



Federal Register

**Tuesday,
June 22, 2004**

Part II

Department of Transportation

Research and Special Programs Administration

**49 CFR Parts 171, 172, 173, 175, 176, 178
and 180**

**Harmonization With the United Nations
Recommendations, International Maritime
Dangerous Goods Code, and International
Civil Aviation Organization's Technical
Instructions; Proposed Rule**

DEPARTMENT OF TRANSPORTATION**Research and Special Programs Administration**

49 CFR Parts 171, 172, 173, 175, 176, 178 and 180

[Docket No. RSPA-04-17036 (HM-215G)]

RIN 2137-AD92

Harmonization With the United Nations Recommendations, International Maritime Dangerous Goods Code, and International Civil Aviation Organization's Technical Instructions

AGENCY: Research and Special Programs Administration (RSPA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: RSPA is proposing to amend the Hazardous Materials Regulations (HMR) to maintain alignment with international standards by incorporating various amendments, including changes to proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, air transport quantity limitations and vessel stowage requirements. Because of recent changes to the International Maritime Dangerous Goods Code (IMDG Code), the International Civil Aviation Organization's Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions), and the United Nations Recommendations on the Transport of Dangerous Goods (UN Recommendations), these revisions are necessary to facilitate the transport of hazardous materials in international commerce.

DATES: Comments must be received by August 23, 2004.

ADDRESSES: Address your comments to the Dockets Management System, U.S. Department of Transportation, 400 Seventh St., SW., Room PL 402, Washington, DC 20590.

Comments. You may submit comments identified by the docket number (RSPA-04-17036) by any of the following methods:

- Federal eRulemaking Portal: <http://www.regulations.gov>. Follow the online instructions for submitting comments.
- Web site: <http://dms.dot.gov>.

Follow the instructions for submitting comments on the DOT electronic docket site.

- Fax: 1-202-493-2251.
- Mail: Docket Management System; U.S. Department of Transportation, 400 Seventh Street, SW., Nassif Building, Room PL-402, Washington, DC 20590-001.

- Hand Delivery: To the Docket Management System; Room PL-402 on the plaza level of the Nassif Building, 400 Seventh Street, SW., Washington, DC between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

Instructions: All submissions must include the agency name and docket number or Regulatory Identification Number (RIN) for this notice. For detailed instructions on submitting comments and additional information on the rulemaking process, see the Public Participation heading of the SUPPLEMENTARY INFORMATION section of this document. Note that all comments received will be posted without change to <http://dms.dot.gov> including any personal information provided. Please see the Privacy Act heading under SUPPLEMENTARY INFORMATION.

Docket: For access to the docket to read background documents or comments received, go to <http://dms.dot.gov> at any time or to the Docket Management System (see ADDRESSES).

FOR FURTHER INFORMATION CONTACT: Charles Betts, Office of Hazardous Materials Standards, telephone (202) 366-8553, or Shane Kelley, International Standards, telephone (202) 366-0656, Research and Special Programs Administration, U.S. Department of Transportation, 400 Seventh Street, SW., Washington, DC 20590-0001.

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I. Background

On December 21, 1990, RSPA (we) published a final rule (Docket HM-181; 55 FR 52402) based on the UN Recommendations, which comprehensively revised the Hazardous Materials Regulations (HMR), 49 CFR parts 171 to 180, for harmonization with international standards. Since publication of the 1990 final rule, we have issued five additional international harmonization final rules (Dockets HM-

215A, 59 FR 67390; HM-215B, 62 FR 24690; HM-215C, 64 FR 10742; HM-215D, 66 FR 33316; and HM-215E, 68 FR 44992). The rules provided additional harmonization with international transportation requirements by more fully aligning the HMR with the corresponding biennial updates of the UN Recommendations, the IMDG Code and the ICAO Technical Instructions.

The UN Recommendations are not regulations, but rather are recommendations issued by the UN Committee of Experts on the Transport of Dangerous Goods (TDG) and on the Globally Harmonized System of Classification and Labeling (GHS). These recommendations are amended and updated biennially by the UN Committee of Experts. They serve as the basis for National, regional, and international modal regulations; specifically, the IMDG Code issued by the International Maritime Organization (IMO), and the ICAO Technical Instructions issued by the ICAO. In 49 CFR 171.12, the HMR authorize domestic transportation of hazardous materials shipments prepared in accordance with the IMDG Code if all or part of the transportation is by vessel, subject to certain conditions and limitations. In § 171.11, subject to certain conditions and limitations, the HMR authorize the offering, acceptance and transport of hazardous materials by aircraft, and by motor vehicle either before or after being transported by aircraft, provided the shipment is in accordance with the ICAO Technical Instructions.

The continually increasing amount of hazardous materials transported in international commerce warrants the harmonization of domestic and international requirements to the greatest extent possible. Harmonization serves to facilitate international transportation and at the same time ensures the safety of people, property and the environment. While the intent of the harmonization rulemakings is to align the HMR with international standards, we review and consider each amendment on its own merit. Each amendment is considered on the basis of the overall impact on transportation safety and the economic implications associated with its adoption into the HMR. Our goal is to harmonize without sacrificing the current HMR level of safety and without imposing undue burdens on the regulated public. In our efforts to continue to align the HMR with international requirements, this notice of proposed rulemaking (NPRM) proposes changes to the HMR based on the Thirteenth Revised Edition of the

UN Recommendations, Amendment 32 to the IMDG Code, and the 2005–2006 ICAO Technical Instructions, which become effective January 1, 2005. Petitions for rulemaking concerning harmonization with international standards and the facilitation of international transportation are also addressed in this NPRM and serve as the basis of certain proposed amendments. Other proposed amendments are based on feedback from the regulated industry, other DOT modal administrations and our initiative. Also included are various proposed editorial clarifications. Unless otherwise stated, the proposed revisions are for harmonization with international standards.

II. Overview of Proposed Changes in This NPRM

Proposed amendments to the HMR in this NPRM include, but are not limited to the following:

- Amendments to the Hazardous Materials Table (HMT) which would add, revise or remove certain proper shipping names, hazard classes, packing groups, special provisions, packaging authorizations, bulk packaging requirements, passenger and cargo aircraft maximum quantity limitations and vessel stowage provisions.
- Amendments to the List of Marine Pollutants.
- Revisions and additions of special provisions.
- Removal of the air eligibility marking requirement.
- Addition of a “KEEP AWAY FROM HEAT” marking requirement for packages offered for transportation by air.
- Amendment to require that aerosol cans that are carried aboard an aircraft in accordance with § 175.10(a)(4) have their release devices protected by a cap or other suitable means.
- A grandfather provision to allow the shipment of materials classified as corrosive to steel or aluminum under ASTM G 31–72.
- A provision to require that the word “overpack” be marked on overpacks to indicate that this marking implies that inside packages comply with prescribed specifications.
- An amendment to the criteria for classification of materials that are corrosive to metals.
- Revision of the limited quantity provisions for Class 6.1, PG II materials and other hazard classes of materials to take into account materials with a subsidiary hazard of 6.1, PG II.
- Amendments to the packaging requirements for materials classified as

Division 6.1, Packing Group I, Hazard Zone A or Hazard Zone B.

- Revision of the organic peroxide packaging requirements in order to have one consolidated packaging section for organic peroxides. The revised section will include three separate tables for organic peroxides authorized for transport in non-bulk packagings, IBCs, and bulk packagings other than IBCs, respectively. Additionally, the packaging tables will be updated through the amendments to the organic peroxide requirements that will add, revise, or delete certain entries in the organic peroxide tables.

III. Overview of Amendments Not Being Considered for Adoption in This NPRM

This NPRM proposes changes to the HMR based on amendments to the Thirteenth Revised Edition of the UN Recommendations, Amendment 32 to the IMDG Code, and the 2005–2006 ICAO Technical Instructions, which become effective January 1, 2005. However, we are not proposing to adopt all of the amendments to those documents into the HMR. In many cases, amendments to the international regulation have not been adopted because of the framework or structure of the HMR. In several cases, we are handling certain amendments in separate rulemakings. For example, all amendments related to infectious substances are being handled under Docket HM–226A. In some instances, such as the amendment to ICAO TI to allow certain oxygen generators aboard passenger carrying aircraft, we do not believe the amendment to be in the interest of public safety.

If we have inadvertently omitted an amendment in this NPRM, we will attempt to include the omission in the final rule. However, our options for making changes in a final rule are limited by requirements of the Administrative Procedures Act. In some instances, we can adopt a provision inadvertently omitted from the NPRM if it is clearly within the scope of changes proposed in the notice, does not require substantive changes from the international standard on which it is based, and imposes minimal or no cost impacts on persons subject to the requirement. Otherwise, in order to provide opportunity for notice and comment the change must be proposed in an NPRM.

One of the goals of this rulemaking is to continue to maintain consistency between the HMR and the international requirements. We are not striving to “match-up” the HMR with the international regulations but rather

striving to remove potential barriers to international transportation.

Below is a listing of those significant amendments to the international regulations that we are not proposing to adopt into the HMR with a brief explanation why:

- Requirements for infectious substances and genetically modified micro-organisms; (Amendments to the HMR related to infectious substances will be addressed in a future rulemaking under Docket HM–226A. Several other Federal agencies regulate genetically modified micro-organisms; thus we do not plan to adopt provisions for their transport in the HMR.)
- Compressed gas cylinders; (Amendments to the HMR related to compressed gas cylinders will be addressed in a future rulemaking under Docket HM–220E.)
- Environmentally hazardous substances; (Delay in action pending further amendments to the international regulations.)
- Hazardous materials security; (Amendments to the HMR related to the UN Model Regulation’s hazardous materials security requirements were promulgated in a rulemaking under the HM–232 Docket series.)
- Requirements for radioactive materials; (Amendments to the HMR related to Class 7 (radioactive) materials are being addressed in a rulemaking under the HM–230 Docket series.)
- Non-specification bulk packagings; (We are not adopting the new requirements in the UN Recommendations for non-specification bulk packagings including the additional inspection, testing and marking requirements. We are unsure about the cost impacts of imposing these additional amendments and, therefore, are not proposing to adopt any additional amendments at this time.)
- The reference to EN 10028–3, Part 3 for defining steel grain size relevant to the definition of fine grain steel; (We do not believe there is a need to adopt the European standard EN 10028–3, Part 3 because this standard is equivalent to ASTM E 112–96 (IBR, see § 171.7 of this subchapter). In addition, the ASTM standard is currently referenced in the HMR and is more commonly used and recognized in the U.S.)
- Bulk authorization for UN0331, UN0332 and UN3375; (For several years, we have authorized, under exemption, the transport of certain blasting agents in bulk packagings. We are currently

reviewing those exemptions to determine if they should be included in the HMR. The amendments in the UN Recommendations related to the bulk authorizations for UN0331, UN0332 and UN3375 will be included in that review.)

- The removal of wooden barrel requirements;

(The removal of the wooden barrel requirements (2C1 and 2C2) may be considered in a future rulemaking.)

- The 24-hour gasket relaxation requirement;

(A requirement that removable head packagings for liquids not be drop tested until at least 24 hours after filling and closing to allow for any possible gasket relaxation was adopted in the thirteenth revised edition of the UN Model Regulations. We have conducted testing in coordination with drum manufacturers and have determined that this requirement is not substantiated by the results of the tests conducted.

Therefore, we are not adopting into the HMR amendments relative to the 24-hour gasket relaxation requirement. We also opposed this requirement when it was considered by the UN TDG Sub-Committee.)

- Authorization to transport protective breathing equipment (PBE's) with an oxygen generator as cargo onboard a passenger-carrying aircraft.

(We do not believe that oxygen generators should be transported aboard passenger carrying aircraft. Therefore, we are not adopting the ICAO amendment that would allow oxygen generators in protective breathing equipment to be transported in passenger carrying aircraft.)

IV. Section-by-Section Review

Part 171

Section 171.7

Paragraph (a)(3) (incorporation by reference materials) would be updated to include the most recent edition of the ICAO Technical Instructions, the IMDG Code and the UN Recommendations. The updated editions of these standards become effective January 1, 2005. Additionally, the International Maritime Organization (IMO) recommends authorizing a one-year transition period, with a delayed compliance date of January 1, 2006, for the use of the updated edition (Amendment 32) of the IMDG Code.

The standards would be updated as follows:

- The ICAO Technical Instructions, 2005–2006 Edition.
- The IMDG Code, Amendment 32.
- The UN Recommendations, Thirteenth Edition.

- The UN Manual of Tests and Criteria, 4th Revised Edition.

Paragraph (b) (list of informational materials not requiring incorporation by reference) would be revised by adding an additional reference for a new method for determining the size of an emergency-relief device for portable tanks transporting organic peroxides. This revision is based on a petition for rulemaking numbered P–1428. The petition was submitted by Mr. Lynne Harris for the Organic Peroxides Producers Safety Division of the Society of the Plastics Industry, Inc.

The reference would be added as follows:

- *The Society of the Plastics Industry, Inc., Organic Peroxide Producers Safety Division, 1801 K Street, NW., Suite 600K, Washington, DC 20006–1301. Example of a Test Method for Venting Sizing: OPPSD/SPI Methodology.*

Section 171.8

The definition for “salvage packaging” would be revised to include the term “non-conforming.” The term “non-conforming” was added to the definition by the UN Committee of Experts in December 2000. In addition to situations involving damaged, defective or leaking packages of dangerous goods, occasionally an undamaged primary container is found to be tested to a performance level which is less than that required for the specific substance it contains (e.g., a drum tested to PG II standards containing a PG I substance). In other instances, the primary container is found to be a non-performance tested packaging containing a regulated substance. In these situations, it may not be safe or practical to transfer the material to the correct packaging to continue on to the consignee. Therefore, the use of salvage packaging to contain “non-conforming” packages will minimize the risk to those handling the package during its transport back to the shipper or to an appropriate disposal location.

Section 171.11

Paragraph (d)(15) would be revised to clarify that the limitations therein also apply to oxygen generators contained in personal breathing equipment. In addition, paragraph (d)(17) would be revised to indicate that an organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

Section 171.12

In § 171.12, paragraph (b)(20) would be revised to indicate that an organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

Section 171.12a

Paragraph (a) would be revised to clarify the requirements for the return to Canada of bulk packagings that correspond to DOT or UN Specification. Paragraph (b)(9)(ii) would be revised to indicate that the shipping certification must be completed for shipments from Canada that enter the U.S. Paragraph (b)(18) would be revised to indicate that an organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

Section 171.14

Paragraphs (d) and (d)(1) would be revised to authorize a delayed implementation date for the proposed amendments in this NPRM. We are proposing an effective date of October 1, 2004, and a voluntary compliance date of January 1, 2005, to correspond with the effective implementation dates of the 2005–2006 ICAO Technical Instructions and Amendment 32 of the IMDG Code. This authorization would allow shippers to prepare their international shipments in accordance with international standards that will become effective on January 1, 2005. We are also, proposing to authorize a delayed compliance date of January 1, 2006, which is comparable to the transitional provisions provided in the final rule published under Docket HM–215E. The delayed mandatory compliance date would offer sufficient time to implement the new requirements.

Paragraph (d)(2) would be revised to authorize certain intermixing of old and new requirements.

Part 172

Section 172.101

In the regulatory text preceding the Hazardous Materials Table, we are proposing the following changes:

Paragraph (c)(11) and the corresponding note to paragraph (c)(11) would be amended to revise a section reference. The reference to § 173.225(c)

in the first sentence would be revised to read § 173.225(b) and the reference to § 173.225(c)(2) in the note to paragraph (c)(11) would be revised to read § 173.225(b)(2).

Paragraph (d)(4) would be revised by adding a statement indicating that when the abbreviation "Comb liq." is found in the "Hazard class of division" column of the Hazardous Materials Table (column 3), the material falls into the "Combustible liquid" hazard class.

Paragraph (i)(3) of this section would be revised to specify that Column 7 of the Hazardous Materials Table contains additional bulk packaging authorizations and limitations for the use of UN portable tanks.

Section 172.101 The Hazardous Materials Table (HMT). We are proposing to make various amendments to the HMT. Readers should review all changes for a complete understanding of the proposed Table amendments. The HMT is being reprinted in its entirety due to the numerous changes. Proposed amendments to the HMT for the purpose of harmonizing with international standards, unless otherwise stated, include, but are not limited to the following:

- We propose to revise several entries by adding the qualifying word "liquid." This action is consistent with the revisions to proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. Affected entries would be as follows:

UN1392 Alkaline earth metal amalgam
 UN1420 Potassium metal alloys
 UN1422 Potassium sodium alloys
 UN1701 Xylyl bromide
 UN1742 Boron trifluoride acetic acid complex
 UN1743 Boron trifluoride propionic acid complex
 UN2235 Chlorobenzyl chlorides
 UN2236 3-Chloro-4-methylphenyl isocyanate
 UN2306 Nitrobenzotrifluorides
 UN2445 Lithium alkyls
 UN2552 Hexafluoroacetone hydrate
 UN2937 alpha-Methylbenzyl alcohol
 UN3276 Nitriles, toxic, n.o.s.
 UN3278 Organophosphorus compound, toxic, n.o.s.
 UN3280 Organoarsenic compound, n.o.s.
 UN3282 Organometallic compound, toxic, n.o.s.
 UN3281 Metal carbonyls, n.o.s.

- We propose to revise several entries by adding the qualifying word "solid." This action is consistent with the revisions to proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. Affected entries would be as follows:

UN1445 Barium chlorate
 UN1447 Barium perchlorate
 UN1459 Chlorate and magnesium chloride mixture
 UN1470 Lead perchlorate
 UN1578 Chloronitrobenzenes
 UN1579 4-Chloro-o-toluidine hydrochloride
 UN1650 beta-Naphthylamine
 UN1680 Potassium cyanide
 UN1689 Sodium cyanide
 UN1690 Sodium fluoride
 UN1697 Chloroacetophenone
 UN1709 2,4-Toluylenediamine
 UN1812 Potassium fluoride
 UN1843 Ammonium dinitro-o-cresolate
 UN2074 Acrylamide
 UN2239 Chlorotoluidines
 UN2261 Xylenols
 UN2446 Nitrocresols
 UN2662 Hydroquinone
 UN3283 Selenium compound, n.o.s.

- We propose to revise several entries by removing the qualifying word "solid." This action would provide consistency with the Thirteenth Revised Edition of the UN Recommendations and enable us to remove all corresponding solution entries. The affected entries would be as follows:

UN1489 Potassium perchlorate, solid
 UN1598 Dinitro-o-cresol, *solid*
 UN1638 Mercury iodide, *solid*
 UN1740 Hydrogendifluorides, n.o.s. *solid*
 UN2439 Sodium hydrogendifluoride, *solid*

- We propose to delete several entries. This action would remove from the HMT the solution form of entries that are not identified as solutions in the Thirteenth Revised Edition of the UN Recommendations. The deleted entries would be as follows:

UN1489 Potassium perchlorate, solution
 UN1598 Dinitro-o-cresol, *solution*
 UN1638 Mercury iodide, *solution*
 UN1740 Hydrogendifluorides, n.o.s. *solutions*
 UN2439 Sodium hydrogendifluoride *solution*

- We propose to revise the proper shipping name "Butadienes, stabilized," UN1010 to read "Butadienes, stabilized or Butadienes and hydrocarbon mixture, stabilized, *containing more than 40% butadienes.*"

- We propose to revise the proper shipping name "Potassium hydrogendifluoride, *solid*," UN1811 to read "Potassium hydrogendifluoride, *solid.*"

- We propose to revise the proper shipping name "Refrigerating machines, *containing non-flammable, non-toxic, liquefied gas or ammonia solution (UN2672),*" UN2857 to read "Refrigerating machines *containing non-flammable, non-toxic gases or ammonia solutions (UN2672).*"

- Four references to IB52 and four references to T23 would be removed

from column 7 of the HMT. This change is necessary because IB52 and T23 would be relocated to § 173.225. The affected entries would be:

UN3109 Organic peroxide type F, liquid
 UN3110 Organic peroxide type F, solid
 UN3119 Organic peroxide type F, liquid, temperature controlled
 UN3120 Organic peroxide type F, solid, temperature controlled

- IP5 would be removed from column 7 of the HMT for the following UN numbers:

UN1791 Hypochlorite solution
 UN2014 Hydrogen peroxide, aqueous solution with not less than 20% but not more than 60% hydrogen peroxide (*stabilized as necessary*).
 UN3149 Hydrogen peroxide and peroxyacetic acid mixture with acid(s), water and not more than 5% peroxyacetic acid.

- We propose to delete several entries. This action is consistent with the deletion of proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations that we are proposing to adopt into the HMR. The entries identified by corresponding "UN" numbers are:

UN2003 Metal alkyls, water-reactive, n.o.s. or Metal aryls, water-reactive, n.o.s.
 UN3049 Metal alkyl halides, water-reactive, n.o.s. or Metal aryl halides, water-reactive, n.o.s.
 UN3050 Metal alkyl hydrides, water-reactive, n.o.s. or Metal aryl hydrides, water-reactive, n.o.s.
 UN3207 Organometallic compound or Compound solution or Compound dispersion, water-reactive, flammable, n.o.s.
 UN3203 Pyrophoric organometallic compound, water-reactive, n.o.s., liquid
 Pyrophoric organometallic compound, water-reactive, n.o.s., solid
 UN3372 Organometallic compound, solid, water-reactive, flammable, n.o.s.

- We propose to add the following new entries. Many of these entries are the liquid or solid form of entries that are already listed in the HMT. This action is consistent with the addition of proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. Affected entries would be as follows:

UN3377 Sodium perborate monohydrate
 UN3378 Sodium carbonate peroxyhydrate
 UN3379 Desensitized explosives, liquid, n.o.s.
 UN3380 Desensitized explosives, solid, n.o.s.
 UN3401 Alkali metal amalgam, solid
 UN3402 Alkaline earth metal amalgam, solid
 UN3403 Potassium metal alloys, solid
 UN3404 Potassium sodium alloys, solid

UN3405 Barium chlorate solution
 UN3406 Barium perchlorate solution
 UN3407 Chlorate and magnesium chloride mixture solution
 UN3408 Lead perchlorate solution
 UN3409 Chloronitrobenzenes, liquid
 UN3410 4-Chloro-o-toluidine hydrochloride solution
 UN3411 beta-Naphthylamine solution
 UN3413 Potassium cyanide solution
 UN3414 Sodium cyanide solution
 UN3415 Sodium fluoride solution
 UN3416 Chloroacetophenone, liquid
 UN3417 Xylyl bromide, solid
 UN3418 2,4-Toluylenediamine solution
 UN3419 Boron trifluoride acetic acid complex, solid
 UN3420 Boron trifluoride propionic, acid complex, solid
 UN3421 Potassium hydrogendifluoride solution
 UN3422 Potassium fluoride solution
 UN3423 Tetramethylammonium hydroxide, solid
 UN3424 Ammonium dinitro-o-cresolate solution
 UN3425 Bromoacetic acid, solid
 UN3426 Acrylamide solution
 UN3427 Chlorobenzyl chlorides, solid
 UN3428 3-Chloro-4-Methylphenyl isocyanate, solid
 UN3429 Chloro-toluidines, liquid
 UN3430 Xylenols, liquids
 UN3431 Nitrobenzotrifluorides, solid
 UN3432 Polychlorinated biphenyls, solid
 UN3433 Lithium alkyls, solid
 UN3434 Nitrocresols, liquid
 UN3435 Hydroquinone solution
 UN3436 Hexafluoroacetone hydrate, solid
 UN3437 Chlorocresols, solid
 UN3438 alpha-Methylbenzyl alcohol, solid
 UN3439 Nitriles, toxic, solid, n.o.s.
 UN3440 Selenium compound, liquid, n.o.s.
 UN3441 Chlorodinitrobenzenes, solid
 UN3442 Dichloroanilines, solid
 UN3443 Dinitrobenzenes, solid
 UN3444 Nicotine hydrochloride, solid
 UN3445 Nicotine sulphate, solid
 UN3446 Nitrotoluenes, solid
 UN3447 Nitroxylenes, solid
 UN3448 Tear gas substance, solid, n.o.s.
 UN3449 Bromobenzyl cyanides, solid
 UN3450 Diphenylchloroarsine, solid
 UN3451 Toluidines, solid
 UN3452 Xylidines, solid
 UN3453 Phosphoric acid, solid
 UN3454 Dinitrotoluenes, solid
 UN3455 Cresols, solid
 UN3456 Nitrosyl-sulphuric acid, solid
 UN3457 Chloronitrotoluenes, solid
 UN3458 Nitroanisoles, solid
 UN3459 Nitrobromobenzenes, solid
 UN3460 N-Ethylbenzyltoluidines, solid
 UN3461 Aluminium alkyl halides, solid
 UN3462 Toxins, extracted from living sources, solid, n.o.s.
 UN3464 Organophosphorus compound, toxic, solid, n.o.s.
 UN3465 Organoarsenic compound, solid, n.o.s.
 UN3466 Metal carbonyls, solid, n.o.s.
 UN3467 Organometallic compound, toxic, solid, n.o.s.
 UN3468 Hydrogen in a metal hydride storage system

• We propose to add the following new generic entries for materials that are poisonous by inhalation. These new names will replace the existing generic entries in the HMT. This action is consistent with the addition of proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN Recommendations. Affected entries would be as follows:

- UN3381 Toxic by inhalation liquid, n.o.s. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC₅₀.
- UN3382 Toxic by inhalation liquid, n.o.s. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC₅₀.
- UN3383 Toxic by inhalation liquid, flammable, n.o.s. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC₅₀.
- UN3384 Toxic by inhalation liquid, flammable, n.o.s. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC₅₀.
- UN3385 Toxic by inhalation liquid, water-reactive, n.o.s. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC₅₀.
- UN3386 Toxic by inhalation liquid, water-reactive, n.o.s. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC₅₀.
- UN3387 Toxic by inhalation liquid, oxidizing, n.o.s. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC₅₀.
- UN3388 Toxic by inhalation liquid, oxidizing, n.o.s. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC₅₀.
- UN3389 Toxic by inhalation liquid, corrosive, n.o.s. with an inhalation toxicity lower than or equal to 200 ml/m³ and saturated vapor concentration greater than or equal to 500 LC₅₀.
- UN3390 Toxic by inhalation liquid, corrosive, n.o.s. with an inhalation toxicity lower than or equal to 1000 ml/m³ and saturated vapor concentration greater than or equal to 10 LC₅₀.

