, United States standard. There must be not more than a total of 100 grams or cubic centimeters, or a combination of both, in each outside wooden box.

(b) Gas identification sets containing extremely toxic materials and irritating materials must be packaged as follows:

(1) The liquids or liquefied gases in hermetically sealed glass tubes containing not to exceed 40 cubic centimeters each. Each tube must be securely cushioned and packed in an individual mailing tube with screw-thread metal cover. Not more than 12 such mailing tubes, cushioned with corrugated fiberboard, may be packed in a closed fiberboard container, not to exceed 4 such fiberboard containers, containing an aggregate of not to exceed 48 glass tubes, cushioned and packed in an outside steel cylinder of not less than 0.145-inch wall thickness, which is closed by a plate, bolted to a flange welded to cylinder wall. Suitable gasket must be placed between flange and head plate, and closure must prevent leakage of any gas.

(c) Gas identification training sets containing extremely toxic materials and irritating materials must be packaged as follows:

(1) The extremely toxic material and irritating material, in amounts not exceeding 5 cubic centimeters, if a liquid, or 20 grams, if a solid, when mixed with or absorbed in activated charcoal, silica gel, crepe rubber, or other absorbent medium, must be packed in strong glass bottles of not less than 2 fluid ounces capacity, equipped with a polyethylene liner; each bottle as herein specified must have a metal screw cap closure, equipped with a built-in compression type spring and an insert in the opening of the bottle to match so that when tightened an airtight seal is obtained. Twelve bottles, containing articles as described in this paragraph and not exceeding 100 cubic centimeters or grams, or a combination of both, must be placed in a modified styrene plastic carrying case, in three rows of four bottles each and fitted with a fiberboard cell or separator. The void space around the individual bottles, and around all interior sides of the carrying case, must be filled with dry, fine sawdust or vermiculite. A sheet of sponge rubber must be fitted to the inside of the top and bottom of the carrying case to provide additional cushioning and insure a snug fit of the bottles when the top is secured. The carrying case must be fitted into a snug fitting fiberboard box, domestic type. The case must then be packed in a nailed wooden box, specification 15A or 15B (§§ 178.168, 178.169 of this subchapter), which must be fitted with a waterproof case liner.

§ 173.332 [Amended]

J. Section 173.332 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

K. In § 173.333, paragraph (a) (2) would be amended to read as follows:

§ 173.333 Phosgene or diphosgene.

(a) * * *

(2) Specification 106A500X (§§ 179.300, 178.301 of this subchapter) tanks. Authorized only for phosgene. Each tank must be equipped with gastight valve protection caps which must be approved by the Bureau of Explosives. Tanks must not be equipped with safety devices of any type. Outage must be sufficient to prevent tanks from becoming liquid full at 130°F. (See §§ 174.200 and 177.834(m) of this subchapter for special requirements for rail and highway shipments.)

* * * * *

L. In § 173.334, the heading and paragraph (a) would be amended to read as follows:

§ 173.334 Hexaethyl tetraphosphate, parathion, tetraethyl dithio pyrophosphate, tetraethyl pyrophosphate, or organic phosphate, n.o.s. (including a compound or mixture), mixed with compressed gas.

(a) Hexaethyl tetraphosphate; parathion, tetraethyl dithio pyrophosphate, tetraethyl pyrophosphate, or organic phosphate, n.o.s. (including a compound or mixture), may be mixed with a compressed gas which must be nonflammable. This mixture must not contain more than 20 percent by weight of organic phosphate and must be packaged as follows:

(1) Specification 3A240, 3AA240, 3B240, 4A240, 4B240, 4BA240, or 4BW240 (§§ 178.36, 178.37, 178.38, 178.49, 178.50, 178.51, 178.61 of this subchapter) cylinders meeting the following requirements:

(i) Each cylinder may be charged with not more than 10 pounds of the mixture, to a maximum filling density of not more than 80 percent of the water capacity;

(ii) Each cylinder must be charged in compliance with § 173.301(e) and (f);

(iii) No cylinder may be equipped with an eduction tube or a fusible plug;

(iv) No cylinder may be equipped with any valve unless the valve is a type approved by the Department for this installation.

(v) Cylinders must be overpacked in a box so arranged to protect each valve or other closing device from damage. No more than four cylinders may be packed in a box except that in a wooden box, up to 12 cylinders may be so packed. Each box with its closing device protection must be sufficiently strong to protect all parts of each inside cylinder from deformation or breakage if the completed package were dropped six feet onto solid concrete, impacting at the weakest point.

* * * * *

§ 173.335 [Deleted]

M. Section 173.335 would be deleted.

N. In § 173.336, the word chapter would be amended to read "subchapter" in

paragraph (a)(2), paragraph (a)(3) would be amended to read as follows:

§ 173.336 Nitrogen dioxide, liquid; nitrogen peroxide, liquid; and nitrogen tetroxide, liquid.

(a) * * *

(3) Specification 106A500X (§§ 179.300, 179.301 of this subchapter) tanks. Each tank must be equipped with gas-tight valve protection caps which must be approved by the Bureau of Explosives. Tanks must not be equipped with safety devices of any type. Outage must be sufficient to prevent tanks from becoming liquid full at 130°F. (See §§ 174.200 and 177.834(m) of this subchapter for special requirements for rail and highway shipments.)

* * * * *

§ 173.337 [Amended]

O. Section 173.337 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

P. In § 173.338, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a)(3) would be amended to read as follows:

§ 173.338 Nitrogen tetroxide - nitric oxide mixtures containing up to 33.2 percent weight nitric oxide.

(a) * * *

(3) Specification 106A500X (§§ 179.300, 179.301 of this subchapter) tanks. Each tank must be equipped with gas-tight valve protection caps which must be approved by the Bureau of Explosives. Tanks must not be equipped with safety devices of any type. Outage must be sufficient to prevent tanks from becoming liquid full at 130° F. (See §§ 174.200 and 177.834(m) of this subchapter for special requirements for rail and highway shipments.)

* * * * *

§ 173.343 [Deleted]

Q. Section 173.343 would be deleted.

R. In § 173.344, the Heading and paragraph (b) and (b)(1) would be amended to read as follows:

§ 173.344 General packaging requirements for highly toxic liquids.

* * * * *

(b) Outage for packagings containing liquid material must be as follows:

(1) Packagings containing liquid materials must not be completely filled. Sufficient outage must be provided so that the packaging will not be liquid full at 130° F.

* * * * *

S. Section 173.345 would be amended to read as follows:

§ 173.345 Exemptions for highly toxic liquids.

(a) Highly toxic liquids, as defined in § 173.326a, except those for which no exemption is provided as indicated by the "No exemption" statement in § 172.101 of this subchapter, or as provided in § 173.359(c), in tightly closed inside packagings, securely cushioned when necessary to prevent breakage, are exempt from the specification packaging requirements of this Part, when packaged as follows:

(1) In glass packagings not over 1 quart capacity each, or in metal containers or polyethylene bottles not over 1 gallon capacity each, packed in strong outside wooden boxes or barrels.

(2) In glass packagings not over 1 pint capacity each, or in metal or polyethylene packagings (not bags) not over 1 quart capacity each, packed in strong outside fiberboard boxes.

T. In § 173.346, the word chapter would be amended to read "subchapter" each time it appears in the section; the heading, introductory text of paragraph (a) and paragraphs (a)(3), (13), (19), (24), and (25) would be amended to read as follows:

§ 173.346 Highly toxic liquids not specifically provided for.

(a) Highly toxic liquids, as defined in § 173.326a, other than those for which special requirements are prescribed, must be packaged as follows:

* * * * *

(3) Specification 37B (§ 178.132 of this subchapter). Metal drums (single-trip containers), welded side seams, openings not over 2.3 inches in diameter, capacity not over 10 gallons. Not authorized for transportation by aircraft.

* * * * *

(13) Specification 1A, 1D, or 1E (§§ 178.1, 178.4, 178.7 of this subchapter). Glass carboys in wooden boxes or plywood drums. Not authorized for transportation by aircraft.

* * * * *

(19) Specification 37P (§ 178.133 of this subchapter). Steel drums, not over 5 gallons capacity, with polyethylene liner (nonreusable container). Drums exceeding 1 gallon capacity must be constructed of at least 24-gauge metal. Hole in steel drum body must be suitably plugged. Authorized only for materials that will not react with polyethylene and result in container failure. Not authorized for transportation by aircraft.

* * * * *

(24) Specification 12P (§ 178.211 of this subchapter). Fiberboard boxes with inside specification 2U (§ 178.24 of this subchapter) polyethylene containers not over 5 gallons capacity each. Wire staples are not authorized for assembly or closure of boxes, except when polyethylene container is completely enclosed in inside boxes free of wire staples or other projections, that could cause failures. Not authorized for transportation by aircraft.

(25) Specification 16A (§ 178.185 of this subchapter). Wirebound wooden box (see § 178.185-22 of this subchapter) with inside specification 2U (§ 178.24 of this subchapter) polyethylene container. The polyethylene container must be separated from the wooden box by a complete corrugated fiberboard liner and top and bottom pads. Not authorized for transportation by aircraft.

* * * * *

U. In § 173.347, the word chapter would be amended to read "subchapter" each time it appears in the section; Note 1 following paragraph (a)(1) would be deleted as follows:

§ 173.347 Aniline oil.

(a) * * *

(1) * * *

NOTE 1: [Deleted]

* * * * *

V. In § 173.348, the word chapter would be amended to read "subchapter" in paragraph (a)(3); paragraph (a)(2) would be amended to read as follows:

§ 173.348 Arsenic acid.

(a) * * *

(2) Specification 1A, 1C, or 1D (§§ 178.1, 178.3, 178.4 of this subchapter). Glass carboys in boxes or kegs which must be closed, and when reused must be reconditioned and tested, as provided in the specification. Not authorized for transportation by aircraft.

* * * * *

W. In § 173.349, the word chapter would be amended to read "subchapter" each time it appears in paragraph (a)(3); paragraph (a)(2) would be amended to read as follows:

§ 173.349 Carbolic acid (phenol) liquid.

(a) * * *

(2) Specification 1A, 1C, or 1D (§§ 178.1, 178.3, 178.4 of this subchapter). Glass carboys in boxes or kegs, which must be closed, and when reused must be reconditioned and tested as provided in the specification. Not authorized for transportation by aircraft.

* * * * *

X. In § 173.350, paragraph (a) would be amended to read as follows:

§ 173.350 Chemical ammunition.

(a) Chemical ammunition consisting of projectiles, shells, bombs, grenades, and other containers filled with highly toxic gases, liquids, or chemicals, without ignition elements, bursting charges, detonating fuzes, or other explosive components, must be packed for shipment in strong outside wooden or metal boxes. Boxes must be marked with name of contents and labeled as prescribed by this part for gases, liquids, or chemicals contained therein.

* * * * *

Y. In § 173.351, the introductory text of paragraph (a) and paragraph (a)(1) would be amended; paragraph (a)(2) would be deleted as follows:

§ 173.351 Hydrocyanic acid solutions.

(a) Hydrocyanic acid solutions must be packaged in glass bottles not over 1 pound capacity each for solutions of not over 5 percent hydrocyanic acid and not over 5 pints capacity each for solutions of not over 2 percent strength and must be packaged as follows:

(1) Specification 15A, 15B, 15C, 16A, or 19A (§§ 178.168, 178.169, 178.170, 178.185, 178.190 of this subchapter). Wooden boxes. Completed package, with glass packaging filled with water, must be

capable of withstanding six four-foot drops onto solid concrete in the order bottom, four sides, and top without breakage.

(2) [Deleted]

Z. In § 173.352, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a)(2) would be amended to read as follows:

§ 173.352 Liquid sodium or potassium cyanide.

(a) * * *

(2) Specification 17E or 37B (§ 178.116, 178.132 of this subchapter). Metal drums (single-trip), with welded side seams, with openings not exceeding 2.3 inches in diameter. Specification 37 not authorized for transportation by aircraft.

* * * * *

AA. In § 173.353, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraphs (a)(1) and (6) and (c) would be amended to read as follows:

§ 173.353 Methyl bromide, liquid (bromomethane); mixtures of methyl bromide and ethylene dibromide, liquid; mixtures of methyl bromide and chloropicrin, liquid; or methyl bromide and nonflammable, nonliquefied compressed gas mixtures, liquid.

(a) * * *

(1) Specification 5A (§ 178.81 of this subchapter). Metal drums not exceeding 30 gallons capacity or metal drums of bilge type not exceeding 33 gallons capacity and with openings not exceeding 2.3 inches in diameter. Not authorized for mixtures containing any compressed gas.

(2) Specification 15A, 15B, 15C, 16A, 19A, or 12B (§§ 178.168, 178.169, 178.170, 178.185, 178.190, 178.205 of this subchapter). Wooden, wire-bound wooden, or fiberboard boxes, with inside metal cans containing not over 1 pound each; outage required so can shall not become liquid-full at 130° F. Cans must be of tinplate or lined with suitable material and must have concave or pressure ends. Cans must be able to withstand an interior pressure of 130 pounds per square inch gauge without evidence of leakage or permanent distortion. Pressure of contents must not exceed 130 p.s.i.g. at 130° F.

* * * * *

(6) Specification 106A500X (§§ 179.300, 179.301 of this subchapter) tanks. Outage must be sufficient to prevent tanks from becoming liquid-full at 130°F. (See §§ 174.200 and 177.834(m) of this subchapter for special requirements for rail and highway shipments.)

* * * * *

(c) Outage must be sufficient to prevent cylinders or spheres from becoming entirely filled with liquid at 130°F. and when the vacant space (outage) is charged with a nonflammable nonliquefied compressed gas, the pressure in the cylinder or sphere at 130°F. must not exceed 5/4 the marked service pressure of the cylinder or sphere.

* * * * *

§§ 173.354, 173.355 and 173.356 [Amended]

BB. Sections 173.354, 173.355, and 173.356 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

CC. In § 173.357, the word chapter would be amended to read "subchapter" each time it appears in the section; Note 1 following paragraph (b)(2) would be deleted; the Heading and introductory text of paragraphs (b) and (c) and paragraph (b)(4) would be amended to read as follows:

§ 173.357 Chloropicrin and chloropicrin mixtures containing no compressed gas or extremely toxic liquid.

* * * * *

(b) *Chloropicrin and mixtures of chloropicrin containing no compressed gas or extremely toxic liquid.* Chloropicrin and mixtures of chloropicrin containing no compressed gas or extremely toxic liquid, in addition to containers prescribed in paragraph (a) of this section, when offered for transportation by carriers by rail freight, highway, or water, may be shipped in specification containers as follows:

* * * * *

(2) * * *

NOTE 1: [Deleted.]

* * * * *

(4) Specification 106A500X (§§ 179.300, 179.301 of this subchapter) tanks. Valves must be protected by metal caps. Tanks must not be equipped with safety devices of any type. Outage must be sufficient to prevent tanks from becoming liquid full at 130°F. (See § 177.834(m) of this subchapter for special requirements for highway shipments.)

(c) Chloropicrin and mixtures of chloropicrin containing no compressed gas or extremely toxic liquid, when offered for transportation by express rail car must be packaged as follows (also authorized for transportation by carriers by rail freight, highway or water):

* * * * *

DD. In § 173.358, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraphs (a)(2), (a)(5), and (a)(6) would be deleted, the Heading, the introductory text of paragraph (a) and paragraph (a)(11) would be amended to read as follows:

§ 173.358 Acetone cyanohydrin; arsenic trichloride, nicotine, liquid; organic phosphate compound, n.o.s., liquid (extremely toxic); parathion, liquid; tetraethyl dithio pyrophosphate, liquid; tetraethyl pyrophosphate, liquid.

(a) Acetone cyanohydrin, arsenic trichloride, liquid nicotine, organic phosphate compound, n.o.s., liquid (extremely toxic), liquid parathion, liquid tetraethyl dithio pyrophosphate, and liquid tetraethyl pyrophosphate must be packaged as follows:

* * * * *

(2) [Deleted]

* * * * *

(5) [Deleted]

(6) [Deleted]

* * * * *

(11) Specification 105A300W (§§ 179.100, 179.101 of this subchapter). Tank cars. Authorized for acetone cyanohydrin and parathion only. The nominal water capacity of a tank car must not exceed 12,000 gallons.

* * * * *

EE. Section 173.358a would be added to read as follows:

§ 173.358a Hexaethyl tetraphosphate, liquid; methyl parathion, liquid; organic phosphate compound, n.o.s., liquid (highly toxic).

(a) Liquid hexaethyl tetraphosphate, liquid methyl parathion, and liquid organic phosphate compound, n.o.s., must be packaged as follows:

(1) In packagings as prescribed in § 173.358 except paragraph (a)(11).

(2) Specification 17C or 17E (§§ 178.115, 178.116 of this subchapter). Metal drums (single-trip) with openings not exceeding 2.3 inches in diameter. Specification 17E drums authorized for not over 5 gallons capacity each.

(3) Specification 21C (§ 178.224 of this subchapter). Fiber drum with inside glass packagings not over 1 gallon capacity each.

(4) Specification 37A (§ 178.131 of this subchapter). Metal drum (single-trip), with inside glass packagings not over 1 gallon capacity each.

(5) Specification 105A300W (§§ 179.100, 179.101 of this subchapter). Tank cars. Authorized for methyl parathion only. The nominal water capacity of a tank car must not exceed 12,000 gallons.

FF. In § 173.359, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraphs (a)(2), (3), (6) and (7), (b)(2), (5) and (6) would be deleted; the Heading and introductory text of paragraphs (a) and (b), and paragraphs (b)(9) and (c) would be amended to read as follows:

§ 173.359 Organic phosphate compound mixtures, n.o.s., liquid (extremely toxic); parathion mixtures, liquid; tetraethyl dithio pyrophosphate mixtures, liquid; tetraethyl pyrophosphate, mixtures, liquid (includes solutions, emulsions, or emulsifiable liquids).

(a) Liquid organic phosphate compound mixtures, n.o.s. (extremely toxic), liquid parathion mixture, liquid tetraethyl dithio pyrophosphate mixture, and liquid tetraethyl pyrophosphate mixture containing not more than 50 percent organic phosphate compound mixture, n.o.s., parathion, tetraethyl dithio pyrophosphate, or tetraethyl pyrophosphate by weight, must be packaged as follows:

* * * * *

(2) [Deleted]
(3) [Deleted]

* * * * *

(6) [Deleted]
(7) [Deleted]

* * * * *

(b) Liquid organic phosphate compound mixtures, n.o.s. (extremely toxic), liquid parathion mixture, liquid tetraethyl dithio pyrophosphate mixture, and liquid tetraethyl pyrophosphate mixture containing more 50 percent organic phosphate compound mixture, n.o.s., parathion, tetraethyl dithio pyrophosphate, or tetraethyl pyrophosphate by weight must be packaged as follows:

* * * * *

(2) [Deleted]

* * * * *

(5) [Deleted]
(6) [Deleted]

* * * * *

(9) Specification 12B (§ 178.205 of this subchapter). Fiberboard box with not more than six inside specification 2E (§ 178.24a of this subchapter) polyethylene bottles made of high density (Type III) polyethylene having minimum wall thickness of 0.015 inch with screw-cap closure, not over 1-quart capacity each. Screw-cap closures must be additionally taped or otherwise secured. Fiberboard boxes must have full height, corrugated fiberboard liner, top and bottom pads, and bottles must be separated by corrugated fiberboard partitions.

* * * * *

(c) Liquid organic phosphate compound mixtures, n.o.s. (extremely toxic), liquid parathion mixture, liquid tetraethyl dithio pyrophosphate mixture, and liquid tetraethyl pyrophosphate mixture containing not more than 25 percent organic phosphate compound mixture, n.o.s., parathion, tetraethyl dithio pyrophosphate, or tetraethyl pyrophosphate by weight, in inside metal packagings not over 8-fluid ounces capacity each, packed in strong outside packagings together with sufficient absorbent material to completely absorb the liquid in the event of leakage, are exempt from the specification packaging requirements of this part.

GG. Section 173.359a would be added to read as follows:

§ 173.359a Hexaethyl tetraphosphate mixtures liquid; methyl parathion mixtures, liquid; methyl parathion compound mixtures, n.o.s., liquid (highly toxic) (includes solutions, emulsions, and emulsifiable liquids).

(a) Liquid hexaethyl tetraphosphate mixtures, liquid methyl parathion mixtures, and liquid organic phosphate compound mixtures, n.o.s. (highly toxic) containing not more than 50 percent hexaethyl tetraphosphate, methyl parathion, or organic phosphate compound mixture, n.o.s., by weight, must be packaged as follows:

(1) In packagings as prescribed in § 173.359(a).

(2) Specification 17C (§ 178.115 of this subchapter). Metal drum (single-trip), with openings not exceeding 2.3 inches in diameter.

(3) Specification 17E or 37B (§ 178.116, 178.132 of this subchapter). Metal drums (single-trip) with openings not exceeding 2.3 inches in diameter. Capacity not to exceed 10 gallons for specification 17E drums. Specification 37B drums must be constructed of at least 24-gauge metal with welded side seams, of capacity not over 5½ gallons, and must be tested as prescribed by § 178.116–12 and 178.116–13 of this subchapter. Authorized only for mixtures not classed as flammable under these regulations.

(4) Specification 21C (§ 178.224 of this subchapter). Fiber drum, with inside glass containers not over one gallon capacity each.

(5) Specification 37A (§ 178.131 of this subchapter). Metal drum (single-trip), with inside glass container not over 1 gallon capacity each.

(b) Liquid hexaethyl tetraphosphate mixtures, liquid methyl parathion mixtures, and liquid organic phosphate compound mixtures, n.o.s. (highly toxic) containing more than 50 percent hexaethyl tetraphosphate, methyl parathion, or organic phosphate compound mixture, n.o.s., by weight, must be packaged as follows:

(1) In packagings as prescribed in § 173.359(b).

(2) Specification 17C, 17E, or 37B (§ 178.115, 178.116, 178.132 of this subchapter). Metal drums (single-trip) with openings not exceeding 2.7 inches in diameter. Specification 17E drums authorized for not over 5 gallons capacity each. Specification 37B drums must be constructed of at least 24-gauge metal with welded side seam, of not over 5½ gallons capacity, and must be tested as prescribed by §§ 178.116–12 and 178.116–13 of this subchapter.

(3) Specification 21C (§ 178.224 of this subchapter). Fiber drum, with inside glass container not over one gallon capacity each.

(4) Specification 37A (§ 178.131 of this subchapter). Metal drum (single-trip), with inside glass container not over 1 gallon capacity each.

(c) Liquid hexaethyl tetraphosphate mixtures, liquid methyl parathion mixtures, and liquid organic phosphate compound mixtures, n.o.s. (highly toxic), containing not more than 25 percent hexaethyl tetraphosphate, methyl parathion, or organic phosphate compound mixture, n.o.s., by weight, in inside metal packagings not over 8 fluid ounces capacity each, packed in strong outside packagings together with sufficient absorbent material to completely absorb the liquid in the event of leakage, are exempt from the specification packaging requirements of this Part.

§ 173.360 [Amended]

HH. Section 173.360 would remain as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

II. In § 173.361, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (b) would be deleted as follows:

§ 173.361 Aldrin mixtures, liquid, with more than 60 percent aldrin.

* * * * *

(b) [Deleted]

§ 173.362 [Amended]

JJ. Section 173.362 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the section.

KK. In § 173.363, the heading would be amended to read as follows:

§ 173.363 General packaging requirements for highly toxic solids.

* * * * *

LL. In § 173.364, the heading and the introductory text of paragraph (a) would be amended to read as follows:

§ 173.364 Exemptions for highly toxic solids.

(a) Highly toxic liquids, except cyanides (other than as specified in § 173.370 (b) and (d), hexaethyl tetraphosphate mixtures, methyl parathion mixtures, and organic phosphate mixtures, n.o.s., in tightly closed inside packagings, securely cushioned when necessary to prevent breakage and packaged as follows, are exempt from the specification packaging requirements of this Part:

* * * * *

MM. In § 173.365, the word chapter would be amended to read "subchapter" each time it appears in the section; the Heading and the introductory text of paragraph (a) and paragraph (a)(15) would be amended, Note 1 following (a)(4) would be deleted as follows:

§ 173.365 Highly toxic solids not specifically provided for.

(a) Highly toxic solids, as defined in § 173.326a, other than those for which special requirements are prescribed, must be packaged as follows:

* * * * *

(4) * * *

NOTE 1: [Deleted.]

* * * * *

(15) Specification 12B (§ 178.205 of this subchapter). Fiberboard boxes constructed of at least 275-pound test double-faced fiberboard and provided with a perimeter liner and bottom pad of at least 200-pound test fiberboard. Boxes constructed of at least 350-pound fiberboard having top and bottom pads need not have a perimeter liner. Product must be contained within a tightly closed polyethylene or other equally efficient plastic bag constructed of material having minimum thickness of 0.004 inch. Not more than 25 pounds net weight of product may be packed in one outside box. Not authorized for transportation by aircraft.

* * * * *

§ 173.366 [Amended]

NN. § 173.366 would remain the same as now written except the word chapter would be amended to read "subchapter" in paragraph (a)(2).

OO. In §173.367, Note 1 following paragraph (a)(1) would be deleted; paragraphs (a)(2) through (a)(6), and (b)(2) would be amended to read as follows:

§ 173.367 Arsenical compounds, n.o.s.; arsenate of lead; calcium arsenate; Paris green; arsenical mixtures.

(a) * * *
(1) * * *

NOTE 1: [Deleted].

(2) Specification 36A or 36B (§§ 178.230, 178.233 of this subchapter). Triplex bags. Authorized only for arsenical insecticides and fungicides containing 10.0 percent or less of arsenic trioxide. Not authorized for transportation by aircraft.

(3) Specification 44B (§ 178.236 of this subchapter). Multiwall paper bags with inside paper bags, specification 2D (§ 178.23 of this subchapter). Net weight not over 50 pounds each. Not authorized for transportation by aircraft.

(4) Specification 44C (§ 178.237 of this subchapter). Multiwall paper bags. For carload and truckload shipments only. Net weight not over 50 pounds each.

(5) Specification 44D (§ 178.238 of this subchapter). Multiwall paper bags. Where extensible kraft is used the minimum total basis weight must be 260 pounds and the outer wall may be no less than 60 pounds basis weight. Net weight not over 50 pounds each. Not authorized for transportation by aircraft.

(6) Specification 44E (§ 178.239 of this subchapter). Multiwall paper bags constructed with minimum total basis weight of 160 pounds. For carload or truckload shipments only by rail or highway transportation; loaded by the consignor and unloaded by the consignee or his duly authorized agent. Net weight not over 50 pounds each. Where extensible kraft is used the minimum total basis weight for 40-pound net weight bags must be 190 pounds and for 20-pound net weight bags it must be 150 pounds. Multiwall bags so constructed are authorized for less-than-carload and less-than-truckload shipments as well as carload and truckload shipments by rail or highway transportation only.

(b) * * *

(2) Specification 44B (§ 178.236 of this subchapter). Paper bags with two added inside thicknesses of No. 1 kraft paper, one sheet having a Mullen test of 50 and the other sheet having a Mullen test of 40. Net weight not over 50 pounds each. Not authorized for transportation by aircraft.

PP. In § 173.368, paragraph (b) would be amended to read as follows:

§ 173.368 Arsenical dust, arsenical flue dust, and other poisonous noncombustible by-product dusts; also arsenic trioxide, calcium arsenate, and sodium arsenate.

(a) Arsenic dust, arsenical flue dust, and other poisonous noncombustible by-product dusts from metal recovery operations not subject to dangerous spontaneous heating, and arsenic trioxide, calcium arsenate, or sodium arsenate, when delivery is made to plants with private sidings only may, in addition to packagings prescribed in § 173.367, be shipped in bulk in the following kinds of cars, if those cars are assigned exclusively to this type of service:

(1) Sift-proof, self-clearing, hopper or bottom outlet steel cars.

(2) Sift-proof all steel flat bottom gondola cars with fixed sides and ends equipped with waterproof and dustproof wooden or steel covers well secured in place for all openings, and

(3) Sift-proof box cars of all steel construction. Cars assigned exclusively to this service must be marked "ARSENICAL SERVICE ONLY," in addition to other required markings, and are not subject to § 174.615 of this subchapter while in that service.

* * * * *

QQ. In § 173.369, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraph (a)(11) and the introductory text of paragraph (b) would be amended to read as follows:

§ 173.369 Carbolic acid (phenol), not liquid.

(a) * * *

(11) Specification 37A or 37B (§§ 178.131, 178.132 of this subchapter). Metal drums (single-trip). Not authorized for transportation by aircraft.

* * * * *

(b) Carbolic acid (phenol), not liquid, in tightly closed inside packagings, securely cushioned when necessary to prevent breakage and packaged as follows, is exempt from the specification packaging requirements of this Part:

* * * * *

RR. In § 173.370, the word chapter would be amended to read "subchapter" each time it appears in the section; the Heading and the introductory text of paragraphs (a), (b), and (d) and paragraphs (a)(8) and (12), and (b)(3) would be amended to read as follows:

§ 173.370 Cyanides, or cyanide mixtures.

(a) Cyanides, or cyanide mixtures, except cyanide of calcium and mixtures thereof, unless otherwise provided for, if containing the cyanogen equivalent of 10 percent or more of potassium cyanide, must be packaged as follows:

* * * * *

(8) Specification 45B (§ 178.240 of this subchapter). Bags, cloth, and paper, lined. Authorized only for sodium cyanides of globular or pellet form, diameter not less than ¾-inch. Net weight not over 100 pounds. Not authorized for transportation by aircraft.

* * * * *

(12) Specification 12B (§ 178.205 of this subchapter). Fiberboard boxes constructed of at least 275-pound test double-faced fiberboard and provided with a perimeter liner and bottom pad of atl east 200-pound test fiberboard. Boxes constructed of at least 350-pound fiberboard having top and bottom pads shall not require perimeter liner. Products must be contained within a tightly closed polyethylene or other equally efficient plastic container constructed of material having minimum thickness of 0.004 inch. Not more than 25 pounds net weight of product may be packed in one outside box. Not authorized for transportation by aircraft.

* * * * *

(b) *Exemptions for cyanides, and cyanide mixtures, except cyanide of calcium and mixtures thereof.* Cyanides and cyanide mixtures, except cyanide of calcium and mixtures thereof, when described and packaged as follows, are exempt from the specification packaging requirements of this Part:

* * * * *

(3) Cyanides of copper, zinc, lead, and silver are exempt from all packaging requirements except §§ 173.24 and 173.363.

* * * * *

(d) *Exemptions for cyanide of calcium and mixtures thereof.* Cyanide of calcium and mixtures thereof, when described and packaged as follows, are exempt from the specification packaging requirements of this Part.

* * * * *

SS. Section 173.371 would be amended to read as follows:

§ 173.371 Dinitrobenzol.

(a) Dinitrobenzol must be packaged as follows:

(1) As prescribed in § 173.346 or 173.365 according to its form at 130°F.

(2) Specification 11A (§ 178.160 of this subchapter). Wooden barrels, gross weight 300 pounds; must be shipped in carload or truckload shipments only and must not be offered for transportation by carriers by express rail car, aircraft, or water.

§ 173.372 [Amended]

TT. Section 173.372 would remain as now written except the word chapter would be amended to read "subchapter" in paragraph (a)(2).

UU. In § 173.373, paragraphs (a)(2) and (4) would be amended to read as follows:

§ 173.373 Ortho-nitroaniline and para-nitraniline.

(a) * * *

(2) Specification 11A (§ 178.160 of this subchapter). Wooden barrels, gross weight 385 pounds; must be shipped in carload or truckload shipments only, and must not be offered for transportation by carriers by express rail car, aircraft, or water.

* * * * *

(4) In addition to specification containers prescribed in this section, paranitraniline may be shipped by highway in bulk in strong, water-tight, metal-bodied covered hopper motor vehicles.

§ 173.374 [Amended]

VV. Section 173.374 would remain the same as now written except the word chapter would be amended to read "sub-

chapter" each time it appears in the section.

WW. In § 173.375 the word chapter would be amended to read "subchapter" each time it appears in the section; Note 1 following paragraph (a)(1) would be deleted as follows:

§ 173.375 Sodium azide.

(a) * * *
(1) * * *

NOTE 1: [Deleted].

XX. In § 173.376, paragraph (b) would be deleted as follows:

§ 173.376 Aldrin and aldrin mixtures, dry, with more than 65 percent aldrin.

* * * * *

(b) [Deleted].

YY. In § 173.377, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraphs (a)(4) and (5), (b)(4) and (5), (f), and (i) would be deleted; the heading and the introductory text of paragraphs (a), (b), and (g), and paragraphs (g)(1), (g)(2), and (h) would be amended; paragraphs (g)(3) and (g)(4) would be added to read as follows:

§ 173.377 Organic phosphate compound mixtures, n.o.s. dry (extremely toxic); parathion mixtures, dry; strychnine; tetraethyl dithio pyrophosphate mixtures, dry; tetraethyl pyrophosphate mixtures, dry.

(a) Dry organic phosphate compound mixtures, n.o.s. (extremely toxic), dry parathion mixtures, strychnine, dry tetraethyl dithio pyrophosphate mixtures, and dry tetraethyl pyrophosphate mixtures, in which the liquid is absorbed in concentrations greater than 2 percent (for 2 percent or less, see § 173.377b) but not exceeding 27 percent in an inert dry material so as to form a dry mixture, must be packaged as follows:

* * * * *

(4) [Deleted]
(5) [Deleted]

(b) Dry organic phosphate compound mixtures, n.o.s. (extremely toxic), dry parathion mixtures, strychnine, dry tetraethyl dithio pyrophosphate mixtures, and dry tetraethyl pyrophosphate mixtures, in which the liquid is absorbed in concentrations greater than 27 percent in an inert dry material so as to form a dry mixture, must be packaged as follows:

* * * * *

(4) [Deleted]
(5) [Deleted]

* * * * *

(f) [Deleted]

(g) Dry mixtures containing more than 2 percent but not exceeding 15 percent by weight of organic phosphate compound mixture, n.o.s. (extremely toxic), parathion, strychnine tetraethyl dithio pyrophosphate, or tetraethyl pyrophosphate, and in which the liquid is absorbed in an inert material, in addition to packagings prescribed in paragraphs (a) and (b) of this section, may be packaged as follows:

(1) Specification 44B (§ 178.236 of this subchapter). Multi-wall paper bag with inside paper bags, specification 2D (§ 178.23 of this subchapter), not over 5 pounds capacity each. Net weight of material in outside container not over 30 pounds each. Not authorized for transportation by express rail car, aircraft, or water.

(2) Specification 12B (§ 178.205 of this subchapter). Fiberboard boxes constructed of at least 275-pound test double-faced fiberboard and provided with a perimeter liner and top and bottom pad of at least 275-pound test fiberboard. Product must be contained within a tightly closed polyethylene or other equally efficient plastic bag constructed of material having minimum thickness of 0.003 inch. Not more than 50 pounds net weight of product may be packed in one outside box. Not authorized for transportation by aircraft.

(3) Specification 17C, 17H or 37A (§§ 178.115, 178.118, 178.131 of this subchapter), metal drums (single-trip). Specification 37A metal drums authorized for not over 100 pounds net weight.

(4) Specification 21C (§ 178.224 of this subchapter). Fiber drums. Authorized net weight not over 250 pounds.

(h) Dry mixtures containing more than 2 percent but not exceeding 5 percent by weight of organic phosphate compound mixture, n.o.s. (extremely toxic), parathion, strychnine, tetraethyl dithio pyrophosphate, or tetraethyl pyrophosphate, and in which the liquid is adsorbed in an inert material, in addition to the packagings prescribed in paragraphs (a), (b), and (g) of this section, may be packaged as follows:

(1) Specification 44D (§ 178.238 of this subchapter). Multiwall paper bag not over 50 pounds net weight each. Where extensible kraft is used the minimum total basis weight shall be 260 pounds. Not authorized for transportation by express rail car, aircraft, or water.

(i) *[Deleted.]*

ZZ. § 173.377a would be added to read as follows:

§ 173.377a Hexaethyl tetraphosphate mixtures, dry; methyl parathion mixtures, dry; organic phosphate compound mixtures, n.o.s., dry (highly toxic).

(a) Dry hexaethyl tetraphosphate mixtures, dry methyl parathion mixtures, and dry organic phosphate compound mixtures, n.o.s. (highly toxic), in which the liquid is absorbed in concentrations greater than 2 percent (for 2 percent or less, see § 173.377b) but not exceeding 27 percent in an inert dry material so as to form a dry mixture, must be packaged as follows:

(1) In packagings as prescribed in § 173.377(a).

(2) Specification 17C, 17H, or 37A (*§§ 178.115, 178.118, 178.131 of this subchapter*), metal drums (single-trip.) Specification 37A metal drums authorized for not over 100 pounds net weight.

(3) Specification 21C (§ 178.224 of this subchapter). Fiber drum. Authorized net weight not over 250 pounds.