• We propose to add the following new generic entries for organometallic substances. We are not proposing to adopt the "Flowchart scheme for organometallic substances" because we believe that it is intuitive based on the hazard class precedence system in the HMR. This action is consistent with the addition of proper shipping names that were incorporated into the Thirteenth Revised Edition of the UN

Recommendations. Affected entries would be as follows:

- UN3391 Organometallic substance, solid, pyrophoric
 UN3392 Organometallic substance, liquid, pyrophoric
 UN3393 Organometallic substance, solid, pyrophoric, water-reactive
 UN3394 Organometallic substance, liquid, pyrophoric, water-reactive
 UN3395 Organometallic substance, solid, water-reactive
 UN3396 Organometallic substance, solid, water-reactive, flammable
 UN3397 Organometallic substance, solid, water-reactive, self-heating
 UN3398 Organometallic substance, liquid, water-reactive
 UN3399 Organometallic substance, liquid, water-reactive, flammable
 UN3400 Organometallic substance, solid, self-heating

In addition, we would continue to allow the following specific Organometallic proper shipping names: UN1366, UN1370, UN2005, UN2445, UN3051, UN3052, UN3053, and UN3076. However, we anticipate removing these entries from the HMT by January 1, 2007.

• The U.N. Recommendations have adopted a rationalized approach for the assignment of UN portable tank instructions for solid materials. Based on that rationalized approach, we are making several changes to UN portable tank authorizations in the HMR. These proposals are summarized as follows. For a more specific identification of the affected shipping descriptions, refer to the *UN report* located in the public Docket.

For Division 4.1, Packing Group I materials, the use of UN portable tanks would not be authorized.

For Division 4.3 materials with a subsidiary class of 6.1, in Packing Group I, the use of portable tanks would not be authorized.

For materials of Divisions 4.1, 4.2, 4.3, 5.1, 6.1, and Classes 8 and 9, in Packing Group II, Special Provisions T3 would be specified.

For Division 4.2, Packing Group I materials, T21 and TP7 would be specified.

For Division 4.3, Packing Group I materials, T9 and TP7 would be specified.

For Division 5.1, Packing Group I materials, the use of UN portable tanks would not be authorized.

For Division 6.1 and Class 8, Packing Group I materials, T6 would be specified.

For materials of Divisions 4.1, 4.2, 4.3, 5.1, 6.1, and Classes 8 and 9, in Packing Group III, Special Provisions T1 would be specified.

• Several entries in the HMT would be revised by amending column 9B to

read "forbidden" so that the materials would no longer be authorized for transport aboard cargo aircraft. The entries are being revised because they meet the criteria of either Zone C or Zone D inhalation toxicity. All other Zone C and Zone D toxic by inhalation materials listed in the HMR are currently already forbidden from transport aboard passenger and cargo aircraft (these materials are already forbidden from transport aboard passenger aircraft). The entries to be revised include:

Zone C:

- UN2204 Carbonyl sulfide
- UN1023 Coal gas, compressed
- UN1064 Methyl mercaptan
- UN1048 Hydrogen bromide, anhydrous
- UN1079 Sulfur dioxide

Zone D:

- UN1005 Ammonia, anhydrous
- UN3318 Ammonia solution, *relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia*
- UN1040 Ethylene oxide or Ethylene oxide with nitrogen up to a total pressure of 1MPa (10 bar) at 50 degrees C
- UN1040 Ethylene oxide or Ethylene oxide with nitrogen up to a total pressure of 1MPa (10 bar) at 50 degrees C
- UN2191 Sulfuryl fluoride

Also, see § 172.102 for additional HMT amendments.

Appendix B to § 172.101

In Appendix B to § 172.101, List of Marine Pollutants, we are proposing to remove the entries "Isoamyl mercaptan" "Pentanethiols" and "Tetrachlorophenol." We are proposing to revise the entry "2, 6-Di-tert-Butylphenol" and we are proposing to add the entry "Chloropicrin."

Section 172.102

We are proposing to amend § 172.102, Special Provisions, as follows:

- Several entries in the HMT would be revised by adding special provisions A3, A6, A7, A9, A10, N3, and N36 to align this section with the equivalent special provisions in the ICAO Technical Instructions (13, 2, 5, 4, 7, 21, and 3 respectively). We propose to remove the "A" special provisions for several entries because we have determined that the materials to which the provisions apply are currently not authorized for transportation on either passenger or cargo aircraft.

The following entries would be revised by adding special provision A3:

- UN1154 Diethylamine
- UN1788 Hydrobromic acid, *not more than 49% strength*
- UN1789 Hydrochloric acid
- UN2031 Nitric acid, *other than red fuming, with more than 70% nitric acid*

UN2604 Boron trifluoride diethyl etherate

- The following entries would be revised by adding A6:

- UN1111 Amyl mercaptan
- UN1228 Mercaptans, liquid, flammable, toxic, n.o.s.
- UN1760 Corrosive liquid, n.o.s.
- UN1903 Disinfectants, liquid, corrosive, n.o.s.
- UN2031 Nitric acid, *other than red fuming, with not more than 70% nitric acid*
- UN2054 Morpholine
- UN2347 Butyl mercaptan
- UN2363 Ethyl mercaptan
- UN2402 Propanethiols
- UN2801 Dye, liquid, corrosive, n.o.s.
- UN2920 Corrosive liquid, flammable, n.o.s.
- UN2922 Corrosive liquid, toxic, n.o.s.
- UN3071 Mercaptans, liquid, toxic, flammable, n.o.s.
- UN3093 Corrosive liquid, oxidizing, n.o.s.
- UN3093 Corrosive liquid, oxidizing, n.o.s.
- UN3094 Corrosive liquid, water-reactive, n.o.s.
- UN3094 Corrosive liquid, water-reactive, n.o.s.
- UN3098 Oxidizing liquid, corrosive, n.o.s.
- UN3099 Oxidizing liquid, toxic, n.o.s.
- UN3139 Oxidizing liquid, n.o.s.
- UN3145 Alkylphenols, liquid, n.o.s. (*including C2-C12 homologues*)
- UN3264 Corrosive liquid, acidic, inorganic, n.o.s.
- UN3265 Corrosive liquid, acidic, organic, n.o.s.
- UN3266 Corrosive liquid, basic, inorganic, n.o.s.
- UN3267 Corrosive liquid, basic, organic, n.o.s.
- UN3301 Corrosive liquid, self-heating, n.o.s.

- The following entries would be revised by adding special provision A7:

- UN1167 Divinyl ether, stabilized
- UN1277 Propylamine
- UN1389 Alkali metal amalgam, liquid
- UN1389 Alkali metal amalgam, solid
- UN1391 Alkali metal dispersion or Alkaline earth metal dispersion
- UN1407 Cesium or Caesium
- UN1420 Potassium metal alloys
- UN1421 Alkali metal alloy, liquid, n.o.s.
- UN1422 Potassium sodium alloys
- UN1431 Sodium methylate
- UN1796 Nitrating acid mixture with *not more than 50% nitric acid*
- UN1796 Nitrating acid mixture with *more than 50% nitric acid*
- UN1826 Nitrating acid mixture, spent with *not more than 50% nitric acid*
- UN1826 Nitrating acid mixture, spent with *more than 50% nitric acid*
- UN1828 Sulphur chlorides
- UN1938 Bromoacetic acid
- UN2257 Potassium
- UN2749 Tetramethylsilane
- UN3093 Corrosive liquid, oxidizing, n.o.s.
- UN3093 Corrosive liquid, oxidizing, n.o.s.
- UN3094 Corrosive liquid, water-reactive, n.o.s.
- UN3094 Corrosive liquid, water-reactive, n.o.s.
- UN3205 Alkaline earth metal alcoholates, n.o.s.

- UN3205 Alkaline earth metal alcoholates, n.o.s.
- UN3206 Alkali metal alcoholates, self-heating, corrosive, n.o.s.
- UN3206 Alkali metal alcoholates, self-heating, corrosive, n.o.s.
- UN3208 Metallic substance, water-reactive, n.o.s.
- UN3208 Metallic substance, water-reactive, n.o.s.
- UN3208 Metallic substance, water-reactive, n.o.s.
- UN3209 Metallic substance, water-reactive, self-heating, n.o.s.
- UN3209 Metallic substance, water-reactive, self-heating, n.o.s.
- UN3209 Metallic substance, water-reactive, self-heating, n.o.s.

- The following entries would be revised by adding special provision A9:

- UN1449 Barium peroxide
- UN1452 Calcium chlorate
- UN3212 Hypochlorites, inorganic, n.o.s.

- The following entries would be revised by adding special provision A10:

- UN1828 Sulphur chlorides
- UN2401 Piperidine

- The following entry would be revised by adding special provision N3:

- UN2817 Ammonium hydrogendifluoride solution

- The following entries would be revised by adding special provision N36:

- UN1184 Ethylene dichloride
- UN1732 Antimony pentafluoride
- UN1777 Fluorosulphonic acid
- UN2699 Trifluoroacetic acid

- The following entries would be revised by removing certain "A" special provisions since the materials themselves are forbidden for transportation aboard passenger and cargo aircraft:

- UN1541 Acetone cyanohydrin, stabilized (remove A3)
- UN1722 Allyl chloroformate (remove A3)
- UN2692 Boron tribromide (remove A3, A7)
- UN1744 Bromine or Bromine solutions (remove A3, A6)
- UN2484 tert-Butyl isocyanate (remove A7)
- UN2485 n-Butyl isocyanate (remove A7)
- UN1752 Chloroacetyl chloride (remove A3, A6, A7)
- UN1754 Chlorosulfonic acid (*with or without sulfur trioxide*) (remove A3, A6, A10)
- UN2382 Dimethylhydrazine, symmetrical (remove A7)
- UN1182 Ethyl chloroformate (remove A3, A6, A7)
- UN2481 Ethyl isocyanate (remove A7)
- UN2014 Hydrogen peroxide, aqueous solutions with *more than 40 percent but not more than 60 percent hydrogen peroxide* (stabilized as necessary) (remove A3, A6)
- UN2015 Hydrogen peroxide, stabilized or Hydrogen peroxide aqueous solutions,

stabilized with more than 60 percent hydrogen peroxide (remove A3, A6)

NA9206 Methyl phosphonic dichloride (remove A3)

UN2534 Methylchlorosilane (remove A2, A3, A7)

UN2304 Naphthalene, molten (remove A1)

UN1670 Perchloromethyl mercaptan (remove A3, A7)

UN1810 Phosphorus oxychloride (remove A7)

UN2740 n-Propyl chloroformate (remove A3, A6, A7)

UN1829 Sulfur trioxide, stabilized (remove A7)

UN1831 Sulfuric acid, fuming with 30 percent or more free sulfur trioxide (remove A3, A6, A7)

UN1834 Sulfuryl chloride (remove A3)

UN1836 Thionyl chloride (remove A7)

UN2474 Thiophosgene (remove A7)

UN1838 Titanium tetrachloride (remove A3, A6)

UN2441 Titanium trichloride, pyrophoric or Titanium trichloride mixtures, pyrophoric (remove A7, A8, A19, A20)

UN2442 Trichloroacetyl chloride (remove A3, A7)

UN1295 Trichlorosilane (remove A7)

UN2438 Trimethylacetyl chloride (remove A3, A6, A7)

- Paragraph (b)(3) of this section would be amended to specify that a "B" code refers to a special provision that applies only to certain bulk packaging requirements and that, unless otherwise stated, would not apply to UN portable tanks or IBCs.

- Paragraph (b)(4) of this section would be amended to specify that a code containing the letters "IB" or "IP" refers to a special provision that applies only to transportation in IBCs.

- Paragraph (b)(8) would be redesignated (b)(9) and a new paragraph (b)(8) would be added to specify that a code containing the letters "TP" refers to a special provision that is in addition to those provided by the portable tank instructions or the requirements in part 178.

- Special Provision 47 would be revised to include an additional exception currently in the UN Model Regulations specifying that a leakproofness test is not required when the liquids are fully absorbed in solid material contained in sealed bags.

- Special Provision 135 would be revised to expand the applicability of the proper shipping names "Vehicle, flammable liquid powered" and "Vehicle, flammable gas powered" to include hybrid electric vehicles.

- Special Provision 137 would be revised to expand the exception for "Cotton, dry."

- Special Provision 143 would be removed and relocated to § 173.219 so that the limitations on the types of hazardous materials authorized apply to

both self-inflating and non-self-inflating life-saving appliances.

- Special Provision 153 would be relocated to new paragraph (k) in § 173.115 and revised to include amended classification criteria for aerosols containing flammable constituents consistent with criteria in the UN Model Regulations. The revised criteria would include methods for the classification of aerosols based on the percentage of flammable components.

- New Special Provision 163 would be added to specify that Ammonium Nitrate Emulsions would be required to satisfactorily pass Test Series 8 of the UN Manual of Tests and Criteria, Part I, Section 18.

- New Special Provision 164 would be added to specify that an approval is required for "Desensitized explosives, liquid, n.o.s." and "Desensitized explosives, solid, n.o.s."

- New Special Provision 165 would be added to the Calcium hypochlorite PG II and the PG III entries for UN1748 and UN2880 to specify the danger of exothermic decomposition and require shading from direct sunlight and sources of heat during transportation.

- New Special Provision 166 would be added to the PG II entry for calcium hypochlorite, UN2880 and UN1748 to indicate that calcium hypochlorite in the non-friable tablet form may be transported as a PG III material.

- New Special Provision 167 would be added to the proposed new entry for "Hydrogen in a metal hydride storage system" to specify that such storage systems shall always be considered as containing hydrogen.

- New Special Provision 170 would be added to the newly proposed Organometallic substances entries (UN3391, UN3392, UN3393, and UN3394). The special provision would require air to be eliminated from the vapor space by nitrogen or other means.

- New Special Provision 171 would be added to the UN2880 PG III entry. Since UN2880 also covers mixtures of hydrated calcium hypochlorite in any concentration, some formulations in other than tablet form (*e.g.*, in granular form) may meet the criteria for classification in Division 5.1, Packing Group III when subjected to the relevant test in the UN Manual of Tests and Criteria. The PG III entry for calcium hypochlorite would only be authorized when the material is offered in the non-friable tablet form or for granular or powered mixtures. This entry would not be authorized for the pure form of calcium hypochlorite hydrated. We also recognize that some formulations, when tested, do not meet the criteria for classification in Division 5.1. In light of

this, we believe that a new Special Provision 171 should be added to the UN2880, PG III entry in the HMT to allow for the possibility to classify powered or granular mixtures of hydrated calcium hypochlorite in Packing Group III when data indicates that the mixture meets the criteria for assignment to PG III.

- Special Provision A11 is currently assigned to UN 2983, Ethylene oxide and Propylene oxide mixtures and UN 1411, Lithium aluminum hydride, ethereal. In the ICAO Technical Instructions these substances are only authorized for transport in metal cylinders. A11 states "For combination packagings, when metal inner packagings are permitted, only specification cylinders constructed of metals which are compatible with the hazardous material may be used." Therefore, to align with ICAO Particular Packing Requirement Number 8, Special Provision A11 would be amended to read "Only specification cylinders constructed of metals which are compatible with the hazardous material may be used."

- Consistent with ICAO, we are adding a proper shipping name to the HMT for "Receptacles, small containing gas, 2.2 with a subsidiary of 5.1." A new "A" code (A14) would be added to prohibit material from being transported as a limited quantity or consumer commodity in accordance with § 173.306 aboard an aircraft. This new "A" code would also be added to the following additional shipping names: "Oxygen, compressed", "Carbon dioxide and oxygen mixtures", "Nitrous oxide", "Compressed gas oxidizing", and "Liquefied gas, oxidizing."

- For consistency, the authorization in Special Provision B69 to allow dry sodium or potassium cyanide in siftproof, water-resistant fiberboard IBCs would be relocated to new Special Provision IP20.

- Paragraph (c)(4) of this section would be amended by relocating "Table 2.—Organic Peroxide IBC Code (IB52)" to paragraph (e) of § 173.225 and renaming it the "Organic Peroxide IBC Table." Table 3.—IP Codes would then be redesignated Table 2.—IP Codes. The wording of paragraph (c)(4) would be revised to indicate that Table 3.—IP Codes had been redesignated Table 2.—IP Codes. All references to IB52 in the HMR would be removed and replaced with "Organic Peroxide IBC Table" or "§ 173.225(e)," as applicable.

- Paragraph (c)(7) would be amended by relocating the Portable Tank Code T50 Table to § 173.313 and renaming it "UN Portable Tank Table for Liquefied Compressed Gases." The T50 Table and

its description would be removed from paragraph (c)(7)(iv) and replaced with a statement indicating that the new "UN Portable Tank Table for Liquefied Compressed Gases" is found in § 173.313. All references to T50 in the HMR would be removed and replaced with "UN Portable Tank Table for Liquefied Compressed Gases in § 173.313". In addition, paragraph (c)(7) would be amended by relocating Portable Tank Code T23 to paragraph (g) of § 173.225 and renaming it the "Organic Peroxide Portable Tank Table." Portable Tank Code T23 and its description found in paragraph (c)(7)(iii) would be removed and paragraphs (c)(7)(iv)–(c)(7)(vii) would be redesignated (c)(7)(iii)–(c)(7)(vi), respectively. All references to T23 in the HMR would be removed and replaced with "Organic Peroxide Portable Tank Table" or "§ 173.225(g)," as applicable.

- New paragraph (c)(8) would be added to provide an introduction to the "TP" codes (*i.e.*, portable tank special provisions). The existing paragraph (c)(8) would be redesignated paragraph (c)(9).

- New Special IBC Packing Provision IP13 would be added to specify that transportation by vessel in IBCs would be prohibited.

- New Special IBC Packing Provision IP14 would be added to specify that air must be eliminated from the vapor space by nitrogen purging or other means.

- New Special IBC Packing Provision IP20 would be added to specify that dry sodium cyanide and potassium cyanide are also permitted in siftproof, water-resistant, fiberboard IBCs when transported in closed freight containers or transport vehicles.

- Portable tank Special Provision TP3 would be revised to include the maximum degree of filling (in %) for solids transported above their melting points.

- Special Provision TP6 would be revised by removing the word "event" and replacing it with the "incident."

- Portable tank Special Provision TP9 would be removed from column (7) of the Hazardous Materials Table for all materials that reference a T code special provision. Special provision TP9 states that a material with TP9 in Column (7) may only be transported in a portable tank if approved by the Associate Administrator. A material that has been given a T code does not require approval and is not subject to Special Provision TP9.

Section 172.202

Paragraph (a)(5)(i) would be revised to clarify that for explosive articles the

quantity shown on a shipping paper must be expressed in terms of the net mass of the article.

Section 172.203

Paragraph (f) would be revised by including the passenger and cargo aircraft limitation certification statement that is currently found in § 172.204.

This would align the HMR with the ICAO TI (see 4.1.5.8.1(b) of the ICAO TI). In addition, in paragraph (o)(3), the reference to § 173.225(c)(2) would be amended to read § 173.225(b)(2).

Paragraph (m)(2) would be revised to specify that the phrase "Poison Inhalation Hazard" or "Toxic Inhalation Hazard" is not required to be repeated if it otherwise appears in the shipping description. Finally, a new paragraph (i)(3) would be added to specify additional shipping paper description requirements for a hazardous material consigned under an "n.o.s." entry when offered for transportation by vessel.

Section 172.204 and Section 172.321— Air Eligibility Marking

Under HM–215E (68 FR 44992), the air eligibility marking was adopted into the HMR as new § 172.321. Since publication of that final rule, the ICAO's Dangerous Goods Panel removed the air eligibility marking requirement. In lieu of this marking, ICAO adopted a requirement that the shipping paper certification statement include the statement "I declare that all of the applicable air transport requirements have been met" when a hazardous material is offered for air transportation. Additionally, the revised section provided examples of the applicable air transport requirements that must be met. Based on this action, we are proposing to revise the air eligibility marking requirement by making it optional rather than mandatory and adding the additional shipping paper certification statement for shipments going by aircraft. Therefore, we are proposing to revise § 172.204(c)(3) by requiring that the statement "I declare that all of the applicable air transport requirements have been met" be included on the shipping paper in addition to the current certification statement when a hazardous material is offered for air transportation.

Additionally, the revised section would provide examples of the applicable air transport requirements that must be met and various section references. In order to allow shippers to expend stocks of preprinted shipping papers containing the previous certification statement, we are providing an additional ten month transitional provision for the new certification statement.

Section 172.317

A new § 172.317 would be added to require a "KEEP AWAY FROM HEAT" handling mark on packages containing self-reactive substances of Division 4.1 or organic peroxides of Division 5.2 when such packages are transported by air.

Part 173

Section 173.3

The definition for "salvage drums" would be revised to include the term "non-conforming." The term "non-conforming" was added to the definition by the UN Committee of Experts in December 2000.

Section 173.24

For consistency with the UN Recommendations, paragraphs (g)(4) and (g)(5) would be revised to clarify the following:

(A) That IBCs (subject to the requirements in § 173.24(g)) are permitted to be vented to reduce internal pressure; and

(B) That venting of IBCs is not conditional upon whether a bulk special provision is indicated for a particular hazardous material in the § 172.101 hazardous materials table.

In addition, paragraph (i) would be revised to clarify that other general requirements specific to air transportation apply and are found in § 173.27.

Section 173.25

Paragraph (a)(2) would be revised by removing the requirement to mark an overpack with the air eligibility marking. In addition, in paragraph (a)(4), we propose to require overpacks to be marked with the word "OVERPACK" or, alternatively, until October 1, 2007, with a statement indicating that inside packages comply with prescribed specifications. This is in response to adoption by the United Nations of the "OVERPACK" marking to indicate that packages within an overpack comply with prescribed specifications when specification markings on inside packagings within the overpack are not visible.

Section 173.27

Paragraph (i) would be revised to indicate that the air eligibility mark has been removed. This section would reference a new requirement for shippers to place the following statement at the end of the certification statement when a hazardous material is authorized for air transportation: "I declare that all applicable air transport requirements have been met."