(b) Dry hexaethyl tetraphosphate mixtures, dry methyl parathion mixtures, and dry organic phosphate compound mixtures, n.o.s. (highly toxic), in which the liquid is absorbed in concentrations greater than 27 percent in an inert dry material so as to form a dry mixture, must be packaged as follows:

(1) In packagings as prescribed in § 173.377(b).

(2) Specification 17C, 17H, or 37A (§§ 178.115, 178.118, 178.131 of this subchapter), metal drums (single-trip). Specification 37A metal drums authorized for not over 100 pounds net weight.

(3) Specification 21C (§ 178.224 of this subchapter). Fiber drum. Authorized only for mixtures in which the liquid is absorbed in concentration not greater than 50 percent. Authorized net weight not over 225 pounds.

(c) Inside metal or fiber cans when closed as for shipment must be capable of withstanding two four-foot drops onto solid concrete without breakage of the container or any sifting of the contents. One drop must be on side of can and the other diagonally on the top rim or chime.

(d) Inside paper bags when closed as for shipment must be capable of withstanding two four-foot drops onto solid concrete without breakage of the container or any sifting of the contents. One drop must be made on bottom of bag and the other on either large face.

(e) Completed packages when closed as for shipment must be capable of withstanding two four-foot drops onto solid concrete without breakage of the container or any sifting of the contents. One drop must be made on bottom of package and the other drop on the smallest adjacent side area.

(f) Dry mixtures containing more than 2 percent but not exceeding 15 percent by weight of hexaethyl tetraphosphate, methyl parathion, or organic phosphate compound mixture, n.o.s. (highly toxic), and in which the liquid is absorbed in an inert material, in addition to the packagings prescribed in paragraphs (a) and (b) of this section, may be packaged as follows:

(1) In packagings as prescribed in § 173.377(g) except paragraph (g)(1).

(2) Specification 44B (§ 178.236 of this subchapter). Multiwall paper bag with inside paper bags, spec. 2D (§ 178.23 of this subchapter), not over 5 pounds capacity each. Net weight of material in outside packaging not over 30 pounds each. Not authorized for transportation by aircraft.

(g) Dry mixtures containing more than 2 percent but not exceeding 5 percent by weight of hexaethyl tetraphosphate, methyl parathion, or organic phosphate compound mixture, n.o.s. (highly toxic), and in which the liquid is absorbed in an inert material, in addition to the packagings prescribed in paragraphs (a), (b), and (f) of this section, may be packaged as follows:

(1) Specification 44D (§ 178.238 of this subchapter). Multiwall paper bag not over 50 pounds net weight each. Where extensible kraft is used the minimum total basis weight must be 260 pounds. Not authorized for transportation by aircraft.

(h) Dry mixtures containing more than 2 percent but not exceeding 12 per-

cent by weight of hexaethyl tetraphosphate, methyl parathion, organic phosphate compound mixture, n.o.s. (highly toxic), and in which the liquid is absorbed in an inert material, in addition to containers prescribed in paragraphs (a), (b), and (g) of this section, may be packed in specification containers as follows:

(1) Specification 44D (§ 178.238 of this subchapter). Multiwall paper bag not over 50 pounds net weight each. Outer ply to be not less than 60 pounds basis weight. Not authorized for transportation by aircraft.

AAA. Section 173.377b would be added to read as follows:

§ 173.377b Hexaethyl tetraphosphate mixtures, dry; methyl parathion mixtures, dry; organic phosphate compound mixtures, n.o.s., dry (extremely or highly toxic); parathion mixtures, dry; tetraethyl dithio pyrophosphate mixtures, dry; tetraethyl pyrophosphate mixtures, dry: Exemptions.

Dry mixtures containing not more than 2 percent by weight of hexaethyl tetraphosphate, methyl parathion, organic phosphate compound mixture, n.o.s. (extremely or highly toxic), parathion, tetraethyl dithio pyrophosphate, or tetraethyl pyrophosphate, and in which the liquid is absorbed in an inert material, are exempt from the specification packaging requirements of this Part.

BBB. Section 173.379 would be amended to read as follows:

§ 173.379 Cyanogen bromide.

Cyanogen bromide must be packaged in tightly closed metal inside containers not over 1-pound capacity each, securely cushioned and packaged in an outside wooden box. Net weight must not exceed 25 pounds in one outside packaging.

CCC. In § 173.381, the Heading and the introductory text of paragraph (b) and paragraph (a) would be amended; paragraph (d) would be added to read as follows:

§ 173.381 General packaging requirements for irritating materials.

(a) *Cushioning.* All packagings must be hermetically closed. Inside packagings must be cushioned as prescribed, or in any case, when necessary to prevent breakage or leakage.

(b) *Outage.* No packaging used for the transportation of any liquid irritating material may be completely filled. Sufficient space must be left empty of liquid to prevent leakage from distortion of the packaging caused by expansion of the contents due to rise in temperature during transportation. This free space must be sufficient in each packaging so that it will not become entirely filled with the liquid at 130°F.

* * * * *

(d) Any pressure in a cylinder at 130°F. must not exceed ¾ the marked service pressure of the cylinder.

DDD. In § 173.382, the word chapter would be amended to read "subchapter" each time it appears in the section; the Heading and the introductory text of paragraph (a) and paragraph (b) would be amended to read as follows:

§ 173.382 Irritating materials, not specifically provided for.

(a) Irritating materials, as defined in § 173.326b, for which special packaging is not otherwise prescribed, except as provided in paragraph (b) of this section, must be packaged as follows:

* * * * *

(b) Chloroacetophenone, diphenylaminechloroarsine, irritating agent, n.o.s., or xylyl bromide, charged with a nonflammable gas exceeding 25 p.s.i.g. at 70°F. must be packaged as specified in subparagraph (a) (4) of this section.

§ 173.383.

EEE. Section 173.383 would remain the same as now written.

§ 173.384 [Deleted]

FFF. Section 173.384 would be deleted.

§§ 173.385, 173.386 and 173.387 [Amended]

GGG. Sections 173.385, 173.386, and 173.387 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

HHH. In § 173.388, the first sentence of paragraph (a) would be amended to read as follows:

§ 173.388 Labeling of packages containing etiologic agents.

(a) Each package containing an etiologic agent, except a diagnostic specimen, a biological product, or cultures of etiologic agents in a quantity of 50 ml or less in one outside package (see § 173.386(d).), must be labeled as prescribed by the regulations of the Department of Health, Education, and Welfare, 42 CFR § 72.25(c)(4). * * *

* * * * *

§§ 173.389, 173.390, 173.391, 173.392, 173.393, 173.393a, 173.393b, and 173.394 through 173.399 [Amended]

III. Sections 173.389, 173.390, 173.391, 173.392, 173.393, 173.393a, 173.393b, 173.394, through 173.399 would remain the same as now written except the word chapter would be amended to read "subchapter" each time it appears in the sections.

JJJ. Subpart H would be amended to read as follows:

Subpart H—Special Shipper Requirements for Certain Rail Shipments or Movements

§§ 173.400–173.417 and 173.420–173.422 [Deleted]

A. Sections 173.400 through 173.417 and §§ 173.420 through 173.422 would be deleted.

§ 173.425 [Deleted]

B. Section 173.425 would be deleted.

C. Section 173.426 would be amended to read as follows:

§ 173.426 Cars, truck bodies or trailers containing lading which has been fumigated or treated with flammable liquids, flammable gases, poisonous liquids or solids, or poisonous gases.

(a) Delivery to carrier of cars, truck bodies or trailers containing lading fumigated or treated with flammable liquid or flammable gas is prohibited until 48 hours have elapsed after such fumigation or treatment, or until cars, truck bodies or trailers have been ventilated so as to remove danger of fire or explosion due to the pressure of flammable vapors.

(b) Cars, truck bodies or trailers containing lading which has been fumigated or treated with poisonous liquid, solid, or gas, such as carbolic acid, liquid or solid, chlorpicrin, hydrocyanic acid, methyl bromide, etc., must be placarded on each door or near thereto with placard as described below (for cleaning cars see section 174.615 of this subchapter):

§§ 173.427 and 173.430 [Deleted]

D. Sections 173.427, and 173.430 would be deleted.

Da. Section 173.431 would be amended to read as follows:

§ 173.431 Switching ticket.

When the initial movement is a switching operation, the switching order, switching receipt or switching ticket, and copies thereof, prepared by the shipper, must bear the placard endorsement and the shipper's certificate prescribed by §§ 172.204 and 174.10(c) of this subchapter.

E. In § 173.432, the word chapter would be amended to read "subchapter" each time it appears in the section; paragraphs (a) and (e) would be amended to read as follows:

§ 173.432 Tank car shipments.

(a) Tank cars containing any flammable poison gas or flammable liquid, except liquid road asphalt or tar, must not be offered for shipment unless originally consigned or subsequently reconsigned to parties having private-siding (see Note 1 of this section) or to parties using railroad siding facilities which have been equipped for piping the liquid from tank cars to permanent storage tanks of sufficient capacity to receive contents of car.

* * * * *

(e) Flammable liquids and flammable compressed gases must not be loaded into tank cars on carrier property from tank trucks, or drums.

* * * * *

F. Subpart I would be deleted and a new Subpart I added to read as follows:

Subpart I—Other Regulated Material; Definition and Preparation

A Section 173.500 would be added to read as follows:

§ 173.500 Definitions.

(a) For the purpose of Parts 170 to 189 of this subchapter, an Other Regulated Material (ORM) is defined as a material which is authorized in this part to be

classed as an ORM material or is not otherwise subject to the regulations in Subpart B through H in this Part and which possesses one or more characteristics as described in one of the following groups:

(1) An ORM–A material is a substance which has an anesthetic, irritating, noxious, toxic, or other similar property and which can cause extreme annoyance or discomfort to passengers and driver or crew in the event of leakage during transportation. Materials, when tested according to the test procedures described in Appendix A to this Part, meeting any of the following criteria are ORM–A materials:

(i) *Ingestion (oral).* Any material that has a single dose LD_{50}[1] of more than 50 milligrams but not more than 500 milligrams per kilogram of body weight when orally administered to both male and female white rats (young adults).

(ii) *Inhalation.* Any material that has an LC_{50}[1] of more than 200 parts per million but not more than 2000 parts per million of vapor or more than 2 milligrams but not more than 20 milligrams of mist or dust when administered by continuous inhalation for 1 hour or less to both male and female white rats (young adults). If the product is administered to the animals as a dust or mist, more than 90 percent of the particles available for inhalation in the test must have a diameter of 10 microns or less provided it is reasonably forseeable that such a concentration could be encountered by man.

(iii) Specifically designated by name in § 172.101 of this subchapter.

(2) An ORM–B material is a substance capable of causing significant damage to a transport vehicle or vessel from leakage during transportation. Materials meeting one or both of the following criteria are ORM–B materials:

(i) A liquid substance that has a corrosion rate exceeding 0.250 inch per year (IPY) on aluminum (nonclad 7075–T6) at a test temperature of 130°F. An acceptable test is described in NACE Standard TM–01–69.

(ii) Specifically designated by name in § 172.101 of this subchapter.

(3) An ORM–C material is a substance which has other inherent characteristics not described as an ORM–A or ORM–B but which make it unsuitable for shipment, unless properly identified and prepared for transportation. Each ORM–C material is specifically named in § 172.101 of this subchapter.

(4) ORM–D material is a substance that is authorized to be so classed by the regulations in this Part applicable to flammable liquids, flammable solids, oxidizing materials, organic peroxides, corrosive materials, and compressed gases. An ORM–D material may be so classed only under the conditions specified in those sections which cover exemptions from specification packaging.

B. Section 173.505 would be added to read as follows:

[1] LD_{50}, LC_{50}: That dose (LD) or concentration (LC) which will cause death within 14 days to one half of the test animals.

§ 173.505 Exemptions for Other Regulated Materials (ORM).

(a) The following Other Regulated Materials (ORM), unless otherwise provided in § 172.101 of this subchapter, are exempt from Parts 170 to 189, except §§ 173.6 and 173.24, when packaged as follows:

(1) ORM Group A, B, or C liquid, not over one pint in one package;

(2) ORM Group A or B solid, not over five pounds in one package;

(3) ORM Group C solid, not over twenty-five pounds in one package.

C. Section 173.510 would be added to read as follows:

§ 173.510 General packaging requirements.

(a) Except as provided in § 173.505, Other Regulated Materials (ORM) must be prepared for shipment in compliance with the following:

(1) Each material must be offered for transportation and transported in compliance with Subparts B, C, and D of Part 172 and Subpart A of Part 173 (including § 173.6 for shipments intended for transportation by air).

(2) Sufficient outage (ullage) to prevent leakage of liquid content or distortion of any packaging from expansion of the content by a temperature of 130°F. must be provided.

(3) When a liquid or solid has an absolute vapor pressure exceeding 16 p.s.i. at 100°F., the primary packaging must be capable of withstanding the inside vapor pressure at 130°F. without leakage.

(4) Any material classed as an Other Regulated Material (ORM), which may cause a hazard in transportation due to its reaction with water, must be packaged with either an inner or outer waterproof packaging.

D. Subpart J would be added to read as follows:

Subpart J—Other Regulated Materials; Group A

A. Section 173.605 would be added to read as follows:

§ 173.605 Ammonium hydrosulfide solution; ammonium polysulfide solution; ammonium sulfide solution; bromochloromethane; dibromodifluoromethane; dichlorodifluoroethylene; dichloromethane; methyl chloroform; perfluoro-2-butene; tetrachloroethylene; trichloroethylene.

(a) Ammonium hydrosulfide solution, ammonium polysulfide solution, ammonium sulfide solution, bromochloromethane, dibromodifluoromethane, dichlorodifluoroethylene, dichloromethane, methyl chloroform, perfluoro-2-butene, tetrachloroethylene, and trichloroethylene, when offered for transportation on a passenger-carrying aircraft, must be prepared for shipment in compliance with § 173.510 of this subchapter and must be packaged as follows:

(1) Wooden box with inside earthenware, glass, metal, or plastic packagings of not more than 2 gallons capacity each, with sufficient cushioning and absorbent material to prevent breakage and leakage.

(2) Fiberboard box with inside earthenware, glass, metal, or plastic packagings of not more than 1 gallon capacity each, with sufficient cushioning and absorbent material to prevent breakage and leakage.

(3) Metal drum, of not more than 10 gallons capacity.

(4) Outside packaging with inside earthenware, glass, plastic, or metal packagings of not more than 4 fluid ounces capacity each, with sufficient cushioning and absorbent material to prevent breakage and leakage. The maximum amount that may be shipped in any one outside packaging is 5 gallons.

B. Section 173.615 would be added to read as follows:

§ 173.615 Carbon dioxide, solid (dry ice).

(a) Solid carbon dioxide, when offered for transportation by aircraft or water, must be packed in packaging designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packaging. For each shipment by air, advance arrangements between the shipper and each carrier must be made.

(b) Railroad cars and motor vehicles containing solid carbon dioxide, when accepted for transportation on board ocean vessels must be conspicuously marked on two sides "WARNING—CO_2, SOLID (DRY ICE)."

(c) Other packagings, when accepted for transportation on board ocean vessels must be marked "CARBON DIOXIDE, SOLID—DO NOT STOW BELOW DECKS."

(d) Not more than 440 pounds of solid carbon dioxide may be transported in any one cargo pit or bin on any aircraft except by specific and special arrangement between the shipper and the aircraft operator.

C. Section 173.620 would be added to read as follows:

§ 173.620 Carbon tetrachloride; ethylene dibromide (1,2-dibromoethane); tetrachloroethane.

(a) Carbon tetrachloride, ethylene dibromide, and tetrachloroethane, when offered for shipment by cargo-only aircraft and water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) As prescribed in § 173.344 or 173.345, meeting the packaging requirements applicable to highly toxic liquids.

(2) Uniform Freight Classification (UFC), Rule 40, Section 5. Metal barrel or drum, not over 55 gallons capacity; not authorized for transportation by aircraft.

(3) Wooden box with inside containers, not over 200 pounds gross weight; not authorized for transportation by aircraft.

(4) Uniform Freight Classification (UFC), Rule 41, Sections 2 and 3. Fiberboard box, with inside containers, not over 90 pounds gross weight; not authorized for transportation by aircraft.

(5) Tank cars or motor vehicle tank trucks.

(b) Carbon tetrachloride, ethylene dibromide, and tetrachloroethane, when offered for shipment by passenger-carrying aircraft, must be prepared for shipment in compliance with § 173.510 and must be packaged to meet the packaging requirements of § 173.344.

D. Section 173.625 would be added to read as follows:

§ 173.625 Castor beans and castor pomace.

(a) Castor beans and castor pomace, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Sift-proof, five-ply paper bag, not over 100 pounds net weight.

(2) Sift-proof, paper or plastic lined burlap bag, not over 100 pounds net weight.

(3) Sift-proof, paper or plastic lined cotton bag, not over 100 pounds net weight.

E. Section 173.630 would be added to read as follows:

§ 173.630 Chloroform.

(a) Chloroform, when offered for transportation by aircraft, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Wooden box with inside earthenware, glass, metal, or plastic packaging of not more than 2 gallons capacity each.

(2) Fiberboard box with inside earthenware, glass, metal, or plastic packaging of not more than 1 gallon capacity each.

(3) Metal drum, not over 10 gallons capacity.

(4) Outer packaging with inside earthenware, glass, metal, or plastic packagings of not more than 4 fluid ounces capacity each, not exceeding 5 gallons total content.

(b) Chloroform, when offered for shipment by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) As prescribed in § 173.344 or 173.345, meeting the packaging requirements applicable to highly toxic liquids.

(2) Uniform Freight Classification (UFC), Rule 40, Section 5. Metal barrel or drum, not over 55 gallons capacity.

(3) Wooden box with inside containers, not over 200 pounds gross weight.

(4) Uniform Freight Classification (UFC), Rule 41, Sections 2 and 3. Fiberboard box with inside containers, not over 90 pounds gross weight.

F. Section 173.635 would be added to read as follows:

§ 173.635 Ferrophosphorus.

(a) Ferrophosphorus, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Steel barrel or drum;

(2) Wooden barrel or keg;

(3) Wooden box with inside container; or

(4) Sift-proof railroad freight car.

G. Section 173.645 would be added to read as follows:

§ 173.645 Ferrosilicon.

(a) Ferrosilicon, containing 30 percent or more but not more than 70 percent silicon, when offered for shipment by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Steel barrel or drum.

(2) Wooden barrel or keg.

(3) Wooden box, not over 500 pounds gross weight.

(b) Ferrosilicon, containing 30 percent or more but not more than 70 percent silicon, when offered for shipment by cargo-only aircraft must be prepared for shipment in compliance with §§ 173.510 and 173.154.

H. Section 173.650 would be added to read as follows:

§ 173.650 Hexachloroethane.

(a) Hexachloroethane, when offered for shipment by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) As prescribed in § 173.344 or 173.345, meeting the packaging requirements applicable to highly toxic liquids.

(2) Uniform Freight Classification (UFC), Rule 40, Section 5. Metal barrel or drum, not over 55 gallons capacity.

(3) Wooden box with inside containers, not over 200 pounds gross weight.

(4) Uniform Freight Classification (UFC), Rule 41, Sections 2 and 3. Fiberboard box with inside containers, not over 90 pounds gross weight.

I. Section 173.655 would be added to read as follows:

§ 173.655 Naphthalene or naphthalin.

(a) Naphthalene or naphthalin, when offered for shipment by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Wooden barrel or keg.

(2) Wooden box.

(3) Fiberboard box.

(4) Metal barrel or drum.

(5) Burlap (jute) bag, not over 224 pounds net weight. Authorized only when the melting point is 167° F. or higher.

(b) Naphthalene or naphthalin, when offered for shipment by cargo-only aircraft, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) As prescribed for passenger-carrying aircraft in paragraph (c) of this section, or

(2) As prescribed in § 173.154.

(c) Naphthalene or naphthalin, when offered for transportation by passenger-carrying aircraft, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Earthenware, glass, metal, or plastic inside packagings of not more than 5 pounds capacity each, in strong outside packaging not over 25 pounds net weight.

J. Subpart K would be added to read as follows:

Subpart K—Other Regulated Materials; Group B

A. Section 173.800 would be added to read as follows:

§ 173.800 Ammonium hydrogen fluoride; ammonium hydrogen sulfate; ammonium fluoride; barium oxide; chloroplatinic acid; copper chloride; ferric chloride; lead chloride; molybdenum pentachloride; potassium hydrogen sulfate; sodium aluminate; sodium hydrogen sulfate; or sodium hydrogen sulfite; (each in solid form).

(a) Ammonium hydrogen fluoride, ammonium hydrogen sulfate, ammonium fluoride, barium oxide, chloroplatinic acid, copper chloride, ferric chloride, lead chloride, molybdenum pentachloride, potassium hydrogen sulfate, sodium aluminate, sodium hydrogen sulfate, or sodium hydrogen sulfite, when offered for transportation by passenger-carrying aircraft, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Earthenware, glass, metal, or plastic inside packagings of not more than 5 pounds net capacity each. Inside packagings must be packed in strong outside packaging, containing not more than 25 pounds net weight.

B. Section 173.850 would be added to read as follows:

§ 173.850 Lime, unslaked, quicklime, or calcium oxide.

(a) Unslaked lime, quicklime, or calcium oxide when offered for transportation by cargo-only aircraft or water, must be prepared for shipment in compliance with § 173.510 and must be packed in waterproofed packaging as follows:

(1) Steel barrel or drum.

(2) Wooden barrel or keg.

(3) Wooden box.

(4) Multi-wall paper bag, not over 100 pounds net weight.

(5) Paper-lined burlap bag, not over 100 pounds net weight.

(6) Sift-proof railroad freight car.

(b) Unslaked lime, quicklime, or calcium oxide, when offered for transportation by passenger-carrying aircraft, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Earthenware, glass, metal, or plastic inside packagings, of not more than 5 pounds net capacity each. Inside packagings must be packed in strong outside packaging, containing not more than 25 pounds net weight.

C. Section 173.860 would be added to read as follows:

§ 173.860 Mercury, metallic.

(a) Except as limited by paragraphs (b) and (c) of this section, metallic mercury, when offered for transportation by aircraft, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Earthenware, glass, or plastic inside packagings of not more than 5 pounds capacity each packed in strong

outside packaging. Either the inside or the outside packaging must have completely enveloping inner linings or bags of strong, leak-tight, and puncture resistant material impervious to mercury.

(2) Iron or steel flasks packed in outside packagings. Either the inside or the outside packaging must have completely enveloping inner linings or bags of strong, leak-tight, and puncture resistant material impervious to mercury.

(b) Manufactured devices of which mercury is a component part (except tubes) packed in outside packagings having completely enveloping inner linings or bags of strong, leak-tight, and puncture resistant material impervious to mercury may be transported by aircraft if prepared for shipment in compliance with § 173.510.

(1) Mercurial barometers, complying with this paragraph, which are loaded and unloaded from an aircraft under the supervision of and are accompanied in flight by a governmental Weather Bureau official, or similar governmental agency official are exempt from any other requirements of this subchapter.

(c) *Electron tubes, vapor tubes,* and similar tubes of which mercury is a component part, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) In outside packaging with all seams and joints sealed with self-adhesive, pressure-sensitive tape which will prevent the escape of mercury from the outside packagings; authorized only if the item contains not over one pound (454 grams) of mercury.

(2) In outside packaging having completely enveloping inner linings or bags of strong, leak-tight, and puncture resistant material impervious to mercury.

(3) In manufacturer's original packaging if each item does not contain more than 0.18 ounce (5 grams) of mercury per tube, and if the outside package does not contain more than 1.1 ounces (30 grams) total net quantity.

(4) In the manufacturer's original packagings if tubes are completely jacketed in sealed leak-tight metal cases.

D. Subpart L would be added to read as follows:

Subpart L—Other Regulated Material: Group C

A. Section 173.905 would be added to read as follows:

§ 173.905 Aluminum, metallic powder.

(a) Polished aluminum powder which has been treated with oils or waxes for printing or paint purposes are not subject to Parts 170–189 of this subchapter.

(b) Metallic aluminum powder, other than the powder described in paragraph (a) of this section, when offered for transportation by passenger-carrying aircraft must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Earthenware, glass, metal, or plastic inside packagings of not more than 5 pounds capacity each, in strong outside packaging of not over 25 pounds net weight.

(c) Metallic aluminum powder, other than the powder described in paragraph (a) of this section, when offered for transportation by cargo-only aircraft and by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Steel barrel or drum, not over 500 pounds gross weight.

(2) Wooden barrel or keg, not over 350 pounds gross weight.

(3) Wooden box, not over 125 pounds gross weight.

(4) Moisture and sift-proof bag, not over 55 pounds gross weight.

(5) Fiber drum, not over 450 pounds gross weight.

(6) Fiberboard box, not over 75 pounds gross weight.

B. Section 173.910 would be added to read as follows:

§ 173.910 Ammonium sulfate nitrate.

(a) Ammonium sulfate nitrate, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Steel barrel or drum.

(2) Wooden barrel or keg.

(3) Wooden box with inside packagings.

(4) Fiberboard box with inside packagings, not over 90 pounds gross weight.

(5) Fiber drum, not over 150 pounds gross weight.

(6) Paper bag, not over 200 pounds net weight, moisture, and sift-proof, of strength not less than the equivalent of bags made of 8-ounce burlap.

C. Section 173.915 would be added to read as follows:

§ 173.915 Battery parts.

Battery parts, when exhausted and unwashed, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packed in a metal or wooden barrel with sufficient absorbent material to absorb any liquid present in the parts.

D. Section 173.920 would be added to read as follows:

§ 173.920 Bleaching powder.

(a) Bleaching powder (or chlorinated lime) containing less than 39 percent available chlorine, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Steel barrel or drum.

(2) Wooden barrel or keg.

(3) Wooden or fiberboard box, with inside containers.

(4) Fiber drum with inside metallic or polyethylene liner, not over 275 pounds gross weight.

E. Section 173.925 would be added to read as follows:

§ 173.925 Box toe board.

(a) Box toe board, nitrocellulose base, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Wooden box, not over 350 pounds gross weight.

(2) Fiber tube, not over 25 pounds gross weight.

(3) Fiber drum, not over 200 pounds gross weight.

(4) Fiberboard box, not over 90 pounds gross weight.

F. Section 173.930 would be added to read as follows:

§ 173.930 Burlap bags, used and unwashed or not cleaned.

(a) Burlap bags, used and not cleaned, when offered for shipment by water, must be packed in tight bales bound with rope, wire, or other similar means.

(b) Burlap bags used for the shipment of any hazardous material and not cleaned may not be transported by aircraft.

G. Section 173.931 would be added to read as follows:

§ 173.931 Burlap cloth, burlap bags, new, used, and washed, or vacuum cleaned, wheel cleaned, or otherwise mechanically cleaned.

(a) Burlap cloth or new, used, and washed, or cleaned burlap bags when offered for transportation by aircraft or by water, must be packaged as follows:

(1) In tight bales, bound with wire, metal hoops, rope, rattan, or withes.

(2) Tight bundles, bound with rope, wire, or other similar means.

(3) Wooden barrel or box.

H–I. Section 173.945 would be added to read as follows:

§ 173.945 Calcium cyanamide, not hydrated.

(a) Calcium cyanamide, not hydrated, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Steel barrel or drum.

(2) Wooden barrel or keg.

(b) Calcium cyanamide, not hydrated, when offered for transportation by cargo-only aircraft, must be prepared for shipment in compliance with §§ 173.510 and 173.154.

(c) Calcium cyanamide, not hydrated, when offered for transportation by passenger-carrying aircraft, must be prepared for shipment in compliance with § 173.510 and must be packed in earthenware, glass, metal, or plastic inside packagings of not over 1 pound each, adequately cushioned to prevent breakage and leakage. Inside packagings must be packed in a strong outside package containing not more than 25 pounds each.

J. Section 173.948 would be added to read as follows:

§ 173.948 Camphene.

(a) Camphene, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged in a wooden barrel, keg, or box.

(b) Camphene, when offered for transportation by air, must be prepared for shipment in compliance with

§ 173.510 and must be packaged as prescribed in § 173.154.

K. Section 173.955 would be added to read as follows:

§ 173.955 Coconut meal pellets.

(a) Coconut meal pellets which contain at least 6 percent moisture, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Burlap (jute) bag.
(2) Multi-ply paper bag.
(3) Polyethylene-lined burlap or paper bag.

L. Section 173.960 would be added to read as follows:

§ 173.960 Copra.

Copra, when offered for shipment by water, must be prepared for shipment in compliance with § 173.510 and must be packaged in a burlap bag.

M. Section 173.965 would be added to read as follows:

§ 173.965 Cotton and other fibers.

Cotton and the fibers jute, hemp, flax, sisal, coir, kapok, or similar vegetable fibers, when offered for shipment by water, must be packaged in bales, securely and tightly bound with rope, wire, or other similar means.

N. Section 173.970 would be added to read as follows:

§ 173.970 Cotton batting, batting dross, wadding, seed hull fiber, shavings, pulp, and cut linters.

(a) Except as provided in paragraphs (b) and (c) of this section, cotton batting, batting dross, wadding, seed hull fiber, shavings, pulp, and cut linters, when offered for transportation by water must be packaged as follows:

(1) Bales, covered with bagging on at least three-fourths of the bales surface, including both ends.
(2) Wooden barrel.
(3) Wooden box.
(4) Burlap bag, tightly compressed.

(b) Cotton batting, batting dross, and wadding, when packaged in a wooden, fiberboard, or metal packaging, are not subject to any other requirements of Parts 170–189 of this subchapter.

(c) Cut cotton linters may be packaged in a bale, covered on the soft sides only, if the bale is compresed to a density of not less than 32 pounds per cubic foot and is bound with six or more bands.

O. Section 173.975 would be added to read as follows:

§ 173.975 Cotton sweepings and textile, cotton, felt, or wool waste.

(a) Cotton sweepings, and textile, cotton, or wool waste, when offered for transportation by water, must be packaged as follows:

(1) Bales, covered with bagging on at least three-fourths of the bale surface, including both ends.
(2) Burlap bag, tightly compressed.

P. Section 173.980 would be added to read as follows:

§ 173.980 Excelsior.

Excelsior, when offered for transportation by water, must be packaged in a bale, tightly bound with wire or metal hoops.

Q. Section 173.985 would be added to read as follows:

§ 173.985 Exothermic ferrochrome, ferromanganese, and silicon-chrome.

Exothermic ferrochrome, ferromanganese, and silicon-chrome, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged in a steel barrel or drum, not over 750 pounds gross weight.

R. Section 173.990 would be added to read as follows:

§ 173.990 Feed, wet, mixed.

Mixed, wet feed, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged in a burlap (jute) bag or in bulk, in a railroad freight car.

S. Section 173.995 would be added to read as follows:

§ 173.995 Fish scrap and fish meal.

(a) Except as provided in paragraph (b) of this section, fish scrap and fish meal, containing at least 6 percent but not more than 12 percent moisture, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Burlap (jute) bag.
(2) Multi-wall paper bag.
(3) Polyethylene-lined burlap or paper bag.
(4) Railroad freight car.

(b) Fish scrap and fish meal may not be offered for transportation if the temperature of the material exceeds 120°F.

T. Section 173.1000 would be added to read as follows:

§ 173.1000 Garbage tankage, rough ammoniate tankage, or tankage fertilizer.

Garbage tankage containing 8 percent or more moisture, rough ammoniate tankage containing 7 percent or more moisture, or tankage fertilizer containing 8 percent or more moisture, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged in a burlap (jute) bag or in bulk, in a railroad freight car.

U. Section 173.1005 would be added to read as follows:

§ 173.1005 Hay and straw.

Hay and straw, when offered for transportation by water, must be packaged in a tightly bound bale.

V. Section 173.1010 would be added to read as follows:

§ 173.1010 Lead dross or scrap.

(a) Lead dross or scrap, when offered for transportation by water must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Steel barrel or drum.
(2) Wooden barrel or keg.
(3) Wooden box.

W. Section 173.1020 would be added to read as follows:

§ 173.1020 Magnetized material.

(a) Magnetized material, when offered for shipment by aircraft, must be packaged as follows:

(1) Devices, such as magnetrons and light meters, must be packed so that the polarities of each unit oppose one another.

(2) Permanent magnets must have keeper bars installed, must be shielded, or the shipper specifically may arrange with the carrier for special stowage to prevent the magnetic field from causing compass deviation.

(3) Each package containing magnetized material must be marked "ORM Group C," and bear the label described in § 172.427 of this subchapter.

X. Section 173.1025 would be added to read as follows:

§ 173.1025 Metal borings, shavings, turnings, or cuttings.

Metal borings, shavings, turnings, or cuttings, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged in a metal barrel or drum.

Y. Section 173.1030 would be added to read as follows:

§ 173.1030 Oakum or twisted jute packing.

Oakum or twisted jute packing (treated or untreated), when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged in a bale, tightly bound with wire, rope, or other similar means, or in a fiberboard box.

Z. Section 173.1035 would be added to read as follows:

§ 173.1035 Oiled material.

(a) Oiled material, when offered for transportation by aircraft or water, must be properly dried to prevent spontaneous heating, including carbon paper treated with oxidizable oil, oiled clothing, oiled paper, oiled textiles including Brattice cloth, engine packings dressed with linseed or other drying oil, webbing or cotton machine belts, and harness dressed with linseed, tung, or other drying soil, impregnated or coated with 5 percent or less of animal or vegetable oil, and must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) When the nature of the material permits, it must be tightly rolled or coiled and wrapped or sealed with heavy paper.

(2) Fabricated articles not suitable for packagings as described in paragraph (a) (1) of this section, must be packed in sealed metal boxes or metal lined wooden boxes.

(3) Wooden or fiberboard box. Not authorized for transportation by aircraft.

AA. Section 173.1040 would be added to read as follows:

§ 173.1040 Pesticide, water reactive.

Water reactive pesticide, not otherwise subject to this subchapter, and including fungicides, herbicides, etc., which contan manganese ethylenebis-dithio carbamate, when offered for transportation by water, must be packaged in water resistant packaging in compliance with § 173.510.

BB. Section 173.1045 would be added to read as follows:

§ 173.1045 Petroleum coke, uncalcined.

Uncalcined petroleum coke, when offered for transportation by water must be prepared for shipment in compliance with § 173.510 and must be packaged in metal barrels or drums.

CC. Section 173.1050 would be added to read as follows:

§ 173.1050 Photographic flash lamps.

Photographic flash lamps which if broken could ignite flammable vapors or finely divided combustible substances, when offered for transportation by aircraft or water, must be prepared for shipment in compliance with § 173.510 and must be packaged in a specification 12B (§ 178.205 of this subchapter) or a Uniform Freight Classification (UFC), Rule 41, Sections 2 and 3 fiberboard box containing not more than 120 bulbs. Lamps must be in individual carton sleeves, and when packaged in tiers, each tier within the packaging must be separated with a fiberboard partition.

DD. Section 173.1055 would be added to read as follows:

§ 173.1055 Rags, scrap or clothing, used.

(a) Scrap rags or used clothing which must contain 5 percent or less of animal or vegetable oil, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Wooden barrel or keg.
(2) Wooden box.
(3) Bag.
(4) Bales, tightly bound with wire or metal bands.

EE. Section 173.1060 would be added to read as follows:

§ 174.1060 Rosin.

(a) Rosin (colophony), when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Steel barrel or drum.
(2) Wooden barrel or keg.
(3) Wooden box.
(4) Fiberboard box.
(5) Fiber drum.
(6) Burlap bag of at least 7½ ounces burlap, with water-proofed paper lining, not over 100 pounds net weight.
(7) Multi-wall paper bag, of at least 4-ply for not over 50 pounds net weight, or of at least 6-ply for not over 100 pounds net weight.
(8) Uniform Freight Classification (UFC), Rule 40, Section 10. Multi-wall paper bag, at least 4-ply, not over 100 pounds net weight.

FF. Section 173.1065 would be added to read as follows:

§ 173.1065 Rubber curing compound, solid.

(a) Solid rubber curing compounds, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Metal barrel or drum.
(2) Fiber drum.
(3) Wooden barrel or keg.
(4) Wooden or fiberboard box.
(5) Sift-proof multiwall paper bag.
(6) Sift-proof lined burlap bag.

GG. Section 173.1070 would be added to read as follows:

§ 173.1070 Sawdust or wood shavings.

(a) Sawdust or wood shavings, when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Steel barrel or drum.
(2) Wooden barrel or keg.
(3) Wooden or fiberboard box.
(4) Bag.
(5) Bales, slatted and compactly bound with wire or metal bands.

HH. Section 173.1075 would be added to read as follows:

§ 173.1075 Scrap paper or waste.

Scrap paper or waste, when offered for transportation by water, must be packaged in tight bales.

II Section 173.1080 would be added to read as follows:

§ 173.1080 Sulfur.

(a) Sulfur, flowers of sulfur (sulfur flower), when offered for transportation by water, must be prepared for shipment in compliance with § 173.510 and must be packaged as follows:

(1) Metal barrel or drum.
(2) Wooden barrel or keg.
(3) Wooden or fiberboard box.
(4) Sift-proof multi-wall paper bag.
(5) Sift-proof paper-lined burlap bag.
(6) Tight railroad freight car.