Section 173.28

In paragraph (c)(2), we propose to delete the words "or a UN 1H1 plastic drum." This would harmonize the HMR with the UN Model Regulations and remove a source of confusion within the regulated community regarding the reconditioning of a non-bulk packaging.

Section 173.115

In § 173.115, a new paragraph (k) would be added (*see* discussion under § 172.102, Special Provision 153).

Section 173.128

In paragraph (d)(1)(i), the section reference would be revised to read § 173.225(c). In addition, in paragraphs (d)(1)(ii) and (d)(1)(iii), the section reference would be revised to read § 173.225(b).

Section 173.132

In paragraph (b)(1), we propose to revise the definition of LD₅₀ for acute oral toxicity to indicate that adult albino rats may be tested without regard to gender. The current definition for LD₅₀ for acute oral toxicity in § 173.132(b)(1) is based on the Organization for Economic Co-Operation and Development (OECD) Test Guideline (TG) 401. The OECD has agreed to three test methods that will replace the current TG 401. The United Kingdom, Germany and the United States of America took the lead in the development of the three alternative tests that OECD has now adopted and published in the OECD Guidelines for the Testing of Chemicals. In a continuing attempt to improve the estimate of acute oral toxicity while reducing the number of animals used per test, three alternative TGs have been developed and implemented to replace TG 401. The three TGs are the Fixed Dose Procedure (FDP, TG 420), the Acute Toxic Class Method (ATCM, TG 423), and the Up-and-Down Procedure (UDP, TG 425). The proposed text would be consistent with the text in the 13th revised edition of the UN Model Regulations that was recently amended on the basis of a proposal from the United States.

Section 173.136

We propose to add a new paragraph (d) to provide a grandfather clause that will allow the shipment of materials classified as corrosive to steel or aluminum under ASTM G 31-72.

Section 173.137

In paragraph (c)(2), we propose to eliminate the references to ASTM G 31-72 as an acceptable test description and add a statement indicating an acceptable

test is prescribed in the Manual of Tests and Criteria, Part III, Section 37.

Sections 173.150, 173.151, 173.152, 173.153 and 173.154

We are proposing to allow most Division 6.1, Packing Group II materials to be transported as a limited quantities. For Packing Group II materials, we are proposing to allow inner packagings not over 100 mL (3.38 ounces) each for liquids or 0.5 kg (1.1 pounds) each for solids to be transported as a limited quantity. However, consistent with the limited quantity authorization for Division 6.1, Packing Group III, we are not proposing a labeling exception for these materials. We are also not proposing to allow these materials to be shipped as a consumer commodity. In addition, we propose to revise the limited quantity sections for the other hazard classes of materials to take into account materials with a subsidiary hazard of 6.1 Packing Group II.

Section 173.185

In § 173.185, we propose to amend paragraphs (c)(3) and (e)(3), to specify that a cell, battery, lithium cell or battery and equipment containing a cell, battery or lithium cell or battery that was transported prior to the effective date of this rule and is of a type proven to meet the criteria of Class 9 by testing, in accordance with the tests prescribed in the UN Manual of Tests and Criteria, Third Revised Edition, 1999 would not be required to be retested.

Section 173.186

In § 173.186, in paragraph (e), we propose to amend the gross weight for 4G outer packages authorized for the transportation of strike-anywhere matches, to be consistent with the UN Model Regulations by increasing the weight from 27 kg (60 pounds) to 30 kg (66 pounds).

Section 173.187

We propose to revise § 173.187 to authorize certain solid hazardous materials to be transported in DOT specification cylinders other than Specification 8 and 3HT cylinders. This proposal would also remove the need for DOT Exemption "DOT-E 11548."

Sections 173.211, 173.212, and 173.213

We propose to revise these sections to authorize certain solid hazardous materials to be transported in DOT specification cylinders other than Specification 8 and 3HT cylinders. This proposal would also remove the need for DOT Exemption "DOT-E 11548."

Section 173.219

We propose to revise § 173.219 for consistency with the UN Model Regulations and the ICAO Technical Instructions. Included in the proposed revision is an allowance for self-inflating life-saving appliances to contain cartridges, power devices of Division 1.4S, for purposes of the self-inflating mechanism. In addition, we propose to provide an exception from regulation for life-saving appliances containing only carbon dioxide cylinders not exceeding 100 cm³ capacity, provided they are overpacked in rigid outer packagings with a maximum gross mass of 40 kg. Finally, the limitations currently found in Special Provision 143 would be relocated to § 173.219 (*see* preamble discussion under Special Provision 143).

Section 173.220

Paragraph (b)(2) would be amended to harmonize the requirements for transporting flammable gas powered vehicles by air with the requirements of Packing Instruction 900 of the ICAO Technical Instructions.

Section 173.224

Paragraph (b)(4) of this section would be amended to include the new references for § 173.225. The section reference to § 173.225(e) for the authorization of bulk packagings would be replaced with § 173.225(f) for IBCs and § 173.225(h) for other bulk packagings.

Section 173.225

This section would be amended to update the Organic Peroxide Table and eliminate special provisions IB52 and T23 from § 172.102(c). The purpose of the change is to consolidate the packaging requirements for organic peroxides into one section and to have separate tables for organic peroxides authorized for transport in non-bulk packagings, IBCs, and bulk packagings other than IBCs. The proposed changes are as follows:

Paragraph (a) would be revised by adding paragraphs (b) and (b)(6), which state that bulk packagings may require a lower control temperature than those specified for non-bulk packagings and that an organic peroxide not identified in either the Organic Peroxide Table, Organic Peroxide IBC Table, or Organic Peroxide Portable Tank Table must be approved under § 173.128(c).

Paragraph (b) would be revised to eliminate all IBC and other bulk packaging authorizations from column 6 of the Organic Peroxide Table. Various obsolete entries would also be removed.

The current paragraph (b), "Organic Peroxide Table," would be moved to paragraph (c) and the current paragraph (c), "New organic peroxides, formulations and samples," would be moved to paragraph (b).

In the notes following the Organic Peroxide Table we propose to:

- Revise note 22 to indicate that ethylbenzene with greater than or equal to 25% of dilutant type A would be acceptable.

- Revise note 23 to indicate that methyl isobutyl ketone with greater than or equal to 19% of dilutant type A would be acceptable.

- Add a new note 29 to identify materials which are not included in the UN Model Regulations and note that a Competent Authority approval is required for international transportation.

- Remove Notes 9, 11, and 14 following the Organic Peroxide Table.

In addition, The Packing Method Table found in paragraph (d), would be revised by replacing the 200 kg maximum quantity for solids and combination packagings listed in OP8 with a 400 kg maximum quantity. Note 2, following the table, would be revised to allow 200 kg of solid material per box and up to 400 kg of material per authorized combination packaging. The note would also indicate that the outer packaging must be a box (4C1, 4C2, 4D, 4F, 4G, 4H1, and 4H2) and each inner packaging must be of plastics or fiber with a maximum net mass of 25 kg. Paragraph (d)(3) would be clarified by revising the text to state that the maximum content acceptable for glass receptacles used as inner packagings of a combination packaging is 0.5 kg for solids or 0.5 L for liquids.

A new paragraph (e) would be added to include the new "Organic Peroxide IBC Table" that replaces the current "Table 2—Organic Peroxide IBC Code (IB52)" in § 172.102(c)(4). The new table would be revised to add an organic peroxide,

"Dicyclohexylperoxydicarbonate, not more than 42% as a stable dispersion, in water." In addition, the new Organic Peroxide IBC Table would identify, by technical name, those organic peroxides authorized for transportation in the IBCs that are specifically listed in the table.

A new paragraph (f) would be added to include the current IBC requirements contained in paragraph (e)(5) of this section. Paragraph (f) would also include requirements that are specific to organic peroxides packaged in IBCs.

A new paragraph (g) would be added to include the new "Organic Peroxide Portable Tank Table," that replaces the

current "Portable Tank Code T23" found in § 172.102(c)(7)(iii). The new table would be identical to the current table except that for UN 3109, in the entry for Pinanyl hydroperoxyde, 50% would be replaced by 56% and all references to self-reactive materials would be removed. In addition, the Organic Peroxide Portable Tank Table would provide certain portable tank requirements and identify, by technical name, those organic peroxides authorized for transportation in the bulk packagings listed in the new paragraph (h).

The current paragraph (e) would be redesignated as paragraph (h). Paragraph (h) would establish requirements that are specific to organic peroxides packaged in certain bulk packagings. Additionally, the new "Note to Paragraph (h)(3)(vi)" would be revised to include changes brought forth by petition for rulemaking P-1428. The petition proposed to amend the current paragraph (e)(3)(vi) and allow for a second but equally acceptable example of an emergency-relief device sizing method to be added to the HMR. We are in agreement with the petitioner and are proposing to add a statement to the new paragraph (h)(3)(vi) indicating that an additional example of an emergency-relief device sizing method can be found in the "American Institute of Chemical Engineers Process Safety Progress Journal, June 2002 issue (Vol. 21, No. 2)" as referenced in § 171.7(b).

The proposed changes to this section would alter the order of the paragraphs within this section and various citations would need to be changed. Also, paragraphs referencing IB52 or TP23 would be revised to indicate that those provisions no longer exist and the updated requirements are found in paragraph (e) and (g), respectively.

Sections 173.226 and 173.227

We propose to revise the packaging requirements of §§ 173.226 and 173.227 for materials poisonous by inhalation, Division 6.1, Packing Group I, Hazardous Zone A and Hazard Zone B. These amendments would: Reduce the hydrostatic test pressure of the inner drum in a drum-within-a-drum configuration authorized in § 173.226(b); standardize the minimum thickness requirements of the inner drums in the drum-within-a-drum configuration authorized in §§ 173.226(b) and 173.227(b); clarify the test requirements for inner packaging systems in § 173.226(b)(2)(iv); and in § 173.226(d) add a provision to authorize transportation of PIH materials in single packages when subjected to additional operational

controls and approved by the Associate Administrator for Hazardous Materials Safety. Section 173.226(c)(2) would be reformatted for ease of understanding. We would also remove an expired transitional date from paragraph (a) that allows the transport of welded cylinders filled before October 1, 2003 for the purpose of reprocessing or disposal of cylinders's content until December 31, 2003.

Section 173.249

Paragraph (c) would be revised to be consistent with the current "Bromine" entry in the § 172.101 "Hazardous Material Table" that authorizes the use of a UN portable tank conforming to tank code T22.

Sections 173.306 and 173.307

To add clarity to the HMR, the text currently found in § 173.306(i) would be removed and replaced with the text currently found in § 173.307(a)(5). Since § 173.306 is devoted exclusively to limited quantities of compressed gases, relocating § 173.307(a)(5) to § 173.306 would make the exception easier to find.

Section 173.313

A new § 173.313 would be added to serve as the new location for the Portable Tank Code T50 Table. The table would be renamed "UN Portable Tank Table for Liquefied Compressed Gases." The table provides the maximum allowable working pressures, bottom opening requirements, pressure relief requirements and degree of filling requirements for liquefied compressed gases permitted for transport in portable tanks. The change would relocate these packaging requirements to Part 173, which is a more appropriate location, and make the special provisions less cumbersome. In addition, the new UN Portable Tank Table for Liquefied Compressed Gases would be amended by revising the Column 3 heading to read "Minimum design pressure (MAWP) (bar) * * *." The values in column 3 are actually minimum values, however the title of the column is misleading because it uses the term "Maximum allowable working pressure (bar) * * *."

Section 173.315

In paragraph (a), the reference to "portable tank provision T50 in § 172.102" would be revised to read "the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313".

Section 173.323

In this rule we are proposing to revise the combination packaging authorizations for Ethylene Oxide to be consistent with the UN Recommendations. Paragraphs (b)(1)–(b)(3) would be revised and consolidated for consistency with current international requirements for the transportation of ethylene oxide in combination packagings. Paragraphs (b)(1)–(b)(3) provide the current authorizations for glass, aluminum, and metal receptacles respectively. Amendments to this section include (1) specifying a 2.5 kg limit per outer package and removing the HMR limitation of 12 inner receptacles per outer package currently applied to aluminum and other metal receptacles, (2) removing the overpack restriction in (b)(2) which specifies a maximum of 10 boxes per overpack, (3) requiring a hot water bath test for all inner receptacles, (4) removing the pressure relief device and burst pressure requirements currently applied to metal receptacles, (5) applying the same outer package authorizations consistently to all inner packaging types and allowing any outer package authorized in § 172.201(b), and (6) requiring all inner packagings to be suitably cushioned (the top and bottom pad and perimeter liner requirement currently only applied to outer packages containing aluminum inner packagings would be removed). Though we are eliminating the option to utilize certain packaging authorizations for glass and aluminum inner packagings, we believe that this proposal will present little or no economic impact on the ethylene oxide industry because of the amount of materials that are transported in international commerce. If comments are received that contradict this understanding, RSPA may revise the final rule accordingly.

Part 175

Section 175.10

Consistent with an amendment to the ICAO TI, we are proposing to require that aerosol cans that are carried aboard an aircraft in accordance with § 175.10(a)(4) have their release devices protected by a cap or other suitable means. In addition, the ICAO Dangerous Goods Panel will convene a series of working groups to develop recommendations for consideration during the 20th session of the Dangerous Goods Panel to further review this issue. These recommendations may lead to additional amendments to the ICAO TI. Finally, we note that non-flammable gases (e.g., nitrogen) other than carbon

dioxide are used for the operation of mechanical limbs. Consistent with an amendment to the ICAO TI, we are proposing to provide an exception from the HMR for mechanical limbs that are powered by any Division 2.2 gas.

Section 175.85

In § 175.85, a new paragraph (j) would be added to specify the cargo location of a package bearing the “KEEP AWAY FROM HEAT” handling marking.

Part 176

Section 176.2

Certain definitions would be revised. The definition for “Explosive article” and “Explosive substance” would be revised to remove an incorrect reference. The definition for “Magazine” would be revised to include a compartment in the vessel. The definition for “Magazine” would also be revised to specify vessel storage location and accessibility. The term “Transport unit” would be revised to read “Cargo transport unit” to be consistent with Amendment 32 of the IMDG Code. In addition, in the definition “In containers or the like” the term “transport unit” would be removed and the term “cargo transport unit” would be added in its place.

Section 176.27

In this section, the words “transport unit” would be replaced with the words “transport vehicle” in each place they appear to be consistent with the removal of the term “transport unit” from the definitions in § 176.2.

Section 176.63

Paragraph (e) would be revised to align the definition of “Closed cargo transport unit” to be consistent with the definition in Amendment 32 of the IMDG Code.

Section 176.76

Paragraph (i) would be revised to clarify that for container ships, a distance equivalent to one container space athwartships (*i.e.*, in the direction of the breadth of the vessel) away from possible sources of ignition applied in any direction would satisfy the requirement that a cargo transport unit packed or loaded with flammable gas or flammable liquid having a flashpoint below +23 °C transported on deck be stowed “away from” possible ignition sources. This would be consistent with Amendment 32 of the IMDG Code. In addition, in paragraphs (h) and (i), the words “transport unit” would be removed and replaced with the words “cargo transport unit” in each place they

appear to be consistent with Amendment 32 of the IMDG.

Section 176.83

Paragraph (l) would be revised to correct an error pertaining to the Segregation Table that set forth the general requirements for segregation of containers on board hatchless container vessels. In addition, throughout the section the words “transport units” would be removed and replaced with the words “cargo transport units” in each place they appear to be consistent with Amendment 32 of the IMDG. A new paragraph (m) would be added to specify the provisions for segregation groups.

Section 176.84

Paragraph (a) would be revised to specify the various chemical groups listed in the segregation table. In the paragraph (b) Table of Provision, we would add eleven new provisions (codes) for certain stowage and segregation requirements for hazardous materials that are transported by vessel. In addition, in paragraph (c)(2) Provisions for the stowage of Class 1 (explosive) materials, we would revise three notes. The terms “separated from” and “away from” in the codes are defined in § 176.83 of the HMR.

Code 133 would be added to the entries “Barium chlorate solution,” UN3405; “Barium perchlorate solution,” UN3406; and “Chlorate and magnesium chloride mixture solution,” UN3407, that requires the material to be stowed “separated from” sulfur.

Code 134 would be added to the entry “Aluminum alkyl halides, solid,” UN3461, that requires the material to be stowed “separated from” UN2716.

Code 135 would be added to the entries “Methylamine, aqueous solution,” UN1235 and “Trimethylamine, aqueous solutions,” UN1297, that requires the material to be stowed “separated from” mercury and mercury compounds.

Code 136 would be added to the entry “Tributylphosphane,” UN3254, that requires the material to be stowed “separated from” tetrachloride.

Code 137 would be added to the entries “Arsenic compounds, liquid, n.o.s.,” UN1556 and “Arsenic compounds, solid, n.o.s.,” UN1557, that requires arsenic sulphides to be stowed “separated from” acids.

Code 138 would be added to the entries for UN1448; UN1456; UN1479; UN1482; UN1490; UN1503; UN1515; UN3085; UN3087; UN3098; UN3099; UN3139; and UN3214, that requires the material to be stowed “separated from” peroxides.

Code 139 would be added to the entry "1, 4-Butynediol," UN2716, that requires the material to be stowed "separated from" mercury salts.

Code 140 would be added to the entry "1, 4-Butynediol," UN2716, that requires the material to be stowed "separated from" UN3052 and UN3461.

Code 141 would be added to the entries for UN1732; UN1755; UN1806; UN1908; UN2433; UN2859; and UN2861, that requires the material to be stowed "away from" radioactive materials.

Code 142 would be added to the entries for UN1748; UN2208; and UN2880, that requires packages in cargo transport units to be stowed so as to allow for adequate air circulation throughout the cargo.

Code 143 would be added to the entry for Organometallic Substance, Liquid, Pyrophoric, UN3392, prohibiting transportation on any vessel carrying explosives (except explosives in Division 1.4, Compatibility group S.

Note 19E would be revised to specify that materials under entries NA0331; UN0004; UN0222; UN0241; and UN0402 must be stowed "away from" explosives containing chlorates or perchlorates.

Note 22E would be revised to specify that materials under the entry "Explosive, blasting, type C;" must be stowed "away from" ammonium compounds and explosives containing ammonium compounds or salts.

Note 23E would be revised to specify that materials under entries UN0247; UN0395; UN0396; UN0397; UN0398; UN0399; UN0400; UN0449; and UN0450 must be "separated from" Division 1.4 and "separated longitudinally by an intervening complete compartment or hold from" Division 1.1, 1.2, 1.3, 1.5, and 1.6 except from explosives of compatibility group J.

Section 176.116

In paragraph (c), the words "transport units" would be revised to read "cargo transport units." In addition, a new paragraph (f) would be added to specify the under deck stowage requirements of Class 1 (explosive) materials allocated stowage categories 09 and 10.

Sections 176.122 and 176.124

Sections 176.122 and 176.124 would be removed and reserved.

Section 176.128

In § 176.128, the section heading and section would be revised.

Section 176.132

Section 176.132 would be removed and reserved.

Section 176.133

Section 176.133 would be revised to clarify the construction and stowage location requirements for magazine stowage type C.

Section 176.136

Section 176.136 would be revised to clarify the special stowage requirements of Class 1 (explosive) materials. In addition, minor editorial revisions would be made.

Section 176.138

Paragraph (a) would be removed and reserved to be consistent with Amendment 32 of the IMDG Code. This paragraph currently requires Class 1 (explosive) material that is stowed on deck to be carried as close to the vessel's centerline as practicable. (See also proposed change to § 176.170.)

Section 176.142

Paragraph (a) would be revised to remove "Pyrophoric organometallic compound, water-reactive, n.o.s." from the list of liquid hazardous materials of extreme flammability that may not be transported in a vessel carrying Class 1 (explosive) materials. Additionally, we propose to add to the above list the following new liquid entries:

"Organometallic substance, liquid, pyrophoric, UN3392"

"Organometallic substance, liquid, pyrophoric, water-reactive, UN3394" These proposed changes would be consistent with Amendment 32 of the IMDG Code.

Section 176.144

In this section, the words "transport unit" would be replaced with the words "cargo transport unit" in each place they appear to be consistent with the definition in Amendment 32 of the IMDG Code. Additional notes would be added to Table 176.144(a)—"Authorized Mixed Stowage For Explosives" to address additional exceptions for mixed stowage of Class 1 materials.

Section 176.146

In § 176.146, in paragraph (d)(1), the wording "transport units" would be revised to read "cargo transport units".

Section 176.168

In § 176.168, in the title before the section heading, the wording "TRANSPORT UNITS AND SHIPBORNE BARGES" would be revised to read "CARGO TRANSPORT UNITS AND SHIPBORNE BARGES".

Section 176.170

A new paragraph (b) would be added to prohibit freight containers loaded

with Class 1 (explosive) materials, except for explosives in Division 1.4, from being stowed in the outermost row of containers. This proposed change would be consistent with Amendment 32 of the IMDG Code.

Section 176.174

Paragraphs (a) and (b) would be revised to remove the references to portable magazines. This proposed change would be consistent with Amendment 32 of the IMDG Code.

Section 176.600

In § 176.600, in paragraph (a), the wording "closed transport units" would be revised to read "closed cargo transport units".

Part 178

Section 178.274

Paragraph (f)(v) would be revised to more clearly specify the rated flow capacity marking required to be placed on every UN portable tank's pressure relief device.

Section 178.275

Paragraph (i)(2) would be revised to more clearly specify the combined delivery capacity of UN portable tank's pressure relief systems.

Section 178.276

In paragraph (a)(4)(ii)(A), the reference to "portable tank special provision T50" would be revised to read "the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313."

In addition, paragraph (d), the reference to "portable tank special provision T50 in § 172.102(c)(7)" would be revised to read "UN Portable Tank Table for Liquefied Compressed Gases in § 173.313." Finally, in paragraph (e)(3), the reference to "portable tank special provision T50 in § 172.102" would be revised to read "the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313."

Section 178.602

Paragraph (b) would be revised to clarify the requirements applicable to filling packaging other than bags in preparation for testing.

Section 178.603

Paragraph (c) would be revised to add a definition indicating that a minimum specific gravity for solutions of water and anti-freeze is 0.95 for testing at -18 °C (0 °F) or lower. Additionally, in paragraph (e), we propose to specify the drop test height for liquids in single packagings and for inner packagings of

combination packagings, when the test is performed in water.

Section 178.810

Paragraph (b)(3) would be revised to specify that water/anti-freeze solutions with a minimum specific gravity of 0.95 for testing at -18 °C (0 °F) or lower are acceptable test liquids for use when conducting IBC drop tests. This is consistent with our amendment to § 178.603(c)(1) regarding the testing of non-bulk packages. We are also proposing to add a sentence to clarify that when conditioning is required by § 178.810(b), the conditioning specified in § 178.802 (which requires a higher temperature) does not apply.

Part 180

Section 180.350

Paragraph (c) would be revised to expand the definition of routine maintenance of IBCs to include flexible, plastic and textile IBCs.

Section 180.352

A new paragraph (d)(1)(v) would be added to this section. This paragraph would state that retests and inspections performed under paragraphs (d)(1)(i) and (ii) of this section may be used to satisfy the tests and inspections required by paragraph (b) of this section. This addition would incorporate changes made to the 12th revised edition of the Transport of Dangerous Goods Model Regulations into the HMR.

V. Regulatory Analyses and Notices

A. Executive Order 12866 and DOT Regulatory Policies and Procedures

This proposed rule is not considered a significant regulatory action under section 3(f) of Executive Order 12866 and, therefore, was not reviewed by the Office of Management and Budget. This proposed rule is not considered a significant rule under the Regulatory Policies and Procedures of the Department of Transportation (44 FR 11034). Benefits resulting from the adoption of the amendments in this proposed rule include enhanced transportation safety resulting from the consistency of domestic and international hazard communications and continued access to foreign markets by domestic shippers of hazardous materials. This proposed rule applies to offerors and carriers of hazardous materials, such as chemical manufacturers, chemical users and suppliers, packaging manufacturers, distributors, battery manufacturers, radiopharmaceutical companies, and training companies.

The majority of amendments in this proposed rule should result in cost savings and ease the regulatory compliance burden for shippers engaged in domestic and international commerce, including trans-border shipments within North America. For example, cost savings will be realized by shippers and carriers as a result of the following:

- Eliminating the air eligibility marking requirement.
- Amendments allowing numerous Class 3, PG II materials with a Class 8 sub-risk and others to be transported as a limited quantity.
- Allowing cylinders to be used for many more substances than currently authorized.
- Allowing salvage packagings to be used for non-conforming packages; and generally minimizing differences between U.S. and international hazardous materials transportation regulations.

We would authorize a delayed effective date and a one-year transition period to allow for training of employees and to ease any burden on entities affected by the amendments. The total net increase in costs to businesses in implementing this rulemaking is considered to be minimal and a preliminary regulatory evaluation is available for review in the Docket.

B. Executive Order 13132

This proposed rule has been analyzed in accordance with the principles and criteria contained in Executive Order 13132 ("Federalism"). This proposed rule preempts State, local and Indian tribe requirements but does not propose any regulation that has substantial direct effects on the States, the relationship between the national government and the States, or the distribution of power and responsibilities among the various levels of government. Therefore, the consultation and funding requirements of Executive Order 13132 do not apply.

The Federal hazardous material transportation law, 49 U.S.C. 5101–5127, contains an express preemption provision (49 U.S.C. 5125(b)) that preempts State, local, and Indian tribe requirements on certain covered subjects. Covered subjects are:

- (1) The designation, description, and classification of hazardous materials;
- (2) The packing, repacking, handling, labeling, marking, and placarding of hazardous materials;
- (3) The preparation, execution, and use of shipping documents related to hazardous materials and requirements related to the number, contents, and placement of those documents;

(4) The written notification, recording, and reporting of the unintentional release in transportation of hazardous; or

(5) The design, manufacture, fabrication, marking, maintenance, recondition, repair, or testing of a packaging or container represented, marked, certified, or sold as qualified for use in transporting hazardous material.

This proposed rule addresses covered subject items (1), (2), (3), and (5) above and would preempt State, local, and Indian tribe requirements not meeting the "substantively the same" standard. This proposed rule is necessary to incorporate changes adopted in international standards, effective January 1, 2003. If the changes in this proposed rule are not adopted in the HMR, U.S. companies, including numerous small entities competing in foreign markets, would be at an economic disadvantage. These companies would be forced to comply with a dual system of regulations. The changes proposed in this rulemaking are intended to avoid this result. Federal hazardous materials transportation law provides at section 5125(b)(2) that, if DOT issues a regulation concerning any of the covered subjects, DOT must determine and publish in the **Federal Register** the effective date of Federal preemption. The effective date may not be earlier than the 90th day following the date of issuance of the final rule and not later than two years after the date of issuance. We propose that the effective date of Federal preemption be 90 days from the date of publication of a final rule in the **Federal Register**.

C. Executive Order 13175

This proposed rule was analyzed in accordance with the principles and criteria contained in Executive Order 13175 ("Consultation and Coordination with Indian Tribal Governments"). Because this proposed rule does not have tribal implications, does not impose substantial direct compliance costs, and is required by statute, the funding and consultation requirements of Executive Order 13175 do not apply.

D. Regulatory Flexibility Act, Executive Order 13272, and DOT Procedures and Policies

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires an agency to review regulations to assess their impact on small entities, unless the agency determines that a rule is not expected to have a significant impact on a substantial number of small entities. This proposed rule would serve to facilitate the transportation of hazardous

materials in international commerce by providing consistency with international standards. This proposed rule applies to offerors and carriers of hazardous materials, some of whom are small entities, such as chemical users and suppliers, packaging manufacturers, distributors, battery manufacturers, and training companies.

As discussed above, under *Executive Order 12866*, the majority of amendments in this proposed rule should result in cost savings and ease the regulatory compliance burden for shippers engaged in domestic and international commerce, including trans-border shipments within North America.

Many companies will realize economic benefits as a result of the proposed amendments. If the changes proposed in this NPRM are not adopted, U.S. companies, including small entities competing in foreign markets, will be forced to comply with a dual system of regulations to their economic disadvantage. Therefore, I certify that these proposed amendments will not have a significant economic impact on a substantial number of small entities. This certification is subject to modification as a result of a review of comments received in response to this proposed rulemaking.

This proposed rule has been developed in accordance with Executive Order 13272 ("Proper Consideration of Small Entities in Agency Rulemaking") and DOT's procedures and policies to promote compliance with the Regulatory Flexibility Act to ensure that potential impacts of draft rules on small entities are properly considered.

E. Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid Office of Management and Budget (OMB) control number. Section 1320.8(d), title 5, Code of Federal Regulations requires that RSPA provide interested members of the public and affected agencies an opportunity to comment on information collection and recordkeeping requests. RSPA currently has two approved information collections affecting this proposed rule: OMB Control Number 2137-0557, "Approvals for Hazardous Materials" with 25,605 burden hours and \$562,837.40 burden costs; and OMB Control Number 2137-0613, "Subsidiary Hazard Class & Number/Type of Packagings" with 63,309 burden hours and \$216,705 burden costs.

There would be only minor editorial changes proposed under this rule. However, there is no net increase in

burden for OMB Control Number 2137-0557 or OMB Control Number 2137-0613. We estimate that the proposed total information collection and recordkeeping burden as follows:

"Approvals for Hazardous Materials," OMB Number 2137-0557:

Total Annual Number of Respondents: 3,523.
Total Annual Responses: 3,874.8.
Total Annual Burden Hours: 25,605.
Total Annual Burden Cost: \$562,837.40.

"Subsidiary Hazard Class & Number/Type of Packagings," OMB Number 2137-0613:

Total Annual Number of Respondents: 250,000.
Total Annual Responses: 6,337,500.
Total Annual Burden Hours: 17,604.
Total Annual Burden Cost: \$216,705.
Total First Year Burden Hours: 45,705.

Total First Year Burden Cost: \$1,115,992.

Requests for a copy of this information collection should be directed to Deborah Boothe or T. Glenn Foster, Office of Hazardous Materials Standards (DHM-10), Research and Special Programs Administration, Room 8422, 400 Seventh Street, SW., Washington, DC 20590-0001, telephone (202) 366-8553. Written comments should be addressed to the Dockets Unit identified in the **ADDRESSES** section of this rulemaking. We should receive comments regarding information collection burdens prior to the close of the comment period identified in the **DATES** section of this rulemaking.

F. Regulatory Identifier Number (RIN)

A regulation identifier number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

G. Unfunded Mandates Reform Act

This final rule does not impose unfunded mandates under the Unfunded Mandates Reform Act of 1995. It does not result in costs of \$120.7 million or more to either State, local or tribal governments, in the aggregate, or to the private sector, and is the least burdensome alternative that achieves the objective of the rule.

H. Environmental Assessment

The National Environmental Policy Act of 1969 (NEPA) requires Federal

agencies to consider the consequences of major Federal actions and prepare a detailed statement on actions significantly affecting the quality of the human environment. We developed an assessment to determine the effects of these revisions on the environment and whether a more comprehensive environmental impact statement may be required. Our findings conclude that there are no significant environmental impacts associated with this proposed rule. Consistency in the regulations for the transportation of hazardous materials aids in the shipper's understanding of what is required and permits shippers to more easily comply with safety regulations and avoid the potential for environmental damage or contamination. For interested parties, an environmental assessment is available in the public docket.

I. Privacy Act

Anyone is able to search the electronic form of any written communications and comments received into any of our dockets by the name of the individual submitting the document (or signing the document, if submitted on behalf of an association, business, labor union, etc.). You may review DOT's complete Privacy Act Statement in the **Federal Register** published on April 11, 2000 (volume 65, number 70; pages 19477-78), or you may visit <http://dms.dot.gov>.

List of Subjects

49 CFR Part 171

Exports, Hazardous materials transportation, Hazardous waste, Imports, Incorporation by reference, Reporting and recordkeeping requirements.

49 CFR Part 172

Education, Hazardous materials transportation, Hazardous waste, Labeling, Markings, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 173

Hazardous materials transportation, Packaging and containers, Radioactive materials, Reporting and recordkeeping requirements, Uranium.

49 CFR Part 175

Air carriers, Hazardous materials transportation, Radioactive materials, Reporting and recordkeeping requirements.

49 CFR Part 176

Hazardous materials transportation, Maritime carriers, Radioactive materials,

Reporting and recordkeeping requirements.

49 CFR Part 178

Hazardous materials transportation, Motor vehicle safety, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 180

Hazardous materials transportation, Motor carriers, Motor vehicle safety, Packaging and containers, Railroad safety, Reporting and recordkeeping requirements.

In consideration of the foregoing, 49 CFR Chapter I is proposed to be amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS, AND DEFINITIONS

1. The authority citation for part 171 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

2. In § 171.7, in the paragraph (a)(3) table, the following changes are made:

a. Under the entry “International Civil Aviation Organization (ICAO),” the existing entry is revised;

b. Under the entry “International Maritime Organization (IMO),” the entry “International Maritime Dangerous Goods (IMDG) Code, 2002 Consolidated Edition, as amended by Amendment 31 (English edition)” is revised;

c. Under the entry “United Nations,” the entry “UN Recommendations on the Transport of Dangerous Goods, Twelfth Revised Edition (2001)” is revised;

d. Under the entry “United Nations,” the entry “UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Third Revised Edition (1999)” is revised; and

e. In Paragraph (b), under the entry “The Society of the Plastics Industry, Inc., Organic Peroxide Producers Safety Division, 1275 K Street NW., Suite 400, Washington, DC 20005,” the entry “Example of a Test Method for Venting Sizing: OPPSD/SPI Methodology” would be added.

The revisions and additions would read as follows:

§ 171.7 Reference material.

(a) * * *

(3) Table of material incorporated by reference.* * *

Source and name of material	49 CFR reference
International Civil Aviation Organization (ICAO),	
Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Technical Instructions), 2005–2006 Edition.	171.11; 172.202; 172.323; 172.401; 172.512; 172.602.
International Maritime Organization (IMO),	
International Maritime Dangerous Goods Code (IMDG Code), as amended by Amendment 32 (English Edition).	171.12; 172.401; 172.502; 173.21; 176.2; 176.5; 176.11; 176.27; 176.30.
United Nations,	
UN Recommendations on the Transport of Dangerous Goods, Thirteenth Revised Edition (2002).	172.401; 172.407; 172.502; 173.24.
UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, Fourth Revised Edition, (2003).	172.102; 173.21; 173.56; 173.57; 173.124; 173.128; 173.166; 173.185.

(b) List of informational materials not requiring incorporation by reference.
* * *

Source and name of material	49 CFR reference
The Society of the Plastics Industry, Inc., Organic Peroxide Producers Safety Division, 1275 K Street NW., Suite 400, Washington, D.C. 20005.	
Example of a Test Method for Venting Sizing: OPPSD/SPI Methodology	Note to 173.225(h)(3)(vi).

3. In § 171.8, the definition for “Salvage packaging” is revised to read as follows:

§ 171.8 Definitions and abbreviations.

* * * * *

Salvage packaging means a special packaging conforming to § 173.3 of this subchapter into which damaged, defective, leaking, or non-conforming hazardous materials packages, or hazardous materials that have spilled or

leaked, are placed for purposes of transport for recovery or disposal.
* * * * *

4. In § 171.11, paragraphs (d)(15) and (d)(17) are revised to read as follows:

§ 171.11 Use of ICAO Technical Instructions.

* * * * *

(d) * * *

(15) A chemical oxygen generator, including when fitted in protective breathing equipment or other apparatus, is forbidden for transportation aboard a passenger-carrying aircraft and must be approved, classed, described and packaged in accordance with the requirements of this subchapter for transportation on cargo-only aircraft. A chemical oxygen generator that has been used or spent is also forbidden for transportation on aircraft.

* * * * *

(17) A self-reactive substance that is not identified by technical name in the Self-reactive Materials Table in § 173.224(b) of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.124(a)(2)(iii) of this subchapter. An organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

5. In § 171.12, paragraph (b)(20) is revised to read as follows:

§ 171.12 Import and export shipments.

* * * * *

(b) * * *

(20) A self-reactive substance that is not identified by technical name in the Self-Reactive Materials Table in § 173.224(b) of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.124(a)(2)(iii) of this subchapter. An organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

* * * * *

6. In § 171.12a, paragraphs (a), (b)(9), and (b)(18) are revised to read as follows:

§ 171.12a Canadian shipments and packagings.

(a) *Scope and applicability.* This section sets forth provisions for the transportation by rail or highway of shipments of hazardous materials which conform to the regulations of the Government of Canada but which may differ from the requirements of this subchapter with regard to hazard communication, classification or

packaging. Except as provided in paragraph (b)(5)(iv) of this section, the provisions apply only to shipments which originate in Canada and either terminate in the U.S. or transit the U.S. to a Canadian or foreign destination, and to the return to Canada of bulk packagings that meet the requirements of a DOT or UN Specification and other bulk packagings containing only residues of hazardous materials that were originally imported into the U.S. Reciprocal provisions, applicable to exports from the U.S., appear in the regulations of the Government of Canada.

(b) * * *

(9) For hazardous waste as defined in this subchapter—

(i) The word “Waste” must precede the proper shipping name on shipping papers and packages; and

(ii) The requirements of § 172.204 of this subchapter with respect to the shippers certification and § 172.205 of this subchapter with respect to hazardous waste manifests are applicable;

* * * * *

(18) A self-reactive substance that is not identified by technical name in the Self-reactive Materials Table in § 173.224(b) of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.124(a)(2)(iii) of this subchapter. An organic peroxide that is not identified by a technical name in any of the organic peroxide tables found in § 173.225 of this subchapter must be approved by the Associate Administrator in accordance with the requirements of § 173.128(d) of this subchapter.

* * * * *

7. In § 171.14, paragraphs (d) introductory text, (d)(1), and (d)(2) introductory text are revised to read as follows:

§ 171.14 Transitional provisions for implementing certain requirements.

* * * * *

(d) A final rule published in the **Federal Register** on [INSERT PUBLICATION DATE OF FINAL RULE], effective October 1, 2004, resulted in revisions to this subchapter. During the transition period, until January 1, 2006, as provided in paragraph (d)(1) of this section, a person may elect to comply with either the applicable requirements of this subchapter in effect on December 31, 2005, or the requirements published in the [INSERT PUBLICATION DATE OF FINAL RULE] final rule.

(1) *Transition dates.* The effective date of the final rule published on [INSERT PUBLICATION DATE OF

FINAL RULE] is October 1, 2004. A delayed compliance date of January 1, 2006 is authorized. On and after January 1, 2006, all applicable regulatory requirements adopted in the final rule in effect on October 1, 2004 must be met.

(2) *Intermixing old and new requirements.* Marking, labeling, placarding, and shipping paper descriptions must conform to either the old requirements of this subchapter in effect on September 30, 2004, or the new requirements of this subchapter in the final rule without intermixing communication elements, except that intermixing is permitted, during the applicable transition period, for packaging, hazard communication, and handling provisions, as follows:

* * * * *

PART 172—HAZARDOUS MATERIALS TABLE, SPECIAL PROVISIONS, HAZARDOUS MATERIALS COMMUNICATIONS, EMERGENCY RESPONSE INFORMATION, AND TRAINING REQUIREMENTS

8. The authority citation for part 172 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

9. In § 172.101, the following amendments are made:

- a. paragraph (c)(11) is revised;
- b. paragraph (d)(4) is revised;
- c. paragraph (i)(3) is revised;
- d. Hazardous Materials Table is revised as set forth below:

§ 172.101 Purpose and use of hazardous materials table.

* * * * *

(c) * * *

(11) Except for a material subject to or prohibited by § 173.21, 173.54, 173.56(d), 173.56(e), 173.224(c) or 173.225(b) of this subchapter, a material that is considered to be a hazardous waste or a sample of a material for which the hazard class is uncertain and must be determined by testing may be assigned a tentative proper shipping name, hazard class, identification number and packing group, if applicable, based on the shipper's tentative determination according to:

- (i) Defining criteria in this subchapter;
- (ii) The hazard precedence prescribed in § 173.2a of this subchapter;
- (iii) The shipper's knowledge of the material;

(iv) In addition to paragraphs (c)(11)(i) through (iii) of this section, for a sample of a material other than a waste, the following must be met:

(A) Except when the word “Sample” already appears in the proper shipping

name, the word "Sample" must appear as part of the proper shipping name or in association with the basic description on the shipping paper.

(B) When the proper shipping description for a sample is assigned a "G" in Column (1) of the § 172.101 Table, and the primary constituent(s) for which the tentative classification is based are not known, the provisions requiring a technical name for the constituent(s) do not apply; and

(C) A sample must be transported in a combination packaging that conforms to the requirements of this subchapter that are applicable to the tentative packing group assigned, and may not exceed a net mass of 2.5 kg (5.5 pounds) per package.

Note to Paragraph (c)(11): For the transportation of self-reactive, organic

peroxide and explosive samples, *see* §§ 173.224(c)(3), 173.225(b)(2) and 173.56(d) of this subchapter, respectively.

* * * * *

(d) * * *

(4) When an entry in this column reads "Comb liq", the material is assigned to the hazard class "Combustible liquid." Additionally, each reference to a Class 3 material is modified to read "Combustible liquid" when that material is reclassified in accordance with § 173.150 (e) or (f) of this subchapter or has a flash point above 60.5 °C (141 °F) but below 93 °C (200 °F).

* * * * *

(i) * * *

(3) *Bulk packaging.* Column 8C specifies the section in part 173 of this subchapter that prescribes packaging

requirements for bulk packagings, subject to the limitations, requirements and additional authorizations of Column 7. A "None" in this column means bulk packagings are not authorized, except as may be provided by special provisions in Column 7. Additional authorizations and limitations for use of UN portable tanks are set forth in Column 7. For each reference in this column to a material that is a hazardous waste or a hazardous substance, and whose proper shipping name is preceded in Column 1 of the Table by the letter "A" or "W" and that is offered for transportation or transported by a mode in which its transportation is not otherwise subject to the requirements of this subchapter:

* * * * *

§ 172.101 HAZARDOUS MATERIALS TABLE

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifica-tion Num-bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Accelerene, see p-Nitrosodimethylaniline												
	Accumulators, electric, see Batteries, wet, etc.												
	Accumulators, pressurized, pneumatic or hydraulic (containing non-flammable gas), see Articles pressurized, pneumatic or hydraulic (containing non-flammable gas).												
	Acetal	3	UN1088	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Acetaldehyde	3	UN1089	I	3	A3, B6, T11, TP2, TP7	None	201	243	Forbidden	30 L	E	
A	Acetaldehyde ammonia	9	UN1841	III	9	IB8, IP3, IP7, T1, TP33	155	204	240	200 kg	200 kg	A	34
	Acetaldehyde oxime	3	UN2332	III	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	
	Acetic acid, glacial or Acetic acid solution, with more than 80 percent acid, by mass	8	UN2799	II	8, 3	A3, A6, A7, A10, B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	
	Acetic acid solution, not less than 50 percent but not more than 80 percent acid, by mass	8	UN2790	II	8	A3, A6, A7, A10, B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	
	Acetic acid solution, with more than 10 percent and less than 50 percent acid, by mass	8	UN2790	III	8	IB3, T4, TP1	154	203	242	5 L	60 L	A	
	Acetic anhydride	8	UN1715	II	8, 3	A3, A6, A7, A10, B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	40
	Acetone	3	UN1090	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Acetone cyanohydrin, stabilized	6.1	UN1541	I	6.1	2, B9, B14, B32, B76, B77, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	25, 40, 52, 53
	Acetone oils	3	UN1091	II	3	IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
	Acetonitrile	3	UN1648	II	3	IB2, T7, TP2	150	202	242	5 L	60 L	B	40
	Acetyl acetone peroxide with more than 9 percent by mass active oxygen	Forbidden											
	Acetyl benzoyl peroxide, solid, or with more than 40 percent in solution	Forbidden											
	Acetyl bromide	8	UN1716	II	8	B2, IB2, T8, TP2, TP12	154	202	242	1 L	30 L	C	40
	Acetyl chloride	3	UN1717	II	3, 8	A3, A6, A7, IB1, N34, T8, TP2, TP12	150	202	243	1 L	5 L	B	40
	Acetyl cyclohexanesulfonyl peroxide, with more than 82 percent wetted with less than 12 percent water.	Forbidden											
	Acetyl iodide	8	UN1898	II	8	B2, IB2, T7, TP2, TP13	154	202	242	1 L	30 L	C	40
	Acetyl methyl carbino	3	UN2621	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Acetyl peroxide, solid, or with more than 25 percent in solution	Forbidden											
	Acetylene, dissolved	2.1	UN1001		2.1		None	303	None	Forbidden	15 kg	D	25, 40, 57
	Acetylene (liquefied)	Forbidden											
	Acetylene silver nitrate	Forbidden											
	Acetylene tetrabromide, see Tetrabromoethane												
	Acid butyl phosphate, see Butyl acid phosphate												
	Acid, sludge, see Sludge acid												
	Acridine	6.1	UN2713	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Acrolein dimer, stabilized	3	UN2607	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
	Acrolein, stabilized	6.1	UN1092	I	6.1, 3	1, B9, B14, B30, B42, B72, B77, T22, TP2, TP7, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
	Acrylamide, solid	6.1	UN2074	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	12
	Acrylamide solution	6.1	UN3426	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	12
	Acrylic acid, stabilized	8	UN2218	II	8, 3	B2, IB2, T7, TP2	154	202	243	1 L	30 L	C	25, 40
	Acrylonitrile, stabilized	3	UN1093	I	3, 6.1	B9, T14, TP2, TP13	None	201	243	Forbidden	30 L	E	40
	Actuating cartridge, explosive, see Cartridges, power device												
	Adhesives, containing a flammable liquid	3	UN1133	I	3	B42, T11, TP1, TP8, TP27	150	201	143	1 L	30 L	B	
				II	3	149, B52, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identifi- cation Num- bers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stow- age		
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
I	Adiponitrile	6.1	UN2205	III	3	B1, B52, IB3, T2, TP1	150	173	242	60 L	220 L	A		
	Aerosols, corrosive, Packing Group II or III, (each not exceeding 1 L capacity)	2.2	UN1950	III	6.1, 2.2, 8	IB3, T3, TP1, 153, A34	153	203	241	60 L	220 L	A	48, 87, 126	
	Aerosols, flammable, (each not exceeding 1 L capacity)	2.1	UN1950		2.1	153, N82	306	None	None	75 kg	150 kg	A	48, 87, 126	
	Aerosols, flammable, n.o.s. (engine starting fluid) (each not exceeding 1 L capacity)	2.1	UN1950		2.1	153, N82	306	304	None	Forbidden	150 kg	A	48, 87, 126	
	Aerosols, non-flammable, (each not exceeding 1 L capacity)	2.2	UN1950		2.2	153	306, 307	None	None	75 kg	150 kg	A	48, 87, 126	
	Aerosols, poison, each not exceeding 1 L capacity	2.2	UN1950		2.2	153	306	None	None	Forbidden	Forbidden	A	48, 87, 126	
	Air bag inflators, or Air bag modules, or Seat-belt pretensioners.	1.4G	UN0503	II	1.4G	6.1	161	None	None	Forbidden	75 kg	02		
	Air bag inflators, or Air bag modules, or Seat-belt pretensioners.	9	UN3288	III	9	166	166	166	166	25 kg	100 kg	A		
	Air, compressed	2.2	UN1002		2.2	78	302	306	302	75 kg	150 kg	A		
	Air, refrigerated liquid, (cryogenic liquid)	2.2	UN1003		2.2	5.1	T75, TP5, TP22	320	316	318, 319	Forbidden	150 kg	D	51
	Air, refrigerated liquid, (cryogenic liquid) non-pressurized	2.2	UN1003		2.2	5.1	T75, TP5, TP22	320	316	318, 319	Forbidden	Forbidden	D	51
	Aircraft engines (including turbines), see Engines, internal combustion													
	Aircraft evacuation slides, see Life saving appliances etc													
Aircraft hydraulic power unit fuel tank (containing a mixture of anhydrous hydrazine and monomethyl hydrazine) (M86 fuel).	3	UN3274	II	3, 8		IB2	150	202	243	1 L	5 L	B		
Aircraft survival kits, see Life saving appliances etc	3	UN3065	II	3		24, 149, B1, IB2, T4, TP1	150	202	242	5 L	60 L	A		
Alcoholic solution, n.o.s., in alcohol														
Alcoholic beverages														
G	Alcohols, n.o.s.		UN1987	I	3	24, B1, IB3, N11, T2, TP1	150	203	242	60 L	220 L	A		
	Alcohols, flammable, toxic, n.o.s.			II	3	T11, TP1, TP8, TP27	None	201	243	1 L	30 L	E		
				II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B		
				III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A		
	Alcohols, flammable, toxic, n.o.s.		UN1986	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	243	Forbidden	30 L	E	40
				II	3, 6.1	IB2, T11, TP2, TP27	150	202	243	243	1 L	60 L	B	40
				III	3, 6.1	B1, IB3, T7, TP1, TP28	None	203	242	242	60 L	220 L	A	
	Aldehydes, n.o.s.		UN1989	I	3	T11, TP1, TP27	None	201	243	243	1 L	30 L	E	
				II	3	IB2, T7, TP1, TP8, TP28	150	202	242	242	5 L	60 L	B	
				III	3	B1, IB3, T4, TP1, TP29	150	203	242	242	60 L	220 L	A	
	Aldehydes, flammable, toxic, n.o.s.		UN1988	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	243	Forbidden	30 L	E	40
				II	3, 6.1	IB2, T11, TP2, TP27	150	202	243	243	1 L	60 L	B	40
				III	3, 6.1	B1, IB3, T7, TP1, TP28	150	203	242	242	60 L	220 L	A	
G	Aldol	6.1	UN2839	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	12	
	Alkali metal alcoholates, self-heating, corrosive, n.o.s.	4.2	UN3206	II	4.2, 8	64, A7, IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	B		
				III	4.2, 8	64, A7, IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg	B		
	Alkali metal alloys, liquid, n.o.s.	4.3	UN1421	I	4.3	A2, A3, A7, B48, N34	None	201	244	244	Forbidden	1 L	D	52
Alkali metal amalgam, liquid	4.3	UN1399	I	4.3	A2, A3, A7, N34	None	201	244	244	Forbidden	1 L	D	40, 52	
Alkali metal amalgam, solid	4.3	UN3401	I	4.3	IB4, IP1, N40, T9, TP7, TP33	None	211	242	242	Forbidden	15 kg	D	52	