JJ. Section 173.1085 would be added to read as follows:

§ 173.1085 Yeast, active (in liquid or compressed form).

(a) Yeast which will not generate gas in transit, or which is shipped in packagings where any gas which may develop can readily escape is not subject to any other requirements of this subchapter.

(b) Any pressure vessel used must be equipped with a safety vent set to release gas at a maximum pressure of 25 p.s.i.g. when transported by aircraft.

(c) Except for a material covered under paragraph (a) of this section, each shipping paper involving shipment by aircraft must indicate to the aircraft operator any special handling and refrigeration conditions necessary for safe transportation including instructions to the operator for handling and refrigeration in the event of delay enroute.

APPENDIX I

METHOD OF TESTING FOR CORROSION TO SKIN

1. Corrosion to the skin is measured by patch-test technique on the intact skin of the albino rabbit, clipped free of hair. A minimum of six subjects are to be used in this test.

2. Introduce under a square cloth patch, such as surgical gauze measuring 1 inch by 1 inch and two single layers thick, 0.5 milliliter (in the case of liquids) or 0.5 gram (in the case of solids and semisolids) of the substance to be tested.

3. Immobilize the animals with patches secured in place by adhesive tape.

4. Wrap the entire trunk of each animal with an impervious material, such as rubberized cloth, for the 4-hour period of exposure. This material is to aid in maintaining the test patches in position and retards the evaporation of volatile substances. It is not applied for the purpose of occlusion.

5. After 4 hours of exposure, the patches are to be removed and the resulting reactions are to be evaluated for corrosion.

6. Readings are again to be made at least at the end of a total of 48 hours (44 hours after the first reading).

7. Corrosion will be considered to have resulted if the substance in contact with the rabbit skin has caused destruction or irreversible alternation of the tissue. Tissue destruction is considered to have occurred if, at any of the readings, there is ulceration or necrosis. Tissue destruction does not include merely sloughing of the epidermis, or erythema, edema, or fissuring.

PART 174—CARRIERS BY RAIL

A. Part 174 would be canceled; a new Part 174 would be added to read as follows:

Subpart A—General Requirements

Sec.
174.1 Scope.
174.3 Acceptable hazardous materials.
174.5 Carriers materials and supplies.
174.8 Inspection.
174.9 Inspection of tank cars.
174.10 Inspection of cars at interchange.
174.11 Canadian shipments and packagings.
174.12 Intermediate shippers and carriers.
174.14 Movements to be expedited.
174.16 Removal and disposition of hazardous materials at destination.
174.18 Astray shipments.
174.20 Local or carrier restrictions.
174.22 Definitions as used in this Part.

Subpart B—General Operating Requirements

174.24 Shipping papers.
174.25 Notice to train crews of cars bearing explosives placards, or poison placards having hazard information number 26, 27, 28, or 29.
174.27 Certificate.
174.33 Lost or detached labels.
174.45 Reporting hazardous materials incidents.
174.47 Correction of violations.
174.49 Flammable vapors.
174.50 Leaking tank cars.

Subpart C—General Handling and Loading Requirements

174.55 General requirements.
174.57 Cleaning cars.
174.59 Marking and placarding of rail cars.
174.61 Truck bodies, trailers, or containers on flat cars.
174.63 Portable containers and portable tanks.
174.67 Tank car unloading.
174.69 Removal of car certificate and commodity cards after unloading.
174.81 Segregation and separation requirements for hazardous materials in rail cars.

Subpart D—Handling of Placarded Cars

174.83 Switching of cars containing hazardous materials.

Subpart A—General Requirements

§ 174.1 Scope.

(a) This part prescribes requirements in addition to those contained in Part 172 of this subchapter that must be observed by carriers with respect to the transportation of hazardous material in rail cars.

(b) For transportation by water, see § 176.13 of this subchapter.

§ 174.3 Acceptable hazardous materials.

Any shipment of a hazardous material not in proper condition for transportation, or not loaded or stayed as required, may not be accepted for transportation or transported.

§ 174.5 Carriers materials and supplies.

The regulations in this Part apply to the transportation of a carrier's materials and supplies moving by rail, except that the shipper's certification is not required when these materials and supplies are being transported by the carrier who owns them.

§ 174.8 Inspection.

(a) Methods of manufacture, packing, and storage insofar as they affect safety in transportation by rail, must be open to inspection by a duly authorized representative of the Department, the initial carrier, and the Bureau of Explosives.

(b) At any point where a train is required to be inspected, all placarded cars and immediately adjacent cars must be inspected. These cars may continue in transit only when this inspection indicates that the cars are in a safe condition for transportation. See § 174.59.

(c) For inspection of cars containing explosives, see § 174.104.

§ 174.9 Inspection of tank cars.

(a) Placarded loaded tank cars must be inspected by the carrier before acceptance at the originating points and when received in interchange to see that they are not leaking and that the air and hand brakes, journal boxes, and trucks are in proper condition for service.

(b) Empty tank cars previously containing a hazardous material tendered for movement or when received in interchange must have manhole covers, outlet valve reducers, outlet valve caps, outlet valve cap plugs, end plugs, and plugs or caps of other openings securely in their proper places, except that heater coil inlet and outlet pipes must be left open for drainage.

(c) Safety valves on tank cars must not be tested while these cars are loaded. Whenever test of safety valves or tank is due on a loaded car while in transit, unless the car is leaking or in a manifestly insecure condition, it must be forwarded to destination, carded on each side with a card exhibiting the following notice:

Safety valves
Tank Overdue for test.
Moving under D.O.T. § 174.596(c)

(1) Prompt reports of such movements, showing initials and numbers of cars, must be made by the railroad carding the cars to the Bureau of Explosives.

§ 174.10 Inspection of cars at interchange.

(a) Cars containing explosives requiring explosives placards (see § 174.104, which are offered by connecting lines must be carefully inspected by the receiving line on the outside, including the roof; and, if practicable, the lading must also be inspected. These cars must not be forwarded until all discovered violations have been corrected.

(b) If the car shows evidence of or if there is any reason to suspect that it has received rough treatment, the lading must be inspected and placed in proper condition before the car is permitted to proceed. When interchange occurs and inspection is necessary after daylight hours, electric flash lights should be provided. Naked lights must not be used.

(c) Shipments of hazardous materials offered by connecting lines must comply with Parts 170–189 of this subchapter, and the revenue waybill, freight bill, manifest of lading, card waybill, switching order, transfer slip ticket, or other billing, must bear the placard endorsement prescribed by § 172.203(d) of this subchapter in letters not less than three-eighths of an inch high near the car number. This billing must also bear a notation stating the name of the placard followed by the words "placard applied."

(d) Cars containing packages of hazardous materials other than explosives may not be offered in interchange if packages are in leaking condition. If small leaks have developed in movement of tank cars to interchange, and where short movements are necessary to make delivery for unloading by consignee, and this movement may be safely made, the precaution prescribed by § 174.50, must be observed.

§ 174.11 Canadian shipments and packagings.

See § 173.8 of this subchapter. Canadian shipments and packagings may be transported if they are in compliance with the regulations in this Part.

§ 174.12 Intermediate shippers and carriers.

(a) Intermediate carriers must have on file a copy of the shipper's certified

shipping paper, as prescribed in Part 172, Subpart C of this subchapter. Intermediate shippers and carriers must not forward or transport shipments of hazardous materials if they do not meet the requirements of this subchapter.

(b) Intermediate carriers offering or delivering for transportation any loaded motor vehicle, trailer, semi-trailer, or container containing any hazardous material must show on the shipping paper the information required by § 172.201 of this subchapter and a description of the type vehicle or container.

§ 174.14 Movements to be expedited.

(a) Carriers must forward shipments of hazardous materials promptly and within 48 hours (Saturdays, Sundays, and holidays excluded), after acceptance at originating point or receipt at any yard, transfer station, or interchange point, except that where biweekly or weekly service only is performed, shipments of hazardous materials must be forwarded on the first available train.

(b) A tank car loaded with any flammable liquid or gas, or a flammable extremely toxic gas, may not be received and held at any point, subject to forwarding orders, so as to defeat the purpose of this section or of § 174.204.

§ 174.16 Removal and disposition of hazardous materials at destination.

(a) *Delivery at non-agency stations.* Shipments of explosives must not be unloaded at non-agency stations unless the consignee is there to receive them or unless properly locked and secure storage facilities are provided at that point for their protection.

(1) If delivery cannot be so made, shipment must be taken to next or nearest agency station for delivery.

(b) *Delivery at agency stations.* Carrier shall require consignee to remove shipments of hazardous materials from carrier's property within 48 hours after notice of arrival has been sent or given. Saturday, Sundays, and holidays are not included. If not so removed, the carrier shall immediately dispose of the shipments as follows:

(1) Class A explosives, by storage at the expense of the owner or by return to the shipper if reasonably secure storage is not available; by sale; when necessary to safety, by destruction under supervision of a competent person.

(2) Hazardous materials, except Class A explosives, in carload and less-than-carload lots as follows:

(i) Carload shipments: By storage on carrier's property; by storage on other than carrier's property, if secure storage on carrier's property is not available; by sale at expiration of 15 calendar days after notice of arrival has been sent or given to consignee, provided consignor has been notified of nondelivery at expiration of 48-hour period and orders for disposition have not been received.

(ii) Less-than-carload shipments: By return to shipper if notice of nondelivery was requested and given consignor as prescribed by carrier's tariff, and orders for return to shipper have been received; by storage on carrier's property; by storage on other than carrier's property, if safe storage on carrier's property is not available; by sale at expiration of 15 calendar days after notice of arrival has been sent or given to consignee, provided consignor has been notified of nondelivery at expiration of 48-hour period and orders for disposition have not been received.

§ 174.18 Astray shipments.

An astray package of hazardous materials other than explosives, of known destination and in proper condition for safe transportation, must be forwarded immediately on an "astray bill," showing information, as prescribed in Part 172 of this subchapter. When necessary to replace a label and doubt exists as to the kind, the flammable liquid label must be applied, with an "X" in its hazard information block. For astray shipments of explosives see § 174.103.

§ 174.20 Local or carrier restrictions.

(a) When local conditions make the acceptance, transportation, or delivery of hazardous materials unusually hazardous, local restrictions may be imposed by the carrier.

(b) Each carrier must report to the Bureau of Explosives for publication full information as to restrictions which may be imposed against the acceptance, delivery, or transportation of hazardous materials, over any portion of its liners.

§ 174.22 Definitions as used in this Part.

(a) "Railroad" means any person engaged in transportation as a common carrier by rail and includes its agents and employees.

(b) "Engine" means any locomotive propelled by any form of energy used by a railroad.

(c) "Occupied Caboose" means any vehicle used by railroad employees, caretakers, or others authorized to ride therein.

(d) "Train" means one or more engines coupled with one or more cars, except during switching operations or where the operation is that of classifying and asembling cars within a railroad yard for the purpose of making up or breaking up trains.

(e) "Placarded Car" means any car which is required to be placarded under Part 172 of this subchapter.

(f) "Private track" or "Private siding" means a track outside of carrier's right-of-way, yard, or terminals, and of which the carrier does not own the rails, ties, roadbed, or right-of-way. Also, it means a track or portion of a track which is devoted to the purpose of its user, either by lease or written agreement, in which case the lease or written agreement is considered as equivalent to ownership.

Subpart B—General Operating Requirements

§ 174.24 Shipping papers.

(a) No person may accept for transportation any hazardous material subject to the regulations of this subchapter unless he has received a shipping paper prepared in the manner specified in Subpart C of Part 172 of this subchapter. (Begins with § 172.200.) In addition, the shipping paper must include:

(1) The certificate required by § 172.204 of this subchapter unless it is not required by that section; however, a member of the train crew is not required to have a shipper's certificate on the shipping paper in his possession if the original shipping paper containing the certificate is in the originating carrier's possession.

(2) An entry indicating the position in the train of each placarded car containing hazardous materials, except when the position is changed or the placarded car is placed in the train by a member of the train crew. A train consist on a separate document may be used to meet this requirement.

(b) A member of the train crew of a train transporting hazardous materials must have in his possession a copy of the shipping papers showing the information required by §§ 172.202 and 172.203 of this subchapter.

(c) Paragraph (a) of this section does not apply to materials classed as ORM–A, B, or C unless they are accepted for subsequent transportation by air or water. However, this requirement only applies to shipments to be transported by air or water, or both, according to the applicability of the regulations in this subchapter according to the listing for the material in § 172.10 of this subchapter. These materials are always preceded by the symbols Ⓐ, Ⓦ, or both, in that section. (See § 172.100 of this subchapter for explanation of these symbols.

(d) Paragraph (a) of this section does not apply to materials classed as ORM–D unless they are accepted for subsequent transportation by air.

(e) Paragraph (b) of this section does not apply to materials classed as ORM–A, B, C, or D.

§ 174.25 Notice to train crews of cars bearing explosives placards, or poison placards having hazard information number 26, 27, 28, or 29.

At all terminals or other places where trains are made up or switched by crews other than train crews accompanying the outbound movement of cars, the railroad shall execute consecutively numbered notices showing the location in the train of every car bearing explosives placards or poison placards having the hazard information number 26, 27, 28, or 29. A copy of each notice must be delivered to the train and engine crew, and a copy thereof showing delivery to the train and engine crew must be kept on file by the railroad at each point where such notice is given. At points where train or engine crews are changed, the notice must be transferred from crew to crew. (See part 172 of this subchapter for other placard cars.)

§ 174.27 Certificate.

No carrier may accept for transportation any hazardous material unless it has been certified by the shipper, using the certificate described in Subpart C of

Part 172 of this subchapter, which must be signed by the shipper.

§ 174.33 Lost or detached labels.

Each carrier shall have an adequate supply of the labels specified in Subpart D of Part 172 of this subchapter on hand to replace those that become lost or detached. Replacement must be based on the information provided on shipping papers. The hazard information number must be added by any suitable means without regard to size or shape of numerals if entered legibly.

§ 174.45 Reporting hazardous materials incidents.

When an incident occurs during transportation in which hazardous materials are involved, Hazardous Materials Incident Reports may be required. See §§ 170.15 and 170.16 of this subchapter.

§ 174.47 Correction of violations.

(a) All violations discovered must be corrected before forwarding shipments of hazardous materials.

(b) Unless they are leaking, or in a manifestly insecure condition, each package of hazardous materials other than explosives in transit must be forwarded to destination and report made of any violation observed. A leaking package may not be forwarded until repaired or reconditioned.

§ 174.49 Flammable vapors.

A placarded box car or container car or a car known to contain flammable liquids, gases, or vapors must not be entered with a lighted open-flame lantern, torch, or other fire, until all car doors are opened and sufficient time has been allowed for ventilation and escape of any vapors.

§ 174.50 Leaking tank cars.

(a) A tank car discovered in a leaking condition in transit must not be unnecessarily moved until the unsafe condition has been corrected.

(1) Safety in short movements may be secured by attaching a receptacle under small leaks to prevent spread of these liquids over tracks.

(b) Any leaking tank car must be protected against ignition of liquid or vapor by flame from such sources as lanterns, torches, flares, fusees, switch lights, switch-thawing flames, fires on sides of tracks, hot coals, lighted pipes, cigars, or cigarettes. All spectators must be kept at a safe distance.

(c) When necessary to transfer the lading of a tank car loaded by a flammable liquid, the transfer must be made by pumping when practicable.

(d) Highly volatile liquids may not be transferred by a vacuum pump unless the pump is placed so that liquid flows to it from the tank by gravity.

(e) Whenever the leaking condition of a tank car requires transfer of lading or renders the tank unfit for reloading, the car must be stenciled on both sides in letters three inches in size, adjacent to the car number, "LEAKY TANK, DO NOT LOAD UNTIL REPAIRED." The location of the leak must be indicated and marked with the symbol "X." The owner must be immediately notified by wire, such notification to indicate the exact location of leak. Stenciling must not be removed until the tank is repaired.

(f) Open flame lights may not be brought near a placarded empty or partially loaded tank car.

(g) A leaking tank car containing any hazardous material must be switched to a location distant from habitation and highways. Any transfer of contents must take place under competent supervision.

Subpart C—General Handling and Loading Requirements

§ 174.55 General requirements.

(a) Packages of hazardous materials must be loaded as prescribed in this subchapter, blocked and braced in closed cars, container cars, or in tight closed truck bodies, trailers, or containers on flat cars, except as otherwise specifically provided in this subchapter. For methods of blocking and bracing in cars, truck bodies, or trailers, see Bureau of Explosives Pamphlets Nos. 6 and 6C. See loading and storage chart (§ 174.81) before loading labeled materials together.

(1) Drums may only be transported in cars having level floors. Any car equipped with metal corrugated ends or having bowed ends must have end wall bulkheads constructed in accordance with the Bureau of Explosives standard for center gates. See Bureau of Explosives Pamphlet No. 6.

(2) Drums with rolling hoops must be loaded on their bottom with the filling holes up. Drums must be loaded in rows across the car with each alternate row being reduced by one drum. Each alternate row of drums must be placed on risers of sufficient height to prevent the rolling hoops contacting each other and placed tightly into the angle of space formed by the sidewalls of the drums in the preceding stack. Any space between the side of the car and the drums must be filled in with wooden boards or lumber, nailed to the car sides, sufficient in length and width to contact both hoops of the drums. Full car loads of heavily loaded drums must be separated into bays, with at least 2 in each end of the car and an intermediate gate between each bay. For loading details see Bureau of Explosives Pamphlet No. 6.

(3) Drums with filling holes in sides must be loaded on their sides with the filling holes up. Drums must be loaded lengthwise of the car in rows and any space between sides of car and the nearest row of drums must be "filled in" with wooden boards or lumber nailed to car sides sufficient in length and width to contact both rolling hoops of the drums. For details, see Bureau of Explosives Pamphlet No. 6.

(4) Drums must be loaded in a box car from both ends of the car toward the space between the car doors, and there braced by center gates and struts. For details, see Bureau of Explosives Pamphlet No. 6.

(b) Packages of hazardous materials must be loaded and securely blocked and braced to prevent the packages from changing position, falling to the floor, or sliding into each other under shocks normally incident to transportation. This requirement does not preclude the use of loading methods that are designed to permit limited movement of the load and that are approved by the Department.

(1) Packages bearing markings "THIS SIDE UP" or "THIS END UP" must be handled and loaded, blocked and braced, in cars to remain in the position indicated by the markings during transportation.

(2) Heavy packages or containers must be trucked, rolled or moved by skids, fork trucks, or other handling devices and may not be dropped from trucks, platforms, or cars. Planks for rolling trucks from platforms to cars must have beveled edges.

(c) A carrier shall store hazardous materials in a secure location while they are being held for loading or delivery. The carrier shall insure that persons not having business with the carrier do not have access to these hazardous materials.

§ 175.57 Cleaning cars.

All loose powder or other hazardous material which has leaked from packages must be carefully removed from car or other railroad property.

§ 174.59 Marking and placarding of rail cars.

No person may move a rail car carrying hazardous materials unless it is marked and placarded as required by Part 172 of this subchapter. If a rail car required to be marked and placarded is not in such condition, and an emergency exists, permission for any movement must be obtained from the Department. Placards and car certificates lost in transit must be replaced at the next inspection point, and those not required must be removed at the next terminal where the train is classified.

§ 174.61 Truck bodies, trailers, or containers on flat cars.

(a) A truck body, container, or trailer containing any hazardous materials as provided in this subchapter must be designed and loaded so that it will not rupture or become seriously damaged under conditions normally incident to transportation. Each unit must be secured on the flat car so that it cannot move except as provided by the normal slack in the tie-down system. The tie-down system must hold the unit in one basic position on the car. Packages of hazardous materials contained therein must be loaded, blocked, and braced as provided in §§ 174.101, 174.112, 174.115, and 174.55.

(1) A truck body, container, or trailer containing hazardous materials when loaded on a flatcar and having a center of gravity greater than 98 inches must be approved by the Department before transportation.

(b) Except as provided in paragraph (b) (1), a truck body, trailer, or container equipped with automatic heating or refrigerating equipment employing any fuel or material as a hazardous material may be loaded on a flat car only if this equipment is of a type approved by the Department. These vehicles or containers must be secured on the flat car so that they cannot move except as provided by the normal slack in the tie-down system.

(1) A truck body, container, or trailer equipped with such a heating or refrig-

erating system when loaded on a flat car and having a center of gravity greater than 98 inches must be approved by the Department before transportation.

(c) Cargo-tanks and multi-unit tank car tanks may not be transported in trailer-on-flat-car or container-on-flat-car service except under conditions approved by the Department.

§ 174.63 Portable containers and portable tanks.

(a) Portable containers and portable tanks may not be transported unless designed, loaded, and stayed in closed cars, gondola cars, on or in truck bodies or trailers loaded on flatcars, so that the container or tank can sustain an impact of 8 miles per hour at each end of the car, and not permanently change position, rupture, or be seriously damaged. Ends, sidewalls, or doors of a truck body or trailer must not be relied upon to prevent shifting of portable containers or tanks. Portable tanks may not be transported on flatcars except under conditions approved by the Department. For cargo tanks see § 174.61(c).

(b) Specification 56 or 57 (§§ 178.251, 178.252, 178.253 of this subchapter) portable tanks containing hazardous materials may not be stacked on each other nor may any other freight be stacked on them during transportation.

§ 174.67 Tank car unloading.

(a) In unloading tank cars, the following conditions must be observed (see also § 174.200 for compressed gases):

(1) Unloading operations must be performed only by reliable persons properly instructed in unloading hazardous materials and made responsible for careful compliance with this Part.

(2) Brakes must be set and wheels blocked on all cars being unloaded.

(3) Caution signs must be so placed on the track or cars to give necessary warning to persons approaching car from open end or ends of siding and must be left up until after car is unloaded and disconnected from discharge connection. Signs must be of metal or other suitable material, at least 12 inches high by 15 inches wide in size, and bear the words, "STOP—Tank Car Connected," or "STOP—Men at Work," the word "STOP" being in letters at least 4 inches high and the other words in letters at least 2 inches high. The letters must be white on a blue background.

(4) Before manhole cover or outlet valve cap is removed, tank car must be relieved of all interior pressure by cooling tank with water or venting tank by raising safety valve or opening vent on dome at short intervals. However, if venting to relieve pressure will cause a dangerous amount of vapor to collect outside the car, venting and unloading must be deferred until pressure is reduced by allowing the car to stand overnight or otherwise cooling the contents.

(i) These precautions are not necessary when car is equipped with a manhole cover which hinges inward or with an inner manhole cover which does not have to be removed to unload the car, and when pressure is relieved by piping vapor into a condenser or storage tank.

(b) After pressure is released, the seal must be broken and manhole cover removed as follows:

(1) *Screw type.* Cover must be loosened by placing bar between manhole cover lug and knob. After two complete turns, so that vent openings are exposed, the operation must be stopped, and if there is any sound of escaping vapor, the cover must be again screwed down tightly and interior pressure relieved as prescribed in paragraph (a) (4) of this section, before again attempting to remove the cover.

(2) *Hinged and bolted type.* All nuts must be unscrewed one complete turn, after which same precautions as prescribed for screw type cover must be observed.

(3) *Interior type.* All dirt and cinders must be carefully removed from around cover before yoke is unscrewed.

(c) When car is unloaded through bottom outlet valve, manhole cover must be adjusted as follows:

(1) *Screw type.* Manhole cover must be put in place, but not entirely screwed down, in order that air may enter tank through vent holes in threaded flange of cover.

(2) *Hinged and bolted type.* A nonmetallic block must be placed under one edge of cover.

(3) *Interior type.* Screw must be tightened up in yoke so that cover will be brought up within one-half inch of closed position.

(d) When unloading through bottom outlet of cars equipped with interior manhole type of covers, and in all cases where unloading is done through the manhole (unless special covers are used, provided with safety vent opening and tight connection for discharge outlet), the manhole must be protected against entrance of sparks or other sources of ignition of vapor by asbestos or metal covers, or by being covered and surrounded with wet burlap or similar cloth material. Burlap or other cloth must be kept damp by replacement or the application of water as needed.

(e) Seals or other substances must not be thrown into the tank. Also the contents must not be spilled over car or tank.

(f) Valve rod handle or control in dome must be operated a few times to see that outlet valve in bottom of tank is one its seat before valve cap is removed.

(g) Valve cap, or reducer when large outlet is to be used, must be removed with suitable wrench after set screws are loosened and a pail is placed in position to catch any liquid that may be in outlet chamber. If valve cap or reducer does not unscrew easily, it must be tapped lightly with mallet or wooden block in an upward direction. If leakage shows upon starting the removal, cap or reducer must not be entirely unscrewed, but sufficient threads must be left engaged and sufficient time allowed to permit escape of any accumulation of liquid in the outlet chamber. If leakage stops or initial rate of leakage diminishes materially, cap or reducer may be entirely removed. If initial rate of leakage continues, further efforts must be made to seat the outlet valve see paragraph (f) of this section. If this fails, the cap or reducer must be screwed up tight and tank must be unloaded through the dome. If upon removal of the outlet cap the outlet chamber is found to be blocked with frozen liquid or any other matter, replace cap immediately and make careful examination to determine that outlet casting has not been cracked. If the obstruction is not frozen liquid, the car must be unloaded through the dome. If the obstruction is frozen liquid and no crack has been found in the outlet casting, the car may, if circumstances require it, be unloaded from the bottom as follows:

(1) Remove cap and attach unloading connections immediately. Then, before opening the valve inside the tank car, apply steam to outside of outlet casting or wrap casting with burlap or other rags and apply hot water to melt the frozen liquid.

(h) Unloading connections must be securely attached to unloading pipes on dome or to bottom discharge outlets before discharge valves are opened.

(i) Tank cars must not be allowed to stand with unloading connections attached after unloading is completed. Throughout the entire period of unloading, or while car is connected to unloading device, the car must be attended by the unloader.

(j) If necessary to discontinue unloading a tank car for any reason, all unloading connections must be disconnected. All valves must first be tightly closed, and the closures of all other openings securely applied.

(k) As soon as a tank car is completely unloaded, all valves must be made tight, the unloading connections must be removed and all other closures made tight, except that heater coil inlet and outlet pipes must be left open for drainage. The manhole cover must be applied by the use of a bar or wrench, the outlet valve reducer and outlet valve cap by the use of a wrench having a handle at least 36 inches long, and the outlet valve cap plug, end plug, and all other closures of openings and of their protective housings by the use of a suitable tool.

(l) Railroad defect cards must not be removed.

(m) Ground around connections must be covered with fresh, dry sand or dirt, if oil or gasoline has been spilled previously.

(n) All tools and implements used in connection with unloading must be kept free from oil, dirt, and grit.

§ 174.69 Removal of car certificate and commodity cards after unloading.

(a) When lading requiring car certificates is removed from cars other than tank cars, car certificates must be removed by the person unloading the car.

(b) After tank car is unloaded, the person unloading the car must remove any commodity cards from car.

§ 174.81 Segregation and separation requirements for hazardous materials in rail cars.

(a) Hazardous materials may not be loaded, transported, or stored together except as provided in the following table:

The following table shows the hazardous materials which must not be loaded or stored together.

The × at an intersection of horizontal and vertical columns shows that these articles must not be loaded or stored together, for example: Detonating fuzes class A, with or without radioactive components g horizontal column must not be loaded or stored with high explosives or propellant explosives, class A p vertical column.

		a	b	c	d	e	f	g	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		Low explosives or black powder	High explosives or propellant explosives, class A	Initiating or priming explosives, wet: Diazodinitrophenol, fulminate of mercury, guanyl nitrosamino guanylidene hydrazine, lead azide, lead styphnate, nitro mannite, nitroguanidine, pentaerythrite tetranitrate, tetrazene, lead mononitroresorcinate	Blasting caps, with or without safety fuse (including electric blasting caps), detonating primers	Ammunition for cannon with explosive projectiles, gas projectiles, smoke projectiles, incendiary projectiles, illuminating projectiles or shell, ammunition for small arms with explosive projectiles, or ammunition for small arms with explosive projectiles; rocket ammunition with explosive projectiles, gas projectiles, smoke projectiles, incendiary projectiles, illuminating projectiles; boosters (explosive); bursters (explosive); and supplementary charges (explosive) without detonators [2]	Explosive projectiles; bombs; torpedoes; mines; rifle or hand grenades (explosive), jet thrust units (jato), class A; igniters, jet thrust, class A; rocket motors, class A; igniters, rocket motor, class A	Detonating fuzes, class A, with or without radioactive components	Ammunition for cannon with empty, inert-loaded or solid projectiles, or without projectiles; rocket ammunition with empty, inert-loaded or solid projectiles	Propellant explosives, class B; jet thrust units (jato), class B; igniters, jet thrust, class B; rocket motors, class B; rocket engines (liquid), class B; igniters, rocket motor, class B; starter cartridges, jet engine, class B	Fireworks, special or railway torpedoes	Small arms ammunition, or cartridges, practice ammunition	Primers for cannon or small arms, empty cartridge bags—black powder primed, combustion primers or percussion caps; empty tube primed, combustion primers or percussion caps, toy caps, explosive cable cutters, explosive rivets	Percussion fuzes, tracer fuzes or tracers	Time, combination or detonating fuzes, class C	Cordeau detonant fuse, safety squibs, fuse lighters, fuse igniters, delay electric igniters, electric squibs, instantaneous fuse or igniter cord	Fireworks, common	Flammable liquids or flammable gases; Flammable liquid or flammable gas label	Flammable solids or oxidizing materials; Flammable solid, oxidizer, or organic peroxide label	Corrosive liquids; Corrosive label	Nonflammable gases; Nonflammable gas label	Poisonous gases or liquids, in cylinders, projectiles or bombs, poison gas label	Radioactive materials
CLASS A EXPLOSIVES																							
Low explosives or black powder	(a)			×							×						×	×	×	×	×	×	[1]×
High explosives or propellant explosives, class A	(b)			×	×			×			×						×	×	×	×	×	×	[1]×
Initiating or priming explosives, wet: Diazodinitrophenol, fulminate of mercury, guanyl nitrosamino guanylidene hydrazine, lead azide, lead styphnate, nitro mannite, nitroguanidine pentaerythrite tetranitrate tetrazene, lead mononitroresorcinate	(c)	×	×		×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	[1]×
Blasting caps, with or without safety fuse (including electric blasting caps), detonating primers	(d)		×	×		×	×				[3]×						[3]×	[3]×	[3]×	[3]×		×	[1]×
Ammunition for cannon with explosive projectiles, gas projectiles, smoke projectiles, incendiary projectiles, illuminating projectiles or shell, ammunition for small arms with explosive projectiles, or ammunition for small arms with explosive projectiles, or rocket ammunition with explosive projectiles, gas projectiles, smoke projectiles, incendiary projectiles, illuminating projectiles; and boosters (explosive), bursters (explosive), or supplementary charges (explosive) without detonators [2] [4]	(e)			×	×			×			×						×	×	×	×	×	×	[1]×
Explosive projectiles, bombs, torpedoes, or mines, rifle or hand grenades (explosive), jet thrust units (jato), explosive, class A, or igniters, jet thrust (jato), explosive, class A [4]	(f)			×	×			×			×						×	×	×	×	×	×	[1]×
Detonating fuzes, class A, with or without radioactive components	(g)		×	×		×	×				×						×	×	×	×	×	×	[1]×
CLASS B EXPLOSIVES																							
Ammunition for cannon with empty, inert-loaded or solid projectiles, or without projectiles, or rocket ammunition with empty projectiles, inert-loaded or solid projectiles or without projectiles	1			×																[5]×		×	
Propellant explosives, class B, jet thrust units (jato) class B, igniters, jet thrust (jato), class B, or starter cartridges, jet engine, class B	2			×																[5]×		×	
Fireworks, special or railway torpedoes	3	×	×	×	[3]×	×	×	×														×	

The following table shows the hazardous materials which must not be loaded or stored together.

The × *at an intersection of* horizontal and vertical columns shows that these articles must not be loaded or stored together, for example: Detonating fuzes class A, with or without radioactive components g horizontal column must not be loaded or stored with high explosives or propellant explosives, class A b vertical column.

		Low explosives or black powder	High explosives or propellant explosives, class A	Initiating or priming explosives, wet; Diazodinitrophenol, fulminate of mercury, guanyl nitrosamine guanylidene hydrazine, lead azide, lead styphnate, nitro mannite, nitrosoguanidine, pentaerythrite tetranitrate, tetrazene, lead mononitroresorcinate	Blasting caps, with or without safety fuse (including electric blasting caps), detonating primers	Ammunition for cannon with explosive projectiles, gas projectiles, smoke projectiles, incendiary projectiles, illuminating projectiles or shell; ammunition for small arms with incendiary projectiles; ammunition for small arms with explosive projectiles; rocket ammunition with explosive projectile, gas projectile, smoke projectile, incendiary projectile, illuminating projectile; boosters (explosive); bursters (explosive); and supplementary charges (explosive) without detonators [d]	Explosive projectiles; bombs; torpedoes; mines; rifle or hand grenades (explosive); jet thrust units (jato), class A; igniters, jet thrust, class A; rocket motors, class A; rocket motor, class A [e]	Detonating fuzes, class A, with or without radioactive components	Ammunition for cannon with empty, inert-loaded or solid projectiles, or without projectiles; rocket ammunition with empty, inert-loaded or solid projectiles	Propellant explosives, class B; jet thrust units (jato), class B; igniters, jet thrust, class B; rocket motors, class B; rocket motor (liquid) class B; igniters, rocket motor, class B; starter cartridges, jet engine, class B	Fireworks, special or railway torpedoes	Small arms ammunition, or cartridges, practice ammunition	Primers for cannon or small arms, empty cartridge bags—black powder igniters, empty cartridge cases, primed, empty grenades, primed, combination primers or percussion caps, toy caps, explosive cable cutters, explosive rivets	Percussion fuzes, tracer fuzes or tracers	Time, combination or detonating fuzes, class C	Cordeau detonant fuse, safety squibs, fuse lighters, fuse igniters, delay electric igniters, electric squibs, instantaneous fuse or igniter cord	Fireworks, common	Flammable liquids or flammable gases; Flammable liquid or flammable gas label	Flammable solids or oxidizing materials; Flammable solid, oxidizer, or organic peroxide label	Corrosive liquids; Corrosive label	Nonflammable gases; Nonflammable gas label	Poisonous gases or liquids, in cylinders, projectiles or bombs, poison gas label	Radioactive materials
		a	b	c	d	e	f	g	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CLASS C EXPLOSIVES																							
Small arms ammunition, or cartridges, practice ammunition	4			×																			
Primers for cannon or small arms, empty cartridge bags—black powder igniters, empty cartridge cases, primed, empty grenades, primed, combination primers or percussion caps, toy caps, explosive cable cutters, explosive rivets	5			×																			
Percussion fuzes, tracer fuses or tracers	6			×																			
Time, combination or detonating fuses, class C	7			×																			
Cordeau detonant fuse, safety squibs, fuse lighters, fuse igniters, delay electric igniters, electric squibs, instantaneous fuse or igniter cord	[a] 8	×	×	×	[a] ×	×	×	×														×	
Fireworks, common	9																						
OTHER DANGEROUS ARTICLES																							
Flammable liquids or flammable gases; Flammable liquid or flammable gas label	10	×	×	×	[a] ×	×	×	×														×	
Flammable solids or oxidizing materials; Flammable solid, oxidizer, or organic peroxide label	11	×	[c] ×	×	[c] ×	×	×	×												[b] ×		×	
Corrosive materials; Corrosive label	12	×	×	×	[c] ×	×	×	×	[b] ×	[b] ×									[b] ×			×	
Nonflammable gases; Nonflammable gas label	13	×	×	×	[c] ×	×	×	×															
Poisonous gases or liquids, in cylinders, projectiles or bombs, poison gas label	14	×	×	×	×	×	×	×	×	×	×							×	×	×			
Radioactive materials; Radioactive materials; Radioactive label except 70	15	[f] ×	[f] ×	[f] ×	[f] ×	[f] ×	[f] ×	[f] ×															

[a] Blasting caps or electric blasting caps in quantities not exceeding 1,000 caps may also be loaded and transported with articles named in vertical and horizontal columns 3, 9, 10, 11, 12, and 13. Loading and transportation of blasting caps or electric blasting caps in any quantity with articles named in vertical or horizontal columns b, c, e, or f is prohibited.

[b] Unless loaded in opposite ends of car, corrosive liquids must not be loaded with flammable solids, oxidizing materials, ammunition for cannon with or without projectiles, or propellant explosives, except that shippers loading carload shipments of corrosive liquids and flammable solids or oxidizing materials and who have obtained prior approval from the Department may load such materials together when it is known that the mixture of contents will not cause a dangerous evolution of heat or gas.

[c] Explosives, class A and explosives, class B must not be loaded or stored with chemical ammunition containing incendiary charges or white phosphorus either with or without bursting charges.

[d] Bursters (explosive), boosters (explosive), or supplementary charges (explosive) without detonators when shipped by, to or for the Departments of the Army, Navy, and Air Force of the United States Government may be loaded with any of the articles named except those in columns c, d, 3, 9, 10, 11, 12, 13, 14, and 15.