UN Number	Proper Name	Class	Subclass	Label	Quantity	Special Provisions	Other	Weight	Code	Page
4.3	Alkali metal amides	UN1390	II	4.3	A6, A7, A8, A19, A20, IB7, IP2, T3, TP33	151	212	241	E	40, 52
4.3	Alkali metal dispersions, or Alkaline earth metal dispersions	UN1391	I	4.3	A2, A3, A7	None	244	1 L	D	52
4.2	Alkaline corrosive liquids, n.o.s. see Caustic alkali liquids, n.o.s.	UN2005	II	4.2	65, A7, IB6, IP2, T3, TP33	None	241	Forbidden	B	
	Alkaline earth metal alcoholates, n.o.s.		III	4.2	65, A7, IB8, IP3, T1, TP33	None	213	25 kg	B	
	Alkaline earth metal alloys, n.o.s.	UN1393	II	4.3	A19, IB7, IP2, T3, TP33	151	212	15 kg	E	52
4.3	Alkaline earth metal amalgams, liquid	UN1392	I	4.3	A19, N34, N40	None	244	1 L	E	40, 52
4.3	Alkaline earth metal amalgams, solid	UN3402	I	4.3	A19, N34, N40, T9, IP7, TP33	None	211	Forbidden	D	52
6.1	Alkaloids, liquid, n.o.s., or Alkaloid salts, liquid, n.o.s.	UN3140	I	6.1	A4, T14, TP2, TP27	None	201	30 L	A	
			II	6.1	IB2, T11, TP2, TP27	153	202	5 L	A	
			III	6.1	IB3, T7, TP1, TP28	153	203	60 L	A	
6.1	Alkaloids, solid, n.o.s. [or Alkaloid salts, solid, n.o.s. [poisonous]]	UN1544	I	6.1	IB7, IP1, T6, TP33	None	211	5 kg	A	
			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	25 kg	A	
			III	6.1	IB8, IP3, T1, TP33	153	213	100 kg	A	
8	Alkyl sulfonic acids, liquid or Aryl sulfonic acids, liquid with more than 5 percent free sulfuric acid.	UN2584	II	8	B2, IB2, T8, TP2, TP12, TP13	154	202	1 L	B	
8	Alkyl sulfonic acids, liquid or Aryl sulfonic acids, liquid with not more than 5 percent free sulfuric acid.	UN2586	III	8	IB3, T4, TP1	154	203	5 L	B	
8	Alkyl sulfonic acids, solid or Aryl sulfonic acids, solid, with more than 5 percent free sulfuric acid.	UN2583	II	8	IB8, IP2, IP4, T3, TP33	154	212	15 kg	A	
8	Alkyl sulfonic acids, solid or Aryl sulfonic acids, solid with not more than 5 percent free sulfuric acid.	UN2585	III	8	IB8, IP3, T1, TP33	154	213	25 kg	A	
8	Alkylphenols, liquid, n.o.s. (including C2-C12 homologues)	UN3145	I	8	A6, T14, TP2	None	201	0.5 L	B	
			II	8	IB2, T11, TP2, TP27	154	202	1 L	B	
			III	8	IB3, T7, TP1, TP28	154	203	5 L	A	
8	Alkylphenols, solid, n.o.s. (including C2-C12 homologues)	UN2430	I	8	IB7, IP1, T6, TP33	None	211	1 kg	B	
			II	8	IB8, IP2, IP4, T3, TP33	154	212	15 kg	B	
			III	8	IB8, IP3, T1, TP33	154	213	50 kg	B	
8	Alkylsulfuric acids	UN2571	II	8	B2, IB2, T8, TP2, TP12, TP13, TP28	154	202	25 kg	A	14
3	Alifflin, see Pesticides, liquid, toxic, n.o.s.	UN2333	II	3, 6.1	IB2, T7, TP1, TP13	150	202	1 L	E	40
	Allyl acetate		I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	Forbidden	D	40
6.1	Allyl alcohol	UN1098	I	6.1, 3	T14, TP2, TP13	None	201	30 L	B	40
			I	6.1, 3	T14, TP2, TP13	None	201	30 L	E	40
			I	6.1, 3, 8	2, B9, B14, B32, B74, N41, T20, TP2, TP13, TP38, TP45	None	227	Forbidden	D	40
3	Allyl ethyl ether	UN2335	II	3, 6.1	IB2, T7, TP1, TP38, TP45	150	202	1 L	E	40
3	Allyl formate	UN2336	I	3, 6.1	T14, TP2, TP13	None	201	30 L	E	40
3	Allyl glycidyl ether	UN2219	III	3	B1, IB3, T2, TP1	150	203	220 L	A	40
3	Allyl iodide	UN1723	II	3, 8	A3, A6, IB1, N84, T7, TP2, TP13	150	202	5 L	B	40
6.1	Allyl isothiocyanate, stabilized	UN1545	II	6.1, 3	A3, A7, IB2, T7, TP2	None	202	60 L	D	40
6.1	Allylamine	UN2334	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	Forbidden	D	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifica-tion Num-bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
D	Allyltrichlorosilane, stabilized	8	UN1724	II	8, 3	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	243	Forbidden	30 L	C	40
	Aluminum alkyl halides, liquid	4.2	UN3052	I	4.2,	B9, B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	134
	Aluminium alkyl halides, solid	4.2	UN3461	I	4.2,	T21, TP7, TP33	None	181	244	Forbidden	Forbidden	D	134
	Aluminum alkyl hydrides	4.2	UN3076	I	4.2,	B9, B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	
	Aluminum alkyls	4.2	UN3051	I	4.2,	B9, B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	D	
	Aluminum borohydride or Aluminum borohydride in devices	4.2	UN2870	I	4.2,	B11, T21, TP7, TP33	None	181	244	Forbidden	Forbidden	D	
	Aluminum bromide, anhydrous	8	UN1725	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	40
	Aluminum bromide, solution	8	UN2580	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Aluminum carbide	4.3	UN1394	II	4.3	A20, IB7, IP2, N41, T3, TP33	151	212	242	15 kg	50 kg	A	52
	Aluminum chloride, anhydrous	8	UN1726	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	40
	Aluminum chloride, solution	8	UN2581	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Aluminum dross, wet or hot	Forbidden											
	Aluminum ferrosilicon powder	4.3	UN1395	II	4.3,	A19, IB5, IP2, T3, TP33	151	212	242	15 kg	50 kg	A	39, 40, 52, 53, 85, 103
	Aluminum hydride	4.3	UN2463	III	4.3,	A19, A20, IB4	151	213	241	25 kg	100 kg	A	39, 40, 52, 53, 85, 103
	Aluminum, molten	9	NA9260	I	4.3	IB3, T1, TP3	None	211	242	Forbidden	15 kg	E	40, 52, 85
	Aluminum nitrate	5.1	UN1438	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	Forbidden	Forbidden	D	
	Aluminum phosphate solution, see Corrosive liquids, etc												
Aluminum phosphide	4.3	UN1397	I	4.3,	A8, A19, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85	
Aluminum phosphide pesticides	6.1	UN3048	I	6.1	A8, IB7, IP1, T6, TP33	None	211	242	Forbidden	15 kg	E	40, 85	
Aluminum powder, coated	4.1	UN1309	II	4.1	IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	A	13, 39, 52, 53, 74, 101	
Aluminum powder, uncoated	4.3	UN1396	III	4.1	IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	13, 39, 52, 53, 74, 101	
Aluminum resinolate	4.1	UN2715	III	4.3	A19, A20, IB7, IP2, T3, TP33	151	212	242	15 kg	50 kg	A	39, 52, 53	
Aluminum silicon powder, uncoated	4.3	UN1398	III	4.3	A19, A20, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	A	39, 40, 52, 53, 85, 103	
Aluminum smelting by-products or Aluminum remelting by-products	4.3	UN3170	II	4.3	128, B115, IB7, IP2, T3, TP33	None	212	242	15 kg	50 kg	B	85, 103	
Amatols, see Explosives, blasting, type B													
Amines, flammable, corrosive, n.o.s. or Polyamines, flammable, corrosive, n.o.s.	3	UN2733	I	3, 8	T14, TP1, TP27	None	201	243	0.5 L	2.5 L	D	40	
			II	3, 8	IB2, T11, TP1, TP27	150	202	243	1 L	5 L	B	40	
			III	3, 8	B1, IB3, T7, TP1, TP28	150	203	242	5 L	60 L	A	40	
Amines, liquid, corrosive, flammable, n.o.s. or Polyamines, liquid, corrosive, flammable, n.o.s.	8	UN2734	I	8, 3	A3, A6, N34, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	A	52	
			II	8, 3	IB2, T11, TP2, TP27	None	202	243	1 L	30 L	A	52	

UN Number	Product Name	Class	Label	Quantity	Other	UN Number	Product Name	Class	Label	Quantity	Other
8 UN2735	Amines, liquid, corrosive, n.o.s., or Polyamines, liquid, corrosive, n.o.s.	8	I 8	None	201	243	A3, A6, B10, N34, T14, TP2, TP27	2.5 L	A	52	
			II 8	154	202	242	B2, IB2, T11, TP1, TP27	30 L	A	52	
			III 8	154	203	241	IB3, T7, TP1, TP28	60 L	A	52	
8 UN3259	Amines, solid, corrosive, n.o.s., or Polyamines, solid, corrosive n.o.s.	8	I 8	None	211	242	IB7, IP1, T6, TP33	25 kg	A	52	
			II 8	154	212	240	IB8, IP2, IP4, T3, TP33	50 kg	A	52	
			III 8	154	213	240	IB8, IP3, T1, TP33	100 kg	A	52	
6.1 UN2673	2-Amino-4-chlorophenol	6.1	II 6.1	153	212	242	IB8, IP2, IP4, T3, TP33	100 kg	A		
6.1 UN2946	2-Amino-5-diethylaminopentane	6.1	III 6.1	153	203	241	IB3, T4, TP1	220 L	A		
4.1 UN3317	2-Amino-4,6-Dinitrophenol, wetted with not less than 20 percent water by mass	4.1	I 4.1	None	211	None	23, A8, A19, A20, N41	15 kg	E	28, 36	
8 UN3055	2-(2-Aminoethoxy) ethanol	8	III 8	154	203	241	IB3, T4, TP1	60 L	A		
8 UN2815	N-Aminohydropiperazine	8	III 8	154	203	241	IB3, T4, TP1	60 L	A		
6.1 UN2512	Aminophenols (o-, m-, p-)	6.1	III 6.1	153	213	240	IB8, IP3, T1, TP33	200 kg	A	12	
	Aminopropylidethanolamine, see Amines, etc										
	n-Aminopropylmorpholine, see Amines, etc										
	Aminopyridines (o-, m-, p-)										
I Ammonia, anhydrous			II 6.1	153	212	242	IB8, IP2, IP4, T3, TP33	100 kg	B	12, 40	
D Ammonia, anhydrous		2.3	UN1005	None	304	314, 315	4, T50	Forbidden	D	40, 57	
D Ammonia solution, relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia.		2.2	UN1005	None	304	314, 315	13, T50	Forbidden	D	40, 57	
I Ammonia solution, relative density less than 0.880 at 15 degrees C in water, with more than 50 percent ammonia.		2.2	UN3318	None	304	314, 315	13, T50	Forbidden	D	40, 57	
I Ammonia solutions, relative density between 0.880 and 0.957 at 15 degrees C in water, with more than 10 percent but not more than 35 percent ammonia.		2.3	UN3318	None	304	314, 315	4, T50	Forbidden	D	40, 57	
Ammonia solutions, relative density less than 0.880 at 15 degrees C in water, with more than 35 percent but not more than 50 percent ammonia.		2.2	UN2073	306	304	314, 315	IB3, IP8, T7, TP1	25 kg	D	40, 85	
Ammonium arsenate		6.1	UN1546	153	212	242	IB8, IP2, IP4, T3, TP33	100 kg	A	53	
Ammonium azide		Forbidden									
Ammonium bifluoride, solid, see Ammonium hydrogen difluoride, solid											
Ammonium bifluoride solution, see Ammonium hydrogen difluoride, solution											
Ammonium bromate		Forbidden									
Ammonium chlorate		5.1	UN1439	152	212	242	IB8, IP2, IP4, T3, TP33	25 kg	A	52	
Ammonium dichromate		6.1	UN1843	153	212	242	IB8, IP2, IP4, T3, TP33	100 kg	B	36, 65, 66, 77	
Ammonium dinitro-o-cresolate, solid		6.1	UN3424	153	202	243	IB2, T7, TP2	60 L	B	36, 66, 78, 91	
Ammonium dinitro-o-cresolate solution											
Ammonium fluoride		6.1	UN2505	153	213	240	IB2, T7, TP2	220 L	A	36, 66, 78, 91	
Ammonium fluosilicate		6.1	UN2854	153	213	240	IB8, IP3, T1, TP33	200 kg	A	52	
Ammonium fulminate		Forbidden									
Ammonium hydrogen sulfate		8	UN2506	154	212	240	IB8, IP2, IP4, T3, TP33	50 kg	A	40	
Ammonium hydrogendifluoride, solid		8	UN1727	154	212	240	IB8, IP2, IP4, TP33	50 kg	A	25, 40, 52	
Ammonium hydrogendifluoride, solution		8	UN2817	154	202	243	N34, T3, TP33	30 L	B	40	
Ammonium hydrosulfide, solution, see Ammonium sulfide solution											
Ammonium hydroxide, see Ammonia solutions, etc											
Ammonium metavanadate		6.1	UN2859	153	212	242	TP2, TP12, TP13	100 kg	A	44, 89, 100, 141	
Ammonium nitrate based fertilizer		5.1	UN2067	152	213	240	IB3, N3, T4, TP1, TP12, TP13	100 kg	B	48, 59, 60, 66, 117	
Ammonium nitrate based fertilizer		9	UN2071	155	213	240	TP1, TP12, TP13	200 kg	A		

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Ammonium nitrate emulsion or Ammonium nitrate suspension or Ammonium nitrate gel, inter- mediate for blasting explosives.	5.1	UN3375	II	.....	147, 163	None	214	214	Forbidden	Forbidden	D	48, 59, 60, 66, 124
D	Ammonium nitrate-fuel oil mixture containing only prilled ammonium nitrate and fuel oil	1.5D	NA0331	II	1.5D	B5, T7	None	62	None	Forbidden	Forbidden	10	19E
	Ammonium nitrate, liquid (not concentrated solution)	5.1	UN2426	.....	5.1	.....	None	None	243	Forbidden	Forbidden	D	59, 60
	Ammonium nitrate, with more than 0.2 percent combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance.	1.1D	UN0222	.....	1.1D	.....	None	62	None	Forbidden	Forbidden	10	19E
	Ammonium nitrate, with not more than 0.2% total combustible material, including any organic substance, calculated as carbon to the exclusion of any other added substance.	5.1	UN1942	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	48, 59, 60, 116
	Ammonium nitrate	Forbidden					None	62	None	.....	.....	10	19E
	Ammonium perchlorate	1.1D	UN0402	II	1.1D	107, A9, IB6, IP2, T3, TP33	152	212	242	Forbidden	Forbidden	E	58, 69
	Ammonium perchlorate	5.1	UN1442	.....	5.1	.....	None	62	None	.....	.....	.....	.....
	Ammonium permanganate	Forbidden					None	62	None	.....	.....	.....	.....
	Ammonium persulfate	5.1	UN1444	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	.....
	Ammonium picrate, dry or wetted with less than 10 percent water, by mass	1.1D	UN0004	II	1.1D	.....	None	62	None	Forbidden	Forbidden	10	5E 19E
	Ammonium picrate, wetted with not less than 10 percent water, by mass	4.1	UN1310	I	4.1	23, A2, N41	None	211	None	0.5 kg	0.5 kg	D	28, 36
	Ammonium polysulfide, solution	8	UN2818	II	8, 6.1	IB2, T7, TP2, TP13	154	202	243	1 L	30 L	B	12, 40, 52
	Ammonium polyvanadate	6.1	UN2861	III	8, 6.1	IB3, T4, TP1, TP13	154	203	241	5 L	60 L	B	12, 40, 52
	Ammonium silicofluoride, see Ammonium fluorosilicate	.....					None	62	None	.....	.....	A	44, 89, 100, 141
	Ammonium sulfide solution	8	UN2683	II	8, 6.1, 3,	IB1, T7, TP2, TP13	154	202	243	1 L	30 L	B	12, 22, 52, 100
	Ammunition, blank, see Cartridges for weapons, blank	.....					.....	.....	.....	.....	.....	.....	.....
	Ammunition, illuminating with or without burster, expelling charge or propelling charge	1.2G	UN0171	II	1.2G	.....	62	.....	None	Forbidden	Forbidden	03	.....
	Ammunition, illuminating with or without burster, expelling charge or propelling charge	1.3G	UN0254	II	1.3G	.....	62	.....	None	Forbidden	Forbidden	03	.....
	Ammunition, illuminating with or without burster, expelling charge or propelling charge	1.4G	UN0297	II	1.4G	.....	62	.....	None	Forbidden	Forbidden	04	.....
	Ammunition, incendiary liquid or gel, with burster, expelling charge or propelling charge	1.3J	UN0247	II	1.3J	.....	62	.....	None	Forbidden	Forbidden	04	23E
	Ammunition, incendiary (water-activated contrivances) with burster, expelling charge or propel- ling charge, see Contrivances, water-activated, etc.	.....					.....	.....	.....	.....	.....	.....	.....
	Ammunition, incendiary, white phosphorus, with burster, expelling charge or propelling charge	1.2H	UN0243	II	1.2H	.....	62	.....	None	Forbidden	Forbidden	08	8E 14E 15E
	Ammunition, incendiary, white phosphorus, with burster, expelling charge or propelling charge	1.3H	UN0244	II	1.3H	.....	62	.....	None	Forbidden	Forbidden	08	17E
	Ammunition, incendiary with or without burster, expelling charge, or propelling charge	1.2G	UN0009	II	1.2G	.....	62	.....	None	Forbidden	Forbidden	03	.....
	Ammunition, incendiary with or without burster, expelling charge, or propelling charge	1.3G	UN0010	II	1.3G	.....	62	.....	None	Forbidden	Forbidden	03	.....
	Ammunition, incendiary with or without burster, expelling charge, or propelling charge	1.4G	UN0300	II	1.4G	.....	62	.....	None	Forbidden	Forbidden	02	.....
	Ammunition, practice	1.4G	UN0362	II	1.4G	.....	62	.....	None	Forbidden	Forbidden	02	.....
	Ammunition, practice	1.3G	UN0488	II	1.3G	.....	62	.....	None	Forbidden	Forbidden	03	.....
	Ammunition, proof	1.4G	UN0363	II	1.4G	.....	62	.....	None	Forbidden	Forbidden	02	.....
	Ammunition, rocket, see Warheads, rocket etc	.....					.....	.....	.....	.....	.....	.....	.....
	Ammunition, SA (small arms), see Cartridges for weapons, etc	.....					.....	.....	.....	.....	.....	.....	.....
	Ammunition, smoke (water-activated contrivances), white phosphorus, with burster, expelling charge or propelling charge, see Contrivances, water-activated, etc. (UN 0248).	.....					.....	.....	.....	.....	.....	.....	.....
	Ammunition, smoke (water-activated contrivances), without white phosphorus or phosphides, with burster, expelling charge or propelling charge, see Contrivances, water-activated, etc. (UN 0249).	.....					.....	.....	.....	.....	.....	.....	.....
	Ammunition smoke, white phosphorus with burster, expelling charge, or propelling charge	1.2H	UN0245	II	1.2H	.....	62	.....	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E
	Ammunition, smoke, white phosphorus with burster, expelling charge, or propelling charge	1.3H	UN0246	II	1.3H	.....	62	.....	None	Forbidden	Forbidden	08	8E, 14E, 15E, 17E

Articles, explosive, extremely insensitive or Articles, EEI	2.3	UN2188	2.3	II	2.1, 2.3	1	None	192	245	Forbidden	Forbidden	40
Articles, explosive, n.o.s.	1.6N	UN0486	1.6N	II	1.6N	101	None	62	None	Forbidden	Forbidden	07
Articles, explosive, n.o.s.	1.4S	UN0349	1.4S	II	1.4S	101	None	62	None	100 kg	100 kg	05
Articles, explosive, n.o.s.	1.4B	UN0350	1.4B	II	1.4B	101	None	62	None	Forbidden	Forbidden	06
Articles, explosive, n.o.s.	1.4C	UN0351	1.4C	II	1.4C	101	None	62	None	75 kg	75 kg	06
Articles, explosive, n.o.s.	1.4D	UN0352	1.4D	II	1.4D	101	None	62	None	75 kg	75 kg	06
Articles, explosive, n.o.s.	1.4G	UN0353	1.4G	II	1.4G	101	None	62	None	Forbidden	Forbidden	08
Articles, explosive, n.o.s.	1.1L	UN0354	1.1L	II	1.1L	101	None	62	None	Forbidden	Forbidden	08
Articles, explosive, n.o.s.	1.2L	UN0355	1.2L	II	1.2L	101	None	62	None	Forbidden	Forbidden	08
Articles, explosive, n.o.s.	1.3L	UN0356	1.3L	II	1.3L	101	None	62	None	Forbidden	Forbidden	08
Articles, explosive, n.o.s.	1.1C	UN0462	1.1C	II	1.1C	101	None	62	None	Forbidden	Forbidden	07
Articles, explosive, n.o.s.	1.1D	UN0463	1.1D	II	1.1D	101	None	62	None	Forbidden	Forbidden	07
Articles, explosive, n.o.s.	1.1E	UN0464	1.1E	II	1.1E	101	None	62	None	Forbidden	Forbidden	07
Articles, explosive, n.o.s.	1.1F	UN0465	1.1F	II	1.1F	101	None	62	None	Forbidden	Forbidden	08
Articles, explosive, n.o.s.	1.2C	UN0466	1.2C	II	1.2C	101	None	62	None	Forbidden	Forbidden	07
Articles, explosive, n.o.s.	1.2D	UN0467	1.2D	II	1.2D	101	None	62	None	Forbidden	Forbidden	07
Articles, explosive, n.o.s.	1.2E	UN0468	1.2E	II	1.2E	101	None	62	None	Forbidden	Forbidden	07
Articles, explosive, n.o.s.	1.2F	UN0469	1.2F	II	1.2F	101	None	62	None	Forbidden	Forbidden	08
Articles, explosive, n.o.s.	1.3C	UN0470	1.3C	II	1.3C	101	None	62	None	Forbidden	Forbidden	07
Articles, explosive, n.o.s.	1.4E	UN0471	1.4E	II	1.4E	101	None	62	None	75 kg	75 kg	06
Articles, explosive, n.o.s.	1.4F	UN0472	1.4F	II	1.4F	101	None	62	None	Forbidden	Forbidden	08
Articles, pressurized pneumatic or hydraulic containing non-flammable gas	2.2	UN3164	2.2	II	2.2	101	306	302, 304	None	No limit	No limit	A
Articles, pyrophoric	1.2L	UN0380	1.2L	II	1.2L	101	None	62	None	Forbidden	Forbidden	08
Articles, pyrotechnic for technical purposes	1.1G	UN0428	1.1G	II	1.1G	101	None	62	None	Forbidden	Forbidden	07
Articles, pyrotechnic for technical purposes	1.2G	UN0429	1.2G	II	1.2G	101	None	62	None	Forbidden	Forbidden	07
Articles, pyrotechnic for technical purposes	1.3G	UN0430	1.3G	II	1.3G	101	None	62	None	Forbidden	Forbidden	07
Articles, pyrotechnic for technical purposes	1.4G	UN0431	1.4G	II	1.4G	101	None	62	None	75 kg	75 kg	06
Articles, pyrotechnic for technical purposes	1.4S	UN0432	1.4S	II	1.4S	101	None	62	None	100 kg	100 kg	05
Asbestos	9	NA2212	9	III	9	156, IB8, IP2, IP4	155	216	240	200 kg	200 kg	A
Ascaridole (organic peroxide)	Forbidden		Forbidden									
Asphalt, at or above its flash point	3	NA1999	3	III	3	IB3, T1, TP3	150	203	247	Forbidden	Forbidden	D
Asphalt, cut back, see Tars, liquid, etc.												
Automobile, motorcycle, tractor, other self-propelled vehicle, engine, or other mechanical apparatus, see Vehicles or Battery etc.												
Aviation regulated liquid, n.o.s.	9	UN3334	9		9	A35	155	204		No limit	No limit	A
Aviation regulated solid, n.o.s.	9	UN3335	9		9	A35	155	204		No limit	No limit	A
Azauric acid (salt of) (dry)	Forbidden		Forbidden									
Azido guanidine picrate (dry)	Forbidden		Forbidden									
5-Azido-1-hydroxy tetrazole	Forbidden		Forbidden									
Azido hydroxy tetrazole (mercury and silver salts)	Forbidden		Forbidden									
3-Azido-1,2-Propylene glycol dinitrate	Forbidden		Forbidden									
Azidodithiocarbamic acid	Forbidden		Forbidden									
Azidoethyl nitrate	Forbidden		Forbidden									
1-Aziridinylphosphine oxide-(tris), see Tris-(1-aziridinyl) phosphine oxide, solution												
Azodicarbonamide	4.1	UN3242	4.1	II	4.1	38, IB8, T3, TP33	151	212	240	Forbidden	Forbidden	D
Azotetrazole (dry)	Forbidden		Forbidden									
Barium	4.3	UN1400	4.3	II	4.3	A19, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E
Barium alloys, pyrophoric	4.2	UN1854	4.2	I	4.2	T21, TP7, TP33	None	181	None	Forbidden	Forbidden	D
Barium azide, dry or wetted with less than 50 percent water, by mass	1.1A	UN0224	1.1A	II	1.1A, 6.1	111, 117	None	62	None	Forbidden	Forbidden	12
Barium azide, wetted with not less than 50 percent water, by mass	4.1	UN1571	4.1	I	4.1, 6.1	162, A2	None	182	None	Forbidden	0.5 kg	D
Barium bromate	5.1	UN2719	5.1	II	5.1, 6.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A
Barium chlorate, solid	5.1	UN1445	5.1	II	5.1, 6.1	A9, IB6, IP2, N34, T3, TP33	152	212	242	5 kg	25 kg	A

Benzoyl chloride	8	UN1736	II	8	B2, IB2, T8, TP2, TP12, TP13	154	202	242	1 L	30 L	C	40
Benzyl bromide	6.1	UN1737	II	6.1, 8	A3, A7, IB2, N33, N34, T8, TP2, TP12, TP13	153	202	243	1 L	30 L	D	13, 40
Benzyl chloride	6.1	UN1738	II	6.1, 8	A3, A7, B70, IB2, N33, N42, T8, TP2, TP12, TP13	153	202	243	1 L	30 L	D	13, 40
Benzyl chloride <i>unstabilized</i>	6.1	UN1738	II	6.1, 8	A3, A7, B8, B11, IB2, N33, N34, N43, T8, TP2, TP12, TP13	153	202	243	1 L	30 L	D	13, 40
Benzyl chloroformate	8	UN1739	I	8	A3, A6, B4, N41, T10, TP2, TP12, TP13	None	201	243	Forbidden	2.5 L	D	40
Benzyl iodide	6.1	UN2653	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	12, 40
Benzyl(dimethyl)amine	8	UN2619	II	8, 3	B2, IB2, T7, TP2	154	202	243	1 L	30 L	A	40, 48
Benzylidene chloride	6.1	UN1886	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	D	40
Beryllium compounds, n.o.s.	6.1	UN1566	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Beryllium nitrate	5.1	UN2464	II	5.1, 6.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	
Beryllium, powder	6.1	UN1567	II	6.1, 4.1	IB8, IP2, IP4, T3, TP33	153	212	242	15 kg	50 kg	A	
Bicyclo [2.2.1] hepta-2,5-diene, stabilized or 2,5-Norbomadiene, stabilized	3	UN2251	II	3	IB2, T7, TP2	150	202	242	5 L	60 L	D	
<i>Biphenyl triazoxide</i>	Forbidden											
Bipyridium pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	3	UN2782	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E	
			II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
Bipyridium pesticides, liquid, toxic	6.1	UN3016	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
			II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
			III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
Bipyridium pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN3015	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	21, 40
			II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	21, 40
			III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	21, 40
Bipyridium pesticides, solid, toxic	6.1	UN2781	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
<i>Bis (Aminopropyl) piperazine, see Corrosive liquid, n.o.s.</i>												
Bisulfate, aqueous solution	8	UN2837	II	8	A7, B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	A	
			III	8	A7, IB3, N34, T4, TP1	154	203	241	5 L	60 L	A	
Bisulfites, aqueous solutions, n.o.s.	8	UN2693	III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40, 52
Black powder, compressed or Gunpowder, compressed or Black powder, in pellets or Gunpowder, in pellets.	1.1D	UN0028	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Black powder or Gunpowder, granular or as a meal	1.1D	UN0027	II	1.1D		None	62	None	Forbidden	Forbidden	10	
Black powder for small arms	4.1	NA0027	I	4.1	70	None	170	None	Forbidden	Forbidden	E	
Blasting agent, n.o.s., see Explosives, blasting etc.												
Blasting cap assemblies, see Detonator assemblies, non-electric, for blasting												
Blasting caps, electric, see Detonators, electric for blasting												
Blasting caps, non-electric, see Detonators, non-electric, for blasting												
Bleaching powder, see Calcium hypochlorite mixtures, etc.												
Blue asbestos (<i>Crocidolite</i>) or Brown asbestos (<i>amosite, myosorite</i>)	9	UN2212	II	9	156, IB8, IP2, IP4, T3, TP33	155	216	240	Forbidden	Forbidden	A	34, 40
Bombs, photo-flash	1.1F	UN0037	II	1.1F			62	None	Forbidden	Forbidden	08	
Bombs, photo-flash	1.1D	UN0038	II	1.1D			62	None	Forbidden	Forbidden	03	
Bombs, photo-flash	1.2G	UN0039	II	1.2G			62	None	Forbidden	Forbidden	03	
Bombs, photo-flash	1.3G	UN0299	II	1.3G			62	None	Forbidden	Forbidden	03	
Bombs, smoke, non-explosive, with corrosive liquid, without initiating device	8	UN2028	II	8		None	160	None	Forbidden	50 kg	E	40
Bombs, with bursting charge	1.1F	UN0033	II	1.1F			62	None	Forbidden	Forbidden	08	
Bombs, with bursting charge	1.1D	UN0034	II	1.1D			62	None	Forbidden	Forbidden	03	

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identifica-tion Num-bers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Bombs, with bursting charge	1.2D	UN0035	II	1,2D			62	None	Forbidden	Forbidden	Forbidden	
	Bombs, with bursting charge	1.2F	UN0291	II	1,2F			62	None	Forbidden	Forbidden	03	
	Bombs with flammable liquid, with bursting charge	1.1J	UN0399	II	1,1J			62	None	Forbidden	Forbidden	04	23E
	Bombs with flammable liquid, with bursting charge	1.2J	UN0400	II	1,2J			62	None	Forbidden	Forbidden	04	23E
	Boosters with detonator	1.1B	UN0225	II	1,1B			62	None	Forbidden	Forbidden	11	
	Boosters with detonator	1.2B	UN0268	II	1,2B			62	None	Forbidden	Forbidden	07	
	Boosters, without detonator	1.1D	UN0042	II	1,1D			62	None	Forbidden	Forbidden	07	
	Boosters, without detonator	1.2D	UN0283	II	1,2D			62	None	Forbidden	Forbidden	07	
	Borate and chlorate mixtures, see Chlorate and borate mixtures												
	Borneol	4.1	UN1312	III	4.1	A1, IB8, IP3, T1, TP33		213	240	25 kg	100 kg	A	
+	Boron tribromide	8	UN2692	I	8, 6.1	2, B9, B14, B32, B74, N34, T20, TP2, TP12, TP13, TP38, TP45		227	244	Forbidden	Forbidden	C	12
	Boron trichloride	2.3	UN1741		2.3, 8	3, B9, B14		304	314	Forbidden	Forbidden	D	25, 40
	Boron trifluoride	2.3	UN1008		2.3	2, B9, B14		302	314, 315	Forbidden	Forbidden	D	40
	Boron trifluoride acetic acid complex, liquid	8	UN1742	II	8	B2, B6, IB2, T8, TP2, TP12		202	242	1 L	30 L	A	
	Boron trifluoride acetic acid complex, solid	8	UN3419	II	8	B2, B6, IB8, IP2, IP4, T3, TP33		212	240	15 kg	50 kg	A	
	Boron trifluoride diethyl etherate	8	UN2604	I	8, 3	A3, A19, T10, TP2		201	243	0.5 L	2.5 L	D	40
	Boron trifluoride dihydrate	8	UN2851	II	8	IB2, T7, TP2		212	240	15 kg	50 kg	B	12, 40, 21, 28, 40, 49, 100
	Boron trifluoride dimethyl etherate	4.3	UN2965	I	4.3, 8, 3	A19, T10, TP2, TP7		201	243	Forbidden	1 L	D	
	Boron trifluoride propionic acid complex, liquid	8	UN1743	II	8	B2, IB2, T8, TP2, TP12		202	242	1 L	30 L	A	
	Boron trifluoride propionic acid complex, solid	8	UN3420	II	8	B2, IB8, IP2, IP4, T3, TP33		212	240	15 kg	50 kg	A	
	Box toe gum, see Nitrocellulose etc												
	Bromates, inorganic, aqueous solution, n.o.s.	5.1	UN3213	II	5.1	IB2, T4, TP1		202	242	1 L	5 L	B	56, 58, 133
	Bromates, inorganic, n.o.s.	5.1	UN1450	III	5.1	IB2, T4, TP1		203	241	2.5 L	30 L	B	56, 58, 133
	Bromates, inorganic, n.o.s.	5.1	UN1450	II	5.1	IB8, IP2, IP4, T3, TP33		212	242	5 kg	25 kg	A	56, 58
+	Bromine azide	Forbidden											
	Bromine or Bromine solutions	8	UN1744	I	8, 6.1	1, B9, B64, B85, N34, N43, T22, TP2, TP10, TP12, TP13, TP38, TP44		226	249	Forbidden	Forbidden		12, 40, 66, 74, 89, 90
	Bromine chloride	2.3	UN2901		2.3, 8, 5.1	TP2, TP13		304	314, 315	Forbidden	Forbidden	D	40, 89, 90
+	Bromine pentafluoride	5.1	UN1745	I	5.1, 6.1, 8	1, B9, B14, B30, B72, T22, TP2, TP12, TP13, TP38, TP44		228	244	Forbidden	Forbidden	D	25, 40, 66, 90
+	Bromine trifluoride	5.1	UN1746	I	5.1, 6.1, 8	2, B9, B14, B32, B74, T22, TP2, TP12, TP13, TP38, TP45		228	244	Forbidden	Forbidden	D	25, 40, 66, 90
	4-Bromo-1,2-dinitrobenzene	Forbidden											
	1-Bromo-1,2-dinitrobenzene (unstable at 59 degrees C)	6.1	UN2688	III	6.1	IB3, T4, TP1		203	241	60 L	220 L	A	
	1-Bromo-3-chloropropane	3	UN2341	III	3	B1, IB3, T2, TP1		203	242	60 L	220 L	A	
	1-Bromo-3-methylbutane	Forbidden											
	1-Bromo-3-nitrobenzene (unstable at 56 degrees C)	4.1	UN3241	III	4.1	46, IB8, IP3		213	None	25 kg	50 kg	C	12, 25, 40
	2-Bromo-2-nitropropane-1,3-diol	8	UN3425	II	8	A7, IB8, IP2, IP4, N34, T3, TP33		212	240	15 kg	50 kg	A	

UN Number	UN Name	Class	Label	Substance	Quantity	Condition	Special	Other	Notes
8 UN1938	Bromoacetic acid solution	8	II 8	A7, B2, IB2, T7, TP2	154	202	242	30 L	40
6.1 UN1569	Bromoacetone	6.1	III 6.1, 3	B2, IB3, T7, TP2, 2, T20, TP2, TP13	154	203	241	60 L	40
8 UN2513	Bromoacetyl bromide	8	II 8	B2, IB2, T8, TP2, TP12	154	202	242	Forbidden	40
3 UN2514	Bromobenzene	3	III 3	B1, IB3, T2, TP1	150	203	242	30 L	40, 53
6.1 UN1694	Bromobenzyl cyanides, liquid	6.1	I 6.1	T14, TP2, TP1	None	201	243	220 L	12, 40, 52
6.1 UN3449	Bromobenzyl cyanides, solid	6.1	I 6.1	T6, TP33	None	211	242	30 L	12, 40, 52
3 UN1126	1-Bromobutane	3	II 3	IB2, T4, TP1	150	202	242	50 kg	52
3 UN2339	2-Bromobutane	3	II 3	B1, IB2, T4, TP1	150	202	242	60 L	40
6.1 UN1887	Bromochloromethane	6.1	III 6.1	IB3, T4, TP1	153	203	241	60 L	40
3 UN2340	2-Bromoethyl ether	3	III 3	IB2, T4, TP1	150	202	242	220 L	40
6.1 UN2515	Bromoform	6.1	III 6.1	IB3, T4, TP1	153	203	241	220 L	12, 40
3 UN2342	Bromomethylpropanes	3	II 3	IB2, T4, TP1	150	202	242	60 L	40
3 UN2343	2-Bromopropane	3	II 3	IB2, T4, TP1	150	202	242	60 L	40
3 UN2344	Bromopropanes	3	III 3	IB2, T4, TP1	150	202	242	60 L	40
3 UN2345	3-Bromopropyne	3	III 3	IB3, T2, TP1	150	203	242	220 L	40
Forbidden	Bromosilane	Forbidden	II 3	IB2, T4, TP1	150	202	242	60 L	40
2.1 UN2419	Bromotoluene-alpha, see Benzyl bromide	2.1	.....	.....	None	304	314	150 kg	40
2.2 UN1009	Bromotrifluoroethylene	2.2	.....	.....	306	304	314, 315	150 kg	40
6.1 UN1570	Bromotrifluoromethane or Refrigerant gas, R 13B1	6.1	I 6.1	IB7, IP1, T6, TP33	None	211	242	50 kg	40
1.1D UN0043	Brucine	1.1D	II 1.1D	.....	None	62	None	Forbidden	07
2.1 UN1010	Bursters, explosive	2.1	.....	.....	306	304	314, 315	150 kg	40
2.1 UN1011	Butadienes, stabilized or Butadienes and Hydrocarbon mixture, stabilized containing more than 40% butadienes	2.1	.....	.....	306	304	314, 315	150 kg	40
3 UN2346	Butane, butane mixtures and mixtures having similar properties in cartridges each not exceeding 500 grams, see Receptacles, etc.	3	II 3	IB2, T4, TP1	150	202	242	60 L	40
Forbidden	Butane, see also Petroleum gases, liquefied	Forbidden	II 3	IB2, T4, TP1, TP29	150	202	242	60 L	40
3 UN1123	Butaneone	3	II 3	B1, IB3, T2, TP1	150	203	242	220 L	40
8 UN1718	Butanol	8	III 8	IB2, T4, TP1	150	202	242	60 L	40
3 UN2348	tert-Butoxyacetyl azide	3	III 3	IB2, T4, TP1	150	202	242	60 L	40
3 UN2709	Butyl acetates	3	III 3	B1, IB3, T2, TP1	150	203	242	220 L	40
6.1 NA2742	Butyl acid phosphate	6.1	I 6.1, 3, 8	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	30 L	12, 13, 22, 25, 40, 48, 100
6.1 UN2743	Butyl acrylates, stabilized	6.1	I 6.1, 8, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	12, 13, 21, 25, 40, 100
3 UN1128	Butyl alcohols, see Butanols	3	III 3	B1, IB3, T2, TP1	150	203	242	220 L	40
4.2 UN2690	n-Butyl bromide, see 1-Bromobutane	4.2	.....	.....	None	227	244	30 L	40
6.1 UN2484	n-Butyl chloride, see Chlorobutanes	6.1	I 6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	12, 13, 21, 25, 40, 100
6.1 UN2485	sec-Butyl chloroformate	6.1	I 6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	12, 13, 21, 25, 40, 100
3 UN1128	n-Butyl chloroformate	3	III 3	IB2, T4, TP1	150	202	242	220 L	40
4.2 UN2690	Butyl ethers, see Dibutyl ethers	4.2	.....	.....	None	211	243	60 L	40
6.1 UN2484	Butyl ethyl ether, see Ethyl butyl ether	6.1	II 6.1, 3	IB2, T7, TP2	153	202	243	Forbidden	40
6.1 UN2484	n-Butyl formate	6.1	I 6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP13, TP38	None	226	244	Forbidden	40
6.1 UN2484	tert-Butyl hydroperoxide, with more than 90 percent with water	6.1	I 6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	40
6.1 UN2484	tert-Butyl hypochlorite	6.1	I 6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	40
6.1 UN2484	N-n-Butyl imidazole	6.1	II 6.1, 3	A3, A6, IB2, T4, TP1	150	202	242	60 L	52, 95
6.1 UN2484	tert-Butyl isocyanate	6.1	I 6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	40
6.1 UN2485	n-Butyl isocyanate	6.1	I 6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	40
3 UN2347	Butyl mercaptans	3	II 3	A3, A6, IB2, T4, TP1	150	202	242	60 L	52, 95

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifica-tion Num-bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age		
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other	
(1)	n-Butyl methacrylate, stabilized	3	UN2227	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Butyl methyl ether	3	UN2350	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
	Butyl nitrites	3	UN2351	I	3	T11, TP1, TP8, TP27	150	201	243	1 L	30 L	E	40	
	tert-Butyl peroxycetate, with more than 76 percent in solution	Forbidden		II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40	
	n-Butyl peroxycarbonate, with more than 52 percent in solution	Forbidden		III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40	
	tert-Butyl peroxycarbonate, with more than 77 percent in solution	Forbidden												
	Butyl phosphoric acid, see Butyl acid phosphate	Forbidden												
	Butyl propionates	3	UN1914	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	5-tert-Butyl-2,4,6-trinitro-m-xylene or Musk xylene	4.1	UN2956	III	4.1	159	None	223	None	None	Forbidden	Forbidden	D	D12, 25, 48, 127
	Butyl vinyl ether, stabilized	3	UN2352	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40	
	n-Butylamine	3	UN1125	II	3, 8	IB2, T7, TP1	150	202	242	1 L	5 L	B	40	
	N-Butylamine	6.1	UN2738	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	74	
	tert-Butylcyclohexylchloroformate	6.1	UN2747	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	12, 13, 25	
	Butylene see also Petroleum gases, liquefied	2.1	UN1012			19, T50	306	304	314, 315	Forbidden	150 kg	E	40	
	1,2-Butylene oxide, stabilized	3	UN3022	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	27, 49	
Butyltoluenes	6.1	UN2667	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A			
Butyltrichlorosilane	8	UN1747	II	8, 3	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	243	Forbidden	30 L	C	40		
1,4-Butynediol	6.1	UN2716	III	6.1	A1, IB8, IP3, T1, TP33	None	213	240	100 kg	200 kg	A	52, 53, 70, 139, 140		
Butyraldehyde	3	UN1129	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B			
Butyraloxime	3	UN2840	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A			
Butyric acid	8	UN2820	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	12		
Butyric anhydride	8	UN2739	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A			
Butyronitrile	3	UN2411	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40		
Butyryl chloride	3	UN2353	II	3, 8	IB2, T8, TP2, TP12, TP13	150	202	243	1 L	5 L	C	40		
Caecodylic acid	6.1	UN1572	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	E	52		
Cadmium compounds	6.1	UN2570	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A			
Caesium hydroxide	8	UN2682	III	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A			
Caesium hydroxide solution	8	UN2681	III	8	IB8, IP2, IP4, T3, TP33	154	212	240	100 kg	200 kg	A	29		
Calcium	4.3	UN1401	II	4.3	B2, IB2, T7, TP2	154	202	242	15 kg	50 kg	A	29		
Calcium arsenate	6.1	UN1573	II	6.1	IB3, T4, TP1	154	203	241	1 L	30 L	A	29		
Calcium arsenate and calcium arsenite, mixtures, solid	6.1	UN1574	II	6.1	IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	E	52		
Calcium bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.	4.3	UN1402	I	4.3	IB8, IP2, IP4, T3, TP33	152	212	242	25 kg	100 kg	A			
Calcium carbide	4.3	UN1402	I	4.3	IB8, IP2, IP4, T3, TP33	152	212	242	25 kg	100 kg	A			
						None	211	242	Forbidden	15 kg	B	52		
						A1, A8, B55, B59, IB4, IP1, N34, T9, TP7, TP33	151	212	241	15 kg	B	52		