[e] Does not include nitrocarbonitrate or ammonium nitrate, fertilizer grade, which may be loaded, transported or stored with high explosives or with blasting caps or electric blasting caps, and detonating primers.

[f] Normal uranium, depleted uranium, and thorium metal in solid form may also be loaded and transported with articles named in vertical and horizontal columns a, b, c, d, e, f, and g.

NOTE 1: Charged electric storage batteries must not be loaded in the same car nor stored with any class A explosive.

NOTE 2: Cyanides or cyanide mixtures must not be loaded or stored with acids of corrosive liquids.

NOTE 3: Gas identification sets may be loaded and transported with all articles named except those in column c.

NOTE 4: Nitric acid, when loaded in the same car with other acids or other corrosive liquids in carboys, must be separated from the other carboys. A 2 by 6 inch plank, set on edge, should be nailed across the car floor at least 12 inches from the nitric acid carboys, and the space between the plank and the carboys of nitric acid should be filled with sand sifted ashes or other incombustible absorbent material.

NOTE 5: Smokeless powder for small arms in quantities not exceeding 100 pounds net weight in one car shall be classed as a flammable solid for purposes of transportation when approved for such classification by the Bureau of Explosives.

§ 174.83 Switching of cars containing hazardous materials.

(a) In switching operations where use of hand brakes is necessary, a placarded loaded tank car, or a draft which includes a placarded loaded tank car may not be cut off until the preceding car or cars clear the ladder track and the draft containing the placarded loaded tank car, or a placarded loaded tank car in turn clears the ladder before another car is allowed to follow.

(1) In switching operations where hand brakes are used, it must be determined by trail that a placarded car or that a car occupied by a rider in a draft containing a placarded car, has its hand brakes in proper working condition before it is cut off.

(b) A car placarded "EXPLOSIVES" or bearing poison placards having hazard information number 26, 27, 28, or 29 must not be cut off while in motion. No car moving under its own momentum shall be allowed to strike any car placarded "EXPLOSIVES" or having poison placards bearing the hazard information number 26, 27, 28, or 29, or any placarded flat car or any flat car carrying a placarded trailer or container nor may any such car be coupled into with more force than is necessary to complete the coupling.

(1) When transporting a car placarded "EXPLOSIVES" in terminals, yards, side tracks, or sidings, such cars must be separated from the engine by at least one nonplacarded car.

(2) Each closed car placarded "EXPLOSIVES" must have doors closed, securely fastened, and the lading securely braced before it is moved.

§ 174.84 Switching of flat cars carrying placarded trailers or containers.

(a) Any placarded flat car or any flat car carrying a placarded trailer or container that bears any placard prescribed by Part 172 of this subchapter may not be cut off while in motion.

(b) No car moving under its own momentum may be permitted to strike any placarded flat car or any flat car carrying a placarded trailer or container.

(c) No placarded flat car or any flat car carrying a placarded trailer or container may be coupled into with more force than is necessary to complete coupling.

§ 174.85 Placement of freight cars bearing explosive placards in yards, on sidings, or sidetracks.

Each car placarded "EXPLOSIVES" must be placed so that they will be safe from all probable danger of fire. Cars so placarded may not be placed under bridges or overhead highway crossings, nor in or alongside a passenger shed or station except for loading or unloading purposes.

§ 174.86 Position in train of cars bearing explosives placards, or poison placards, when accompanied by cars carrying guards or technical escorts.

A car requiring explosives placards or poison placards must be next to and ahead of any car occupied by the guards or technical escorts accompanying this car. However, if a car occupied by guards or technical esorts is equipped with a lighted heater or stove, it must be the fourth car behind any car requiring explosives placards.

§ 174.87 Position of cars containing explosives in passenger or mixed trains.

(a) Cars containing explosives, Class A, may not be transported in a passenger train. These cars may be transported in mixed trains but only at such times and between such points that freight train service is not in operation.

(1) Cars bearing "EXPLOSIVE" placards may not be transported next to occupied cabooses or cars carrying passengers in mixed trains, except as provided in § 174.86.

(2) When a car bearing "EXPLOSIVES" placards is moved in mixed train and such car is not occupied by an employee of the carrier, placards must be applied to the car as required by Part 172 of this subchapter.

§ 174.88 Position in train of cars bearing explosives placards.

(a) In a moving or standing train, a car required to be placarded "EXPLOSIVES" may not be placed nearer than the sixth car from the engine or caboose, except:

(1) When the length of the train will not permit this car to be so placed, it must be placed as near the middle of the train as possible, but not less than the second car from the engine or occupied caboose; or

(2) When transported in a train made up in "blocks" or classifications, this car must be placed near the middle of the "block" or classification in which it is moving, but not nearer than the sixth car from both the engine or occupied caboose.

§ 174.89 Position in train of cars bearing radioactive materials placards.

In a standing or moving train, a car bearing radioactive materials placards must not be placed next to any car required to be placarded by the regulations in Part 172 of this subchapter, an engine, occupied caboose, or carload of undeveloped film.

§ 174.90 Separating car bearing explosives placards or poison placards having hazard information number 26, 27, 28, or 29 from other cars in trains.

(a) In a moving or standing train, a car required to bear explosives placards or poison placards having hazard information number 26, 27, 28, or 29 may not be placed next to:

(1) A passenger car or combination car that may be occupied, except as provided in § 174.86;

(2) Any car required to bear other placards prescribed by these regulations;

(3) An engine;

(4) A wooden underframe car (except on narrow gauge railroads);

(5) A loaded flat car, except that loaded cars required to bear explosives placards may be placed next to each other. A flat car equipped with permanently attached ends of rigid construction is considered to be an open-top car. (See subparagraph (6) of this paragraph);

(6) An open-top car when any of the lading protrudes beyond the car ends or when any of the lading extending above the car ends is liable to shift so as to protrude beyond the car ends;

(7) A car with automatic refrigeration or heating apparatus in operation, or a car with open-flame apparatus in service, or with an internal combustion engine in operation;

(8) A car containing lighted heaters, stoves, or lanterns;

(9) A car occupied by any person, including any attendant for the cargo contained therein; or

(10) An occupied caboose, except as provided in § 174.86.

§ 174.91 Position in train of loaded placarded tank car.

(a) Except for a car bearing combustible placards, a placarded loaded tank car must not be nearer than the sixth car from the engine, occupied, caboose, or passenger car:

(1) When the length of the train will not permit a placarded loaded tank car to be so placed, it must be placed as near the middle as possible and not nearer than the second car from the engine, occupied caboose, or passenger car.

(b) A car bearing combustible placards must not be nearer than the second car from the engine, occupied caboose, or passenger car.

§ 174.92 Separating placarded loaded tank cars other than combustible placarded cars from other cars in trains.

(a) In a train either standing or during transportation thereof, a loaded tank car required to be placarded must not be handled next to:

(1) A passenger car or combination car, other than cars occupied by technical escorts and authorized personnel accompanying shipments;

(2) Any car bearing explosives or radioactive materials placards;

(3) An engine or occupied caboose;

(4) Any car bearing a poison placard bearing the hazard information number 27, 28, or 29;

(5) A wooden under-frame car (except on narrow gauge railroads);

(6) A loaded flat car, other than specially equipped cars in trailer-on-flat-car service, or specially equipped cars in container-on-flat-car service, or flat cars loaded with automobiles, or other wheeled or tracked vehicles secured by means of a device or devices designed for that purpose and permanently installed on the flat car, and of a type generally accepted for handling in interchange between railroads;

(i) A flat car equipped with permanently attached ends of rigid construction is considered to be an open-top car. See paragraph (a) (7) of this section.

(ii) The exception for cars in trailer-on-flat-car service does not apply to loaded flat bed trucks, loaded flat bed trailers, loaded open-top trailers, or

loaded trucks or trailers without securely closed doors;

(7) An open-top car when any of the lading protrudes beyond the car ends or when any of the lading extending above the car ends is liable to shift so as to protrude beyond the car ends;

(8) A car with automatic refrigeration or heating apparatus in operation or a car with open-flame apparatus in service or with an internal combustion engine in operation;

(9) A car containing lighted heaters, stoves, or lanterns except when car is occupied by technical escorts or authorized personnel accompanying shipment;

(10) A car occupied by any person, including any attendant for the cargo contained therein.

§ 174.93 Position in train of placarded car, other than cars subject to §§ 174.86 through 174.90 and § 174.92.

In moving or standing train, a placarded car (other than a car subject to § 174.86 through § 174.90 and § 174.92) may not be placed nearer than the second car from the engine or caboose.

§ 174.95 Placarded cars in passenger or mixed trains.

(a) Tank cars requiring placards may not be transported in a passenger train. These cars may be transported in mixed trains but only at such times and between such points that freight train service is not in operation.

(1) Tank cars requiring placards may not be transported next to occupied cabooses or cars carrying passengers in mixed trains, except as provided in § 174.86.

(b) When a car bearing hazardous materials placards is moved in a mixed train and such car is not occupied by an employee of the carrier, placards must be applied to the car as required by Part 172 of this subchapter.

Subpart E—Detailed Requirements for Explosives

§ 174.100 Forbidden explosives.

(a) Explosives described in § 173.51 of this subchapter may not be accepted for transportation.

(b) Leaking or damaged packages of explosives may not be accepted for transportation. Unless the carrier has knowledge or shipper has substantiated to the carrier that a stain is due to contact with material other than a liquid explosive ingredient, the carrier shall refuse any package that shows excessive dampness, mold, or other outward sign of any oily stain, or other indication that absorption of the liquid part of the explosive is not perfect, or that the amount of the liquid part is greater than the absorbent can carry.

§ 174.101 Loading explosives.

(a) Boxes containing Class A explosives must be loaded so that ends of wooden boxes will not bear against sides of any fiberboard boxes or so that ends of any box will cause a pressure point on a small area of another box.

(b) Bombs, unfuzed projectiles, rocket ammunition, Class A or Class B explosive rocket motors, when not packed in wooden boxes, or large metal packages of incendiary bombs, each weighing 500 pounds or more, may be loaded in stock cars or in flat bottom gondola cars when adequately braced.

(1) Boxed bombs, rocket ammunition, or Class A or Class B explosives rocket motors, which, due to size, cannot be loaded in closed cars may be loaded in open-top cars or on flat cars, provided they are protected from the weather and accidental ignition.

(c) Boxes of high explosives or black powder packed in long cartridges, bags, or sift-proof liners, and containing no liquid explosive ingredient, may be loaded on their sides or ends.

(d) Class A explosives may not be loaded higher than any permanent car lining unless additional lining is provided as high as the lading.

(e) When the lading of a car includes any explosives, the weight of the lading must be distributed as much as possible so that it will be equalized on each side of the car and over the trucks.

(f) Except when boxed, metal kegs containing explosives must be loaded on their sides with ends toward ends of the car. Packages of explosives must not be placed in the space opposite the doors unless these doorways are boarded on the inside as high as the lading. This paragraph does not apply to palletized packages if they are braced so they cannot fall or slide into the doorways during transportation.

(g) Wooden kegs, fiber kegs, barrels, and drums must be loaded on their sides or ends, to best suit the conditions.

(h) At stations or other loading points, packages containing any explosives for which a certified and placarded car is prescribed (see § 174.104) or any blasting caps, must be securely blocked and braced to prevent the packages from changing position, falling to the floor, or sliding into each other, under shocks incident to normal transportation. Explosives must be loaded to avoid transfer at stations. For methods of blocking and bracing see Bureau of Explosives Pamphlets No. 6 and 6A.

(1) Heavy packages or containers must be trucked, rolled, or moved by skids, fork trucks, or other handling devices and may not be dropped from trucks, platforms, or cars. Planks for rolling trucks from platforms to cars must have beveled ends.

(2) Platforms and shoes of each workman must be free from grit. All possible precautions must be taken against fire.

(3) Unauthorized persons must not have access to packages of explosives at any time while in the custody of the carrier.

(4) Explosives must be kept in a safe place while being held for loading or delivery.

(i) To prevent delays to local freight trains, when there are shipments of explosives for different destinations loaded in a "peddler car" or "way car," the shipment for each destination must be stayed separately.

(j) Forwarding and transfer stations for explosives must be provided with the necessary materials for staying.

(k) Shippers must furnish the material for staying packages of explosives loaded by them.

(l) Explosives, Class A must not be loaded, transported, or stored in cars equipped with any type of lighted heater or open-flame device, or electric devices having exposed heating coils, or in cars equipped with any apparatus or mechanism utilizing an internal combustion engine in its operation.

(m) Blasting caps or electric blasting caps in quantity not exceeding 1,000 caps may be loaded in any closed car which is in good condition, without car certificates or placards.

(n) Container cars or portable containers on flat cars or gondola cars (drop-bottom cars not authorized), when properly loaded, blocked, and braced to prevent change of position under conditions incident to normal transportation, may be used for any Class A explosive except black powder packed in metal containers. Portable containers must be of a type approved by the Department. They must be designed and maintained so as to be weather-tight and so constructed that sparks cannot enter. Wooden containers must be painted or treated with fire-retardant material of a type approved by the Department.

(1) Portable containers must be of such design and so braced that there will be no evidence of failure of the container or the bracing when subjected to impact from each end of at least 8 miles per hour. Efficiency shall be determined by actual test, using dummy loads equal in weight and general character to material to be shipped.

(2) Container cars or cars which are loaded with portable containers must be placarded with the explosives placards as prescribed in Part 172 of this subchapter and with properly executed car certificates as required by § 174.104.

(3) Lading must be so loaded, blocked, and braced within the container that it will not change position under impact from each end of at least 8 miles per hour.

(o) Explosives, Class A or Class B, may be loaded and transported in tight, closed truck bodies or trailers on flat cars, and wooden boxed bombs, rocket ammunition, and rocket motors, Class A or Class B explosives, which due to their size cannot be loaded in tight, closed truck bodies or trailers, may be loaded in or on open-top truck bodies or trailers, but must be protected against accidential ignition, provided all of the following requirements are fulfilled and provided wooden containers are painted or treated with fire-retardant and waterproof material of a type approved by the Department.

(1) Truck body or trailer must meet the requirements of Part 177 of this subchapter, applicable to shipments of explosives by motor vehicle.

(2) Truck body or trailer must be so secured on the car that it will not per-

manently change position or show evidence of failure or impending failure of the method of securing truck body or trailer under impact from each end of at least 8 miles per hour. Efficiency must be determined by actual test, using dummy loads equal in weight and general character to the material to be shipped.

NOTE 1: For methods of blocking and bracing, see Bureau of Explosives' Pamphlet 6C.

(3) Lading must be so loaded, blocked, and braced within or on truck body or trailer that it will not change position under impact from each end of at least 8 miles per hour. For methods of blocking and bracing see Bureau of Explosives' Pamphlet 6C.

(4) Cars, or cars loaded with truck bodies, trailers, or containers containing explosives must be placarded with explosives placards as prescribed in Part 172 of this subchapter and with properly executed car certificates as required by § 174.104.

(5) All fuel tanks for heaters or refrigerating machinery with which truck bodies or trailers are equipped must be drained and all automatic heating or refrigerating machinery must be rendered inoperative by disconnection of the automatic controls or the source of power for their operation.

§ 174.102 Forbidden mixed loading and storage.

(a) Class A explosives and initiating or priming explosives must not be transported together in the same rail car. Additionally, they must not be transported, loaded, or stored on carrier property with charged electric storage batteries or with any hazardous material for which a nonflammable gas, flammable gas, flammable liquid, flammable solid, oxidizer, organic peroxide, radioactive, or corrosive label is prescribed in these regulations.

(b) Explosives may not be loaded together nor with other hazardous materials, except as provided in § 174.81. See § 174.104 for loading shipments of explosives or any other material in a placarded and certified car containing a shipment of Class A explosives.

§ 174.103 Disposition of damaged or astray shipments.

(a) Packages of explosives found damaged or broken in transit may be repaired when this is practicable and not dangerous. A broken box of high explosives that cannot be repaired must be reinforced by stout wrapping paper and twine, placed in another strong box and surrounded by dry, fine sawdust or dry and clean cotton waste or elastic wads made from dry newspapers. A ruptured can or keg must be sealed and enclosed in a strong cloth bag of good quality and boxed. Damaged packages thus protected and properly marked may be forwarded. The box and waybill must be marked to indicate that it has been repacked.

(b) Particles of explosive compositions from damaged containers may be strewn on car floors or freight, and care must be exercised in repacking these containers so that no spark may be produced by contact of metal or other hard surfaces. In these cases car floors must be thoroughly swept, and washed with a plentiful supply of water. Iron-wheel trucks, metal hammers, or other metal tools that may produce sparks must not be used. This restriction does not apply to metal tools made of brass, bronze, or copper.

(c) Packages of explosives showing evidence of leakage of liquid ingredients must:

(1) Be returned immediately to shipper, if at point of shipment; or

(2) Be disposed of to a person who is competent and willing to remove them from railway property, if leakage is discovered while in transit; or

(3) Be removed immediately by consignee, if shipment is at destination.

(d) When disposition cannot be made as above, the leaking boxes must be packed in other boxes large enough to permit enclosure, and the leaking boxes must be surrounded by at least 2 inches of dry, fine sawdust or dry and clean cotton waste, and be stored in station magazine or other safe place until arrival of an inspector of the Bureau of Explosives, or other authorized person, to superintend the destruction or disposition of the condemned material.

(e) An astray shipment of explosives must be forwarded immediately to its destination if known, or returned to the shipper by the most practicable route, provided a careful inspection shows the packages to be in proper condition for safe transportation.

(f) When a package in an astray shipment is not in proper condition for safe transportation (see paragraphs (a), (c), and (d) of this section), or when name and address of consignee or shipper are unknown, disposition must be made as prescribed by paragraphs (c) and (d) of this section.

§ 174.104 Class A explosives; car selection, preparation, inspection, and certification.

NOTE: This section will be the subject of a separate rule making action by the Board in a future docket.

§ 174.105 Routing shipments, Class A explosives.

Before any shipment of Class A explosives, destined to a point beyond the lines of the initial carrier, is accepted from a shipper, the initial carrier shall ascertain that the shipment can go forward by the route designated. To avoid delays en route, the initial carrier must be in possession of full rate information, before forwarding the shipment.

§ 174.106 "Order-Notify" or "C.O.D." shipments, Class A explosives.

(a) A carrier may not accept for transportation Class A explosives or blasting caps in any quantity when consigned to "order-notify" or "C.O.D.," except on a through bill of lading to a foreign country. These materials may not be accepted when the shipper consigns them to himself unless he has a resident representative to receive them at the delivery point.

(b) Class A explosives may not be accepted for transportation by a carrier subject to "stop-off privileges en route for partial loading or unloading."

§ 174.107 Shipping days for Class A explosives.

(a) When practicable at any point, regular days should be assigned for receiving from shippers less-than-carload lots of Class A explosives.

(b) To enable the carrier to provide proper cars at stations where less-than-carload shipments of Class A explosives are accepted for loading by the carrier, the shipper shall give to the carrier not less than 24 hours notice to his intention to offer such shipments, and state their destinations. When a regular day to receive all explosives shipments offered at such a station has been appointed, this notice may be waived by the carrier, but the explosives shipments must be delivered on such days in time to permit proper inspection, billing, and loading on that day.

§ 174.109 Non-agency shipments.

If a shipment of explosives is accepted at a non-agency station, the shipper shall make provision for proper certification and placarding of cars, examination of shipments, and the loading and staying of packages in cars. Waybills, switching orders, switching tickets, or other shipping papers must be prepared as prescribed in Part 172 of this subchapter.

§ 174.110 Car magazine.

When specially authorized by the carrier, Class A explosives in quantity not exceeding 150 pounds may be carried in construction or repair cars when the packages of explosives are placed in a "magazine" box made of sound lumber not less than 1 inch thick, covered on the exterior with metal, and provided with strong handles. This box must be plainly stenciled on the top, sides, and ends, in letters not less than 2 inches high, "EXPLOSIVES — DANGEROUS — HANDLE CAREFULLY." The box must be provided with strong hinges and with a lock for keeping it securely closed. Vacant space in the box must be filled with a cushioning material such as sawdust or excelsior, and the box must be properly stayed to prevent movement within the car. The car must be placarded with the "EXPLOSIVES 19" placards.

§ 174.112 Loading Class B explosives. (Also see § 174.101.)

(a) Class B explosives must not be loaded, transported, or stored in cars equipped with any type of lighted heater or open-flame device, or in cars equipped with any apparatus or mechanism utilizing an internal combustion engine in its operation.

(b) Except as provided in § 174.101 (b), Class B explosives must be transported in a closed car or container car which is in good condition, into which sparks cannot enter. These cars do not require car certificates. If not tight, the doors must be stripped to prevent entrance of sparks. Wood floored cars must be equipped with spark shields (see § 174.104).

(1) Packages of Class B explosives must be blocked and braced to prevent their movement and to prevent damage to them due to movement of other freight during transportation. For methods of blocking and bracing see Bureau of Explosives' Pamphlet No. 6.

(c) Class B explosives may not be transported in a truck body, trailer, or container on flat car unless:

(1) The truck body, trailer, or container is closed and tight;

(2) All automatic heating or refrigerating machinery with which the truck body, trailer, or container is equipped is inoperative.

(3) Packages of Class B explosives are blocked and braced to prevent their movement and to prevent damage to them due to movement of other freight during transportation (ends, side walls, or doors of the truck body, trailer or container may not be relied on to prevent the shifting of heavy loads), and

(4) For methods of blocking and bracing see Bureau of Explosives' Pamphlet No. 6C.

(d) See § 174.101(o)

§ 174.114 Record to be made of change of seals on explosives laden cars.

(a) When a car seal is changed on a car requiring explosives placards while en route or before delivery to a consignee, a record must be made showing the following information which must be shown on or attached to waybill or other form of memorandum which must accompany car to destination.

(Railroad) (Place) (Date)

(Car initial) (Car number)

Number or description of seal broken _____

Number or description of seal used to reseal car _____

Reasons for opening car _____

Conditions of load _____

Name and occupation of person opening car _____

§ 174.115 Loading Class C explosives.

(a) Class C explosives may be loaded into any closed car in good condition. With the exception of blasting caps and electric blasting caps, Class C explosives may be loaded into any container car in good condition. No placards or car certificates are required.

(1) Packages of Class C explosives must be blocked and braced to prevent their movement and to prevent damage to them due to movement of other freight during transportation. For methods of blocking and bracing see Bureau of Explosives' Pamphlet No. 6.

(b) Class C explosives may not be transported in a truck body, trailer, or container on flat car unless:

(1) The truck body, trailer, or container is closed and tight;

(2) All automatic heating or refrigerating machinery with which the truck body, trailer, or container is equipped is inoperative;

(3) Packages of Class C explosives are blocked and braced to prevent their movement and to prevent damage to them due to movement of other freight during transportation (ends, side walls, or doors of the truck body, trailer, or container may not be relied on to prevent shifting of heavy loads); and

(4) For methods of blocking and bracing see Bureau of Explosives' Pamphlet No. 6C.

Subpart F—Detailed Requirements for Gases

§ 174.200 Special handling requirements.

(a) Flammable gases must not be loaded, transported, or stored in cars equipped with any type of lighted heater or open-flame device, or in cars equipped with any apparatus or mechanism utilizing an internal combustion engine in its operation.

(1) Flammable gases must not be loaded in truck bodies or trailers equipped with lighted heaters or any automatic heating or refrigerating apparatus when such truck bodies or trailers are loaded on flatcars except as provided in paragraph (a)(2) of this section.

(2) Heating or refrigeration apparatus may be operated on motor vehicles loaded on flatcars when such motor vehicles are loaded with flammable gases, when the lading space is equipped with electrical apparatus other than nonsparking or explosion-proof types, no combustion apparatus in the lading space, and no connection for return of air from the lading space to any combustion apparatus. The heating system must be such that no part of the lading is heated over 130° F., and conforms to § 393.77 of this title.

§ 174.201 Cylinders and series 106A * * * and 110A * * * tanks.

(a) Cylinders containing compressed gases must be securely lashed in an upright position so as to prevent their overturning, or loaded into racks securely attached to the car, or packed in boxes or crates of such dimensions as to prevent their overturning, or they must be loaded in a horizontal position. Specification DOT-4L cylinders must be loaded in an upright position and be securely braced.

(1) Cylinders containing compressed gases may be loaded into steel gondola or flatcars or into stock cars, but must not be loaded into hopper bottom cars.

§ 174.204 Tank car delivery of gases.

(a) No tank car containing compressed gas may be unloaded unless the car is consigned for delivery and unloading on a private track, (See § 174.22(f)) except that where no private track is available, delivery and unloading on carrier tracks is permitted if the following occurs:

(1) Any tank car of DOT-106A or 110A type (see § 179.300 or 179.301 of this subchapter (may be delivered and the loaded unit tanks may be removed from car frame on carrier tracks, if, before car is accepted for transportation, the shipper has obtained from the delivering carrier and filed with originating carrier, written permission for such removal. The consignee must furnish adequately strong mechanical hoist, by which the tanks are lifted from the car and deposited directly upon vehicles furnished by the consignee for immediate removal from carrier property.

(i) Carriers may give permission for the unloading of these containers on carrier tracks only where no private siding is available within reasonable trucking distance of final destination.

(2) Except for DOT-106A or 110A type tank cars (see § 179.300 or 179.301 of this subchapter), a tank car containing anhydrous ammonia, liquefied hydrocarbon or liquefied petroleum gas, and having interior pipes of liquid and gas discharge valves equipped with check valves, may not be delivered and unloaded on carrier tracks, unless the lading is piped directly from the car to permanent storage tanks of sufficient capacity to receive the entire contents of the car. Such cars may also be stored on a private track or on a carrier track when designated by the carrier for such storage.

(b) Tank cars containing flammable poison gas must not be delivered unless originally consigned or subsequently reconsigned to parties having private siding or to parties using railroad-siding facilities which have been equipped for piping the liquid from tank cars to permanent storage tanks of sufficient capacity to receive contents of car.

§ 174.208 Rail cars or cars loaded with truck bodies or trailers containing lading which has been fumigated or treated with a flammable liquid or gas or with a poisonous liquid, gas, or solid.

(a) A carrier may not accept or transport a rail car or car loaded with truck bodies or trailers, containing lading fumigated or treated with a flammable liquid or gas until 48 hours have elapsed after this fumigation or treatment, or until cars, truck bodies, or trailers have been ventilated to remove any danger of fire or explosion due to the presence of flammable vapor.

(b) Rail cars or cars loaded with truck bodies or trailers containing lading which has been fumigated or treated with a poisonous liquid, gas, or solid, must be placarded on each door (or as close as possible to the door if it is not possible to placard the door) with the placard described in § 173.426 of this subchapter.

§ 174.280 Toxic gases with foodstuffs.

A carrier may not transport any package of gaseous material bearing a poison label in the same car with material which is marked as or known to be foodstuff,

feed, or any other edible material intended for consumption by humans or animals.

§ 174.290 Extremely toxic gases shipped by, for, or to the Department of Defense.

(a) Extremely toxic gases shipped by, for, or to, the Department of Defense may not be transported unless loaded and handled as follows:

(1) In DOT-5A[1] or WD-5A metal drums, in box cars, gondola cars, or stock cars (flat bottom) in carload lots. See § 174.55(a)(1) through (4) and § 174.600 for blocking, bracing, and stowage requirements.

(2) In tanks which are hereby authorized under this section for extremely toxic gases, specification DOT 106A (§§ 179.300 and 179.301 of this subchapter), mounted on or secured to multi-unit cars or gondola cars (flat bottom) in carload lots only.

(3) In bombs, in box cars or gondola cars (flat bottom) in carload lots only.

(4) In projectiles or ammunition for cannon with gas filled projectiles in box cars in carload or less-than-carload lots.

(5) Each shipment of one or more carloads, as described in subparagraphs (1), (2), (3), and (4) of this paragraph, must be accompanied by Department of Defense qualified escorts supplied with equipment to handle leaks and other packaging failures which could result in escape of the gas. Technical escorts shall remain with the shipment during the entire time that it is in the custody of the carrier. Technical escorts shall, in the event of leakage or escape of gas, make repairs and perform decontamination as necessary.

(6) Tanks must be securely mounted on cars especially provided for them or on gondola cars prepared with substantial wooden frames and blocks.

(7) Bombs, projectiles, and cannon ammunition must be loaded, blocked and braced as shown in Bureau of Explosives' Pamphlet No. 6A. When shipments are loaded in gondola cars they must be securely blocked and braced and not loaded higher than the sides of the car.

Subpart G—Detailed Requirements for Flammable Liquids

§ 174.300 Special handling requirements.

(a) Flammable liquids must not be loaded, transported, or stored in cars equipped with any type of lighted heater or open-flame device, or in cars equipped with any apparatus or mechanism utilizing an internal combustion engine in its operation.

(1) Flammable liquids must not be loaded in truck bodies or trailers equipped with lighted heaters or any automatic heating or refrigerating apparatus when such truck bodies or trailers are loaded on flatcars except as provided in paragraph (a)(2) of this section.

(2) Heating or refrigeration apparatus may be operated on motor vehicles loaded on flatcars when such motor vehicles are loaded with flammable liquids, when the lading space is equipped with no electrical apparatus other than non-sparking or explosion-proof types, no combustion apparatus in the lading space, and no connection for return of air from the lading space to any combustion apparatus. The heating system must be such that no part of the lading is heated over 130°F., and conforms to § 393.77 of this title.

(3) Cylinders containing pyrophoric liquids, unless packed in strong wooden boxes and secured therein to protect valves, must be stowed with all valves and safety relief devices in the vapor space and must be secured so that no shifting will occur during transportation.

(b) Metal barrels or drums containing flammable liquids may be loaded on steel gondola or flat cars or into stock cars, but must not be loaded into hopper bottom cars.

§ 174.304 Tank car delivery of flammable liquids.

Tank cars containing flammable liquids except liquid road asphalt or tar must not be delivered unless originally consigned or subsequently reconsigned to parties having private track (see § 174.22(f)) or to parties using railroad-siding facilities which have been equipped for piping the liquid from tank cars to permanent storage tanks of sufficient capacity to receive contents of car.

§ 174.330 Toxic flammable liquids with foodstuffs.

A carrier may not transport any package of flammable liquid bearing a poison label in the same car with material which is marked as or known to be foodstuff, feed, or any other edible material intended for consumption by humans or animals.

Subpart H—Detailed Requirements for Flammable Solids

§ 174.410 Special handling requirements for matches.

(a) Carload lots of strike-anywhere (friction) matches must be loaded as compactly as possible to avoid motion within the car, especially lengthwise of the car. Protruding nails, metal band anchors or other projections on sidewalls, ends, door posts, studding, or car floors liable to puncture packages must be removed or adequately covered to prevent damage to containers of matches. Car doorways must be boarded on the inside to keep packages from contact with the doors, and the inside lining of the car must be supplemented when necessary by strips nailed to the car and close enough together to keep the boxes from being jammed against the studding and broken by high pressures on small areas. The strongest dimension of the box must be loaded lengthwise of the car. Partial layers of boxes must be interlocked with the lower layers. The cars used must be made secure against the entrance of sparks or rain.

(1) Carload lots of strike-anywhere matches handled subject to stop off privileges must be loaded in accordance with paragraph (a) of this section and when necessary the load must be rearranged or blocked and braced by each consignee before forwarding.

(2) Less-than-carload lots of "strike-anywhere" matches may be loaded so that they cannot fall and so that other packages of freight cannot fall on or injure them. Whenever practicable the packages of matches must be placed to facilitate ready removal in case of fire.

(3) Carload or less-than-carload lots of "strike-anywhere" matches which have been damaged by fire, or by water in extinguishing a fire, in transit or on carrier's property must be reloaded in properly prepared cars, and braced or blocked before being forwarded to destination, to freight claim department or claim adjusters, or to original shipper or other parties for salvage. Care must be taken to examine and repair damaged outside packages before reloading into car. All loose matches must first be destroyed. Individual interior boxes and paper-wrapped cartons or packages, must then be carefully placed in tight outside packages complying, as nearly as practical, with container specifications; but under no condition shall the outside package be of less strength than required by specification 15A or 12C (§§ 178.168 or 178.206 of this subchapter), nor of greater capacity than authorized. Charred cases must not be used. Boards used in repairing wooden cases must be so nailed that they will not allow any interior boxes, cartons, or packages to fall out. In the event that the individual boxes or paper-wrapped packages do not fit snugly in the outside package, the vacant spaces must be filled tightly with dry and clean cotton waste, or elastic wads of dry newspapers or dry waste paper.

§ 174.450 Fires.

(a) *Cotton.* When fire occurs in a shipment of cotton in transit at a point where it cannot be reconditioned, and where arrangements cannot be made with the originating line to sell it, all burnt cotton in the shipment must be stored under observation in as safe a place as practicable for not less than 10 days, and without further evidence of fire, before forwarding. The billing must be changed to read "Burnt Cotton," and the material must be forwarded as a hazardous material. (See § 173.159 of this subchapter.)

(b) *Charcoal.* When fire occurs in charcoal in transit, water should not be used if it is practicable to locate and remove the material on fire, since wet charcoal is much more liable to ignite spontaneously, and the fire cannot be stopped permanently by the use of water. Any material which has become wet in extinguishing fire must be removed from the car and not reshipped; the remainder of the charcoal must be held under observation in a dry place for at least five days before forwarding.

§ 174.480 Toxic flammable solids with foodstuffs.

A carrier may not transport any package of flammable solids bearing a poison label in the same car with material which is marked as or known to be foodstuff,

[1] War Department specification container.

feed, or any other edible material intended for consumption by humans or animals.

Subpart I—Detailed Requirements for Oxidizing Materials

§ 174.510 Special handling requirements for nitrates.

Nitrates listed in § 173.182(b) of this subchapter must be loaded in clean closed cars, which must be free of loose boards, cracks, holes, or exposed decayed spots. Interior of cars must be swept clean and be free of any projections capable of damaging bags when the nitrate is so packaged. Doors of cars must have tight closures. Ammonium nitrate (no organic coating), ammonium nitrate fertilizer, ammonium nitrate mixed fertilizer, or ammonium nitrate-phosphate, in bulk may be loaded in clean covered hopper cars. Ammonium nitrate with organic coating must not be loaded in all steel cars. Journals and boxes must be in good condition.

§ 174.515 Cleaning cars; potassium permanganate.

After unloading potassium permanganate from steel hopper cars or other cars, cars must be thoroughly cleaned except that cars used exclusively in this service under the provisions of § 173.194 (a) of this subchapter are not subject to this requirement.

§ 174.580 Toxic oxidizing materials with foodstuffs.

A carrier may not transport any package of oxidizing material bearing a poison label in the same car with material which is marked as or known to be foodstuff, feed, or any other edible material intended for consumption by humans or animals.

Subpart J—Detailed Requirements for Toxic Materials

§ 174.600 Special handling requirements for toxic materials.

Drums containing toxic materials may not be loaded more than one tier (layer) high and must be transported with filling holes up. They must be stowed as closely together as possible in rows both crosswise and lengthwise of car and so blocked and braced as to maintain their relative position during transportation. See Bureau of Explosives' Pamphlet No. 6.

(b) See also §§ 174.280 and 174.290.

§ 174.615 Cleaning cars.

(a) Cars which have contained arsenic, arsenate of lead, sodium arsenate, calcium arsenate, Paris green, calcium cyanide, potassium cyanide, sodium cyanide, or other toxic materials which show any evidence of leakage from packages, must be thoroughly cleaned after unloading before cars are again placed in service.

(1) A car which has been used to transport material marked as or known to be an extremely or highly toxic material, other than the materials specifically named in paragraph (a) of this section must be inspected for contamination before reuse. A car which has been contaminated must not be returned to service until such contamination has been removed. This subparagraph does not apply to cars used solely for transporting these poisons as long as they are used exclusively in that service.

(b) After unloading toxic materials from steel hopper cars or other cars, cars must be thoroughly cleaned except that cars used exclusively in this service under the provisions of § 173.368(a) of this subchapter are not subject to this requirement.

§ 174.625 Fumigation placard.

For requirements for use and description of the fumigation placard, see §§ 173.426 and 174.208 of this subchapter.

§ 174.630 Toxic materials with foodstuffs.

A carrier may not transport any package of toxic material bearing a poison label in the same car with material which is marked as or known to be foodstuff, feed, or any other edible material intended for consumption by humans or animals.

Subpart K—Detailed Requirements for Radioactive Materials

§ 174.700 Special handling requirements for radioactive materials.

(a) Shipments of low specific activity materials, as defined in § 173.389(c) of this subchapter, must be loaded so as to avoid spillage and scattering of loose material. Loading restrictions are prescribed in § 173.392 of this subchapter.

(b) The number of packages of radioactive materials, as provided in §§ 173.393 through 173.396 of this subchapter, in any rail car or storage location, must be limited so that the total transport index number, as defined in § 173.389(i) of this subchapter, and determined by adding together the transport index numbers on the labels of the individual packages, does not exceed 50. This provision does not apply to sole-use shipments as described in § 173.393(j) or (k) or § 173.392 of this subchapter.