Calcium chlorate	5.1	UN1452	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Calcium chlorate aqueous solution	5.1	UN2429	II	5.1	A2, IB2, N41, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133
Calcium chlorite			III	5.1	A2, IB2, N41, T4, TP1	152	203	241	2.5 L	30 L	B	56, 68, 133
Calcium cyanamide with more than 0.1 percent of calcium carbide	5.1	UN1453	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Calcium cyanide	4.3	UN1403	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	A	52
Calcium dithionite or Calcium hydrosulfite	6.1	UN1575	I	6.1	N80, T6, TP33	None	211	242	5 kg	50 kg	A	40, 52
Calcium hydride	4.2	UN1923	II	4.2	A19, A20, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	E	13
Calcium hydroxide, see Calcium dithionite	4.3	UN1404	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	E	52
Calcium hypochlorite, dry or Calcium hypochlorite mixtures dry with more than 39 percent available chlorine (8.8 percent available oxygen).	5.1	UN1748	II	5.1	165, 166, A7, A9, IB8, IP2, IP4, IP13, IP13, N34, W9	152	212	None	5 kg	25 kg	D	4, 25, 48, 52, 56, 58, 69, 142
Calcium hypochlorite, hydrated or Calcium hypochlorite, hydrated mixtures, with not less than 5.5 percent but not more than 16 percent water.	5.1	UN2880	III	5.1	165, 171, IB8, IP4, IP13, W9	152	213	240	25 kg	100 kg	D	4, 25, 48, 52, 56, 58, 69, 142
Calcium hypochlorite mixtures, dry, with more than 10 percent but not more than 39 percent available chlorine.	5.1	UN2208	III	5.1	165, A1, A29, IB8, IP3, IP13, N34, W9	152	213	240	25 kg	100 kg	D	4, 25, 48, 52, 56, 58, 69, 142
Calcium manganese silicon	4.3	UN2844	III	4.3	A1, A19, IB8, IP2, IP4, T1, TP33	151	213	241	25 kg	100 kg	A	52, 85, 103
Calcium nitrate	5.1	UN1454	III	5.1	34, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
Calcium oxide	8	UN1910	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
Calcium perchlorate	5.1	UN1455	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Calcium permanganate	5.1	UN1456	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
Calcium peroxide	5.1	UN1457	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 56, 75
Calcium phosphide	4.3	UN1360	I	4.3, 6.1	A8, A19, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85
Calcium, pyrophoric or Calcium alloys, pyrophoric	4.2	UN1855	I	4.2	A1, A19, IB6, T1, TP33	None	187	None	Forbidden	Forbidden	D	
Calcium resinate	4.1	UN1313	III	4.1	A1, A19, IB4, T1, TP33	None	213	240	25 kg	100 kg	A	
Calcium resinate, fused	4.1	UN1314	III	4.1	A1, A19, IB4, T1, TP33	None	213	240	25 kg	100 kg	A	
Calcium selenate, see Selenates or Selenites												
Calcium silicide	4.3	UN1405	II	4.3	A19, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	B	52, 85, 103
Camphor oil	3	UN1130	III	3	A1, A19, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	B	52, 85, 103
Camphor, synthetic	4.1	UN2717	III	4.1	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Caproic acid	8	UN2829	III	8	A1, IB8, IP3, T1, TP33	None	213	240	25 kg	100 kg	A	
Carbamate pesticides, liquid, flash point less than 23 degrees C	3	UN2758	I	3, 6.1	IB3, T4, TP1	154	203	241	5 L	60 L	A	
Carbamate pesticides, liquid, toxic	6.1	UN2992	II	6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
			II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
			I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
			II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division (3)	Identifica-tion Num-bers (4)	PG (5)	Label Codes (6)	Special provisions (§172.102)	Packaging (§173.***) (8)			Quantity limitations (9)		Vessel stow-age (10)	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Carbamate pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN2991	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	Carbamate pesticides, solid, toxic	6.1	UN2757	III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
	Carbolic acid, see Phenol, solid or Phenol, molten			III	4.2	IB8, IP3, T1, TP33	None	213	241	0.5 kg	Forbidden	A	12
	Carbolic acid solutions, see Phenol solutions	4.2	UN1362	III	4.2	IB6, T3, TP33	None	212	242	Forbidden	Forbidden	A	12
	Carbon, activated			III	4.2	IB8, IP3, T1, TP33	None	213	241	Forbidden	Forbidden	A	12
	Carbon, animal or vegetable origin			III	2.2		306	302, 304	302, 314, 315	75 kg	150 kg	A	
	Carbon bisulfide, see Carbon disulfide												
	Carbon dioxide	2.2	UN1013		2.2		306	302, 304	302, 314, 315	75 kg	150 kg	A	
	Carbon dioxide and nitrous oxide mixtures	2.2	UN1015		2.2		306	None	314, 315	75 kg	150 kg	A	
	Carbon dioxide and oxygen mixtures, compressed	2.2	UN1014		2.2, 5.1	77, A14	306	304	314, 315	75 kg	150 kg	A	
	Carbon dioxide, refrigerated liquid	2.2	UN2187		2.2	T75, TP5	306	304	314, 315	50 kg	500 kg	B	
A W	Carbon dioxide, solid or Dry ice	9	UN1845	III	None	B16, T14, TP2, TP7, TP13	217	217	240	200 kg	200 kg	C	40
	Carbon disulfide	3	UN1131	I	3, 6.1		None	201	243	Forbidden	Forbidden	D	18, 40, 115
	Carbon monoxide, compressed	2.3	UN1016		2.3, 2.1		None	302	314, 315	Forbidden	25 kg	D	40, 57
	Carbon monoxide and hydrogen mixture, compressed	2.3	UN2600		2.3, 2.1		None	302	302	Forbidden	Forbidden	D	
	Carbon monoxide, refrigerated liquid (cryogenic liquid)	2.3	NA8202		2.3, 2.1		None	316	318	Forbidden	Forbidden	D	
D	Carbon tetrabromide	6.1	UN2516	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	25
	Carbon tetrachloride	6.1	UN1846	II	6.1	IB2, N36, T7, TP2	153	202	243	5 L	60 L	A	40
	Carbonyl chloride, see Phosgene												
	Carbonyl fluoride	2.3	UN2417		2.3, 8		None	302	None	Forbidden	Forbidden	D	40
	Carbonyl sulfide	2.3	UN2204		2.3, 2.1		None	304	314, 315	Forbidden	Forbidden	D	40
	Cartridge cases, empty primed, see Cases, cartridge, empty, with primer												
	Cartridges, actuating, for aircraft ejector seat catapult, fire extinguisher, canopy removal or apparatus, see Cartridges, power device.												
	Cartridges, explosive, see Charges, demolition												
	Cartridges, flash	1.1G	UN0049	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Cartridges, flash	1.3G	UN0050	II	1.3G		None	62	None	Forbidden	75 kg	07	
	Cartridges for weapons, blank	1.1C	UN0326	II	1.1C		None	62	None	Forbidden	Forbidden	07	
	Cartridges for weapons, blank	1.2C	UN0413	II	1.2C		None	62	None	Forbidden	Forbidden	07	
	Cartridges for weapons, blank	1.4S	UN0014	II	None		63	62	None	25 kg	100 kg	05	
	Cartridges for weapons, blank or Cartridges, small arms, blank	1.3C	UN0327	II	1.3C		None	62	None	Forbidden	Forbidden	07	
	Cartridges for weapons, blank or Cartridges, small arms, blank	1.4C	UN0338	II	1.4C		None	62	None	Forbidden	75 kg	06	
	Cartridges for weapons, blank or Cartridges, small arms, blank	1.2C	UN0328	II	1.2C		None	62	None	Forbidden	Forbidden	03	
	Cartridges for weapons, inert projectile	1.4S	UN0012	II	None		63	62	None	25 kg	100 kg	05	
	Cartridges for weapons, inert projectile or Cartridges, small arms	1.4C	UN0339	II	1.4C		None	62	None	Forbidden	75 kg	06	
	Cartridges for weapons, inert projectile or Cartridges, small arms	1.3C	UN0417	II	1.3C		None	62	None	Forbidden	Forbidden	06	
	Cartridges for weapons, with bursting charge	1.1F	UN0005	II	1.1F		None	62	None	Forbidden	Forbidden	08	
	Cartridges for weapons, with bursting charge	1.1E	UN0006	II	1.1E		None	62	None	Forbidden	Forbidden	03	

UN Number	Description	Class	Subclass	Quantity	Restrictions	Other	Exemptions	Notes
UN0007	Cartridges for weapons, with bursting charge	1.2F		None	Forbidden			08
UN0321	Cartridges for weapons, with bursting charge	1.2E		None	Forbidden			03
UN0348	Cartridges for weapons, with bursting charge	1.4F		None	Forbidden			08
UN0412	Cartridges for weapons, with bursting charge	1.4E		None	Forbidden	75 kg		02
UN0277	Cartridges, oil well	1.3C		None	Forbidden			06
UN0278	Cartridges, oil well	1.4C		None	Forbidden	75 kg		07
UN0275	Cartridges, power device	1.3C		None	Forbidden	75 kg		07
UN0276	Cartridges, power device	1.4C		None	Forbidden	75 kg		06
UN0323	Cartridges, power device	1.4S		63	Forbidden	100 kg		05
UN0381	Cartridges, safety, see Cartridges for weapons, blank (UN 0014)	1.2C		None	Forbidden			07
UN0054	Cartridges, signal	1.3G		None	Forbidden	75 kg		07
UN0312	Cartridges, signal	1.4G		None	Forbidden	75 kg		06
UN0405	Cartridges, signal	1.4S		None	Forbidden	100 kg		05
ORM-D	Cartridges, small arms	None		63	Forbidden	30 kg gross		A
ORM-F	Cartridges, power device (used to project fastening devices)	None		63	Forbidden	30 kg gross		A
UN0055	Cartridges, sporting, see Cartridges for weapons, other than blank	1.4S		None	Forbidden			05
UN0379	Cartridges, starter, jet engine, see Cartridges, power device	1.4C		None	Forbidden	100 kg		05
UN0446	Cases, cartridges, empty with primer	1.4C		None	Forbidden	75 kg		06
UN0447	Cases, combustible, empty, without primer	1.4C		None	Forbidden	75 kg		06
UN2969	Cases, combustible, empty, without primer	1.3C		None	Forbidden			07
UN1719	Casinghead gasoline see Gasoline	None		155	No limit			E
	Castor beans or Castor meal or Castor pomace or Castor flake	8		202	30 L			A
	Caustic alkali liquids, n.o.s.	8		203	60 L			A
	Caustic potash, see Potassium hydroxide etc							
	Caustic soda, (etc.) see Sodium hydroxide etc							
	Cells, containing sodium	4.3		189	No limit			A
	Celluloid, in block, rods, rolls, sheets, tubes, etc, except scrap	4.1		None	100 kg			A
	Celluloid, scrap	4.2		213	Forbidden			D
	Cement, see Adhesives containing flammable liquid	4.1		None	50 kg			A
	Cerium, slabs, ingots, or rods	4.3		212	15 kg			74, 91
	Cerium, turnings or gritty powder	4.3		212	15 kg			E
	Cesium or Caesium	4.3		211	15 kg			D
	Cesium nitrate or Caesium nitrate	5.1		240	100 kg			A
	Charcoal briquettes, shell, screenings, wood, etc.	4.2		213	25 kg			12
	Charges, bursting, plastics bonded	1.1D		None	100 kg			A
	Charges, bursting, plastics bonded	1.2D		None	Forbidden			07
	Charges, bursting, plastics bonded	1.4D		None	Forbidden	75 kg		06
	Charges, bursting, plastics bonded	1.4S		None	100 kg			05
	Charges, demolition	1.1D		None	Forbidden			03
	Charges, depth	1.1D		None	Forbidden			03
	Charges, expelling, explosive, for fire extinguishers, see Cartridges, power device							
	Charges, explosive, commercial without detonator	1.1D		None	Forbidden			07
	Charges, explosive, commercial without detonator	1.2D		None	Forbidden			07
	Charges, explosive, commercial without detonator	1.4D		None	Forbidden	75 kg		06
	Charges, explosive, commercial without detonator	1.4S		None	100 kg			05
	Charges, propelling	1.1C		None	Forbidden			07
	Charges, propelling	1.3C		None	Forbidden			07
	Charges, propelling	1.2C		None	Forbidden	75 kg		06
	Charges, propelling	1.4C		None	Forbidden	75 kg		06
	Charges, propelling, for cannon	1.3C		None	Forbidden			10
	Charges, propelling, for cannon	1.1C		None	Forbidden			10
	Charges, propelling, for cannon	1.2C		None	Forbidden			10
	Charges, shaped, flexible, linear	1.4D		None	Forbidden			06
	Charges, shaped, flexible, linear	1.1D		None	Forbidden			07
	Charges, shaped, without detonator	1.1D		None	Forbidden			07
	Charges, shaped, without detonator	1.2D		None	Forbidden			07
	Charges, shaped, without detonator	1.4D		None	Forbidden	75 kg		06
	Charges, shaped, without detonator	1.4S		None	100 kg			05
	Charges, supplementary explosive	1.1D		None	Forbidden			10
	Chemical kit	8		154	10 kg			40
	Chemical kits	9		161	30 L			B
	Chloral, anhydrous, stabilized	6.1		202	5 kg			D
	Chlorate and borate mixtures	5.1		212	25 kg			A

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifica-tion Num-bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
	Chlorate and magnesium chloride mixture, solid	5.1	UN1459	II	5.1	A9, IB8, IP3, N34, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Chlorate and magnesium chloride mixture solution	5.1	UN3407	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	240	5 kg	25 kg	A	56, 58
	Chlorate and magnesium chloride mixture, solid	5.1	UN1459	III	5.1	A9, IB2, N34, T4, TP1	152	202	242	1 L	5 L	A	56, 58, 133
	Chlorate of potash, see Potassium chlorate												
	Chlorate of soda, see Sodium chlorate												
	Chlorates, inorganic, aqueous solution, n.o.s.	5.1	UN3210	II	5.1	IB2, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133
	Chlorates, inorganic, n.o.s.	5.1	UN1461	III	5.1	IB2, T4, TP1	152	203	241	2.5 L	30 L	B	56, 58, 133
	Chloric acid aqueous solution, with not more than 10 percent chloric acid	5.1	UN2626	II	5.1	A9, IB6, IP2, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Chloride of phosphorus, see Phosphorus trichloride												
	Chloride of sulfur, see Sulfur chloride												
	Chlorinated lime, see Calcium hypochlorite mixtures, etc												
	Chlorine	2.3	UN1017		2.3, 8	2, B9, B14, T50, TP19	None	304	314, 315	Forbidden	Forbidden	D	40, 51, 55, 62, 68, 89, 90
D	Chlorine azide	Forbidden	NA9191	II	5.1, 6.1		None	229	None	Forbidden	Forbidden	E	
	Chlorine dioxide, hydrate, frozen	Forbidden	UN2548		2.3, 5.1, 8	1, B7, B9, B14	None	304	314	Forbidden	Forbidden	D	40, 89, 90
	Chlorine trifluoride	2.3	UN1749		2.3, 5.1, 8	2, B7, B9, B14	None	304	314	Forbidden	Forbidden	D	40, 89, 90
	Chlorite solution	8	UN1908	II	8	A3, A6, A7, B2, IB2, N34, T7, TP2, TP24	154	202	242	1 L	30 L	B	26, 44, 89, 100, 141
	Chlorites, inorganic, n.o.s.	5.1	UN1482	III	8	A3, A6, A7, B2, IB3, N34, T4, TP2, TP24	154	203	241	5 L	60 L	B	26, 44, 89, 100, 141
	1-Chloro-1,1-difluoroethane or Refrigerant gas R 142b	2.1	UN2517	II	2.1	A7, IB6, IP2, N34, T3, TP33, T50	152	212	242	5 kg	25 kg	A	56, 58
	3-Chloro-4-methylphenyl isocyanate, liquid	6.1	UN2236	II	6.1	IB2	153	202	243	5 L	60 L	B	40
	3-Chloro-4-methylphenyl isocyanate, solid	6.1	UN3428	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	40
	1-Chloro-1,2,2,2-tetrafluoroethane or Refrigerant gas R 124	2.2	UN1021		2.2	IB1, T7, TP3, TP28	306	304	314, 315	75 kg	150 kg	A	
	4-Chloro-o-toluidine hydrochloride, solid	6.1	UN1579	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	4-Chloro-o-toluidine hydrochloride, solution	6.1	UN3410	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	1-Chloro-2,2,2-trifluoroethane or Refrigerant gas R 133a	2.2	UN1983		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	Chloroacetic acid, molten	6.1	UN3250	II	6.1, 8	IB1, T7, TP3, TP28	None	202	243	Forbidden	Forbidden	C	40
	Chloroacetic acid, solid	6.1	UN1751	II	6.1, 8	A3, A7, IB8, IP4, N34, T3, TP33	153	212	242	15 kg	50 kg	A	40
	Chloroacetic acid, solution	6.1	UN1750	II	6.1, 8	A7, IB2, N34, T7, TP2	153	202	243	1 L	30 L	C	40

Chemical Name	UN Number	Class	Subclass	Other	None	227	244	Forbidden	Forbidden	D	21, 40, 100
Chloroacetone, stabilized	6.1 UN1695	I	6.1, 3, 8	2, B9, B14, B32, B74, N12, N32, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 40, 52
Chloroacetone (unstabilized)	Forbidden 6.1 UN2668	II	6.1, 3	2, B9, B14, B32, B74, IB99, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 40, 52
Chloroacetone, liquid CN	6.1 UN3416	II	6.1	A3, IB2, N12, N32, N33, T7, TP2, TP13	None	202	243	Forbidden	Forbidden	D	12, 40
Chloroacetophenone, solid (CN)	6.1 UN1697	II	6.1	A3, IB8, IP2, IP4, N12, N32, N33, N34, T3, TP33, TP2, TP13	None	212	None	Forbidden	Forbidden	D	12, 40
Chloroacetyl chloride	6.1 UN1752	I	6.1, 8	2, B3, B8, B9, B14, B32, B74, B77, N34, N43, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
Chloroanilines, liquid	6.1 UN2019	II	6.1	IB2, T7, TP2, IB8, IP2, IP4, T3, TP33	153	202	243	5 L	60 L	A	52
Chloroanilines, solid	6.1 UN2018	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52
Chloroanisidines	6.1 UN2233	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Chlorobenzene	3 UN1134	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Chlorobenzol, see Chlorobenzene											
Chlorobenzotrifluorides	3 UN2234	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
Chlorobenzyl chlorides, liquid	6.1 UN2235	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
Chlorobenzyl chlorides, solid	6.1 UN3427	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Chlorobutanes	3 UN1127	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	12
Chlorocresols solution	6.1 UN2669	III	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	12
Chlorocresols, solid	6.1 UN3437	II	6.1	IB3, T7, TP2	153	203	241	25 kg	100 kg	A	12
Chlorodifluoromethane or Refrigerant gas R 12B1	2.2 UN1974		2.2	IB8, IP2, IP4, T3, TP33	306	304	314, 315	75 kg	150 kg	A	
Chlorodifluoromethane and chloropentafluoroethane mixture or Refrigerant gas R 502 with fixed boiling point, with approximately 49 percent chlorodifluoromethane.	2.2 UN1973		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
Chlorodifluoromethane or Refrigerant gas R 22	2.2 UN1018		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
Chlorodinitrobenzenes, liquid	6.1 UN1577	II	6.1	IB2, T7, TP2, TP33	153	202	243	5 L	60 L	B	91
Chlorodinitro-benzenes, solid	6.1 UN3441	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	91
2-Chloroethanal	6.1 UN2232	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
Chloroform	6.1 UN1888	III	6.1	IB3, N36, T7, TP2	153	203	241	60 L	220 L	A	40
Chloroformates, toxic, corrosive, flammable, n.o.s.	6.1 UN2742	II	6.1, 8, 3	5, IB1, T7, TP2	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
Chloroformates, toxic, corrosive, n.o.s.	6.1 UN3277	II	6.1, 8	IB2, T8, TP2, TP13, TP28	153	202	243	1 L	30 L	A	12, 13, 25, 40
Chloromethyl chloroformate	6.1 UN2745	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
Chloromethyl ethyl ether	3 UN2354	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
Chloronitroanilines	6.1 UN2237	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Chloronitrobenzene, liquid ortho	6.1 UN3409	II	6.1	IB2, T7, TP2, TP33	153	202	243	5 L	60 L	A	
Chloronitrobenzenes, solid meta or para	6.1 UN1578	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Chloronitrotoluenes, liquid	6.1 UN2493	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	44, 89, 100, 141
Chloronitrotoluenes, solid	6.1 UN3457	III	6.1	IB8, IP3, T1, TP33	153	213	240	25 kg	200 kg	A	
Chloropentafluoroethane or Refrigerant gas R 115	2.2 UN1020		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
Chlorophenolates, liquid or Phenolates, liquid	8 UN2904	III	8	IB3	154	203	241	5 L	60 L	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
	Chlorophenolates, solid or Phenolates, solid	8	UN2905	III	8		154	213	240	25 kg	100 kg	A	
	Chlorophenols, liquid	6.1	UN2021	III	6.1	IB8, IP3, T1, TP33	153	203	241	60 L	220 L	A	
	Chlorophenols, solid	6.1	UN2020	III	6.1	IB8, IP3, T1, TP1, TP33	153	213	240	100 kg	200 kg	A	
	Chlorophenyltrichlorosilane	8	UN1753	II	8	A7, B2, B6, IB2, N34, T7, TP2	None	202	242	Forbidden	30 L	C	40
+	Chloropicrin	6.1	UN1580	I	6.1	2, B7, B9, B14, B32, B46, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Chloropicrin and methyl bromide mixtures	2.3	UN1581		2.3	2, B9, B14, T50	None	193	314, 315	Forbidden	Forbidden	D	25, 40
	Chloropicrin and methyl chloride mixtures	2.3	UN1582		2.3	2, T50	None	193	245	Forbidden	Forbidden	D	25, 40
	Chloropicrin mixture, flammable (pressure not exceeding 14.7 psia at 115 degrees F flash point below 100 degrees F) see Toxic liquids, flammable, etc.	6.1	UN1583	I	6.1	5	None	201	243	Forbidden	Forbidden	C	40
	Chloropicrin mixtures, n.o.s.			II	6.1	IB2	153	202	243	Forbidden	Forbidden	C	40
	Chloropicrin mixtures, n.o.s.			III	6.1	IB3	153	203	241	Forbidden	Forbidden	C	40
D	Chloropivaloyl chloride	6.1	NA9263	I	6.1, 8	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40
	Chloroplatinic acid, solid	8	UN2507	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Chloroprene, stabilized	3	UN1991	I	3, 6.1	B57, T14, TP2, TP13	None	201	243	Forbidden	30 L	D	40
	Chloroprene, uninhibited	Forbidden											
	1-Chloropropane	3	UN1278	II	3		None	202	242	Forbidden	60 L	E	
	2-Chloropropane	3	UN2356	I	3	N36, T11, TP2, T7, TP2	150	201	243	1 L	30 L	E	
	3-Chloropropanol-1	6.1	UN2849	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	2-Chloropropene	3	UN2456	I	3	A3, N36, T11, TP2	150	201	243	1 L	30 L	E	
	2-Chloropropionic acid	8	UN2511	III	8	IB3, T4, TP2	154	203	241	5 L	60 L	A	8
	2-Chloropyridine	6.1	UN2822	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Chlorosilanes, corrosive, flammable, n.o.s.	8	UN2986	II	8, 3	IB2, T11, TP2, TP27	None	202	243	1 L	30 L	C	40
	Chlorosilanes, corrosive, n.o.s.	8	UN2987	II	8	B2, IB2, T14, TP2, TP27	154	202	242	1 L	30 L	C	40
	Chlorosilanes, flammable, corrosive, n.o.s.	3	UN2985	II	3, 8	IB1, T11, TP2, TP13, TP27	150	201	243	1 L	5 L	B	40
	Chlorosilanes, toxic, corrosive, n.o.s.	6.1	UN3361	II	6.1, 8	IB1, T11, TP2, TP13	153	202	243	1 L	30 L	C	40
	Chlorosilanes, toxic, corrosive, flammable, n.o.s.	6.1	UN3362	II	6.1, 3, 8	IB1, T11, TP2, TP13	153	202	243	1 L	30 L	C	40, 125
	Chlorosilanes, water-reactive, flammable, corrosive, n.o.s.	4.3	UN2988	I	4.3, 3, 8	A2, T10, TP2, TP7, TP13	None	201	244	Forbidden	1 L	D	21, 28, 40, 49, 100
+	Chlorosulfonic acid (with or without sulfur trioxide)	8	UN1754	I	8, 6.1	2, B9, B10, B14, B32, B74, T20, TP2, TP12, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
	Chlorotoluenes	3	UN2238	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Chlorotoluidines, liquid	6.1	UN3429	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Chlorotoluidines, solid	6.1	UN2239	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Chlorotrifluoromethane and trifluoromethane azeotropic mixture or Refrigerant gas R 503 with approximately 60 percent chlorotrifluoromethane.	2.2	UN2599		2.2		306	304	314, 315	75 kg	150 kg	A	
	Chlorotrifluoromethane or Refrigerant gas R 13	2.2	UN1022		2.2		306	304	314, 315	75 kg	150 kg	A	