(c) Packages of radioactive material bearing "radioactive yellow-II" or "radioactive yellow-III" labels must not be placed in cars, depots, or other places closer than three feet to an area (or dividing partition between areas) which may be occupied for more than a brief interval by passengers, employees, or shipments of animals, nor closer than 15 feet to any package containing undeveloped film (if so marked). If more than one of these packages is present, the distance must be computed from the table below on the basis of the total transport index number (determined by adding together the transport index numbers on the labels of the individual packages) of packages in the car or storeroom:

Total transport index	Minimum separation distance in feet to nearest undeveloped film	Minimum distance in feet to area of persons, or minimum distance in feet from dividing partition of a combination car.
None	0	0
0.1 to 10.0	15	3
10.1 to 20.0	22	4
20.1 to 30.0	29	5
30.1 to 40.0	33	6
40.1 to 50.0	36	7

NOTE 1: The distance in the table must be measured from the nearest point on the packages of radioactive materials.

(d) Each fissile class III radioactive material shipment (as defined in § 173.389(a)(3) of this subchapter) must be transported in accordance with one of the methods prescribed in § 173.396(g) of this subchapter. The transport controls must be adequate to assure that no fissile class III shipment is transported in the same transport vehicle with any other fissile radioactive material shipment. In loading and storage areas each fissile class III shipment must be segregated by a distance of at least 20 feet from other packages required to bear one of the "radioactive" labels described in Part 172 of this subchapter.

(e) Containers of radioactive material weighing 15,000 pounds or more may be loaded on flat cars. Gondola cars (drop-bottom cars not authorized) may be used for the following:

(1) Radioactive materials in containers weighing 5,000 pounds or more;

(2) Strong wooden boxes with inside containers of solid radioactive material, securely braced and cushioned; and

(3) Radioactive material in concrete-filled metal drums or in concrete vaults weighing 700 pounds or more.

(f) Persons shall not remain unnecessarily in a car containing radioactive materials.

§ 174.715 Cleanliness of cars after use.

(a) Each car used for transporting low specific activity radioactive materials in carload lots under the provisions of § 173.392(d) of this subchapter must be surveyed with appropriate radiation detection instruments after each use. Carriers may not return such cars to service until the radiation dose rate at any accessible surface is not more than 0.5 millirem per hour, and there is no significant removable radioactive surface contamination (see § 173.399 of this subchapter).

(b) This paragraph does not apply to any car used solely for transporting radioactive materials if a survey of the interior surface shows that the radiation dose rate does not exceed 10 millirem per hour at the interior surface or 2 millirem per hour at 3 feet from any interior surface. These cars must be stenciled with the words "FOR RADIOACTIVE MATERIALS USE ONLY" in lettering at least three inches high in a conspicuous place on both sides of the exterior of the car. These cars must be kept closed at all times other than loading and unloading.

§ 174.750 Incidents involving leakage.

(a) In addition to the incident reporting requirements of §§ 171.15 and 171.16 of this subchapter, the carrier shall also notify the shipper at the earliest practicable moment following any incident in which there has been breakage, spillage, or suspected radioactive contamination involving radioactive materials shipments. Vehicles, buildings, areas, or equipment in which radioactive materials have been spilled may not be again placed in service or routinely occupied until the radiation dose rate at

any accessible surface is less than 0.5 millirem per hour and there is no significant removable radioactive surface contamination (see § 173.397 of this subchapter).

NOTE 1: In these instances, the package or materials should be segregated as far as practicable from personnel contact. If radiological advice or assistance is needed, the U.S. Atomic Energy Commission should also be notified. In case of obvious leakage, or if it appears likely that the inside container may have been damaged, care should be taken to avoid inhalation, ingestion, or contact with the radioactive material. Any loose radioactive materials should be left in a segregated area and held pending disposal instructions from qualified persons.

NOTE 2: Information involving the handling of radioactive materials in the event of a wreck may be found in Bureau of Explosives' Pamphlet No. 1 and No. 2.

Subpart L—Detailed Requirements for Corrosive Materials

§ 174.300 Special handling requirements for corrosive materials.

(a) Carboys of corrosive liquids may not be loaded into container cars. Packages of corrosive liquids must be loaded, blocked, and braced so that they cannot change position during transportation due to shocks normally incident to transportation. Car doors may be cleated in an open position. Flat or stock cars may be used for loading carboys of acid.

(b) When less-than-carload shipments of corrosive liquids are loaded with other freight, the carboys must be placed near the doorway and must have wooden strips not less than 2 inches in height nailed to the car floor about 8 inches from the bracing. These strips must be arranged so that the liquid from a broken carboy will drain toward the doorway and outside the car. The space between the strips and the floor braces or blocking used for staying the carboy boxes must be covered with at least 1 inch thickness of clean and dry sand or earth, not sawdust or other combustible material.

(c) The carier must not accept carboys previously used for the shipment of corrosive liquids for transportation as empty carboys unless they have been thoroughly and completely drained. The carrier must handle them with the necks up.

§ 174.310 Special handling requirements for wet electric storage batteries.

(a) Electric storage batteries (wet) for shipment must be completely protected so that short circuits will be prevented and must not be loaded or stored with explosives.

(b) Wet electric storage batteries, and electrolyte packed as required by § 173.258 of this subchapter, must be blocked and braced so they cannot change position during transportation due to shocks normally incident to transportation. They must be loaded so that other freight cannot fall onto or slide against them. They may be loaded on gondola or flat cars, but may not be loaded into hopper bottom cars.

§ 174.812 Special handling requirements for nitric acid.

(a) Carboys of nitric acid may not be loaded into a box car or in a truck body or trailer on flat car more than two tiers high, except that completely boxed carboys, DOT–ID, may be loaded three tiers high.

(b) Nitric acid, when loaded with other corrosive liquids in carboys, must be separated from the other carboys. A 2 x 6-inch plank, set on edge, must be nailed across the car floor at least 12 inches from the nitric acid carboys and the space between the plank and the carboys of nitric acid must be filled with sand, sifted ashes, or other incombustible absorbent material.

PART 175—AIRCRAFT OPERATORS

A. Part 175 Table of Contents would be canceled; a new Part 175 Table of Contents would be added to read as follows:

Subpart A—General Information and Regulations

Sec.
175.1 Scope.
175.5 Applicability.
175.10 Exceptions.
175.20 Compliance.
175.30 Accepting shipments.
175.35 Shipping papers aboard aircraft.
175.40 Keeping and replacement of labels.
175.45 Reporting hazardous materials incidents.
175.50 Authority to deviate.

Subpart B—Loading, Unloading, and Handling

175.75 Quantity limitations aboard aircraft.
175.78 Stowage compatibility of cargo.
175.79 Orientation of cargo.
175.80 Banding, palletizing, or use of a shipping unit overpack.
175.85 Cargo location.
175.90 Damaged shipments.

Subpart C—Specific Regulations Applicable According to Classification of Material

175.205 Self-propelled vehicles.
175.210 Trasportation of gasoline, kerosene, or aviation fuel in small aircraft.
175.220 Carriage of flammable liquids in cargo in the State of Alaska.
175.630 Special requirements for poisons.
175.700 Special requirements for radioactive materials.
175.710 Special requirements for fissile Class III radioactive materials.

B. Part 175 would be canceled; a new Part 175 would be added to read as follows:

Subpart A—General Information and Regulations

§ 175.1 Scope.

This part provides requirements that must be observed by aircraft operators with respect to the transportation of hazardous materials via civil aircraft.

§ 175.5 Applicability.

This part contains regulations pertaining to the acceptance of hazardous materials for transportation, and the loading and transportation of hazardous materials, in any civil aircraft in the United States and in civil aircraft of United States registry anywhere in air commerce, except aircraft of United States registry under lease to and operated solely by foreign nationals outside the United States.

§ 175.10 Exceptions.

(a) This part does not apply to:

(1) Aviation fuel and oil in tanks that are in compliance with the installation provisions of 14 CFR, Chapter 1.

(2) Aircraft parts, equipment, and supplies other than fuel, if authorized or required to be carried aboard an aircraft for its operation including:

(i) Fire extinguishers;
(ii) Cylinders containing compressed gases;
(iii) Aerosol dispensers;
(iv) Distilled spirits;
(v) Hydraulic accumulators;
(vi) Batteries;
(vii) First aid kits;
(viii) Signaling devices;
(ix) Tires; and
(x) Items of replacement therefor.

(3) Hazardous material loaded and carried in hoppers or tanks of aircraft certificated for use in aerial seeding, dusting, spraying, fertilizing, crop improvement, or pest control, to be dispensed during such an operation.

(4) Medicinal and toilet articles carried by a crewmember or passenger in his baggage (including carry-on-baggage) when:

(i) The total capacity of all the containers used by a crewmember or passenger for the carriage of those articles does not exceed 75 ounces (net weight ounces and fluid ounces);

(ii) The capacity of each container other than an aerosol container does not exceed 16 fluid ounces or 1 pound of material.

(5) Small-arms ammunition carried by a crewmember or passenger in his baggage (excluding carry-on-baggage) if securely packed in fiber, wood, or metal boxes.

§ 175.20 Compliance.

Unless the regulations specifically provide that another person must perform a duty, each operator shall comply with all the regulations in this part and shall thoroughly instruct his employees in relation thereto. (See 14 CFR 121.135, 121.401, 121.433a, 135.27 and 135.140.)

§ 175.30 Accepting shipments.

(a) No aircraft operator may accept a hazardous material for transportation in an aircraft unless the hazardous material is—

(1) Authorized, and is within the quantity limitations specified, for carriage aboard aircraft according to § 172.101 of this subchapter;

(2) Described and certified in duplicate on a shipping paper prepared in accordance with subpart C, Part 172 of this subchapter. The originating aircraft operator must retain one copy of each shipping paper;

(3) Labeled or placarded (when required) in accordance with subparts E and F, Part 172 of this subchapter.

(4) Labeled with a "CARGO AIRCRAFT ONLY" label (See § 172.462 of this subchapter) if the material, as presented, is not permitted aboard passenger-carrying aircraft.

§ 175.35 Shipping papers aboard aircraft.

(a) One of the shipping papers required by § 175.30 (a)(2) must accompany the shipment it covers during transportation aboard an aircraft.

(b) Before departure of an aircraft having a hazardous material aboard, the aircraft operator shall provide the pilot-in-command a written notice containing the—

(1) Shipping name, hazard information number (if any) and classification of the hazardous material as specified in § 172.101 of this subchapter;

(2) Quantity of the material in terms of weight, volume, or as otherwise appropriate, and

(3) Location of the material in the aircraft.

(c) The documents required by paragraphs (a) and (b) of this section may be combined into one document if it is given to the pilot-in-command before departure of the aircraft.

§ 175.40 Keeping and replacement of labels.

(a) Aircraft operators who engage in the transportation of hazardous materials must keep an adequate supply of the labels specified in subpart E, Part 172 of this subchapter, on hand at each location where shipments are loaded aboard aircraft.

(b) Lost or detached labels for packages of hazardous materials must be replaced in accordance with the information provided on shipping papers.

§ 175.45 Reporting hazardous materials incidents.

(a) Each operator that transports hazardous materials shall report to the nearest ACDO, FSDO, GADO, or other FAA facility, except that in place of reporting to the nearest of those facilities a certificate holder under 14 CFR Part 121, 127, or 135 may report to the FAA District Office holding the carrier's operating certificate and charged with overall inspection of its operations, by telephone at the earliest practicable moment after each incident that occurs during the course of transportation (including loading, unloading or temporary storage) in which as a direct result of any hazardous material—

(1) A person is killed;

(2) A person receives injuries requiring his hospitalization;

(3) Estimated carrier or other property damage, or both, exceeds $50,000; or

(4) Fire, breakage, or spillage or suspected radioactive contamination occurs involving shipment of radioactive materials (see also § 175.720(b)).

(5) Fire, breakage, spillage, or suspected contamination occurs involving shipment of etiologic agents. In place of the report required by paragraph (a) of this section, a report on an incident involving etiologic agents may be telephoned directly to the Director, Center for Disease Control, U.S. Public Health, Atlanta, Georgia, area code 404 633–5313.

(6) A situation exists of such a nature that, in the judgment of the carrier, it should be reported to the Department even though it does not meet the criteria of subparagraphs (1), (2), or (3) of this paragraph, e.g., a continuing danger to life exists at the scene of the incident.

(b) The following information shall be furnished in each report required by this section:

(1) Name of reporting person;

(2) Name and address of carrier represented by reporter;

(3) Phone number where reporter can be contacted;

(4) Date, time, and location of incident;

(5) The extent of the injuries, if any; and

(6) Classification, name and quantity of hazardous material involvement and whether a continuing danger to life exists at the scene.

(c) Each operator who transports hazardous materials shall report in writing, in duplicate, on DOT Form F 5800.1, within 15 days of the date of discovery, each incident that occurs during the course of transportation (including loading, unloading, or temporary storage) in which, as a direct result of the hazardous materials, any of the circumstances set forth in paragraph (a) of this section occurs or there has been an unintentional release of hazardous materials from a package (including a portable tank). Each operator making a report under this section shall send that report to the Secretary, Hazardous Materials Regulations Board, Department of Transportation, Washington, D.C. 20590, with a separate copy to the FAA facility indicated in paragraph (a) of this section.

§ 175.50 Authority to deviate.

(a) When other forms of transportation are impracticable, or in an emergency, the FAA Administrator may authorize deviations from the provisions of this Part for one or more flights of a particular operation, subject to the following:

(1) Only the minimum flight crew necessary for safe flight, and such other persons as are necessary for handling the shipment en route, are carried in the aircraft.

(2) The shipper certifies that the shipment can be handled with a reasonable degree of safety to persons, other cargo, and the aircraft.

(3) The shipper provides full instructions in writing on special handling procedures and precautions necessary for safe shipment.

(4) The crew of the aircraft is thoroughly briefed in writing on the characteristics, and any special requirements for handling, of the cargo.

(5) Whenever any crew change occurs during the flight, the new crew is briefed under a hand-to-hand signature service furnished by the carrier.

(6) The aircraft is located on airports for loading and unloading, operated in takeoff, en route, and in landing, as far as practicable from heavily populated areas and from any place of human abode or assembly.

(7) The authorization is limited to the particular operation and to the hazardous materials for which the authorization is requested.

(8) The authorization specifies the points of origin where the material is to be loaded in the aircraft and the points of destination where it is to be removed from the aircraft.

(9) The shipment is loaded, unloaded, packed, marked, stowed, and secured in the aircraft in accordance with the rules or special instructions of this subchapter applicable to the materials for which deviation is requested.

(10) The holder of the authorization has advance permission from the operators or managers of the airports concerned.

(11) The authorization is limited to flights of civil aircraft between places in the United States and, except for shipments of radioactive materials, to flights of civil aircraft that depart from the United States for a place outside thereof.

(b) Application for authority to deviate from this Part must be made on Form FAA 7711–2.

(c) In an emergency requiring immediate transportation of hazardous materials for which authority to deviate is necessary, the applicant may apply by telephone or telegraph to the appropriate Flight Standards District Office.

(d) Upon applying for authority for deviation under this section, the applicant must arrange with the appropriate Flight Standards inspector to inspect the aircraft and loading arrangement and to ascertain the safety precautions necessary for safe flight.

Subpart B—Loading, Unloading, and Handling

§ 175.75 Quantity limitations aboard aircraft.

(a) No person may carry on an aircraft—

(1) A hazardous material except as permitted in Part 172 of this subchapter;

(2) More than 65 pounds (gross weight) of hazardous material in any inaccessible cargo pit, bin, or reusable transport container unless a larger quantity is permitted by this section;

(3) More than 300 pounds gross weight of nonflammable, compressed gas in any inaccessible cargo pit, bin, or reusable transport container;

(4) Packages containing radioactive materials when their combined transport indexes exceed 50.

(b) No limitation applies to the number of packages of "Other Regulated Material" (ORM) aboard an aircraft.

§ 175.78 Stowage compatibility of cargo.

No person may stow a package of a corrosive material on an aircraft next to, or in a position that will allow contact with, a package of flammable solids, oxidizing materials, or organic peroxides.

§ 175.79 Orientation of cargo.

A package containing hazardous material marked "This Side Up," "This End Up," or with arrows to indicate the proper orientation of the package, must be stored for loading and loaded aboard an aircraft in accordance with such markings.

§ 175.80 Banding, palletizing, or use of a shipping unit overpack.

See § 173.18 of this subchapter.

§ 175.85 Cargo location.

(a) No person may carry a hazardous material subject to the requirements of this Part in the cabin of a passenger-carrying aircraft.

(b) A hazardous material authorized according to § 172.101 of this subchapter for cargo aircraft only must be carried in a location accessible to a crewmember during flight.

(c) No person may load magnetized material (which might cause an erroneous magnetic compass reading) on an aircraft in the vicinity of a magnetic compass or compass master unit that is a part of the instrument equipment of the aircraft in a manner that affects its operation. If this requirement cannot be met, a special aircraft swing and compass calibration may be made. No person loading magnetized materials may obscure the warning labels.

(d) No person may carry materials subject to the requirements of this Part in an aircraft unless they are suitably safeguarded to prevent their becoming a hazard by shifting. For packages bearing "RADIOACTIVE YELLOW II" or "RADIOACTIVE YELLOW III" labels, such safeguarding must prevent movement that would permit the package to be closer to a space that is occupied by a person or an animal than is permitted by § 175.240.

(e) No person may carry a material subject to the requirements of this Part that is acceptable for carriage in a passenger-carrying aircraft (other than magnetized materials) unless it is located in the aircraft in a place that is inaccessible to persons other than crewmembers.

§ 175.90 Damaged shipments.

Except as provided for in § 175.700 the operator of an aircraft shall remove from the aircraft any package subject to this Part that appears to be damaged or leaking. A package that appears to be damaged or leaking may not be transported on an aircraft subject to this rule.

Subpart C—Specific Regulations Applicable According to Classification of Material

§ 175.205 Self-propelled vehicles.

(a) Self-propelled vehicles are exempt from the drainage requirements of § 173.120 of this subchapter when carried in aircraft designed or modified for vehicle ferry operations and when all of the following conditions are met:

(1) Authorization for this type operation has been given by the appropriate authority in the government of the country in which the aircraft is registered;

(2) Each vehicle is secured in an upright position;

(3) Each fuel tank is filled in a manner and only to a degree that will preclude spillage of fuel during loading, unloading, and transportation; and

(4) Ventilation rates to be maintained in the vehicle stowage compartment have been approved by the appropriate authority in the government of the country in which the aircraft is registered.

§ 175.210 Transportation of gasoline, kerosene, or aviation fuel in small aircraft.

(a) Except in scheduled passenger-carrying operations, an aircraft operated entirely within the State of Alaska, or a helicopter operated into a remote area in the United States may carry not more than 20 gallons of gasoline, kerosene, or aviation fuel, if:

(1) Transportation by air is the only practical means of providing suitable fuel;

(2) The flight is necessary to meet the needs of the passenger;

(3) The fuel is carried in metal containers that are either:

(i) DOT (Department of Transportation) Specification 2A containers of not more than 5 gallons capacity, each packed inside a DOT Specification 15A, 15B, 15C, 16A, 19A, or 19B (§§ 178.168, 178.169, 178.170, 178.185, 178.190, 178.191 of this subchapter) wooden box or, for small aircraft in Alaska, each packed inside a wooden box of at least one-half inch thickness;

(ii) Air tight, leakproof, inside containers of not more than 10 gallons capacity and of at least 28-gage metal, each packed inside a DOT Specification 15A, 15B, 15C, 16A, 19A, or 19B wooden box or, for small aircraft in Alaska, each packed inside a wooden box of at least one-half inch thickness.

(4) On helicopters, the fuel is carried on external cargo racks;

(5) The area or compartment in which the fuel is loaded is ventilated so as to prevent the accumulation of fumes;

(6) Before each flight, the pilot-in-command:

(i) Informs each passenger of the location of the fuel and the hazards involved; and

(ii) Prohibits smoking, lighting matches, the carrying of any lighted cigar, pipe, cigarette or flame, and the use of anything that might cause an open flame or spark, while loading or unloading or in flight; and

(7) Fuel is transferred to the fuel tanks only while the aircraft is on the surface.

§ 175.220 Carriage of flammable liquids in cargo-only aircraft in the State of Alaska.

(a) Contrary provisions of this Part notwithstanding, any operator of an aircraft while conducting operations entirely within the State of Alaska may deviate from the provisions of § 175.210 to the extent necessary to permit the transportation in cargo-only aircraft of any flammable liquids listed in 49 CFR 172.101, except a pyrophoric liquid as defined in 49 CFR 173.115(c), in quantities greater than 10 U.S. gallons but not exceeding 55 U.S. gallons, subject to the following conditions;

(b) The flammable liquid may be carried only when means of transportation other than by air are impractical, and the carriage is not solely for the purpose of economic advantage or convenience;

(c) No person other than a required flight crewmember or a person assigned to the handling of the flammable liquid may be carried;

(d) No person may smoke, carry a lighted cigarette, cigar, or pipe, or operate any device capable of causing an open flame or spark in the aircraft;

(e) The aircraft may not be loaded or unloaded while—

(1) Any person is smoking or carrying a lighted cigarette, cigar, or pipe within 50 feet of the aircraft.

(2) Any engine or any device capable of causing an open flame or spark is being operated within 50 feet of the aircraft.

(3) The aircraft's engines or electrical or avionic equipment, except position lights in the steady position, are being operated.

(f) During loading and unloading, the aircraft shall be positively grounded.

(g) No person may fill or discharge a flammable liquid packaging while it is inside an aircraft.

§ 175.630 Special requirements for poisons.

(a) No person may transport a package bearing a POISON label aboard an aircraft in the same cargo compartment with material which is marked as or known to be foodstuff, feed, or any other edible material intended for consumption by humans or animals.

(b) No person may operate an aircraft that has been used to transport any package bearing a POISON label unless, upon removal of such package, the area in the aircraft in which it was carried is visually inspected for evidence of leakage, spillage, or other contamination. All contamination discovered must be either isolated or removed from the aircraft. The operation of an aircraft contaminated with such poisons is considered to be the carriage of toxic materials under paragraph (a) of this section.

§ 175.700 Special requirements for radioactive materials.

(a) No person may place any package of radioactive materials bearing "RADIOACTIVE YELLOW—II" or "RADIOACTIVE YELLOW—III" labels in an aircraft closer than the distances shown in the following table to a space (or dividing partition between spaces) which may be continuously occupied by people, or shipments of animals, or closer than the distances shown in the following table to any package containing undeveloped film (if so marked). If more than one of these packages is present, the distance shall be computed from the following table on the basis of the total transport index numbers shown on the labels of the individual packages in the aircraft.

Total transport index	Minimum separation distances if feet to nearest undeveloped film for various times of transit					Minimum distance in feet to area of persons, or minimum distance in feet from dividing partition of cargo compartments
	Up to 2 hours	2-4 hours	4-8 hours	8-12 hours	Over 12 hours	
None	0	0	0	0	0	0
0.1 to 1.0	1	2	3	4	5	1
1.1 to 5.0	3	4	6	8	11	2
5.1 to 10.0	4	6	9	11	15	3
10.1 to 20.0	5	8	12	16	22	4
20.1 to 30.0	7	10	15	20	29	5
30.1 to 40.0	8	11	17	22	33	6
40.1 to 50.0	9	12	19	24	36	7

(b) In addition to the reporting requirements of § 175.45, the carrier must also notify the shipper at the earliest practicable moment following any incident in which there has been breakage, spillage, or suspected radioactive contamination involving radioactive materials shipments. Aircraft in which radioactive materials have been spilled may not be again placed in service or routinely occupied until the radiation dose rate at any accessible surface is less than 0.5 millirem per hour and there is no significant removable radioactive surface contamination (see 49 CFR 173.397 of this subchapter). In these instances, the package or materials should be segregated as far as practicable from personnel contact. If radiological advice or assistance is needed, the U.S. Atomic Energy Commission should also be notified. In case of obvious leakage, or if it appears likely that the inside container may have been damaged, care should be taken to avoid inhalation, ingestion, or contact with the radioactive materials. Any loose radioactive materials should be left in a segregated area pending disposal instructions from qualified persons.

(c) No person may carry abroad a passenger-carrying aircraft any package of radioactive material which contains a large quantity (large radioactive source) of radioactivity (as defined in § 173.389 (b) of this subchapter), except as specifically approved by the Administrator.

§ 175.710 Special requirements for fissile Class III radioactive materials.

(a) No person may carry aboard any aircraft any package of fissile class III radioactive material (as defined in § 173.389(a)(3) of this subchapter), except as follows:

(1) On a cargo-only aircraft which has been assigned for the sole use of the consignor for the specific shipment of fissile radioactive material. Instructions for such sole use must be provided for in special arrangements between the consignor and carrier, with instructions to that effect issued with shipping papers; or

(2) On any aircraft on which there is no other package of radioactive materials required to bear one of the RADIOACTIVE labels described in §§ 172.437, 172.438, and 172.439 of this subchapter. Specific arrangements must be effected between the shipper and carriers, with instructions to that effect issued with the shipping papers; or

(3) In accordance with any other procedure specifically approved by the Board Member for the Federal Aviation Administration.

PART 176—CARRIERS BY WATER

A. Part 176 Table of Contents would be canceled; a new Part 176 Table of Contents would be added to read as follows:

Subpart M—Detailed Requirements for Radioactive Materials

Subpart N—Detailed Requirements for Corrosive Materials

Subpart O—Detailed Requirements for Other Regulated Materials (ORM)

B. The current Part 176 of this subchapter would be deleted.

C. The following Part 176 would be added to read as follows:

Subpart A—General

§ 176.1 Scope.

This part provides requirements in addition to those contained in Part 172 of this subchapter that must be observed by carriers with respect to the transportation of hazardous materials via vessels.

§ 176.5 Application to vessels.

(a) Except as provided in paragraphs (b) and (d) of this section, the regulations in this subchapter apply to all domestic or foreign vessels when in the navigable waters of the United States, regardless of character, tonnage, size, service, whether self-propelled or not, whether arriving or departing, underway, moored, anchored, aground, or while in drydock.

(b) The following vessels are exempt from the regulations in this subchapter except for compliance with paragraph (c) of this section:

(1) Any public vessel not engaged in commercial service;

(2) Any vessel constructed or converted for the principal purpose of carrying flammable or combustible liquid cargo in bulk in its own tanks;

(3) Any vessel specifically exempted from these regulations by subsection (6) (b) of R.S. 4472.

(c) Regulations covering explosives prohibited by subsection 3 of R.S. 4472, as amended, apply to all vessels.

(d) For purposes of transportation by water, regulations in this subchapter covering the transportation of combustible liquids apply only to combustible liquids whose flash point is at or below 150° F. Tagliabue's open-cup tester (ASTM-D1310) and carried aboard passenger vessels.

§ 176.9 "Order-Notify" or "C.O.D." shipments.

A carrier may not accept for transportation Class A explosives or blasting caps in any quantity when consigned to "order-notify" or "C.O.D.," except on a through bill of lading to a foreign port. These materials may not be accepted when the shipper consigns them to himself unless he has a resident representative to receive the shipment at the port of discharge.

§ 176.10 Exceptions.

(a) Any shipment of a hazardous material (except Class A explosives and radioactive materials) which upon arrival at a domestic port is not destined for transportation outside the port area may be transported in accordance with the packaging requirements of the International Maritime Dangerous Goods Code adopted by the Inter-governmental Maritime Consultative Organization.

(b) *Canadian shipments and packagings.* (See § 173.8 of this subchapter.) Canadian shipments and packagings may be transported by vessel if they are transported in accordance with the regulations of this part.

(c) A ferry vessel, a railroad car ferry vessel, or a carfloat, operating in other than ocean or coastwise service that has provisions only for deck passengers or transport vehicles, that operates on a short run on a frequent schedule between two points over the most direct water route, and that offers a public service of a type attributed to a bridge or tunnel, may accept highway vehicles and railroad vehicles carrying hazardous materials loaded therein in accordance with the applicable regulations for stowage and segregation in the other parts of this subchapter. When taken aboard, the vehicles must be transported in accordance with the remaining applicable requirements of this part and § 172.101 of this subchapter.

§ 176.12 Explosives prohibited on any vessel for transportation.

A carrier may not accept for transportation an explosive or explosive composition expressly prohibited by subsection 3 of R.S. 4472, as amended. These prohibited items include compositions containing an ammonium salt or chlorate, fulminates, or any other detonating compounds in bulk in dry condition, or explosive compositions that ignite spontaneously or undergo marked decomposition when subjected for forty-eight consecutive hours to a temperature of 167°F.

§ 176.13 Compliance.

Unless the regulations specifically provide that another person must perform a duty, each carrier, including any connecting carrier, shall comply with all regulations in this Part, and must thoroughly instruct his employees in relation thereto.

§ 176.15 Penalties.

(a) Whoever violates any provision of R.S. 4472, as amended, or any regulation established thereunder, is subject to a penalty of not more than $2,000 for each violation. In the case of a violation on the part of the carrier or shipper, the vessel or the shipment is liable for the penalty and may be seized and proceeded against by way of libel in the District Court of the United States in any district in which the vessel or shipment is located.

(b) When death or bodily injury of person(s) results from a violation of any provision of R.S. 4472, as amended, or of any regulation established thereunder, the person who has violated the regulation, or has caused the violation, may be fined not more than $10,000 or imprisoned not more than 10 years, or both.

§ 176.16 Enforcement.

(a) Enforcement officers of the U.S. Coast Guard may at any time and at any place within the jurisdiction of the United States board any vessel for the purpose of enforcement.

(b) Any collector of customs may detain a vessel or hazardous materials shipment when possessing knowledge of any violation of the regulations in this subchapter after he has followed the procedures outlined in subsection (13) of R. S. 4472, as amended.

§ 176.18 Assignment and certification.

(a) The National Cargo Bureau, Inc., is authorized to assist the Coast Guard in administering R. S. 4472, as amended, and the regulations of this subchapter established thereunder with respect to the following:

(1) Inspection of vessels for suitability for loading hazardous materials;

(2) Examination of stowage of hazardous materials;

(3) Making recommendations for stowage requirements of hazardous materials cargo; and

(4) Issuance of certificates of loading setting forth that the stowage of hazardous materials is in accordance with the requirements of R. S. 4472 and the regulations in this part.

(b) A certificate of loading issued by the National Cargo Bureau may be accepted by the Department as prima facie evidence that the cargo is stowed in conformity with the requirements of R. S. 4472, as amended, and the regulations in this part.

§ 176.20 Local regulations.

The regulations of this part are not intended to pre-empt the enforcement of local regulations which are consistent and not in conflict with these regulations, and which do not undermine the purpose of these regulations.

§ 176.22 Definitions.

As used in this part:

(a) "Accessible" means stowed in a manner to permit the manual application of fire extinguishing agents directly to hazardous materials.

(b) "Approved" means approval by the Department unless otherwise specifically indicated in this part.

(c) "Away from". See § 176.83.

(d) "Barge" means any nonself-propelled vessel without any passengers on board.

(e) "Break-bulk" refers to packages of hazardous materials that are handled individually, palletized, or unitized for purposes of transportation.

(f) "Captain of the Port" as used in this part, means the Officer of the Coast Guard, under the command of a District Commander, so designated by the Commandant for the purpose of giving immediate direction to Coast Guard law enforcement activities within his assigned area. In addition, the District

Commander shall be Captain of the Port with respect to remaining areas in his District not assigned to officers designated by the Commandant as Captain of the Port.

(g) "Carfloat" means a vessel that serves as an extension of a rail line or highway over water, and does not operate in ocean, coastwise, or ferry service; it operates on a short run, on an irregular basis, and may serve several points in a port area.

(h) "Cargo vessel" means:

(1) Any vessel other than a passenger vessel or a barge; or

(2) Any ferry which is being operated under authority of a change of character certificate issued by a Coast Guard Officer-in-Charge, Marine Inspection.

(i) "Carrier" means any person who performs any function assigned by the regulations in this subchapter to a carrier, and includes the owner, charterer, agent, master, or any person in charge of a transport vehicle or vessel. Consideration of one individual as a carrier does not exclude another person from also being considered a carrier for an assigned function unless the regulations specifically provide that one party is responsible.

(j) "Character of vessel" means the type of service in which the vessel is engaged at the time of transporting hazardous materials; i.e. cargo vessel, passenger vessel, barge, etc.

(k) "Containership" is a cargo vessel designed and constructed to transport portable tanks and inter-modal containers within authorized holds and which are lifted on and lifted off with their contents intact.

(l) "Inter-modal container" is defined as a cargo carrying unit which is designed and constructed to transport packaged or dry bulk cargoes to be placed on board a vessel intact with or without cargo, and to be used as a land transportation unit integrated with a chasis to form a highway vehicle.

(m) "District Commander" means the District Commander of the Coast Guard, or his authorized representative, who has jurisdiction in the particular geographical area.

(n) "Finely divided metals" means metals that have been divided into small parts such as aluminum powder, bronze powder, metal cuttings, or borings such as are produced in working metals.

(o) "Finely divided organic material" means organic material such as charcoal, peat moss, sugar, sulfur, sawdust, powdered materials such as flour, granular materials such as seeds, grains, and cereals or like substances.

(p) "Full load" applies only to radioactive materials. See § 173.389 of this subchapter for definition.

(q) "Highway vehicle" means a mobile structure attached to an underframe and wheels, designed to transport freight by highway, and loaded on and unloaded from a vessel as a unit by a roll-on/roll-off method.

(r) "Magazine vessel" is a waterborne craft used for the receiving, storing, or dispensing of explosives. A single deck vessel with or without a house on deck is the only type that may be used as a magazine vessel. A magazine vessel may not be moved while explosives are on board.

(s) "Navigable waters" means the navigable waters of the United States, its territories, and possessions, but does not mean the navigable waters of the Panama Canal Zone.

(t) "Officer in Charge, Marine Inspection" means any person from the civilian or military branch of the Coast Guard designated as such by the Commandant and who under the superintendence and direction of the Coast Guard District Commander is in charge of an inspection zone for the performance of duties with respect to the enforcement and administration of Title 52, R. S., acts amendatory thereof or supplemental thereto, rules and regulations thereunder and the inspections required thereby.

(u) "Passenger vessel" means:

(1) Any vessel subject to any of the requirements of the International Convention for the Safety of Life at Sea, 1960, which carries more than 12 passengers; or

(2) Any cargo vessel documented under the laws of the United States and not subject to that Convention which carries more han 16 persons in addition to the crew; or

(3) Any cargo vessel or any foreign nation that extends reciprocal privileges and is not subject to the Convention and which carries more than 16 persons in addition to the crew; or

(4) Any vessel engaged in a ferry operation which carries passengers.

(v) "Portable tank"—See § 170.30(a) of this subchapter.

(w) "Railroad vehicle" means a mobile structure attached to an underframe and wheels, designed to transport freight by rail, and loaded on and unloaded from a vessel as a unit by a roll-on/roll-off method.

(x) "Separated by a complete hold or compartment from." See § 176.83.

(y) "Separated from." See § 176.83.

(z) "Separated longitudinally by a complete hold or compartment from." See § 176.83.

(aa) "Sheathing" is a covering which consists of a smooth layer of wood placed over metal and secured to prevent any movement. The securing and arrangement methods must not result in any metal projecting beyond the wood surface forming the cargo storage area interior.

(bb) "Shipper" means any person who performs any function assigned by the regulations in this subchapter to a shipper. Performance of any function by one individual as a shipper does not exclude another person from also being considered a shipper. For example, a warehouseman who presents hazardous materials to a carrier may be subject to the regulations as a shipper or as the agent of a shipper, and the individual who packed, marked, classified, and labeled the shipment initially may also be considered a shipper.

(cc) "Storage" means the placing of explosives or other hazardous materials on board a vessel for purposes of safekeeping or accumulation, pending removal therefrom in whole or in part at a subsequent time; the process of "placing on board" and "removing therefrom" occurring without movement of the vessel being involved.

(dd) "Trailership" means a vessel other than a highway vehicle ferry or carfloat, specifically constructed to transport highway vehicles, and equipped with installed securing devices to tie down each vehicle.

(ee) "Trainship" means a vessel other than a railroad car ferry or carfloat, specifically constructed to transport railroad vehicles, and equipped with installed securing devices to tie down each vehicle.

(ff) "Transportation" includes the carrying, handling, stowing, and storing of hazardous materials on a vessel.

(gg) "W.T." means watertight.

Subpart B—General Operating Requirements

§ 176.24 Shipping papers.

A carrier may not transport any hazardous material unless the material is properly described on the shipping paper as prescribed in § 172.201 of this subchapter.

§ 176.27 Certificate.

(a) A carrier may not transport any hazardous material unless it has been certified by the shipper, using the following certificate which must be signed by the shipper:

"This is to certify that the above-named articles are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

(b) For import or export shipments of hazardous materials which will not be transported by rail, highway, or air, the shipper may certify on the bill of lading or other shipping paper that the hazardous material is properly classed, described, marked, and labeled according to § 172.101 of this subchapter or in accordance with the regulations of country of origin or destination.

§ 176.30 Dangerous cargo manifest.

(a) The person in charge of vessel transporting hazardous materials, including passenger vessels transporting combustile liquids in outside packagings, shall prepare a dangerous cargo manifest, list, or stowage plan. This document must be kept in a designated holder, on or near the vessel's bridge. It must contain the following information:

(1) Name of vessel and official number. (If the vessel has no official number, the international radio call sign must be substituted.);

(2) Nationality of vessel;

(3) Shipping name of each hazardous material on board, as given in column (1) of § 172.101 of this subchapter or the "correct technical name" as given in the International Maritime Dangerous Goods Code published by IMCO. For other than a domestic shipment, when the shipping name of a material is an "N.O.S." entry in column (1) of § 172.101 or in the IMCO Code, this entry must be qualified by the chemical name of the commodity in parentheses, e.g., "Corro-

sive material, N.O.S. (caprylyl chloride)";

(4) Tonnage in bulk shipment or the number and description of packages (barrels, drums, cylinders, boxes, etc.) and gross weight for each type of packaging;

(5) Classification of the hazardous material in accordance with either:

(i) Column (2) of § 172.101, or

(ii) Column (4) of § 172.101 of this subchapter.

(Permitted only when a classification is shown.)

NOTE: For transportation outside the port area, hazardous materials must be classified in accordance with column (2) of § 172.101 of this subchapter.

(6) For vessels used for the storage of explosives and other hazardous materials, the following additional information is required:

(i) Name and address of vessel's owner;

(ii) Location of vessel's mooring;

(iii) Name of person in charge of vessel;

(iv) Name and address of the owner of the cargo; and

(v) A complete record, by time intervals of one week, of all receipts and disbursements of hazardous materials. The name and address of the consigner must be shown against all receipts and the name and address of the consignee against all deliveries.

(b) The information on the dangerous cargo manifest must be the same as the information furnished by the shipper on his shipping order or other shipper paper. The person who supervises the preparation of the manifest, list, or stowage plan shall ensure that the information is correctly transcribed, and shall certify to the truth and accuracy of this information to the best of his knowledge and belief by his signature and notation of the date prepared.

(c) The master, or a licensed deck officer designated by the master and attached to the vessel, or the person in charge of a barge, shall acknowledge the correctness of the dangerous cargo manifest, list, or stowage plan by his signature. The requirements of this paragraph do not apply to unmanned barges.

(d) Owners, charters, or agents of vessels transporting or storing hazardous materials, shall retain for one year a copy of the dangerous cargo manifest, list, or stowage plan, and shall produce said manifest or list in accordance with the provisions of § 176.36.

§ 176.31 Special permits.

(a) Any Special Permit required to be on board a vessel must be kept with the dangerous cargo manifest.

§ 176.33 Labels.

Each carrier shall have an adequate supply of hazardous materials labels readily available. Lost or detached labels must be replaced based on information taken from the shipping order, delivery receipt, or other shipping paper applying to the shipment. The hazard information number must be added by any suitable means without regard to size or shape of numerals if entered legibly.

§ 176.36 Preservation of records.

(a) Where the regulations in this part require shipping orders, manifests, cargo lists, stowage plans, reports, and any other papers, documents or records, the owner of the vessel shall preserve them or copies of them in his place of business or office in the United States for a period of one year after their preparation. If a party contracts for the full and exclusive use and control of a vessel, that party shall preserve these papers, records, and documents in place of the owner in the same manner.

(b) Any record required to be preserved must be made available upon request to authorized representatives of the Department.

§ 176.39 Inspection of cargo.

(a) Manned vessels: (1) The master shall insure that an inspection of each hold or compartment containing hazardous materials is made after stowage is complete, at least once every 24 hours if weather permits, and after any period of heavy weather, in order to ensure that this cargo is in a safe condition and that no damage caused by shifting, spontaneous heating, leaking, sifting, wetting, or other cause has been sustained by the vessel or its cargo since loading and stowage. Vessels' holds equipped with smoke or fire detecting systems, having an automatic monitoring capability, need not be inspected except after stowage is complete and after periods of heavy weather.

(2) An entry must be made in the vessel's deck log book for each inspection of the stowage of hazardous materials.

(b) Unmanned and magazine vessels: (1) An inspection of the cargo must be made after stowage has been completed to ensure that stowage has been accomplished properly and that there are no visible signs of damage to any packages or evidence of heating, leaking, or shifting. This inspection must be made by the person who is responsible to the owner, charterer, or agent and who is in charge of loading and stowing the cargo on the unmanned vessels or the person in charge in the case of magazine vessels.

(c) The master of any ocean-going vessel carrying hazardous materials shall insure that an inspection of this cargo is made immediately prior to entering any port in the United States.

(d) When inspecting cargoes of hazardous materials capable of evolving flammable vapors, any artificial means of illumination must be of a vaporproof type.

§ 176.45 Emergency situations.

(a) When an accident occurs on board a vessel involving hazardous materials, the master or person in charge shall adopt procedures as will, in his judgment, provide maximum safety for the vessel, its passengers, and its crew. When the accident results in damaged packages or the emergency use of unauthorized packagings, these packages may not be offered to any forwarding carrier for transportation and the nearest District Commander shall be advised so instructions as to disposition can be obtained.

(b) Hazardous materials may be jettisoned only if the master believes this action necessary to prevent or substantially reduce a hazard to human life or reduce a substantial hazard to property.

§ 176.48 Situation requiring report.

(a) When a fire or other hazardous condition exists on a vessel transporting hazardous materials, the nearest District Commander must be notified. The master or person in charge of the vessel shall comply with any instructions of the District Commander.

(b) When an incident occurs during transportation in which hazardous materials are involved, Hazardous Materials Incident Reports may be required. See §171.15 and § 171.16 of this subchapter.

(c) *Jettisoned or lost packages.* If jettisoning or loss of a package, container, portable tank, highway, or railroad vehicle containing hazardous materials occurs, the nearest District Commander must be notified of the location, quantity, and type or description of the material.

§ 176.50 Acceptance of damaged or leaking packages.

A carrier may not accept for transportation any package that is so damaged as to permit the escape of its contents, that appears to have leaked, or whose securing means give evidence of failure to properly contain the contents unless it is restored or repaired to the satisfaction of the master of the vessel. Packages containing radioactive materials (other than low specific materials) may not be repaired or restored.

§ 176.52 Rejections of shipments in violation.

(a) A carrier may not transport any hazardous material offered under a false or deceptive name, marking, invoice, shipping paper or other declaration, or without the shipper furnishing written information about the true nature of the material by the time of delivery.

(b) When any such shipment is found in transit, the master of the vessel shall adopt procedures which in his judgment provide maximum safety to the vessel, its passengers and its crew and which are in compliance with § 176.45. If in port, a carrier may not deliver the material to any party, and shall immediately report to the nearest District Commander with a request for instructions for disposition.

§ 176.54 Repairs involving welding or burning.

(a) A vessel having on board explosives or other hazardous materials as cargo may not proceed to a ship repair plant, enter upon a drydock or marine railway, or otherwise undertake repairs, or any work involving welding or burning, or the use of power actuated tools or appliances which may produce intense heat:

(1) While any explosives as cargo are on board except emergency repairs to the vessel's main propelling or boiler plant or auxiliaries thereto;

(2) In holds containing any other hazardous materials as cargo, in compartments adjoining holds in which other hazardous materials as cargo are stored, or upon the boundaries of holds in which other hazardous materials as cargo are

stowed except on the vessel's main propelling or boiler plant or auxiliaries thereto, including main propulsion shafting and propeller;

(3) In or upon boundaries of holds, after the discharge of any cargo of explosives or flammable solids or oxidizing materials, until all precautions are taken to see that no residue of cargo is left to create a hazard;

(4) In, or upon boundaries of, holds that have lately contained substances capable of giving off flammable or explosive vapors, until such holds have been determined to be gas free.

(b) None of the provisions in paragraph (a) of this section apply to permitted articles of ships' stores and supplies of a dangerous nature, although provisions shall be taken to afford safe storage and protection to such stores from any risk incident to the repair work.

Subpart C—General Handling and Stowage

§ 176.57 Supervision of handling and stowage.

Hazardous materials may be handled or stowed on board a vessel only under the direction and observation of a qualified person assigned for this duty. For a vessel engaged in voyages coastwise, or on rivers, bays, sounds or lakes, including the Great Lakes when the voyage is not foreign-going, this person may be an employee of the vessel owner or charterer and assigned by said owner or charterer, or he may be a licensed officer attached to the vessel and assigned by the master of the vessel. For domestic vessels engaged in voyages foreign-going or intercoastal, this person must be an officer possessing an unexpired license issued by the U.S. Coast Guard and assigned to this duty by the owner, charterer, agent, or master of the vessel. For foreign vessels this person must be an officer of the vessel assigned to such duty by the master of the vessel.

§ 176.58 Preparation of the vessel.

(a) Each hold or compartment must be swept clean of all debris before hazardous materials are stowed therein.

(b) Bilges must be examined and any residue of previous cargo removed.

§ 176.60 "No Smoking" signs.

Where smoking is prohibited during the loading, stowing, storing, transporting, or unloading of hazardous materials by the regulations in this part, the owner, master, or person in charge of the vessel is required to post "NO SMOKING" signs.

§ 176.63 Stowage locations.

(a) General stowage locations are given in column (7) of the list of hazardous materials (see § 172.101 of this subchapter). Stowage is indicated by the numbers 1, 2, and 3. Where more than one stowage location is permitted, the numbers are separated by commas, for example: 1, 2, means "On deck" or "Under deck." The first entry in column (7) pertains to both cargo vessels and passenger vessels unless otherwise indicated. Each number corresponds to a stowage location as follows:

(1) "1"—On deck—means the hazardous material must be stowed on the weather deck unless another stowage is listed. Any house on this deck used for the stowage of hazardous materials must have a permanent structural opening to the atmosphere (such as a door, hatch, companionway, manhole, etc.). No structural opening to any living quarters, cargo, or other compartment is permitted unless the opening has means for being closed off and secured. Any deck house containing living quarters, a steering engine, a refrigerating unit, a refrigerated stowage box, or a heating unit may not be used unless the area occupied by such a unit is isolated from the stowage area by a permanent and tight metallic division bulkhead. Stowage in a shelter—'tween deck compartment is not considered to be on deck. A barge which is vented to the atmosphere and is stowed on deck on a barge-carrying ship is considered to be on deck.

(2) "2"—Under deck—means the hazardous material must be stowed in a cargo space or hold below the weather deck unless another stowage is listed. A cargo space or hold is defined as an area capable of being ventilated and allotted entirely to the carriage of cargo; it is bounded by permanent steel bulkheads, decks, and the shell of the vessel; the deck openings must have means for effectively closing the hold against the weather, and in the case of superimposed holds, for effectively closing off each hold. A cargo space or hold containing a crew passage formed by battens or by a mesh or wire screen bulkhead may not be used for the stowage of any hazardous material unless a watchman is provided for this area.

(3) "3"—Under deck away from heat—means the hazardous material must be stowed in a cargo space with built in means for ventilation and not subject to heat from any artificial source, unless on deck stowage is permitted and used for the material in place of this stowage.

§ 176.66 "Keep cool" and "Shade from radiant heat."

The designation "Keep cool" means that when stowed below deck, each package must be kept away from artificial heat. The designation "Shade from radiant heat" means that when stored on deck each package must be protected from the direct rays of the sun by means of structural erections or awnings. Such designations will be provided, as necessary, in column (7) of the List of Hazardous Materials (§ 172.101 of this subchapter).

§ 176.69 General stowage requirements for hazardous materials.

(a) Under deck stowage should be used when authorized.

(b) Hazardous materials (except ORM) must be stowed in an accessible manner to facilitate inspection during the voyage, its removal from a potentially dangerous situation, and the removal of packages in case of fire.

(c) Any package marked "This Side Up" must be so stowed.

§ 176.72 Handling of break-bulk hazardous materials.

(a) A metal bale hook must not be used for handling any packages of hazardous material.

(b) The use of equipment designed to lift or move cargo by means of pressure exerted on the packages is not allowed if the device can damage the package or the package is not designed to be lifted in that manner.

(c) Equipment used in loading (i.e. pallets, slings, cargo nets, etc.) must give adequate support beneath the packages. Packages must not be able to fall during loading. Examples of unacceptable loading conditions are packages smaller than the net mesh size or a pallet without sideboards with loose packages.

§ 176.74 On deck stowage of break bulk hazardous materials.

(a) Packages containing hazardous materials must be secured using existing vessel's structures (such as bulwarks, hatch coamings, shelter deck and poop bulkheads) as part boundaries and effectively closing in the cargo by fitting angle bar closing means bolted to clips or other parts of the ship's structure. Lashing of deck cargo is permitted if eye pads are used to attach these lashings. Lashings may not be secured to guard rails. Bulky articles must be shored in addition to the above means of securing.

(b) Any packaging susceptible to weather or water damage must be protected so that it will not be exposed to the weather or to sea water.

(c) Not more than fifty percent of the total open deck area may be used for stowage of hazardous materials (except ORM materials).

(d) Fireplugs, sounding pipes, and access to these must be free and clear of all cargo.

(e) Crew and passenger spaces and areas set aside for crew's use must not be used to stow any hazardous material.

(f) A hazardous material may not be stowed within a horizontal distance of 25 feet of an operating or embarkation point of a lifeboat.

(g) Hazardous materials must be stowed to permit safe access to crew's quarters and to all parts of the deck required in navigation and necessary working of the vessel.

(h) When runways for use of crew are built over stowed hazardous materials, they must be so constructed and fitted with rails and lifelines as to afford complete protection to the crew when in use.

§ 176.76 Highway vehicles, railroad vehicles, inter-modal containers, and portable tanks containing hazardous materials.

(a) Except for Class A explosives, permitted hazardous materials may be carried on board a vessel in a highway vehicle, railroad vehicle, or inter-modal container subject to paragraphs (b) through (f) of this section and to the following conditions:

(1) The material must be in proper condition for transportation according to the requirements of this subchapter;

(2) Each package in the transport vehicle or container must be secured to prevent movement in any direction;

(3) Bulkheads made of dunnage which extend to the level of the cargo must be provided unless the packages are stowed flush with the sides or ends;

(4) Dunnage must be secured to the floor when the cargo consists of dense materials or heavy packages;

(5) Each package marked "This Side Up" must be so stowed;

(6) Any void between packages must be filled with dunnage;

(7) The weight in a container must be distributed throughout as evenly as possible;

(8) Adjacent levels of bagged and baled cargo must be stowed in alternate directions so that each tier binds the tier above and below it.

(9) Packages containing solids must be stowed on top of packages containing liquids.

(10) The lading must be contained entirely within the inter-modal container or vehicle body without overhang or projection. No open-bed container or vehicle is permitted to carry hazardous materials unless it is equipped with a means of properly securing the lading.

(b) Hazardous material in a highway vehicle may be carried only on board a trailership, ferry vessel or a carfloat.

(c) Hazardous material in a railroad vehicle may be carried only on board a trainship, railroad car ferry or a carfloat.

(d) Railroad and highway vehicles or inter-modal containers equipped with heating or refrigeration equipment, may be operated on board vessels. Such equipment may not be operated in the same hold or compartment with nor within a distance of 80 feet "on deck" of any inter-modal container, portable tank, railroad or highway vehicle containing flammable liquids or gas or stowage of these hazardous materials. Any heating or air conditioning equipment having a fuel tank containing a flammable liquid or gas must be stowed "on deck" only. Any equipment electrically powered and designed to operate within an environment containing flammable vapors may be operated under deck in a hold or compartment containing a flammable liquid or gas.

(e) A highway vehicle or railroad vehicle, loaded with any hazardous material which is required to be stowed on deck by § 172.101 of this subchapter, may be stowed one deck below the weather deck when transported on a trainship or trailership which is unable to provide "on deck" stowage because of the vessel's design. Otherwise, this transport vehicle or container must be transported "on deck."

(f) Each transport vehicle, inter-modal container, and portable tank must be placarded in accordance with the requirements of subpart F of part 172 of this subchapter.

(g) A hazardous material may be carried on board a vessel in a portable tank subject to the following conditions:

(1) The material must be in proper condition for transportation according to the requirements of this subchapter;

(2) A portable tank may not exceed 20,000 pounds gross weight;

(3) A loaded portable tank must be stowed on deck unless it contains only ORM or corrosive materials;

(4) ORM or corrosive materials must be stowed as permitted in column (7) of the List of Hazardous Materials (§ 172.101 of this subchapter).

§ 176.77 Stowage of barges containing hazardous materials aboard barge-carrying vessels.

(a) Barges containing hazardous materials may be stowed aboard barge-carrying vessels.

(b) Barges which contain hazardous materials for which only "on deck" stowage is permitted must be stowed above the weather deck and be vented to the atmosphere.

(c) Barges which contain hazardous materials for which both "on deck" and "below deck" storage is permitted may be stowed above or below the weather deck.

§ 176.78 Use of power-operated industrial trucks aboard vessels.

(a) Only power-operated industrial trucks complying with the requirements of this section may be used in any space containing a hazardous material. When the term "truck" is used in this section, it means power-operated industrial truck.

(b) Each truck must have a specific designation of Underwriter's Laboratories or Factory Mutual Laboratories. Any repair or alteration to a truck must be equivalent to that required on the original designation.

(c) *Description of designations.* Description of recognized testing laboratory-type designations are as follows:

(1) An "E" designated unit is an electrically-powered unit that has minimum acceptable safeguards against inherent fire hazards.

(2) An "EE" designated unit is an electrically-powered unit that has, in addition to all the requirements for the "E" unit, the electric motor and all other electrical equipment completely enclosed.

(3) An "EX" designated unit is an electrically-powered unit that differs from the "E" or "EE" unit in that the electrical fittings and equipment are so designed, constructed, and assembled that the unit may be used in certain atmospheres containing flammable vapors or dusts.

(4) A "G" designated unit is a gasoline-powered unit having minimum acceptable safeguards against inherent fire hazards.

(5) A "GS" designated unit is a gasoline-powered unit that is provided with additional safeguards to the exhaust, fuel, and electrical systems.

(6) An "LP" designated unit is similar to a "G" unit except that it is powered by a liquefied petroleum gas engine instead of a gasoline engine.

(7) An "LPS" designated unit is a unit similar to a "GS" unit except that liquefied petroleum gas is used for fuel instead of gasoline.

(8) A "D" designated unit is a unit similar to a "G" unit except that it is powered by a diesel engine instead of a gasoline engine.

(9) A "DS" designated unit is a unit powered by a diesel engine provided with additional safeguards to the exhaust, fuel, and electrical systems.

(d) *Explosives.* A truck may not be used in a hold or compartment containing explosives without the approval of the Department. In a space in which packaged small arms ammunition without explosive bullets is stowed, an approved power-operated industrial truck (except "E" or "G") may be used when it can be shown to the Captain of the Port that it can be used safely.

(e) *Other hazardous materials.* (1) Only an "EX", "EE", "GS", "LPS", or "DS" truck may be used in a hold or compartment containing flammable liquids, flammable compressed gases, flammable solids, oxidizing materials, organic peroxides, articles of a fibrous nature, or bulk sulfur.

(2) Only a designated truck may be used to handle any other hazardous material not covered in paragraph (d) or paragraph (e)(1) of this section.

(f) *Minimum safety features.* In addition to the construction and design safety features required, each truck must have at least the following minimum safety features:

(1) Each truck must be equipped with a warning horn, whistle, gong, or other device that may be heard clearly above normal shipboard noises.

(2) When a truck operation may expose the operator to danger from a falling object, the truck must be equipped with a driver's overhead guard. When the overall height of a truck with forks in the lowered position is limited by head room the overhead guard may be omitted.

NOTE: This overhead guard is only intended to offer protection from impact of small packages, boxes, bagged material, etc., representative of the hazards expected to be encountered.

(3) Each fork lift truck which handles small objects or unstable loads must be equipped with a vertical load back rest or rack which must have height, width, and strength sufficient to prevent any load, or part of it, from falling toward the mast when the mast is in a position of maximum backward tilt.

(4) The forks on a fork lift truck must be secured to the carriage so that unintentional lifting of the toe may not occur on such application where this lifting may create a hazard. The factor of safety of the forks must be at least 3 to 1, based on the elastic limit (yield point) of the material.

(5) Each fork extension or other attachment must be secured to prevent unintentional lifting or displacement on primary forks.

(6) Each exposed wheel must be provided with a guard to prevent the wheel from throwing any material that may strike the operator.

(7) Unless the steering mechanism is a type that prevents road reactions from causing the steering handwheel to spin, a mushroom type steering knob must be used to engage the palm of the operator's hand, or the steering mechanism must be arranged in some other manner to prevent injury. The knob must be mounted within the perimeter of the wheel.

(8) All steering controls must be con-

fined within the clearances of the truck or guarded so that movement of the controls will not result in injury to the operator when passing obstructions, stanchions, etc.

(g) *Special operating conditions.* (1) A truck may not be used on board a vessel unless prior notification of its use is given to the master or senior deck officer on board.

(2) When any truck is in use on board a vessel subject to the regulations in this part, it must be in a safe operating condition as determined by the master or senior deck officer on board.

(3) Any truck that emits sparks or flames from the exhaust system must immediately be removed from service and may not be returned to service until the cause for these sparks or flames has been eliminated.

(4) A truck may not be operated on a vessel when the temperature of any part of the truck is found to be in excess of a safe operating temperature.

(5) Motors of all trucks must be shut off immediately whenever an emergency condition arises aboard a vessel.

(6) Motors of all trucks must be shut off immediately when a breakage or leakage of packages containing flammable liquids or gases, flammable solids, oxidizing materials, or organic peroxides occurs or is discovered.

(7) The rate capacity of a truck must be posted on the truck at all times in a conspicuous place. This capacity may not be exceeded.

(8) At least one approved two-pound dry chemical portable fire extinguisher, or its approved equivalent, must be affixed to the truck in a readily accessible position or must be kept in close proximity available for immediate use.

(9) Vessel's fire-fighting equipment, both fixed (where installed) and portable, must be kept ready for immediate use in the vicinity of the space being worked.

(h) *Refueling.* (1) A truck using gasoline as fuel may not be refueled in the hold or on the weather deck of a vessel unless a portable non-spilling fuel handling system of not over five gallons capacity is used. Gasoline may not be transferred to a portable non-spilling fuel handling device on board the vessel.

(2) A truck using liquified petroleum gas as fuel may not be refueled in the hold or on the weather deck of a vessel unless it is fitted with a removable tank and the hand-operated shut-off valve of the depleted tank is closed. In addition, the motor must be run until it stalls from lack of fuel before the quick disconnect fitting may be attached to the fuel tank and the hand-operated shut-off valve is reopened.

(3) A truck using diesel oil as fuel may not be refueled on the weather deck or in the hold of a vessel unless a portable container of not over a five-gallon capacity is used. A truck may be refueled or a portable container may be refilled from a larger container of diesel fuel on the weather deck of a vessel if a suitable pump is used for the transfer operation and a drip pan of adequate size is used to prevent any dripping of fuel on the deck.

(4) Refueling must be performed under the direct supervision of an experienced and responsible person specifically designated for this duty by the person in charge of the loading or unloading of the vessel.

(5) Refueling may not be undertaken with less than two persons specifically assigned and present for the complete operation, at least one of whom must be experienced in using the portable fire extinguishers required in the fuel area.

(6) At least one approved four-pound dry chemical portable fire extinguisher, or its approved equivalent, must be provided in the fueling area. This is in addition to the extinguisher required by paragraph (g) (8) of this section.

(7) The location for refueling trucks must be designated by the master or senior deck officer on board the vessel. "No Smoking" signs must be posted in the area and smoking must be prohibited.

(8) The location designated for refueling must be adequately ventilated to ensure against accumulation of any hazardous concentration of vapors. When trucks are being refueled, the ventilation requirements of § 176.79 apply.

(9) Before any truck in a hold is refueled or before any fuel handling device or unmounted liquefied petroleum gas cylinder is placed in a hold, motors of all trucks in the same hold must be stopped.

(10) All fuel handling devices and unmounted liquefied petroleum gas containers must be removed from a hold before any truck motor is started and the trucks are placed in operation in that hold.

(i) *Replacing batteries.* Batteries for electrically powered trucks and for the ignition systems of internal combustion powered trucks may be changed in the hold of a vessel subject to the following conditions:

(1) Only suitable handling equipment may be employed.

(2) Adequate precautions must be taken to avoid damage to the battery, short circuiting of the battery, and spillage of the electrolyte.

(j) *Charging of batteries.* Batteries of electrically powered industrial trucks may be recharged in a hold of a vessel provided the following conditions are met.

(1) The batteries must be housed in a suitable, ventilated, portable metal container with a suitable outlet at the top for connection of a portable air hose, or must be placed directly beneath a suitable outlet at the top for connection of a portable air hose. The air hose must be permanently connected to an exhaust duct leading to the open deck and terminate in a gooseneck or other suitable weather head. If natural ventilation is not practicable or adequate, mechanical means of exhaust must be employed in conjunction with the duct. The air outlet on the battery container must be equipped with an interlock switch so arranged that the changing of battery can not take place unless the air hose is properly connected to the box.

(2) If mechanical ventilation is used, an additional interlock must be provided between the fan and the charging circuit so that the fan must be in operation in order to complete the charging circuit for operation. It is preferable that this interlock switch be of a centrifugal type driven by the fan shaft.

(3) The hold may not contain any hazardous materials.

(4) The charging facilities may be part of the truck equipment or may be separate from the truck and located inside or outside the cargo hold. The power supply or charging circuit (whichever method is used) must be connected to the truck by a portable plug connection of the break-away type. This portable plug must be so engaged with the truck battery charging outlet that any movement of the truck away from the charging station will break the connection between the plug and receptacle without exposing any live parts to contact with a conducting surface or object and without the plug falling to the deck where it may become subject to injury.

(5) All unmounted batteries must be suitably protected or removed from an area in the hold of the vessel before trucks are operated in that area.

(k) *Stowage of power-operated industrial trucks aboard a vessel.* (1) Trucks may be stowed in any location aboard a vessel subject to the following conditions:

(i) Each gasoline-powered truck must have all the fuel expended from the fuel system.

(ii) Each liquefied petroleum gas-powered truck must have the fuel tank removed and all the fuel expended from the fuel system.

(2) Trucks not meeting the conditions set forth in paragraph (k)(1) of this section must be stowed on the open deck except for intervals such as lunch hours, between work shifts, and interdock and intraport movements. If a truck is stowed in a fixed metal enclosure located on or above the weather deck, this enclosure must have access from the weather deck only and must have adequate ventilation arranged to remove vapors from both the upper and lower portions of the space.

(l) *Packaging and stowage of fuel aboard a vessel.* (1) Packaging. Flammable liquids and gases to be used as fuels for trucks must be packaged in DOT specification containers, A.S.M.E. containers, or portable safety containers approved by a recognized testing laboratory and authorized for the contents.

(2) *Marking and Labeling.* Each container of flammable liquid or flammable gas must bear the appropriate DOT label.

(3) *Stowage.* Each container must be stowed on or above the weather deck as designated by the master except as follows:

(i) DOT specification container, A.S.M.E. containers, or portable safety containers approved by a recognized testing laboratory may be stowed below decks in a paint locker when the container does not exceed a five-gallon capacity.

(ii) Diesel fuel may be stowed in any location designated by the master.

§ 176.79 Spaces exposed to carbon monoxide or other hazardous vapors.

Each space exposed to carbon monoxide or other hazardous vapors from exhausts or power-operated industrial trucks must have adequate ventilation. The senior deck officer shall ensure that a test of the carbon monoxide content of the atmosphere is made as frequently as conditions require to detect the presence of any dangerous concentration of vapors. This test must be made by a person acquainted with the test equipment and procedure in the area in which persons are working. The carbon monoxide concentration in any hold or intermediate deck where any person is working must not exceed 50 parts per million (0.005 percent) as a time-weighted average. Persons must be removed from the hold or intermediate deck if the concentration exceeds 75 parts per million (0.0075 percent). Portable blowers of adequate size and location may be used to prevent accumulation of vapors.

Subpart D—General Segregation Requirements

§ 176.80 Application.

The segregation requirements in this section apply in addition to any prescribed elsewhere in this subchapter.

§ 176.83 Segregation requirements for cargo vessels and passenger vessels.

(a) The following table (Table 176.83 (a)) shows the category of explosives which may not be loaded or stowed together within the same hold or cargo space. The letter X at an intersection of a horizontal and vertical column indicates that these categories may not be stowed together in the same hold or cargo space.

TABLE 176.83(a).—SEGREGATION CHART OF EXPLOSIVES

The symbol X at an intersection of horizontal and vertical columns shows that these articles must not be loaded or stowed together	Low explosives or black powder	High explosives or propellant explosives, Class A	Initiating or priming explosives, wet; diazodinitrophenol, fulminate of mercury, guanyl nitrosamino guanylidene hydrazine, lead azide, lead styphnate, nitro mannite, nitrosoguanidine, pentaerythrite tetranitrate, tetrazene, lead mononitroresorcinate	Blasting caps, with or without safety fuse (including electric blasting caps) detonating primers[3]	Ammunition for cannon with explosive projectiles, gas projectiles, smoke projectiles, incendiary projectiles, illuminating projectiles or shells, ammunition for small arms with incendiary projectiles; ammunition for small arms with explosive projectiles; rocket ammunition with explosive projectiles; gas projectiles, smoke projectiles, incendiary projectiles, illuminating projectiles[1]; boosters (explosive); bursters (explosive); and supplementary charges (explosive) without detonators[2]	Explosive projectiles; bombs; torpedoes; mines; rifle or hand grenades (explosive); jet thrust units (jato), Class A; igniters, jet thrust, Class A; rocket motors, Class A; igniters, rocket motor, Class A[1]	Detonating fuses, Class A explosives, with or without radioactive components	Ammunition for cannon with empty, inert-loaded or solid projectiles, or without projectiles; rocket ammunition with empty, inert-loaded or solid projectiles	Propellant explosives, class B, jet thrust units (jato), class B; igniters, jet thrust, class B; rocket motors, class B; rocket engines (liquid), class B; igniters, rocket motor, class B; starter cartridges, jet engine, class B	Fireworks, special, or railway torpedoes	Small arms ammunition, or cartridges, practice ammunition	Primers for cannon or small arms, empty cartridge bags—black powder igniters, empty cartridge cases, primed, combination primers or percussion caps, toy caps, explosive cable cutters, explosive rivets	Percussion fuzes, tracer fuzes or tracers	Time, combination, or detonating fuzes Class C explosives	Cordeau detonant fuse, safety squibs, fuse lighters, fuse igniters, delay electric igniters, electric squibs, instantaneous fuse or igniter cord	Fireworks, common
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CLASS A EXPLOSIVES																
1 Low explosives or black powder			X				X			X						X
2 High explosives or propellant explosives, Class A			X	X			X			X						X
3 Initiating or priming explosives, wet; diazodinitrophenol, fulminate of mercury, guanyl nitrosamino guanylidene hydrazine, lead azide, lead styphnate, nitro mannite, nitrosoguanidine, pentaerythrite tetranitrate, tetrazene, lead mononitroresorcinate	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
4 Blasting caps, with or without safety fuse (including electric blasting caps) detonating primers[3]		X	X		X	X				X						X
5 Ammunition for cannon with explosive projectiles, gas projectiles, smoke projectiles, incendiary projectiles, illuminating projectiles or shells, ammunition for small arms with incendiary projectiles; ammunition for small arms with explosive projectiles; rocket ammunition with explosive projectiles, gas projectiles, smoke projectiles, incendiary projectiles, illuminating projectiles[1]; boosters (explosive); bursters (explosive); and supplementary charges (explosive) without detonators[2]			X	X			X			X						X
6 Explosive projectiles; bombs; torpedoes; mines; rifle or hand grenades (explosive); jet thrust units (jato), Class A; igniters, jet thrust, Class A; rocket motors Class A; igniters, rocket motor, Class A[1]			X	X			X			X						X
7 Detonating fuzes, class A explosives, with or without radioactive components		X	X		X	X				X						X
CLASS B EXPLOSIVES																
8 Ammunition for cannon with empty, inert-loaded or solid projectiles, or without projectiles; rocket ammunition with empty, inert-loaded or solid projectiles			X													
9 Propellant explosives, class B, jet thrust units (jato), class B; igniters, jet thrust, class B; rocket motors, class B; rocket engines (liquid), class B; igniters, rocket motor, class B; starter cartridges jet engine, class B			X													
10 Fireworks, special	X	X	X	X	X	X	X									
CLASS C EXPLOSIVES																
11 Small arms ammunition			X													
12 Primers for cannon or small arms, empty cartridge bags, black powder igniters, empty cartridge cases, primed, combination primers or percussion caps, toy caps, explosive cablecutters, explosive rivets			X													
13 Percussion fuzes, tracer fuzes or tracers			X													
14 Time combination or detonating fuzes, class C explosives			X													
15 Cordeau detonant fuse, safety squibs, fuse lighters, fuse igniters, delay electric igniters, electric squibs, instantaneous fuse or igniter cord			X													
16 Fireworks, common, highway fusees or railway fusees	X	X	X	X	X	X	X									

[1] Explosives, class A, and explosives, class B, must not be loaded or stowed with chemical ammunition containing incendiary charges or white phosphorus either with or without bursting charges. Chemical ammunition of the same classification *containing incendiary or white phosphorus may be loaded and stowed together.*

[2] Bursters (explosive), boosters (explosive), or supplementary c arges (explosive) without detonators when shipped by to or for the Departments of the Army, Navy and Air Force of the United States Government may be stowed with any of the articles named, except those in columns 3, 4, 10, 16, 17, 18, 19, 20, 21, 22, 23, and 24.

[3] A minimum distance of 25 feet and a permanent steel bulkhead or deck must *intervene between blasting caps (more than 1000) and any other incompatible* explosive.

(b) Except for ferry vessels, the segregation table (Table 176.83(b)) contains the minimum separation requirements that apply when transporting different classes of hazardous materials on board vessels. The symbols used in the table below mean the following:

(1) "1"—Away from.
(2) "2"—Separated from.
(3) "3"—Separated by a complete cargo space or hold from.
(4) "4"—Separated longitudinally by an intervening complete cargo space or hold from.
(5) "X"—No general segregation specified.
(6) "*"—Consult Table 176.83(a) of this section for segregation requirements between different explosives.

TABLE 176.83(b)

This table shows general requirements for segregation between different hazardous materials classes; but since the properties of specific materials within each class may vary greatly, column (7) of the List of Hazardous Materials (§ 172.101) of this subchapter, for the specific material should always be consulted for additional requirements.

		1	2(a)	2(b)	3	4(a)	4(b)	5(a)	5(b)	6	7	8	9
Explosives	1	(*)	4	2	4	4	4	4	4	2	2	4	X
Flammable compressed gases	2(a)	4		X	2	1	1	2	2	X	2	1	X
Nonflammable compressed gases	2(b)	2	X		2	X	X	2	2	X	1	X	X
Flammable or Combustible liquids	3	4	2	2		1	2	1	3	X	2	1	X
Flammable solids	4(a)	4	1	X	1		1	1	2	X	2	1	X
Flammable solids labeled dangerous when wet	4(b)	4	1	X	2	1		2	2	X	2	1	X
Oxidizing materials	5(a)	4	2	X	1	1	2		2	X	1	2	X
Organic peroxides	5(b)	4	4	2	3	2	2	2		X	2	2	X
Extremely or Highly toxic materials or Irritating materials	6	2	X	X	X	X	X	X	X		X	X	X
Radioactive materials	7	2	2	1	2	2	2	1	2	X		2	X
Corrosive materials	8	4	1	X	1	1	1	2	2	X	2		X
Other regulated (ORM) materials	9	2	X	X	X	X	X	X	X	X	X	X	

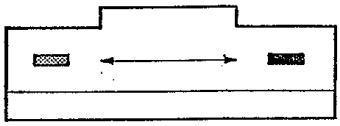
(c) *Definition of terms.* (1) *Legend.*
(i) Reference package . . .

(ii) Incompatible package . . .

(iii) Deck resistant to liquid and fire . . .

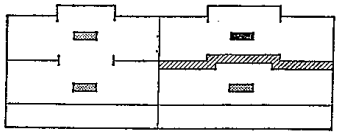
NOTE: Vertical lines represent transverse watertight bulkheads between holds.

(2) *Away from.*
(i) "Away From" means effectively segregated so that materials may not interact dangerously in the event of an accident. These materials may be stowed in the same cargo space, hold, or deck area.



(ii) When the incompatible hazardous materials requiring "away from" separation are in separate inter-modal containers, portable tanks, railroad or highway vehicles, adjacent stowage of such inter-modal containers, portable tanks or vehicles is authorized.

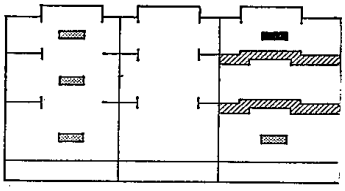
(3) *Separate from.* (i) "Separate From" means in separate holds when stowed "Under Deck." If the intervening deck is resistant to fire and liquid, a vertical separation, i.e. in different cargo spaces, is considered equivalent to this requirement. For "on deck" stowage, "away from" segregation is authorized.



(ii) For railroad or highway vehicles on board trailerships or trainships, separation by an intervening bulkhead or deck is required provided the bulkhead or deck is resistant to fire and liquid. For "on deck" stowage, separate vehicles and a distance of 40 feet are required.

(iii) On barge-carrying vessels, separate barges are required if the barges are constructed of steel. Otherwise separate holds are required.

(4) *Separate by a complete cargo space or hold from.* (i) "Separate by a complete cargo space or hold from" means either a vertical or horizontal separation. If the decks are not resistant to fire and liquid, a longitudinal separation by an intervening complete cargo space is required. For "on deck" stowage this segregation means a separation by a corresponding longitudinal distance.



(ii) For inter-modal containers or portable tanks stored below decks on a containership, "separated from" may be substituted for this segregation.

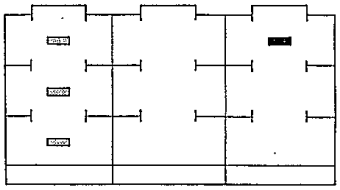
(iii) For barges aboard barge-carrying vessels, the following requirements apply:

(A) For barges loaded on ships having vertical holds, separate barge holds are required.

(B) For barges loaded on ships having horizontal barge levels, separate barge levels are required.

(iv) For highway vehicles or railroad vehicles on trailerships or trainships, a horizontal separation by two intervening bulkheads or vertical separation by two intervening decks is required, provided the decks are resistant to fire and liquid. For "on deck" stowage, separate vehicles and a distance of 65 feet are required.

(5) *Separate longitudinally by an intervening complete cargo space or hold or engine room from.* (i) "Separate longitudinally by an intervening complete cargo space or hold or engine room from" means a horizontal separation by a complete intervening hold (two intervening bulkheads) or engine room. Vertical separation alone does not meet this requirement. For "on deck" stowage, this segregation means a separation by the vessel's bridge or superstructure:



(ii) For highway vehicles or railroad vehicles on trailerships or trainships, separation by two intervening bulkheads is required.

(iii) For barges aboard barge-carrying vessels the following requirements apply:

(A) For barges loaded on ships having vertical holds, separation by an intervening barge hold or engine room is required.

(B) For barges loaded on ships having horizontal barge levels, separate barge levels and a longitudinal separation by at least two intervening barges are required.

(d) A ferry vessel (when operating either as passenger or cargo vessel) which cannot provide for the type of separation required in this part may carry incompatible hazardous materials in separate highway or railroad vehicles if they are stowed to give the maximum possible separation.

Subpart E—Special Requirements for Railroad or Highway Vehicles Loaded With Hazardous Materials and Transported on Board Ferry Vessels

§ 176.88 Application.

The requirements in this subpart are in addition to those contained elsewhere in this subchapter and are applicable when transporting any railroad or highway vehicle aboard a ferry vessel.

§ 176.89 Control of highway vehicle.

(a) The operator or person in charge of a highway vehicle containing a hazardous material, when entering upon or while being transported on any vessel, shall observe the following rules:

(1) Deliver to the vessel's representative a copy of the shipping papers and certificate required by § 176.24 and § 176.27;

(2) Drive the vehicle to the location indicated by the vessel's representative;

(3) Securely set the brakes of the vehicle to prevent movement;

(4) Shut off the motor and do not restart it until the vessel has completed its voyage and docked;

(5) Cut off all vehicle lights and do not relight them until the vessel has completed its voyage and docked;

(6) Remain with the vehicle;

(7) Make no repairs or adjustments to the vehicle while on the vessel; and

(8) Observe any instructions given by the vessel's representative during the voyage, and during "drive on" or "drive off" operations.

(b) Smoking by any person in the vehicle is prohibited.

§ 176.90 Private automobiles.

A private automobile which is carrying any explosive (except permitted fireworks or small-arms ammunition) may not be transported on a passenger-carrying ferry unless the explosive is in compliance with all the requirements of this subchapter for transportation. Other hazardous materials may be carried without the required packing, labeling, marking, or certification if they are in tight containers.

§ 176.91 Motorboats.

In a motorboat, gasoline may be transported in the tank and two other containers not exceeding six-gallon capacity each if they are closed and in good condition.

§ 176.92 Cylinders laden in highway vehicles.

Any cylinder of compressed gas which is required to have a valve protection cap fitted in place may be transported on board a ferry vessel without having the valve protection cap in place when it is laden in a highway vehicle and is not removed from the vehicle while on the vessel.

§ 176.93 Vehicles having refrigerating or heating equipment.

(a) Any vehicle fitted with refrigerating or heating equipment using a flammable liquid or gas, or diesel oil as fuel, may be transported on a ferry vessel. This refrigerating or heating equipment may be operated while the vehicle is on the vessel, if the installation is in compliance with the following requirements:

(1) The installation is rigidly mounted and free of any movement other than normal vibration in operation;

(2) An easily accessible shut-off control is fitted to the fuel and electrical supply of the refrigerating or heating equipment; and

(3) The fuel storage tank, the fuel lines, the carburetor or any other fuel device are tight and show no signs of leakage.

(b) If the vehicle operator desires to operate the refrigerating or heating equipment while on the vessel and this equipment is not fitted with automatic starting and stopping devices, it must be started before the vehicle is taken on board. It may continue in operation while the vehicle is on the vessel, but if the motor stops it may not be restarted.

(c) Vessels on voyages exceeding thirty minutes duration shall provide a stowage for vehicles having refrigerating or heating equipment operated by internal combustion engines as well permit ready diffusion of exhaust gases to the open air. Passenger vehicles shall not be stowed in a position adjacent to vehicles operating internal combustion motors as would expose the occupants thereof to excessive concentrations of exhaust fumes from such motors.

(d) Each railroad or highway vehicle containing solid carbon dioxide as a refrigerant, must be stowed in a well ventilated location.

Subpart F—Special Requirements for Barges

§ 176.95 Application.

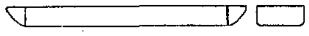
The requirements in this subpart must be followed in addition to any prescribed elsewhere in this subchapter.

§ 176.96 Barges classified.

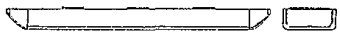
(a) For the purpose of the regulations in this subchapter, barges are classified as follows:

CLASS "A" BARGES

AA Hull constructed of steel or wood, completely decked over and transporting cargo "On deck" only.

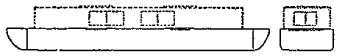


AB Hull constructed of steel or wood, completely decked over, fitted with cargo hatches, ceiled holds, and capable of transporting cargo "Under deck" or "On deck."



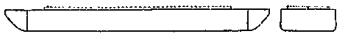
AC Hull constructed of steel or wood, completely decked over with superstructure house covering the deck and fitted with cargo hatches or cargo doors, and capable of transporting cargo "On deck," "Under deck" in ceiled holds, or "On deck within the house."

AD Hull constructed of steel or wood, completely decked over, fitted with cargo hatches, with or without superstructure house covering the deck, and capable of transporting cargo "On Deck" or "On deck within the house," or "Under deck," having holds that are not ceiled.

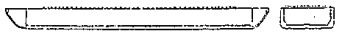


CLASS "B" BARGES

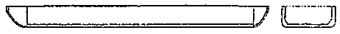
BA Hull constructed of steel or wood with partial decks at the ends or sides, fitted with hatches with or without coamings, having ceiled holds and transporting cargo "Under deck" only.



BB Hull constructed of steel or wood with partial decks at the ends or sides, with open ceiled hold or holds.

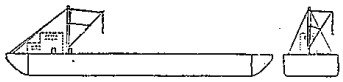


BC Hull constructed of steel or wood with partial decks at the ends or sides, with or without hatches, and having hold or holds without ceiling.



CLASS "C" BARGES

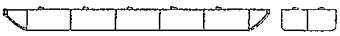
CA Hull constructed of steel or wood, completely decked over and transporting cargo "On deck" only, fitted with cargo mast and boom, and machinery for cargo handling, with or without house or houses on deck.



CB Hull constructed of steel or wood, completely decked over, having cargo hatches in deck, and transporting cargo "On deck" or "Under deck," fitted with cargo mast and boom and machinery for cargo handling, with or without house or houses on deck.

CLASS "D" BARGES

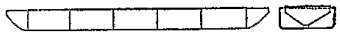
DA Hull constructed of steel having division bulkheads forming tight compartments (tanks) integral with the hull of the barge, to be utilized for the transportation of bulk liquid hazardous materials other than flammable or combustible liquids.



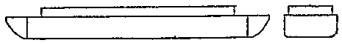
DB Hull constructed of wood having division bulkheads and ceiling, forming tight compartments integral with the hull of the barge, to be utilized for the transportation of bulk hazardous materials other than liquids.

CLASS "E" BARGES

EA Hull constructed of steel or wood, having cargo carrying compartments of hopper type and fitted with bottom dump or side dump (known as dump scows, mud scows, garbage scows, etc.).



EB Barge constructed of wood completely decked and having boxlike structure on deck, not roofed over.



(b) The term "ceiled" applied to a barge constructed of wood means the hold space is fitted with a tight plank floor and that tight planking or wooden cargo battens are carried up the sides of the hold to provide a smooth floor and reasonably smooth sides without any unnecessary projections. Floors or siding fitted "tight" must have removable sections for cleaning and access for inspection of hull. When cargo battens are fitted at the sides, the floor must be carried out to the skin of the barge and fitted reasonably tight around the frames.

(c) When applied to a barge constructed of steel, the term "ceiled" means the construction must provide a reasonably flush floor or tank top and rise free from any unnecessary projections within the cargo space. Tight wooden flooring and ceiling or battens may be fitted in the cargo spaces of a steel barge in place of steel platings.

§ 176.98 Stowage of explosives.

Explosives required by the regulations in this subchapter to be stowed in magazines must, when on board barges as cargo, be stowed either in a house or "under deck" when permitted for the particular type of barge by table 176.99.

§ 176.99 Barges permitted to carry hazardous materials.

(a) Table 176.99 outlines what class of barges described in § 176.96 may carry hazardous materials.

	Class A barge				Class B barge			Class C barge		Class D barge		Class E barge	
	AA	AB	AC	AD	BA	BB	BC	CA	CB	DA	DB	EA	EB
Explosives	Yes	Yes	Yes	On deck only.	Yes	Yes	No	No	No	No	No	No	No.
Flammable liquids	Yes [1]	Yes [2]	Yes	On deck only.[1]	Yes	Yes [1]	No	Yes [1]	Yes [2]	No [4]	No	No	No.
Flammable solids, oxidizing materials and organic peroxides.	Yes [1,4]	Yes [2,5]	Yes	No	Yes	No	No	Yes [1]	Yes [5]	Yes	Yes	No	No.
Corrosives	Yes, also bulk in tanks.[6]	Yes, also bulk in tanks.[3]	Yes, also bulk in tanks.[3]	No, except bulk in tanks.[3]	Yes, also bulk in taks.[6]	Yes, also bulk in tanks.[3]	No, except bulk in tanks.[3]	Yes [1]	Yes [2]	Yes	No	No	No.
Flammable compressed gases.	Yes	On deck only.	Yes [7]	On deck only.	No	No	No	Yes	On deck only.	No	No	No	No.
Nonflammable compressed gases.	Yes	Yes	Yes	On deck only.	Yes	Yes	No	Yes	Yes	No	No	No	No.
Extremely toxic, highly toxic and irritating substance.	Yes [1]	Yes [2]	Yes	On deck only.[1]	Yes	Yes [1]	No	Yes [1,4]	Yes [2,5]	No	No	No	No.
Radioactive materials.	Yes [1]	Yes [2]	Yes	On deck only.[1]	Yes	Yes [1]	No	Yes [1,4]	Yes [2,5]	No	No	No	No.
Other regulated materials.	Yes [1,4]	Yes [2]	Yes	On deck only.[1,4]	Yes	Yes [1,4]	No, except bulk in tanks.[6]	Yes [1,4]	Yes [2,4]	Yes	Yes, except liquids.	No	Yes.

[1] Outside containers vulnerable to damage by water may not be given this stowage.
[2] Outside containers vulnerable to damage by water must be stowed under deck only.
[3] Outside containers vulnerable to damage by water must be stowed under cover only.
[4] Substances affected by water may not be given this stowage.
[5] Substances affected by water must be stowed under deck only.
[6] Substances affected by water must be stowed under cover only.
[7] Stowage must be "on deck in house" only.
[8] Transportation of flammable or combustible liquids, in bulk, is governed by rules and regulations for tank vessels.
[9] Transportation of certain hazardous materials in bulk is governed by the rules and regulations contained in Subchapter O of Chapter I of Title 46 Code of Federal Regulations.

NOTE.—Any container of hazardous materials vulnerable to damage by water or hazardous materials affected by water, when loaded in a weatherproof railroad vehicle in accordance with requirements of this subchapter, is exempt from the stowage restrictions shown in this Table and numbered (1) to (7), inclusive.

Subpart G—Detailed Requirements for Explosives

§ 176.100 Permit for Class A explosives.

(a) Each carrier must obtain a permit from the District Commander or his authorized representative before any shipment of Class A explosives (see 33 CFR 126.17) is discharged from, loaded on, handled, or restowed aboard any vessel at any place in the United States, its territories, or its possessions (except Panama Canal Zone). Exceptions to this permit requirement may be given only by the District Commander or his authorized representative.

(b) The request for the permit must include a stowage plan of all explosives and other hazardous materials comprising the cargo including a copy of the certificate required by § 176.27.

§ 176.105 Loading and unloading explosives.

(a) Unless a vessel is loading at an intermediate port or at the port of destination, Class A or Class B explosives (except special fireworks), may not be loaded until all other cargo has been loaded on board the vessel. At an intermediate port or at the port of destination, no explosives may be loaded or unloaded at the same time that other cargo is being loaded or unloaded.

(b) All explosives must be handled carefully. Packages of explosives may not not be thrown, dropped, rolled, dragged, or slid over each other or over a deck.

(c) Packaged Class A explosives must be loaded and discharged from a vessel by using a chute as provided for in § 176.-163 or by a mechanical pallet, skipboard, tray or pieplate, fitted with a cargo net or sideboards. A stuffed mattress at least 4 feet wide by 6 feet long and not less than 4 inches thick, or a heavy jute or hemp mat of these dimensions, must be used for depositing explosives lifted by mechanical means or slid on a chute. The maximum load handled in a pallet, skipboard, tray, or pieplate may not exceed 2,400 pounds plus 10 percent. A rope net sling with a pallet, skipboard, pieplate or similar base must be loaded so that a minimum displacement of items occurs when it is lifted; the cargo net must completely encompass the bottom and sides of the load. Not more than one third of the vertical dimension of any package may extend above the sideboard of a tray. A landing mattress and cargo net is not needed for palletized Class A explosives.

(d) Blasting caps, detonating fuzes, fulminate of mercury, and other initiating or priming explosives defined in this subchapter constitute a distinct type of explosive. They must be handled with extreme care. A chute and mattress may not be used when loading or discharging this type of explosive.

(e) A "can" hook may not be used for raising or lowering a barrel, drum, or other container of explosives.

(f) A fire hose of sufficient length to cover the area of the loading operation and connected with an adequate water supply must be ready for use.

§ 176.110 Condition of package.

A package of an explosive which is damp, moldy, stained or in any condition that indicates leakage may not be accepted for transportation. The shipper

must substantiate any claim that a stain is due to accidental contact with grease, oil, or a similar substance. In case of doubt, the package may not be transported.

§ 176.115 On deck stowage of explosives.

(a) The following requirements apply to the stowage of any explosive on deck:

(1) An explosive may not be stowed on or under a bridge deck; and

(2) An explosive may not be stowed nearer than 25 feet in a horizontal plane to the access to any crew's quarters.

(b) Each vessel engaged in transporting explosives on deck between receiving points and delivery points within the harbors, bays, sounds, lakes and rivers including explosive anchorage must cover the explosive with a fire-resistant or flame proof tarpaulin securely lashed in place.

§ 176.120 Preparation of decks, gangways, hatches, and cargo ports.

(a) All decks, gangways, and hatches over or through which explosives must be passed or handled in loading or unloading must be freed of all loose material and must be swept broom clean before and after loading or unloading.

(b) All hatches and cargo ports opening into a compartment in which any explosives are stowed must be kept closed, except during loading or unloading of the compartment. After loading, hatches must be securely closed against the weather. If tarpaulins are used, they must be securely battened.

§ 176.125 Handling over deck loads.

A deck load over which explosives must be passed may not exceed the height of the hatch coaming, bulwark, or three feet, whichever is greater.

§ 176.130 Securing and dunnaging of packages of explosives.

(a) All packages of explosives must be secured and dunnaged to prevent movement in any direction.

(b) Each keg of black powder must be stored in an upright position with the bungs up and each tier must be completely dunnaged.

(c) The top tier of explosives must be secured so that upward or lateral displacement of any package may not occur.

(d) All packages of explosives must be braced and dunnaged so that they are not likely to be pierced by the dunnaging or crushed by any superimposed weight.

§ 176.135 Location of magazines.

(a) Each magazine must be located in a hold, preferably a 'tween deck hold, that is dry and well ventilated. It must not be located in horizontal proximity to crew or passenger accommodations nor below their living spaces. A magazine may not be built on or under the principal bridge structure or any navigation spaces. Except for inspection purposes, the hold or compartment in which a magazine is constructed must be closed off to all traffic after the explosives are stowed.

(b) A magazine may not be constructed contacting a collision bulkhead or a bulkhead forming a boiler room, engine room, coal bunker or galley boundary unless there is no practicable alternative. If it is necessary to construct a magazine contacting one of these bulkheads, a cofferdam space of at least one foot must be provided between the permanent bulkhead and the magazine bulkhead. This cofferdam space must remain open to the free circulation of air and may not be used for stowage or storage purposes.

(c) When a magazine is constructed over a 'tween deck hatch, the hatch girders or strongbacks and the hatch covers forming the 'tween deck hatch must be of a design and size to carry the imposed load with safety. Covers of the 'tween deck and over-deck hatch must completely close the hatch opening and fit securely in place. 'Tween deck hatch covers of wood forming the base of a magazine must be completely covered with asbestos board at least ¼ inch thick, fitted tight at the sides of the magazine. The joints of the asbestos board must be staggered midway between the joints formed by the wooden hatch covers; this magazine must be constructed in accordance with the applicable provisions of § 176.138, except that the asbestos board must be completely covered with wood dunnage. No metal structural parts may protrude within any magazine. If the stowage of explosives extends into the over-deck hatch coaming, this coaming must be sheathed with wood. A magazine located in a hatchway may be constructed to occupy only a part of the hatchway. A portable magazine may be stowed in the square of a hatchway; it must be lashed or tommed to prevent movement.

(d) Any construction and location of a magazine for the stowage of explosives other than as provided in this part may be authorized only by the Department.

§ 176.138 Construction of magazines.

(a) All magazine construction, or other conditioning of holds, deck, or hatches, must be completed before the actual loading of explosives is initiated.

(b) The following requirements must be observed in the construction of a magazine for stowage of explosives requiring magazine stowage:

(1) Each magazine must be constructed of steel or wood;

(2) Each magazine constructed of steel must have the interior completely protected by wood sheathing not less than ¾ inch thick to form a smooth surface, free of any projections. All metal stanchions within the magazine must be boxed with wood not less than ¾ inch thick. When the floor of a magazine would be on a steel deck or tank top, a floor of wood not less than 1¼ inch commercial lumber, constructed on bearers, must be installed. This floor may be portable, but must be tight to prevent movement;

(3) Each magazine constructed of wood must have the bulkheads forming the sides and ends constructed of 1-inch lumber, of ¾-inch tongue and groove sheathing, or of ¾-inch plywood, secured to uprights of at least 3 by 4-inch size, spaced not more than 18 inches apart and secured at top, bottom and center with horizontal bracing. When ¾-inch plywood is used, the upright may be spaced on 24-inch centers. Uprights may not be stepped directly to a metal deck. A 2 by 4-inch bearer to carry the uprights must be laid upon the metal deck. A 2 by 4-inch header must be fitted against the underside of the overhead deck to receive the top of the uprights. Top of uprights fitted against channel beams may be wedged directly to the beam with 2 by 4-inch spacers fitted between. Upright framing must be secured so that nails do not penetrate the interior of the magazine. When a magazine is constructed as a permanent compartment in a vessel, increased size and finish of lumber and other methods of fastening may be used, provided all fastenings are recessed below the surface of the boarding to avoid any projections within the interior of the magazine. All boarding must be fitted and finished to form a smooth surface within the interior of the magazine. The construction must separate all containers of explosives from contact with metal surfaces of the structures of the vessel. When a metal stanchion, post, or other obstruction is located in the interior area of the magazine, this obstruction must be completely covered with wood at least ¾-inch thick secured with nails or screws. All screws or nails used in the interior of the magazine for fastening must be countersunk below the surface of the wood. Flooring of each magazine must be not less than 1¼-inch commercial lumber, constructed on bearers. This floor may be portable but must be tight to prevent movement. Each door of a magazine must be of substantial construction, fitted reasonably tight in its jamb, and provided with a locking method of a tamper-proof type. The door must be easily accessible;

(4) Plywood 5/16-inch thick may be used if the bulkheads forming the sides of a magazine are to be constructed directly against the ship's side and battens are fitted, and if the plywood is securely fastened to vertical furring strips of not less than 1 by 3-inch material, spaced not more than 18 inches apart;

(5) A magazine constructed in accordance with the provisions of paragraph (b) (2) and (3) of this section, in which it is proposed to stow containers of explosives within 12 inches of the overdeck beams or hatch coaming must have such deck beams and coaming sheathed with wood as prescribed by the provisions of paragraph (b) (2) of this section for stanchions; and

(6) When a Class A explosive magazine exceeds 40 feet in any direction, a partition bulkhead must be fitted in the magazine as near half length as practicable, extending from the deck to at least the top of the stowage. This partition bulkhead must be constructed to the same scantlings as the sides of the magazine, except the boardings may be spaced not more than 6 inches apart alternately on both sides of the uprights. Nail points may not protrude beyond the surface of any boarding. The bulkhead must be

constructed before loading commences. This bulkhead is not required when the explosives are palletized.

§ 176.141 Entire hold forming magazine.

When a complete compartment or hold is used for the stowage of explosives requiring magazine stowage, the entire compartment may be considered a magazine. Any frames or bulkhead stiffeners protruding into the compartment must be effectively sheathed to provide a smooth surface. Overdeck beams need not be sheathed when the explosives are stowed more than twelve inches from these beams. If explosives are stowed up to the overdeck beams and in the square of the hatch formed by the coaming, these overdeck beams, including the hatch coaming, must be effectively sheathed. The installation of sheathing must be in accordance with the specifications for the construction of a magazine; however, when cargo battens are fitted to the vessel's shell or a bulkhead forming part of the hold, this sheathing may be secured vertically to the battens.

§ 176.144 Ventilation of magazines.

Each magazine must be efficiently ventilated. Each cowl ventilator "on deck" opening must be covered with a minimum 30x30 mesh wire screen, if it leads into a magazine or to an area in the same hold immediately adjacent to a magazine. A magazine which occupies only a portion of a hold, and is not fitted with a ventilator entering into the magazine, must be constructed to leave an open space of not more than one inch below the overdeck frame.

§ 176.147 Metal lockers for stowage of fireworks.

(a) A metal locker for the stowage of special fireworks which are permitted to be accepted and transported on board passenger vessels must meet the following specifications:

(1) *Size.* The cubic capacity of a locker may not exceed 150 cubic feet.

(2) *Division.* Any locker exceeding 5 feet in height must be fitted with a division shelf at about ½ height constructed to carry the imposed load without deflection.

(3) *Gage.* The thickness of steel used in the construction of any locker may not be less than 16 gage steel.

(4) *Type of construction.* Each locker must have a completely smooth interior surface. No stiffener element may project beyond any interior surface. Each locker must be fitted with a top and bottom closure unless it is "built in" to the structure of the vessel with the overdeck and underdeck forming the top and botton of the locker. "Built in" construction when the overdeck or underdeck is of wood is not authorized.

(5) *Closures.* Closures may be the removable plate or hinged door type if the locker is flame tight when closed. A locker having a portable plate closure must have an accessible side opening to permit insertion of a fire hose nozzle for flooding. This opening must be at least 3 inches in diameter, not more than 12 inches below the top of the locker, and fitted with a metal flap cover to preserve the flame tight requirement.

(6) *Location.* Each locker must be readily accessible from a companionway or cargo hatch. In vessels constructed of wood, each locker must be easily observable by a watchman on his rounds. Each locker must be secured to prevent shifting in a seaway.

§ 176.150 Portable magazines for stowage of explosives.

(a) A portable magazine used for the stowage of explosives must meet the following requirements:

(1) It must be constructed watertight of wood or of metal lined with wood at least ¾-inch thick. No more than 100 cubic feet plus 10 percent of explosives (gross) may be stowed therein.

(2) All inner surfaces must be smooth and free of any protruding nails, screws, or other projections.

(3) When constructed of wood, the scantlings and arrangement must be not less than those required by § 176.138. Each magazine must be provided with a strong, close-fitting, hinged cover or door with hasps and padlock.

(4) When constructed of metal, the metal must not be less than ⅛-inch thick.

(5) Runners, bearers, or skids must be provided to elevate the magazine at least 4 inches from the deck. Pad eyes, ring bolts, or other suitable means must be provided for securing. Each magazine must be lashed, chocked, or braced to prevent movement in any direction.

(6) Each magazine must be stowed in the square of a 'tween deck hatch unless another stowage is authorized by § 176.155.

(7) A portable magazine may be used for the stowage of explosives exceeding 100 cubic feet plus 10 percent (gross) under such conditions of construction, handling, and stowage that meet the approval of the Department.

(8) Each portable magazine must be marked on the top and four sides, in letters at least 3 inches high, as follows: "EXPLOSIVES—HANDLE CAREFULLY—KEEP LIGHTS AND FIRE AWAY."

§ 176.155 Stowage of small quantities of explosives.

(a) The District Commander may approve the stowage of small quantities of explosives in a location other than "under deck," such as in an isolated compartment, mast or deck house, or in a magazine (which may be portable) secured "on deck" if:

(1) No other stowage is available;

(2) The compartment or stowage area is sheathed with wood;

(3) The boundary of the compartment or magazine is at least 8 feet from the vessel's side; and

(4) The boundary of the explosives stowage area is separated from other incompatible explosives and other hazardous materials by at least one permanent steel deck or bulkhead and a distance of 25 feet or by at least two steel decks or bulkheads and a distance of 10 feet. An intervening steel deck or bulkhead is not required on deck if the separation distance between these materials is not less than 40 feet in any direction.

§ 176.156 Stowage of explosives with combustible liquids.

Class A or B explosives may not be stowed in the same hold or compartment with combustible liquids.

§ 176.157 Stowage of explosives in holds containing coal.

An explosive may not be stowed in a hold containing coal, nor may any explosive be stowed in a hold above or adjacent to a hold containing coal.

§ 176.158 Stowage of explosives with fireworks.

Fireworks may not be stowed in the same hold in which magazines containing explosives are loaded.

§ 176.159 Stowage of explosives and nondangerous cargo.

Each magazine in which explosives are stowed must be protected from damage which may be caused by any heavy cargo stowed in the same hold. When any shafting, steel bar, pipe, heavy machinery, or similar type of cargo is stowed in the same hold with explosives, it must be isolated, dunnaged, or secured to prevent damage to the magazine under any conditions likely to be encountered during the voyage.

§ 176.163 Requirements of equipment for handling explosives.

(a) A chute for loading and unloading explosives must be constructed of smooth planed boards not less than one-inch thick with side guards of the same material at least 4 inches high. Only brass screws may be used to assemble the sides and bottom. D-shaped wooden strips or runners not more than six inches apart and running lengthwise of the chute must be fastened to the upper surface of the slide by glue and wooden dowels extended through the bottom of the chute. No metal may protrude beyond the inner face of the chute. Four lashing rings must be provided, one at each outside corner of the chute, for purposes of securing during use.

(b) A roller conveyor constructed of aluminum or other non-sparking material may be used for loading or unloading explosives. The conveyor must be grounded when in use.

(c) A powered conveyor may be used only after the design, construction, and specifications have been approved by the Department.

(d) Before any explosives are loaded or unloaded from a vessel, the master or other person in charge of the vessel must examine the condition and working order of all slings, crates, baskets, boxes, chutes, mattresses, tackle and other equipment to be used in the transfer operation.

(e) Any equipment which in the judgment of the master or other person in charge of the vessel is not in a safe working condition must be rejected. He shall prohibit its use and take the precautions necessary to ensure this rejected equip-

ment is not used to load or unload explosives. The master or other person in charge of the vessel shall ensure that all equipment used in the handling of explosives is in good working order. If any part of the equipment shows any defect or is damaged in use, work must be stopped immediately and the damaged or defective equipment repaired or replaced before permitting the loading or unloading to continue.

(f) This inspection of cargo working equipment applies to the vessel's equipment and to stevedore's or other contractor's equipment.

§ 176.165 Installation of loading chute and roller conveyor.

The incline of the chute or roller conveyor to be used in loading explosives must not permit the velocity of any sliding package to violently strike other packages on or at the bottom of the chute or conveyor unless men are stationed alongside to retard and control the velocity of the packages to prevent any violent shock. Each chute must be wiped down with machine oil before any package of explosives is transferred.

§ 176.167 Lights, tools, and equipment.

(a) No artificial light except electric lights or electric lamps or floodlights may be used during the loading or unloading of explosives.

(b) The vessel owner or operator shall provide flashlights of a non-sparking type for persons required to enter holds in which explosives are stowed.

(c) No person permitted on board a vessel may carry firearms, matches, bale hooks, or metallic tools on board.

(d) No person engaged in loading Class A or Class B explosives may wear boots or shoes shod or strengthened with iron nails or other metal, unless such boots or shoes are covered with rubber, leather, felt, or other non-sparking material.

§ 176.169 Fires.

(a) No fire is permitted on docks, lighters, or vessels during the loading or unloading of explosives unless the fire is necessary.

(b) If a fire is necessary it must be properly safeguarded and under the direct observation of a competent person assigned for that purpose by the master of the vessel for the entire period of cargo transfer.

§ 176.171 Smoking.

(a) Smoking is prohibited on or near any vessel loading or unloading explosives at a waterfront facility. The Coast Guard officer having jurisdiction may designate smoking areas if these areas are located at a safe distance from the vessel. "No Smoking" signs must be posted during operations of handling, loading, or unloading this cargo. At least one "No smoking" sign must be located on the pier at a reasonable distance from the vessel when handling, loading or unloading explosives.

(b) Smoking is prohibited on or near any vessel handling, loading or unloading explosives at an explosives anchorage, except the Coast Guard officer having jurisdiction may, with concurrence of the master or person in charge of the vessel, designate a compartment as a smoking area. "No Smoking" signs must be posted conspicuously outside the entrance to this compartment and in other parts of the vessel during the loading or unloading operations.

§ 176.173 Liquor or drugs.

A person, whom the master or other person in charge of the vessel finds, in his judgment, to be under the influence of liquor or drugs, may not be permitted on board during the loading, unloading or transporting of explosives.

§ 176.177 Magazine vessels.

(a) The requirements of this part apply unless otherwise specified in this section.

(b) Class A and Class B explosives in excess of 5,000 pounds stored in any magazine vessel must be stowed below deck. No explosive may be stowed on deck unless the vessel is fitted with a deck house having a stowage area which meets the requirements in this part for the stowage of explosives. Blasting caps, and electric blasting caps in excess of 1,000, may not be stored on the same magazine vessel with Class A or Class B explosives.

(c) Any compartment on a magazine vessel used for the stowage of explosives must be completely ceiled with wood to provide a smooth interior surface; all metal stanchions in the compartments must be boxed in the same manner. An overhead ceiling is not required when the overdeck is weathertight. All nail and bolt heads must be countersunk and any exposed metal must be covered with wood.

(d) No initiating or priming explosive may be stowed in the same compartment with any other explosive when any high explosive is stowed on the same magazine vessel. All blasting caps must be stowed at least 25 feet from any bulkhead forming a boundary of a compartment containing any other explosives.

(e) Any magazine vessel having a dry storage space capable of being used for any purpose whatsoever must have a cofferdam at least 24 inches wide fitted between the dry storage space and any adjacent compartment containing explosives. This cofferdam must be constructed of wood or steel, formed by two tight athwartship bulkheads extending from the vessel to the overdeck. If the compartment in which a cofferdam is located extends to the weather deck, a watertight hatch must be fitted in this deck to provide access to the cofferdam.

(f) *Lighting.* Non-sparking, battery powered, self-contained electric lanterns or non-sparking hand flashlights are the only means of artificial light permitted.

(g) *Living quarters on magazine vessels.* Living quarters on magazine vessels must be fitted on the inside with asbestos board or other equivalent fire resistant material. Bracketed ship's lamps are the only authorized lighting fixtures in the living quarters. Stoves for heating or cooking must be securely fastened and may not be mounted closer than 6 inches to the deck or sides of the house. Any smoke pipe for these stoves which passes through the roof of the house must be kept at least 3 inches away from any woodwork. Each smoke pipe must be protected by a layer of asbestos, an air space of at least 1 inch, and a metal collar of at least 16 gage sheet secured only on the weather side of the roof. No opening from any living quarters into any stowage compartment of a magazine vessel is permitted.

(h) *Storage of other hazardous materials.* Magazine vessels having explosives on board may not be used for the stowage of any other hazardous material.

(i) *Magazine vessels' stores.* Articles for use as stores on board any magazine vessel must be in compliance with the requirements of 46 CFR Part 147.

(j) *Matches.* Safety matches requiring a prepared surface for ignition are the only type of matches permitted on board a magazine vessel. They must be kept in a metal box or can with a metal cover and stored in the custodian's living quarters.

(k) *Firearms.* No firearms or ammunition (except as cargo) are permitted on any magazine vessel.

l) *Fire extinguishing equipment.* No explosive may be received, stored, or dispensed from any magazine vessel, unless four 2½-gallon extinguishers of the soda-acid type and four two-gallon pails filled with dry sand are placed about the vessel. Any liquid extinguisher continuously exposed to a temperatre lower than 40°F may contain only material that has been modified or protected against freezing.

(m) *Supervision of magazine vessels.* Magazine vessels containing explosives must be continuously attended by a custodian employed for that purpose by the vessel's owner.

(n) *Unauthorized persons on magazine vessels.* A custodian of a magazine vessel shall not permit unauthorized persons to come on board unless it concerns a hazard to human life or reduction of a substantial hazard to property.

(o) *Repacking of explosives on board magazine vessels.* No explosive may be repacked on a magazine vessel. Any broken or damaged package must be placed in an open box and carried to a safe location for repacking or other disposition.

(p) *Work boat.* Each magazine vessel must be equipped with a work boat.

(q) *Life preservers.* One approved life preserver must be available for each person employed on a magazine vessel.

(r) *Fenders.* Each magazine vessel must be fitted with fenders in sufficient number and size to prevent any vessel tying up alongside from coming in contact with the hull.

Subpart H—Detailed Requirements for Compressed Gases

§ 176.200 General stowage requirements.

(a) All packages must be kept from direct contact with the vessel's deck, side or bulwark by dunnage, shoring, or other effective means.

(b) When cylinders are stowed horizontal, each tier must be stowed in the cantlines of the lower tier. Cylinders may not be stowed bilge to bilge or directly on top of one another. Each tier may be stepped back and the ends alternated in order to clear the flange. Lashing must be provided to prevent any movement.

(c) When cylinders are stowed in a vertical position they must be stowed in a block, cribbed, or boxed-in with suitable sound lumber. This box or crib must be dunnaged at least 4 inches off any metal deck. The cylinders in the box or crib must be braced to prevent any movement. This box or crib must be securely chocked and lashed to prevent any movement.

(d) Any compressed gas packaging, bearing a poison label, must be stowed away from all foodstuffs.

(e) No compressed gas may be stowed "on deck" over a hold or compartment containing coal.

§ 176.205 Under deck stowage requirements.

(a) All compressed gases must be stowed in a ventilated hold or compartment with no source of artificial heat and clear of crew and passenger living spaces. No bulkhead or deck of this hold or compartment may be common with the boundary of a boiler room, engine room, coal bunker, galley, or boiler room uptake.

(b) Each flammable compressed gas must be stowed in a hold or compartment also complying with all the following requirements:

(1) Each hold or compartment must be equipped with an overhead water sprinkler system or fixed fire smothering system;

(2) Each electrical power line must be protected by a strong metal covering to prevent crushing by cargo being stowed against it;

(3) Except when fitted with electrical fixtures of the explosion-proof type, each electrical circuit must be disconnected from all sources of power. No circuit may be energized until the flammable compressed gas cargo and any vapors have been removed from the compartment or hold. Portable lighting of the explosion-proof type may be used if the source of power is from electrical outlets outside the hold and above the weather deck;

(4) Any opening in a common bulkhead of an adjacent hold must be securely closed off and made gas tight, unless the adjacent hold is also used for the stowage of a flammable compressed gas;

(5) Full and efficient hatch covers must be used. Tarpaulins, if fitted, must be protected by dunnaging before overstowing with any cargo. Each tarpaulin must be in one piece and free of any rents, tears, and holes;

(6) A fire screen must be fitted at the weather end of each vent duct. This fire screen must completely cover the open area. It must consist of two layers of fine brass wire screen at least 20 x 20 mesh, spaced not less than ½ inch or more than 1½ inches apart. This screen may be removable if means for securing it in place when in service are provided;

(7) Flammable compressed gases may not be transported in any hold or compartment that is fitted with a gooseneck type of vent trunk head; and

(8) All electrical apparatus must have a positive means for disconnecting from power outside the hold or compartment containing any flammable compressed gas.

§ 176.210 On deck stowage requirements.

Cylinders must be protected from the direct rays of the sun by structural erections or awnings. A tarpaulin covering the cylinders is not acceptable if it comes in contact with them.

§ 176.220 Smoking or open flame and posting of warning signs.

(a) Smoking or the use of open flame is prohibited in any hold containing a flammable compressed gas, near any flammable compressed gas stowed on deck, or near any ventilator leading to a hold containing this material.

(b) Signs carrying the legend:

FLAMMABLE VAPORS
KEEP LIGHTS AND FIRE AWAY
NO SMOKING

must be posted at each approach to an "on deck" flammable compressed gas stowage area or near any cargo hold ventilator leading to a hold containing this material. This sign must be painted on a white background using red letters. These letters must not be less than 3 inches high.

§ 176.225 Stowage of chlorine.

Chlorine may not be stowed in the same cargo space or hold with metallic sodium or potassium, phosphorus, copper or brass leaf sheets, powdered antimony, turpentine, ammonia, finely divided organic material, coal gas, hydrogen, or acetylene.

Subpart I—Detailed Requirements for Flammable Liquids and Combustible Liquids

§ 176.300 Flammable and combustible liquids transported on vessels.

(a) Regulations regarding flammable and combustible liquids in this subchapter do not apply to any liquid that has a flash point above 80° F. on board any cargo vessel or barge.

(b) Regulations regarding flammable liquids in this subchapter do not apply to any liquid that has a flash point above 80° F. on board any passenger vessel; instead, regulations regarding combustible liquids apply to such liquids and they may be stowed "on deck" or "under deck."

(c) For the purposes of this section, flash points must be determined by Tagliabue's open-cup tester, ASTM test D. 1310.

NOTE.—If a liquid has a flash point above 80° F. and its packaging is identified as flammable for the purposes of transportation by air or land, the package should be marked with contents' flash point or other clarifying information, if it is desired to avoid its being treated as a flammable liquid on vessels. Liquids that have flash points above 150° F. should be marked with their flash points and the words "Not combustible for transportation on vessels."

§ 176.305 General stowage requirements.

(a) Any package containing a flammable liquid equipped with a vent or safety relief device must be stowed "on deck" only.

(b) The following requirements apply to each hold or compartment containing a flammable or combustible liquid:

(1) It must be ventilated;

(2) Stowage of these liquids within 20 feet of a bulkhead which forms a boundary or deck of a boiler room, engine room, coal bunker, galley, or boiler room uptake is not permitted. If the amount of the liquid to be stowed in a hold will not permit compliance with the requirement for a 20-foot separation, less separation distance is authorized if at least one of the following conditions exists:

(i) The bulkhead or deck is covered with at least three inches of insulation on the entire area subject to heat; or

(ii) A temporary wooden bulkhead at least two inches thick is constructed in the hold at least three inches off an engine room or six inches off a boiler room bulkhead, covering the entire area of the bulkhead that is subject to heat. The space between the permanent bulkhead and the temporary wooden bulkhead must be filled with bulk asbestos or mineral wool, or

(iii) A temporary wooden bulkhead is constructed of at least one-inch thick tongue and groove sheathing, located three feet of the boiler room or engine room bulkhead, and filled with sand to a height of six feet above the tank top. If the cargo compartment is located 'tween decks, only three feet of sand is required.

(3) Combustible liquids may be stowed in a hold within 20 feet of a common bulkhead with the engine room if the means of vessel propulsion is by internal combustion motors.

(4) Any cargo opening in a bulkhead of an adjacent hold must be securely closed off and made gas tight, unless the adjacent hold is also used for the stowage of a flammable or combustible liquid.

(5) All of the following apply only to flammable liquids:

(i) Full and efficient hatch covers must be used. Tarpaulins, if fitted, must be protected by dunnaging before overstowing with any cargo. Each tarpaulin must be in one piece and free of any rents, tears, and holes;

(ii) If a flammable liquid in exce
one ton is stowed under dec
screen must be fitted at the
of each vent duct. Thi
completely cover t
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means for securing it in place when in service are provided;

(iii) Each electrical power line must be protected by a strong metal covering to prevent crushing by cargo being stowed against it;

(iv) Except when fitted with electrical fixtures of the explosion-proof type, each electrical circuit must be disconnected from all sources of power from a point outside the hold or compartment containing the flammable liquid. No circuit may be energized until the flammable liquids and any vapors have been removed from the compartment or hold. Portable lighting of the explosion-proof type may be used if the source of power is from electrical outlets outside the hold and above the weather deck;

(v) Flammable liquid in excess of one ton may not be transported in any hold or compartment that is fitted with a gooseneck type of vent trunk head.

(c) On a passenger vessel, each hold must be equipped with an overhead water sprinkler system or fixed fire smothering system.

(d) On a passenger vessel, each hold or compartment containing any flammable liquid under a passenger space must have an overdeck of an A–60 type construction (see Title 46 CFR 72.05–10(c)(1)) or equivalent or have its underside covered with at least three inches of non-combustible insulation.

(e) No flammable liquid in a drum or wooden case, having inside packagings over one quart capacity, may be stowed as a beam filler. A wooden barrel, wooden box or a fiberboard box, with any flammable liquid in inside packagings having less than one quart capacity, may not be stowed as a beam filler unless it is possible to stow and observe any "This Side Up" marking.

§ 176.315 On deck stowage.

(a) Each 21,000 or less U.S. gallons of any flammable or combustible liquid in a portable tank, tank car, or a tank truck must be protected by one or more B-V semi-portable foam (40 gallon capacity) (see Title 46 CFR 95.50), dry chemical (100 lbs. minimum capacity) or equivalent fire extinguishers, or a fire hose fitted with an approved portable mechanical foam nozzle with pick-up tube and two five-gallon cans of foam liquid concentrate. Each foam system must be suitable for use with each flammable or combustible liquid it covers. Each fire extinguisher must be access- to the tank it covers.

The fire hose at each fire hydrant gallonity of any flammable or gallon- uid stowage must be fitted accessible d combination spray or combustible t be maintained use with the lading. loading and

port-

§ 176.320 Use of hand flashlights.

Each hand flashlight used in a hold or compartment containing any flammable liquid, or on deck near any flammable liquid, must be of the non-sparking type.

§ 176.325 Smoking or open flame and posting of warning signs.

(a) Smoking or the use of open flame is prohibited in any hold containing a flammable or combustible liquid, near any flammable or combustible liquid stowed on deck, or near any ventilator leading to a hold containing such material.

(b) Signs carrying the legend:

FLAMMABLE VAPORS
KEEP LIGHTS AND FIRE AWAY
NO SMOKING

must be posted at each approach to a flammable or combustible liquid stowed "on deck" or near any cargo-hold ventilator leading to a hold containing this material. This sign must be painted on a white background using red letters. These letters must not be less than three inches high.

§ 176.329 Potable spirits.

Potable spirits packed in strong tight drums, casks, wooden or fiberboard boxes, when stowed in a compartment not subject to artificial heat may be transported on board any vessel without compliance with this Part.

§ 176.331 Transportation of flammable liquids with foodstuffs.

Any package containing a flammable liquid which bears a poison label must be stowed separate from foodstuffs.

Subpart J—Detailed Requirements for Flammable Solids, Oxidizing Materials and Organic Peroxides

§ 176.400 Stowage of oxidizing materials and organic peroxides.

(a) No oxidizing material or organic peroxide may be stowed in the same hold or compartment with any readily combustible material such as a combustible liquid, a textile product, or with a finely divided substance such as an organic powder.

(b) No oxidizing material or organic peroxide may be stowed in a hold or compartment containing sulfur in bulk, or in any hold or compartment above, below, or adjacent to one containing sulfur in bulk.

§ 176.405 Stowage of charcoal.

(a) Before stowing any charcoal, the compartment or hold in which it is to be stowed must be swept broom clean. Any residue of a former cargo, including a petroleum product, a vegetable or animal oil, nitrate, or sulfur, must be removed.

(b) Charcoal packed in bags and offered for transportation aboard a vessel a quantity over one ton must be loaded t the bags are laid horizontally and with space for efficient air circ- the bags are not compactly filled and closed to avoid free space within, vertical and horizontal dunnage strips must be laid between the bags. Space for ventilating must be maintained near bulkheads, the shell of the vessel, the underdeck, and the overdeck. No more than 40 tons of charcoal may be stowed in a compartment or hold when other stowage space is available. If the unavailability of hold space requires the stowage of a larger amount, the arrangement for ventilation must be adjusted to ensure a sufficient venting effect.

(c) Any loose material from bags broken during loading must be removed. Broken bags may be repacked or have the closures repaired and the repaired bags restowed.

(d) Charcoal "screenings" packed in bags must be stowed to provide spaces for air circulation between tiers regardless of the quantity stowed.

§ 176.410 Stowage of nitro carbo nitrate, ammonium nitrate, and ammonium nitrate mixtures.

(a) Ammonium nitrate, ammonium nitrate mixtures, and nitro carbo nitrate must be stowed in compliance with the following requirements:

(1) Stow well away from any steam pipe, electric circuit, or other source of heat;

(2) Do not permit smoking except in designated areas. Post "No-Smoking" signs;

(3) Connect and lay out hose lines and test them before loading or unloading commences; and

(4) Provide a fire watch in the hold where the material is being loaded or unloaded.

(b) When in non-rigid packages the stowage must be as follows:

(1) The temperature of the bagged material may not exceed 130°F;

(2) Minimum dunnage and sweatboards must be used to prevent any friction or abrasion of bags, and to allow for the circulation of air and access of water in the event of fire;

(3) Bags must be stowed from side to side, out to the sweatboards;

(4) A space of 18 inches must be provided between any transverse bulkhead and the bagged cargo;

(5) An 18-inch athwartship trench must be provided along the centerline of the compartment, continuous from bottom to top;

(6) An 18-inch amidship trench must be provided running fore and aft from bulkhead to bulkhead;

(7) Bags may not be stowed closer than 18 inches from any overhead deck beam;

(8) Bags must be stowed to provide vent flues 14 inches square at each corner of the hatch continuous from top to bottom;

(9) Trenching must be accomplished by alternating the direction of the bags in each tier (bulkheading); and

(10) The bags must be blocked and braced as necessary to prevent shifting of the bagged cargo adjacent to any trench area.

(c) Ammonium nitrate or nitro carbo nitrate may be stowed with dynamite, commercial boosters, or other non-priming non-initiating types of explosives which are compatible with dynamite as follows:

(1) Stowage of ammonium nitrate or nitro carbo nitrate in the same hold or compartment with these explosives or in a hold or compartment adjacent to these explosives is permitted if the ammonium nitrate or nitro carbo nitrate is packaged in strong metal cans, metal or fiber drums, barrels, kegs, or wooden or fiberboard boxes with non-combustible inside packagings;

(2) Ammonium nitrate or nitro carbo nitrate in non-rigid combustible packagings may be stowed in proximity to these explosives if the two are separated by a steel deck or bulkhead, or a fire retardant wooden bulkhead built to the specifications of § 176.138(b)(3). This bulkhead must be sheathed on the oxidizing materials stowage side with one-inch asbestos board.

§ 176.415 Permit requirements for ammonium nitrate and nitro carbo nitrate.

(a) Except as provided in paragraphs (c) and (d) of this section, each carrier must obtain a permit from the District Commander, or his authorized representative, before any of the following material is placed on or discharged from any vessel at any place in the United States, its territories, or its possessions (except Panama Canal Zone):

(1) Ammonium nitrate (organic coated) in any package;

(2) Ammonium nitrate mixtures containing more than 60 percent ammonium nitrate or nitro carbo nitrate, packaged in a paper bag, burlap bag, or other non-rigid combustible packaging, or any rigid container with combustible inside packagings.

(b) Before a permit may be issued the following requirements must be met in addition to any others the District Commander may require:

(1) Ammonium nitrate (organic coated) and nitro carbo nitrate in non-rigid combustible packaging in a rigid container with combustible inside packaging mut be handled at a facility remote from populous areas or high value or high hazard industrial facilities so that in the event of fire or explosion loss of lives and property may be minimized;

(2) Ammonium nitrate (organic coated) in rigid metal drums with non-combustible inside packagings, nitro carbo nitrate in rigid containers with non-combustible inside packagings, or ammonium nitrate mixtures containing more than 60 percent ammonium nitrate in rigid containers with combustible inside packagings, must be handled at a facility removed from congested areas or high value or high hazard industrial facilities;

(3) Each facility must conform with the requirements of the port security and local regulations and must have an abundance of water readily available for fire fighting; and

(4) Each facility must be located so that there is unrestricted passage to open water. Each vessel must be moored bow to seaward, and must be maintained in a mobile status by the presence of tugs or the readiness of engines. Each vessel must have two wire towing hawsers, each having an eye splice, lowered to the water's edge, one at the bow and the other at the stern.

(c) An ammonium nitrate mixture containing more than 60 percent ammonium nitrate in a rigid container with noncombustible inside packagings may be handled at any waterfront facility without a permit.

§ 176.419 Flammable solids or oxidizing materials transported with foodstuffs.

Any package containing a flammable solid or oxidizing material which bears a poison label must be stowed separate from foodstuffs.

Subpart K—[Reserved]

Subpart L—Detailed Requirements for Poisons (Extremely Toxic, Highly Toxic, and Irritating Materials)

§ 176.600 General stowage requirements.

(a) All packages of poisons must be stowed well away from living quarters and any ventilation ducts serving living quarters.

(b) All packages of extremely or highly toxic materials must be stowed "separate from" foodstuffs.

§ 176.605 Care following leakage or sifting of extremely toxic or highly toxic materials.

(a) Any compartment or hold containing packages of extremely or highly toxic materials which have leaked or sifted must be thoroughly cleaned and decontaminated after the cargo is unloaded and before the hold is used for the stowage of any other cargo.

Subpart M—Detailed Requirements for Radioactive Materials

§ 176.700 General stowage requirements.

(a) Any package or container required to bear a Radioactive White or Radioactive Yellow label must be stowed separately from any living accommodations and from any space continuously occupied by any person. Separate stowage is not required from a space occupied by a courier specially authorized to accompany a shipment.

(b) Mail bags must not be stowed in the same hold.

(c) The Transport Index is a number which appears on all packages containing a Radioactive Yellow Label. The following are conditions that must be met regarding the Transport Index:

(1) The sum of the transport indexes of any group of packages must not exceed 50. A group of packages comprising a total transport index of 50 must be separated by at least 20 feet from any other packages bearing a Radioactive Yellow label. The limitation does not apply to low specific activity or a full load where the consignor has the exclusive use of the whole vessel, providing that the transport indexes of Fissile Class II packages do not exceed 50.

(2) Packages bearing Radioactive Yellow labels must be stowed in accordance with Table 176.700.

(3) The sum of the transport indexes on all packages aboard a ship must not exceed 200.

(d) Any package of radioactive materials which is a significant heat source may not be overstowed with any other cargo. If the package is stowed under deck, the hold or compartment must be ventilated.

(e) Each Fissile Class III shipment must be stowed in a separate hold and be stowed and handled at least 20 feet from other packages bearing a Radioactive Yellow label.

(f) A person may not remain unnecessarily in a hold or compartment or in the immediate vicinity of any package on deck containing radioactive materials. A person may not be exposed to a total of more than 100 millirem in any 7-day period or more than 500 millirem per year whole body dose.

(g) The radiation level in any space or area continuously occupied by passengers, crew, or shipments of animals may not exceed 0.5 millirem per hour.

(h) For shipment requiring supplemental operational procedures, the Master shall be furnished a copy of the necessary operational instructions.

TABLE 176.709.—*Safe Distance for Persons and Undeveloped Films*

Sum of transport indexes of the packages	Minimum distance in feet from living accommodation or regularly occupied working space				Minimum distance[1] in feet from undeveloped films or plates											
					Less than 24 up to 24-hr. voyage	48-hr. voyage	Over 2 up to 4-day voyage				Over 4 up to 9-day voyage					
	A	B	C	D	A	A	A	B	C	D	A	B	C	D		
0 through 0.5	10	10	10	10	3	5	10	10	10	10	15	10	10	10		
Over 0.5 through 1.0	10	10	10	10	5	7	15	10	10	10	20	10	10	10		
Over 1.0 trough 2.0	10	10	10	10	7	12	20	10	10	10	25	15	10	10		
Over 2.0 through 5.0	10	10	10	10	12	16	35	10	10	10	40	15	10	10		
Over 5.0 through 10.0	15	10	10	10	16	25	40	15	10	10	55	20	10	10		
Over 10.0 through 25.0	25	10	10	10	25	35	65	20	10	10	100	30	10	10		
Over 25.0 through 50.0	40	15	10	10	35	50	90	30	10	10	145	45	10	10		
Over 50.0 through 100	60	20	10	10	50	70	140	45	10	10	210	65	10	10		
Over 100 through 200	80	25	10	10	70	100	190	55	10	10	285	85	15	10		
Over 200 through 300[2]	110	30	10	10	90	125	230	70	10	10	320	105	15	10		
Over 300 through 400[2]	130	85	10	10	100	145	260	80	15	10	360	120	20	10		

Sum of transport indexes of the packages	Minimum distance[1] in feet from undeveloped films or plates—Continued															
	Over 9 up to 16-day voyage				Over 16 up to 25-day voyage				Over 25 up to 35-day voyage				Over 36 up to 49-day voyage			
	A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D
0 through 0.5	20	10	10	10	20	10	10	10	25	15	10	10	30	15	10	10
Over 0.5 through 1.0	25	15	10	10	30	15	10	10	35	20	10	10	45	20	10	10
Over 1.0 through 2.0	35	15	10	10	45	20	10	10	55	25	10	10	65	30	10	10
Over 2.0 through 5.0	60	20	10	10	70	25	10	10	90	30	10	10	100	35	10	10
Over 5.0 through 10.0	85	30	10	10	110	35	10	10	135	40	10	10	155	45	10	10
Over 10.0 through 25.0	140	45	10	10	170	50	10	10	200	60	10	10	230	70	10	10
Over 25.0 through 50.0	195	60	10	10	240	70	10	10	275	85	15	10	315	105	15	10
Over 50.0 through 100	270	85	15	10	320	95	15	10	360	115	20	10	400	145	20	10
Over 100 through 200	325	110	20	10	400	145	20	10	450	180	25	10	520	170	30	10
Over 200 through 300[2]	400	145	25	10	460	175	25	10	560	220	30	10	(3)	240	35	10
Over 300 through 400[2]	450	165	30	10	500	200	30	10	(3)	235	35	10	(3)	270	40	10

[1] Col. A applies when no intervening cargo or bulkheads screen the radioactive material from the living accommodation or undeveloped photographic film or plate. Col. B applies when the radioactive material is to be surrounded by at least 2 ft of cargo of unit density and at least 1 steel bulkhead between the radioactive material and the living accommodation or undeveloped photographic film or plate. Col. C applies when the radioactive material is to be surrounded by at least 6 ft of cargo of unit density and at least 2 steel bulkheads between the radioactive material and the living accommodation or undeveloped photographic film or plate. Col. D applies when the radioactive material is to be surrounded by at least 14 feet of cargo of unit density and at least 2 steel bulkheads between the radioactive material and the living accommodation or undeveloped photographic film or plate.

"Cargo of unit density" means cargo stowed at a density of 1 ton per 36 ft³ (1 ton metric per cubic meter). Where the density of the cargo is less than this, the depth of the cargo specified in this note for cols. B, C, and D (i.e., 2, 6, and 14 ft) must be increased in proportion.

"Minimum distance" means the least distance in any direction, whether vertical or horizontal.

[2] The total consignment on board at any time must not exceed transport indexes totaling 200 without prior authorization by the Department.

[3] Not to be carried unless screening by other cargo and bulkheads can be arranged in accordance with cols. B, C or D.

§ 176.710 Care following leakage or sifting of radioactive materials.

(a) In case of fire, collision, or breakage involving any shipment of radioactive materials, other than materials of low specific activity, the package or material must be segregated from unnecessary contact with personnel. In case of obivous leakage, or if the inside container appears to be damaged, the stowage area (hold, deck area, or compartment) containing this cargo must be isolated as much as possible to prevent radioactive material from entering any person's body through contact, inhalation, or ingestion. No person may handle the material or remain in the vicinity unless supervised by a qualified person.

(b) A hold or compartment in which leakage of radioactive materials has occurred may not be used for other cargo until it is decontaminated in compliance with the requirements of § 176.715.

§ 176.715 Contamination control.

Each hold, compartment, or deck area used for the transportation of low specific activity radioactive material as a full load must be surveyed with appropriate radiation detection instruments after each use. It may not be used again until the radiation dose rate at any accessible surface is less than 0.5 millirem per hour, and there is no significant removable radioactive surface contamination.

Subpart N—Detailed Requirements for Corrosive Materials

§ 176.800 General stowage requirements.

(a) Packages must be stowed well away from living quarters, foodstuffs, or any cargo of an organic nature.

(b) Packages must be stowed to be readily observable.

(c) Packages may not be stowed over any combustible substance even though such substance is not dangerous by the regulations in this subchapter.

(d) Glass carboys containing any corrosive material may not be stowed more than two tiers high unless each carboy is completely boxed. The transportation of corrosive materials in glass carboys on board barges is not subject to this requirement. "Completely boxed carboy" means a boxed or crated carboy with neck protection extending to the sides of the carboy box. This protective construction must be strong enough to permit stacking one on top of the other.

(e) A corrosive material may not be stowed over a hold or compartment containing cotton unless the deck is of steel and the hatch is fitted with a tight coaming. Also, the deck must be tight against leakage and the corrosive material may not be stowed over the square of the hatch.

§ 176.805 "On Deck" stowage.

(a) The stowage "On Deck" must provide for leakage from any package to drain away from other cargo and to readily reach an overboard scupper or freeing port. This drainage must not enter an enclosed drainage system other than a direct overboard scupper. If this stowage is not practical, sufficient clean dry sand must be placed under and around the lower tier of packages to absorb any leakage.

(b) Dunnage must be provided on the deck and arranged so that any leakage will be apparent.

(c) Any leakage must be washed down, using liberal quantities of water.

Subpart O—Detailed Requirements for Other Regulated Materials (ORM)

§ 176.900 Stowage of cotton and fibers.

(a) All cotton or fibers must be securely baled and bound. Each cotton or fiber bale must be covered with bagging on at least three-fourths of its surface, including both ends. Cut cotton linters may be accepted when baled and covered with bagging on the soft sides only if the bale is compressed to a density of at least 32 pounds per cubic foot and it is bound with at least six bands per bale. Any poorly compressed bale or any bale having damaged bindings may not be transported.

(b) Each wet bale must be stowed separately from any dry bales, preferably in a 'tween deck space and not overstowed. Any bale which is saturated with water may not be transported.

(c) Bales showing contact with oil or grease may not be accepted.

(d) Cotton or fibers must be stowed in a hold or a compartment in compliance with the following requirements:

(1) All traces of oil or residue must be removed;

(2) A recently painted hold may not be used unless it is thoroughly dry;

(3) Each ventilation cowl must be fitted with a spark screen;

(4) When a bulkhead is common with a boiler room, engine room, coal bunker, or galley, a wooden bulkhead must be erected between the bulkhead and any cotton or fibers. This wooden bulkhead must be at least 6 inches from a boiler room bulkhead, and at least 2 inches from an engine room, coal bunker, or galley bulkhead;

(5) Each 'tween deck hatch must be closed with hatch covers, tarpaulins, and dunnage; however, metal hatch covers which are sealed by other means to provide equivalent protection may be used;

(6) Each hold must be equipped with a carbon dioxide, steam smothering, or overhead water sprinkler system. Before loading, the extinguishing system must be examined to ensure that it is in good working condition; and

(7) Each hold must be clear of all debris and swept broom clean before loading.

(e) Naked lights or any fire likely to produce sparks are not permitted on the vessel, dock area, or any lighters alongside.

(f) Upon completion of stowage, each hatch opening must be compeltely closed. Tarpaulins must be fitted and secured in place to provide a tight hold. During a period of temporary stoppage of loading or unloading, a hatch may be left

open; however, a fire watch, designated by the master, must be stationed in the hold in which the cotton or fibers are stowed.

(g) At least one fire hose must be connected. Each fire pump must be operated before any loading or unloading. Pressure must be maintained on each fire main during loading and be ready for immediate use. Portable fire extinguishers must be placed to be readily available. The fire hose, fire pumps and fire extinguishers may be the vessel's equipment or shore equipment.

(h) Smoking is not permitted on a vessel loading or unloading cotton or fibers except at those times and in those places designated by the master or officer in charge. "No Smoking" signs must be posted in appropriate places and the officer in charge of the loading must see that they are observed.

(i) All cotton or fibers must be segregated in compliance with the requirements applicable to flammable solids (see § 176.83(b)).

(j) Cotton or fibers may be stowed in the same hold over bulk sulfur if the sulfur has been trimmed and leveled and the hold is thoroughly cleaned of sulfur dust. A tight floor of two 1-inch crossed clean dunnage boards must be laid on the sulfur before cotton or fibers are stowed. These substances may be stowed alongside each other in the same hold if they are separated by a tight dustproof wood bulkhead.

(k) Cotton or fibers may not be stowed in a 'tween deck hold over bulk sulfur in a lower hold unless the 'tween deck hold has been throughly cleaned of all sulfur dust and the 'tween deck hatch covers are in place and covered with tarpaulins and dunnage.

(l) *Cotton fibers with rosin or pitch.* When practicable, these materials must be stowed in separate holds. When this stowage is not practicable, cotton or fibers may be stowed in the same hold with these materials if they are separated by clean dunnage or a cargo of a noncombustible nature. When this stowage within the same hold involves large amounts of these materials, the rosin or pitch must be floored off with at least two layers of 1-inch dunnaging and the cotton or fibers stowed above.

(m) *Cotton and fibers with a vegetable oil, animal oil, or rosin oil.* (1) Fish oil, whale oil, vegetable oil, animal oil, or rosin oil must be stowed in a separate compartment. If necessary to stow in the same hold, the cotton and fibers must be stowed so that there is no contact with these materials. If cotton or other fibers are transported over fish oil, whale oil, vegetable oil, animal oil, or rosin oil, a tight 2-inch floor of dunnage boards must be laid over these oils before the cotton or other fibers are placed on top.

(2) Cotton or fibers must not be stowed in the hold below one in which these materials are stowed unless the 'tween deck hatch is fitted with a tight coaming and the deck is of steel and made tight against leakage.

(n) *Cotton or fibers with coal.* Cotton or fibers may not be stowed in the same hold with coal. Cotton or fibers may be stowed in a hold adjacent to one in which coal is stowed if the holds are separated by a tight steel bulkhead and the cotton or fibers are dunnaged 2 inches off this division bulkhead. Cotton or fibers may be stowed in the compartment above or below one in which coal is stowed if the deck is of steel and hatches are closed off with hatch covers and tarpaulins.

(o) *Cotton or fibers with synthetic nitrate of soda.* These materials may be transported when stowed in an adjacent hold, or in a hold above or below each other if the holds are separated by a tight steel bulkhead or deck and the hatch covers are in place and covered with tarpaulins.

(p) Cotton or fibers may not be stowed in the same hold with any combustible liquid having a closed cup flash point at or below 141° F.; cotton or fibers may be stowed in a hold adajcent to, any hold above, or any hold below one containing these materials if the holds are separated by a tight steel bulkhead or deck.

§ 176.905 Motor vehicles or mechanical equipment powered by internal combustion engines.

(a) A motor vehicle or any mechanized equipment powered by an internal combustion engine is subject to the requirements of this subchapter when carried as cargo if the engine or fuel tank contain any fuel or if either battery cable is connected. The requirements of this subchapter do not apply if the fuel tank is empty, the engine has been run until it has stalled from lack of fuel, both battery cables are disconnected, and no hazardous material is stowed in the vehicle.

(b) Before loading, each vehicle must be inspected for leaks. A vehicle showing any sign of leakage may not be transported.

(c) Each vehicle stowed in a hold or compartment must have battery cables disconnected and secured away from the battery terminals. This requirement does not apply if the vehicles are to be stowed in a hold designated by the administration of the country in which the vessel is registered to be specially suited for vehicles see Title 46 CFR 95.15–5 (e) and (f) for U.S. vessels).

(d) The fuel tank may not be more than one-fourth full.

(e) All equipment used for handling vehicles must be designed so that the fuel tank and fuel system are protected from stress that might cause rupture or other damage incident to handling.

(f) Each vehicle must be stowed to allow for its inspection during transit.

(g) Two hand-held, portable, dry-chemical fire extinguishers of at least 10 pounds capacity each must be separately located in an accessible location in each hold or compartment in which any motor vehicle is stowed.

(h) "No Smoking" signs must be conspicuously posted at each access opening to the hold or compartment.

(i) The following additional requirements apply to the stowage of any vehicles containing a flammable compressed gas or flammable liquid:

(1) Each portable electrical light and hand flashlight used in the stowage area must be an approved, explosion-proof type. All electrical connections for any portable light must be made to outlets outside the space in which any vehicle is stowed;

(2) No hazardous material other than a motor vehicle or mechanized equipment may be stowed in the same hold or compartment with any vehicle having a flammable liquid or flammable compressed gas in its fuel tank;

(3) Each hold or compartment must be ventilated and fitted with an overhead water sprinkler system or fixed fire extinguishing system;

(4) Each hold or space must be equipped with a smoke or fire-detection system; and

(5) All electrical equipment in the hold or compartment other than fixed explosion-proof lighting must be disconnected from its power source at a location outside the hold or compartment during the handling and transportation of any vehicle. Where the disconnecting means is a switch or circuit breaker, it must be locked in the open position until all vehicles have been discharged.

(j) *Refueling.* Motor vehicles may be refueled when necessary in the hold of a vessel provided it is done in accordance with § 176.78.

(k) Motor vehicles with fuel in their tanks may not be stowed in closed (nonventilated) containers.

§ 177.816 [Deleted]

§§ 177.815 and 177.823 [Amended]

A. In Part 177 Table of Contents, § 177.816 would be deleted; §§ 177.815 and 177.823 would be amended to read as follows:

Sec.
177.815 Lost or destroyed labels.
177.823 Marking and placarding motor vehicles.

§§ 177.800–177.810 [Amended]

B. Sections 177.800 through 177.810 would remain the same as now written except the word "chapter" would be amended to read subchapter each time it appears in the sections.

C. Section 177.811 would be amended to read as follows:

§ 177.811 Astray shipments.

(a) Each carrier in possession of an astray shipment of hazardous materials (other than explosives) shall forward it promptly to its destination, if known, after inspection has shown the package to be in proper condition for transportation.

(b) If the package is not labeled and the exact classification of the contents is not determinable, the carrier shall apply a FLAMMABLE LIQUID label, with an "X" in its hazard information number block.

D. Sections 177.812 and 177.813 would remain the same as now written except the word "chapter" would be amended to read subchapter in § 177.812(a).

E. Section 177.815 would be amended to read as follows:

§ 177.815 Lost or destroyed labels.

Each carrier shall keep on hand an adequate supply of the labels specified in subpart D of Part 172 of this subchapter to replace those that become lost or destroyed. The carrier shall replace each lost or destroyed label based on the information on the shipping papers. The hazard information number may be added by any suitable means, without regard to the size or shape of numerals, if entered legibly.

§ 177.816 [Deleted]

F. Section 177.816 would be deleted.

G. Section 177.817 would be amended to read as follows:

§ 177.817 Shipping papers.

(a) A carrier may not accept for transportation, or transport, any hazardous material to which this subchapter applies unless he has received (or in the case of a private carrier, has prepared) a shipping paper prepared in the manner specified in subpart C of Part 172 of this subchapter. The shipping paper must include the shipper's certificate required by § 172.204 of this subchapter, unless it is not required by that section.

(1) This paragraph does not apply to materials classed as ORM–A, B, or C unless they are accepted for subsequent transportation by air or water. However, this requirement only applies to shipments to be transported by air or water, or both, according to the applicability of the regulations in this subchapter, and according to the listing for the material in § 172.101 of this subchapter. These materials are always preceded by the symbol Ⓐ, Ⓦ, or both, in that section. (See § 172.100 of this subchapter for explanation of these symbols.)

(2) This paragraph does not apply to materials classed as ORM–D unless they are accepted for subsequent transportation by air.

(b) The driver of each motor vehicle transporting hazardous materials must have in his possession a copy of a shipping paper arranged in the same manner and containing the information required by paragraph (a) of this section. However, the driver is not required to have a shipper's certificate on the shipping paper in his possession if the original shipping paper containing the certificates is in the originating carrier's possession.

(1) This paragraph does not apply to materials classed as ORM–A, B, C, or D.

(c) To be considered to be in the driver's possession for the purposes of this section, the shipping paper must be either on his person or within his immediate reach, or it may be placed in a pouch or other device that is mounted on the inside of the door to the left of the driver's position.

(d) Whenever any shipping papers required by this section are carried with other shipping papers, the shipping papers required by this section must be arranged so they will appear first upon any examination made during transportation.

(e) When a transportation incident occurs, the driver of a motor vehicle transporting hazardous materials should offer the shipping papers required by this section for examination by emergency personnel.

§§ 177.819, 177.821, and 177.822 [Amended]

H. Sections 177.819, 177.821, and 177.822 would remain the same as now written except the word "chapter" would be amended to read subchapter each time it appears in the sections.

I. Section 177.823 would be amended to read as follows:

§ 177.823 Marking and placarding motor vehicles.

(a) A carrier may not move a transport vehicle containing a hazardous material unless the vehicle is marked and placarded in accordance with Part 172 of this subchapter, or unless, in an emergency—

(1) The vehicle is escorted by a representative of a state or local government; or

(2) The carrier has permission from the Department.

§§ 177.824 and 177.834–177.840 [Amended]

J. Sections 177.824 and 177.834 through 177.840 would remain the same as now written except the word "chapter" would be amended to read subchapter each time it appears in the sections.

K. In § 177.841, paragraph (d) would be added to read as follows:

§ 177.841 Poisons.

* * * * *

(d) A carrier may not transport a package bearing a poison label in the same transport vehicle with material that is marked as or known to be foodstuff, feed, or any other edible material intended for consumption by humans or animals.

* * * * *

§§ 177.842, 177.843, 177.848, 177.853–177.861, and 177.870 [Amended]

L. Sections 177.842, 177.843, 177.848, 177.853 through 177.861, and 177.870 would remain the same as now written except the word "chapter" would be amended to read subchapter each time it appears in the sections.

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14 CFR PART 103 [DELETED]

Part 103 of Title 14 would be deleted.

Interested persons are invited to give their views on this proposal. Communications should identify the docket number and be submitted in duplicate to the Secretary, Hazardous Materials Regulations Board, Department of Transportation, Washington, D.C. 20590. Communications received before May 28, 1974 will be considered before final action is taken on the proposal. All comments received will be available for examination by interested persons at the Office of the Secretary, Hazardous Materials Regulations Board, room 6215 Buzzards Point Building, Second and V Streets, SW., Washington, D.C., both before and after closing date for comments.

Commenters are requested to make their comments in a manner that will clearly identify the particular matters on which they are commenting. Unless comments are general in nature pertaining to the entire Notice, it is requested that each paragraph of comments be identified in the following manner:

"Part 176—We think _____" or "Section 175.503—We believe _____" Also, those commenters submitting more than two pages of comments are requested to submit six copies in order to facilitate their handling by the Board.

(Transportation of Explosives Act (18 U.S.C. 831–835); sec. 6, Department of Transportation Act (49 U.S.C. 1655); Title VI and sec. 902(h), Federal Aviation Act of 1958 (49 U.S.C. 1421–1430, 1472(h), and 1655(c)); Dangerous Cargo Act, as amended (46 U.S.C. 170); Tank Vessel Act of 1936 (46 U.S.C. 391a, 46 U.S.C. 375, 46 U.S.C. 416, 49 U.S.C. 1655 (b)(1)); 49 CFR 1.46(b).)

Issued in Washington, D.C. on December 21, 1973.

JAMES F. RUDOLPH,
Board Member, for the Federal Aviation Administration.
ROBERT A. KAYE,
Board Member, for the Federal Highway Administration.
MAC E. ROGERS,
Board Member, for the Federal Railroad Administration.
W. F. REA III,
Board Member, for the United States Coast Guard.

[FR Doc.74–1914 Filed 1–23–74;8:45 am]