UN Number	Proper Name	Class	Label	Quantity	Special Provisions	Other	Weight/Volume	Container	Code	
8	Chromic acid solution	DG	8	154	B2, IB2, T8, TP2, TP12	202	242	1 L	30 L C	40, 44, 89, 100, 141
8	Chromic anhydride, see Chromium trioxide, anhydrous									
8	Chromic fluoride, solid	DG	III	154	IB3, T4, TP1, TP12	203	241	5 L	60 L C	40, 44, 89, 100, 141
8	Chromic fluoride, solution	DG	II	154	IB8, IP2, IP4, T3, TP33	212	240	15 kg	50 kg A	52
5.1	Chromium nitrate	DG	III	154	B2, IB2, T7, TP2	202	242	1 L	30 L A	
8	Chromium oxychloride	DG	III	154	IB3, T4, TP1	203	241	5 L	60 L A	
5.1	Chromium trioxide, anhydrous	DG	III	152	A1, A29, IB8, IP3, T1, TP33	213	240	25 kg	100 kg A	
8	Chromosulfuric acid	DG	I	None	A3, A6, A7, B10, N34, T10, TP2, TP12	201	243	0.5 L	2.5 L C	40, 66, 74, 89, 90
8	Coal gas, compressed	DG	II	None	IB8, IP4, T3, TP33	212	242	5 kg	25 kg A	
3	Coal tar distillates, flammable	DG	III	150	A3, A6, A7, B4, B6, N34, T10, TP2, TP12, TP13	201	243	0.5 L	2.5 L B	40, 66, 74, 89, 90
3	Coal tar dyes, corrosive, liquid, n.o.s. see Dyes, liquid or solid, n.o.s. or Dye intermediates, liquid or solid, corrosive, n.o.s.									
4.1	Coal tar dyes, liquid, n.o.s. see Dyes, liquid or solid, n.o.s. or Dye intermediates, liquid or solid, corrosive, n.o.s.									
4.1	Coating solution (includes surface treatments or coatings used for industrial or other purposes such as vehicle undercoating, drum or barrel lining)									
4.1	Cobalt naphthenates, powder	DG	III	150	IB2, T4, TP1	202	242	5 L	60 L B	
4.1	Cobalt resinates, precipitated	DG	III	150	B1, IB3, T4, TP1, TP29	203	242	60 L	220 L A	
8	Coke, hot	DG	III	151	T11, TP1, TP8, TP27	201	243	1 L	30 L E	
8	Colloidal, see Nitrocellulose etc									
1.2B	Combustible liquid, n.o.s.	DG	III	150	149, IB2, T4, TP1, TP8	202	242	5 L	60 L B	
1.4B	Components, explosive train, n.o.s.	DG	III	150	B1, IB3, T2, TP1	203	242	60 L	220 L A	
1.4S	Components, explosive train, n.o.s.	DG	III	151	A19, IB8, IP3, T1, TP33	213	240	25 kg	100 kg A	
1.1B	Components, explosive train, n.o.s.	DG	III	151	A1, A19, IB6, T1, TP33	213	240	25 kg	100 kg A	
8	Compounds, cleaning liquid	DG	I	None	A7, B10, T14, TP2, TP27	201	243	0.5 L	2.5 L B	
3	Compounds, cleaning liquid	DG	III	154	B2, IB2, N37, T11, TP2, TP27	202	242	1 L	30 L B	
8	Compounds, tree killing, liquid or Compounds, weed killing, liquid	DG	III	154	IB3, N37, T7, TP1, TP28	203	241	5 L	60 L A	
3	Compounds, tree killing, liquid or Compounds, weed killing, liquid	DG	I	150	T11, TP1	201	243	1 L	30 L E	
3	Compounds, tree killing, liquid or Compounds, weed killing, liquid	DG	II	150	IB2, T7, TP1, TP8, TP28	202	242	5 L	60 L B	
6.1	Compounds, tree killing, liquid or Compounds, weed killing, liquid	DG	III	150	B1, B52, IB3, T4, TP1, TP29	203	242	60 L	220 L A	
6.1	Compounds, tree killing, liquid or Compounds, weed killing, liquid	DG	I	None	T14, TP2, TP13, TP27	201	243	1 L	30 L B	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Di- vision	Identi- fication Num- bers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
				II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	40
G	Compressed gas, flammable, n.o.s.	2.1	UN1954		2.1		306	302, 305, 315	314, 315	Forbidden	150 kg	D	40
G	Compressed gas, n.o.s.	2.2	UN1956		2.2		306, 307	302, 305, 315	314, 315	75 kg	150 kg	A	
G	Compressed gas, oxidizing, n.o.s.	2.2	UN3156		2.2	A14	306	302	314, 315	75 kg	150 kg	D	
G	Compressed gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone A	2.3	UN3304		2.3, 8	1	None	192	245	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone B	2.3	UN3304		2.3, 8	2, B9, B14	None	302, 305, 315	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone C	2.3	UN3304		2.3, 8	3, B14	None	302, 305, 315	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone D	2.3	UN3304		2.3, 8	4	None	302, 305, 315	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone A	2.3	UN3305		2.3, 2.1, 8	1	None	192	245	Forbidden	Forbidden	D	17, 40
G	Compressed gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone B	2.3	UN3305		2.3, 2.1, 8	2, B9, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	17, 40
G	Compressed gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone C	2.3	UN3305		2.3, 2.1, 8	3, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	17, 40
G	Compressed gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone D	2.3	UN3305		2.3, 2.1, 8	4	None	302, 305	314, 315	Forbidden	Forbidden	D	17, 40
G	Compressed gas, toxic, flammable, n.o.s. Inhalation hazard Zone A	2.3	UN1953		2.3, 2.1	1	None	192	245	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, flammable, n.o.s. Inhalation hazard Zone B	2.3	UN1953		2.3, 2.1	2, B9, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, flammable, n.o.s. Inhalation Hazard Zone C	2.3	UN1953		2.3, 2.1	3, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, flammable, n.o.s. Inhalation Hazard Zone D	2.3	UN1953		2.3, 2.1	4	None	302, 305	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, n.o.s. Inhalation Hazard Zone A	2.3	UN1955		2.3	1	None	192	245	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, n.o.s. Inhalation Hazard Zone B	2.3	UN1955		2.3	2, B9, B14	None	302, 305, 315	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, n.o.s. Inhalation Hazard Zone C	2.3	UN1955		2.3	3, B14	None	302, 305, 315	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, n.o.s. Inhalation Hazard Zone D	2.3	UN1955		2.3	4	None	302, 305, 315	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, corrosive, n.o.s. Inhalation Hazard Zone A	2.3	UN3306		2.3, 5.1, 8	1	None	192	244	Forbidden	Forbidden	D	40, 89, 90
G	Compressed gas, toxic, oxidizing, corrosive, n.o.s. Inhalation Hazard Zone B	2.3	UN3306		2.3, 5.1, 8	2, B9, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	40, 89, 90
G	Compressed gas, toxic, oxidizing, corrosive, n.o.s. Inhalation Hazard Zone C	2.3	UN3306		2.3, 5.1, 8	3, B14	None	302, 305	314, 315	Forbidden	Forbidden	D	40, 89, 90
G	Compressed gas, toxic, oxidizing, corrosive, n.o.s. Inhalation Hazard Zone D	2.3	UN3306		2.3, 5.1, 8	4	None	302, 305	314, 315	Forbidden	Forbidden	D	40, 89, 90
G	Compressed gas, toxic, oxidizing, n.o.s. Inhalation Hazard Zone A	2.3	UN3303		2.3, 5.1	1	None	192	245	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, n.o.s. Inhalation Hazard Zone B	2.3	UN3303		2.3, 5.1	2, B9, B14	None	302, 305, 315	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, n.o.s. Inhalation Hazard Zone C	2.3	UN3303		2.3, 5.1	3, B14	None	302, 305, 315	314, 315	Forbidden	Forbidden	D	40
G	Compressed gas, toxic, oxidizing, n.o.s. Inhalation Hazard Zone D	2.3	UN3303		2.3, 5.1	4	None	302, 305, 315	314, 315	Forbidden	Forbidden	D	40

Consumer commodity	ORM-D	None	156, 306, None	156, 306, None	None	101	156, 306, None	156, 306, None	None	30 kg gross	30 kg gross	30 kg gross	A
Contrivances, water-activated, with burster, expelling charge or propelling charge	1.2L UN0248	II 1.2L	None	101	None	156, 306, None	156, 306, None	None	None	Forbidden	Forbidden	Forbidden	08
Contrivances, water-activated, with burster, expelling charge or propelling charge	1.3L UN0249	II 1.3L	None	101	None	156, 306, None	156, 306, None	None	None	Forbidden	Forbidden	Forbidden	08
Copper acetoarsenite	6.1 UN1585	II 6.1	6.1	IB8, IP2, IP4, T3, TP33	153	212	212	242	242	100 kg	100 kg	100 kg	A
Copper acetylacrylate	Forbidden												
Copper amine azide	6.1 UN1586	II 6.1	6.1	IB8, IP2, IP4, T3, TP33	153	212	212	242	242	100 kg	100 kg	100 kg	A
Copper arsenite	3 UN2776	I 3, 6.1	3, 6.1	T14, TP2, TP13, TP27	None	201	201	243	243	30 L	30 L	30 L	B
Copper based pesticides, liquid, flammable, toxic, flash point less than 23 degrees C		II 3, 6.1	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	202	243	243	60 L	60 L	60 L	B
Copper based pesticides, liquid, toxic	6.1 UN3010	I 6.1	6.1	T14, TP2, TP13, TP27	None	201	201	243	243	30 L	30 L	30 L	B
		II 6.1	6.1	IB2, T11, TP2, TP13, TP27	153	202	202	243	243	60 L	60 L	60 L	B
		III 6.1	6.1	IB3, T7, TP2, TP28	153	203	203	241	241	220 L	220 L	220 L	A
Copper based pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1 UN3009	I 6.1, 3	6.1, 3	T14, TP2, TP13, TP27	None	201	201	243	243	30 L	30 L	30 L	B
		II 6.1, 3	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	202	243	243	60 L	60 L	60 L	B
		III 6.1, 3	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	203	242	242	220 L	220 L	220 L	A
Copper based pesticides, solid, toxic	6.1 UN2775	I 6.1	6.1	IB7, IP1, T6, TP33	None	211	211	242	242	50 kg	50 kg	50 kg	A
		II 6.1	6.1	IB8, IP2, IP4, T3, TP33	153	212	212	242	242	100 kg	100 kg	100 kg	A
		III 6.1	6.1	IB8, IP3, T1, TP33	153	213	213	240	240	200 kg	200 kg	200 kg	A
Copper chlorate	5.1 UN2721	II 5.1	5.1	A1, IB8, IP2, IP4, T3, TP33	152	212	212	242	242	25 kg	25 kg	25 kg	A
Copper chloride	8 UN2802	III 8	8	IB8, IP3, T1, TP33	154	213	213	240	240	100 kg	100 kg	100 kg	A
Copper cyanide	6.1 UN1587	II 6.1	6.1	IB8, IP2, IP4, T3, TP33	153	204	204	242	242	100 kg	100 kg	100 kg	A
Copper selenate, see Selenates or Selenites													
Copper selenite, see Selenates or Selenites													
Copper tetramine nitrate	Forbidden												
Copra	4.2 UN1363	III 4.2	4.2	IB8, IP3, IP7	None	213	213	241	241	Forbidden	Forbidden	Forbidden	A
Cord, detonating, flexible	1.1D UN0065	II 1.1D	1.1D	102	63(e)	62	62	None	None	Forbidden	Forbidden	Forbidden	07
Cord, detonating, flexible	1.4D UN0289	II 1.4D	1.4D		None	62	62	None	None	75 kg	75 kg	75 kg	06
Cord, detonating or Fuse detonating metal clad	1.2D UN0102	II 1.2D	1.2D		None	62	62	None	None	Forbidden	Forbidden	Forbidden	07
Cord, detonating or Fuse, detonating metal clad	1.1D UN0290	II 1.1D	1.1D		None	62	62	None	None	Forbidden	Forbidden	Forbidden	06
Cord, detonating, mild effect or Fuse, detonating, mild effect metal clad	1.4D UN0104	II 1.4D	1.4D		None	62	62	None	None	75 kg	75 kg	75 kg	06
Cord, igniter	1.4G UN0066	II 1.4G	1.4G		None	62	62	None	None	75 kg	75 kg	75 kg	06
Cordeau detonant fuse, see Cord, detonating, etc; Cord, detonating, flexible													
Cordite, see Powder, smokeless													
Corrosive liquid, acidic, inorganic, n.o.s.	8 UN3284	I 8	8	A6, B10, T14, TP2, TP27	None	201	201	243	243	0.5 L	0.5 L	0.5 L	B
		II 8	8	A6, B2, IB2, T11, TP2, TP27	154	202	202	242	242	1 L	1 L	1 L	B
		III 8	8	IB3, T7, TP1, TP28	154	203	203	241	241	5 L	5 L	5 L	A
Corrosive liquid, acidic, organic, n.o.s.	8 UN3285	I 8	8	A6, B10, T14, TP2, TP27	None	201	201	243	243	0.5 L	0.5 L	0.5 L	B
		II 8	8	B2, IB2, T11, TP2, TP27	154	202	202	242	242	1 L	1 L	1 L	B
		III 8	8	IB3, T7, TP1, TP28	154	203	203	241	241	5 L	5 L	5 L	A
Corrosive liquid, basic, inorganic, n.o.s.	8 UN3286	I 8	8	A6, T14, TP2, TP27	None	201	201	243	243	0.5 L	0.5 L	0.5 L	B
		II 8	8	B2, IB2, T11, TP2, TP27	154	202	202	242	242	1 L	1 L	1 L	B
		III 8	8	IB3, T7, TP1, TP28	154	203	203	241	241	5 L	5 L	5 L	A

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
G	Corrosive liquid, basic, organic, n.o.s.	8	UN3267	I	8	A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40, 52
				II	8	B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40, 52
				III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40, 52
G	Corrosive liquid, self-heating, n.o.s.	8	UN3301	I	8, 4.2	A6, B10	None	201	243	0.5 L	2.5 L	D	
				I	8, 4.2	B2, IB1	154	202	242	1 L	30 L	D	
G	Corrosive liquids, flammable, n.o.s.	8	UN2920	I	8, 3	A6, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	C	25, 40
				II	8, 3	B2, IB2, T11, TP2, TP27	None	202	243	1 L	30 L	C	25, 40
G	Corrosive liquids, n.o.s.	8	UN1760	I	8	A6, A7, B10, T14, TP2, TP27	None	201	243	0.5 L	2.5 L	B	40
				II	8	B2, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40
				III	8	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	A	40
G	Corrosive liquids, oxidizing, n.o.s.	8	UN3093	I	8, 5.1	A6, A7	None	201	243	Forbidden	2.5 L	C	89
				II	8, 5.1	A6, A7, IB2	None	202	243	1 L	30 L	C	89
G	Corrosive liquids, toxic, n.o.s.	8	UN2922	I	8, 6.1	A7, A6, B10, T14, TP2, TP13, TP27	None	201	243	0.5 L	2.5 L	B	40
				II	8, 6.1	B3, IB2, T7, TP2	154	202	243	1 L	30 L	B	40
				III	8, 6.1	IB3, T7, TP1, TP28	154	203	241	5 L	60 L	B	40
G	Corrosive liquids, water-reactive, n.o.s.	8	UN3094	I	8, 4.3	A6, A7	None	201	243	Forbidden	1 L	E	
				II	8, 4.3	A6, A7	None	202	243	1 L	5 L	E	
G	Corrosive solid, acidic, inorganic, n.o.s.	8	UN3260	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	
				II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	
				III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
G	Corrosive solid, acidic, organic, n.o.s.	8	UN3261	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	
				II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	
				III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
G	Corrosive solid, basic, inorganic, n.o.s.	8	UN3262	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	52
				II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	52
				III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
G	Corrosive solid, basic, organic, n.o.s.	8	UN3263	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	52
				II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	B	52
				III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	52
G	Corrosive solids, flammable, n.o.s.	8	UN2921	I	8, 4.1	IB6, T6, TP33	None	211	240	1 kg	25 kg	B	12, 25
				II	8, 4.1	IB8, IP2, IP4, T3, TP33	None	212	242	15 kg	50 kg	B	12, 25
G	Corrosive solids, n.o.s.	8	UN1759	I	8	IB7, IP1, T6, TP33	None	211	242	1 kg	25 kg	B	
				II	8	128, IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
				III	8	128, IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
G	Corrosive solids, oxidizing, n.o.s.	8	UN3084	I	8, 5.1	T6, TP33	None	211	242	1 kg	25 kg	C	
				II	8, 5.1	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	
G	Corrosive solids, self-heating, n.o.s.	8	UN3095	I	8, 4.2	T6, TP33	None	211	243	1 kg	25 kg	C	

G	Corrosive solids, toxic, n.o.s.	8	UN2923	II	8, 4.2	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	40
	Corrosive solids, water-reactive, n.o.s.	8	UN3096	I	8, 6.1	IB7, T6, TP33	None	211	242	1 kg	25 kg	B	40
				I	8, 6.1	IB8, IP2, IP4, T3, TP33	None	212	240	15 kg	50 kg	B	40
				III	8, 6.1	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	B	40, 95
G	Corrosive solids, water-reactive, n.o.s.	8	UN3096	I	8, 4.3	IB4, IP1, T6, TP33	None	211	243	1 kg	25 kg	D	
				II	8, 4.3	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	D	
D W	Cotton	9	NA1365		9	137, IB8, IP2, IP4, W41	None	None	None	No limit	No limit	A	
A W	Cotton waste, oily	4.2	UN1364	III	4.2	IB8, IP3, IP7	None	213	None	Forbidden	Forbidden	A	54
A I W	Cotton, wet	4.2	UN1365	III	4.2	IB8, IP3, IP7	None	204	241	Forbidden	Forbidden	A	40
	Coumarin derivative pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	3	UN3024	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	Forbidden	B	40
				II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
	Coumarin derivative pesticides, liquid, toxic	6.1	UN3026	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP27	153	202	243	1 L	30 L	B	40
				III	6.1	IB3, T7, TP1, TP28	153	203	241	5 L	60 L	B	40
	Coumarin derivative pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN3025	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
				II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
				III	6.1, 3	B1, IB3, T7, TP1, TP28	153	203	242	60 L	220 L	A	40
	Coumarin derivative pesticides, solid, toxic	6.1	UN3027	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
	Cresols, liquid	6.1	UN2076	II	6.1, 8	IB2, IP2, IP4, T7, TP2	153	202	243	1 L	30 L	B	
	Cresols, solid	6.1	UN3455	II	6.1, 8	IB8, IP2, IP4, T3, TP33	153	212	242	15 kg	50 kg	B	
	Cresylic acid	6.1	UN2022	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	B	
	Crotonaldehyde, stabilized	6.1	UN1143	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40
	Crotonic acid liquid	8	UN2823	III	8	IB8, T1	154	203	241	5 L	60 L	A	12
	Crotonic acid, solid	8	UN2823	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12
	Crotylene	3	UN1144	I	3	T11, TP2	150	201	243	1 L	30 L	E	
	Cupriethylenediamine solution	8	UN1761	II	8, 6.1	IB2, T7, TP2	154	202	243	1 L	30 L	A	
				III	8, 6.1	IB3, T7, TP1, TP28	154	203	242	5 L	60 L	A	95
	Cutters, cable, explosive	1.4S	UN0070	II	1.4S		None	62	None	25 kg	100 kg	05	
	Cyanide or cyanide mixtures, dry, see Cyanides, inorganic, solid, n.o.s.	6.1	UN1935	I	6.1	B37, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40, 52
	Cyanide solutions, n.o.s.	6.1	UN1935	II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	A	40, 52
				III	6.1	IB3, T7, TP2, TP13, TP28	153	203	241	60 L	220 L	A	40, 52
	Cyanides, inorganic, solid, n.o.s.	6.1	UN1588	I	6.1	IB7, IP1, N74, N75, T6, TP33	None	211	242	5 kg	50 kg	A	52
				II	6.1	N74, N75, T3, TP33	153	212	242	25 kg	100 kg	A	52
				III	6.1	IB8, IP3, N74, N75, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Cyanogen	2.3	UN1026		2.3,		None	304	245	Forbidden	Forbidden	D	40
					2.1,		None	211	242	1 kg	15 kg	D	40
	Cyanogen bromide	6.1	UN1889	I	6.1, 8	A6, A8, T6, TP33	None	192	245	Forbidden	Forbidden	D	40
	Cyanogen chloride, stabilized	2.3	UN1589		2.3, 8		None	192	245	Forbidden	Forbidden	D	40
	Cyanuric chloride	8	UN2670	II	8	IB8, IP2, IP4, T3, TP33	None	212	240	15 kg	50 kg	A	12, 40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
	Cyanuric triazide	Forbidden 2.1	UN2601		2.1		306	304		Forbidden	150 kg	B	40
	Cyclobutane	6.1	UN2744	II	6.1, 8, 3	IB1, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
	Cyclobutyl chloroformate												
	1,5,9-Cyclododecatriene	6.1	UN2518	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Cycloheptane	3	UN2241	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
	Cycloheptatriene	3	UN2603	II	3, 6.1	IB2, T7, TP1, TP13	150	202	243	1 L	60 L	E	40
	Cycloheptene	3	UN2242	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Cyclohexane	3	UN1145	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Cyclohexanone	3	UN1915	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Cyclohexene	3	UN2256	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	
	Cyclohexenyltrichlorosilane	8	UN1762	II	8	A7, B2, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
	Cyclohexyl acetate	3	UN2243	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Cyclohexyl isocyanate	6.1	UN2488	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Cyclohexyl mercaptan	3	UN3054	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40, 95
	Cyclohexylamine	8	UN2357	II	8, 3	IB2, T7, TP2	None	202	243	1 L	30 L	A	40
	Cyclohexyltrichlorosilane	8	UN1763	II	8	A7, B2, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
	Cyclonite and cyclotetramethylenetetramine mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.												
	Cyclonite and HMX mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.												
	Cyclonite and octogen mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.												
	Cyclonite, see Cyclotrimethylenetetramine, etc.												
	Cyclooctadiene phosphines, see 9-Phosphabicyclononanes												
	Cyclooctadienes	3	UN2520	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Cyclooctatetraene	3	UN2358	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Cyclopentane	3	UN1146	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	E	
	Cyclopentane, methyl, see Methylcyclopentane												
	Cyclopentanol	3	UN2244	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Cyclopentanone	3	UN2245	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Cyclopentene	3	UN2246	II	3	IB2, IP8, T7, TP2	150	202	242	5 L	60 L	E	
	Cyclopropane	2.1	UN1027		2.1	T50	306	304	314, 315	Forbidden	150 kg	E	40
	Cyclooctamethylene tetranitramine (dry or unphlegmatized) (HMX)	Forbidden 1.1D	UN0484	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Cyclooctamethylenetetramine, desensitized or Octogen, desensitized or HMX, desensitized	1.1D	UN0226	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Cyclooctamethylenetetramine, wetted or HMX, wetted or Octogen, wetted with not less than 15 percent water, by mass.												
	Cyclotrimethylenetetramine and cyclotetramethylenetetramine mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.												
	Cyclotrimethylenetetramine and octogen, mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.												
	Cyclotrimethylenetetramine and octogen, mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.												
	Cyclotrimethylenetetramine and HMX mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.												
	Cyclotrimethylenetetramine, desensitized or Cyclonite, desensitized or Hexogen, desensitized or RDX, desensitized.	1.1D	UN0483	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Cyclotrimethylenetetramine, wetted or Cyclonite, wetted or Hexogen, wetted or RDX, wetted with not less than 15 percent water by mass.	1.1D	UN0072	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Cymenes	3	UN2046	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Dangerous Goods in Machinery or Dangerous Goods in Apparatus	9	UN3363			A19, A20, IB6, IP2, T3, TP33	None	222	None	No limit	No limit	A	74
	Decaborane	4.1	UN1868	II	4.1, 6.1		None	212	None	Forbidden	50 kg	A	
	Decahydronaphthalene	3	UN1147	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	n-Decane	3	UN2247	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Deflagrating metal salts of aromatic nitroderivatives, n.o.s.	1.3C	UN0132	II	1.3C		None	162	None	Forbidden	Forbidden	10	5E

G	Delay electric igniter, see Igniters	UN3379	I	3	None	201	None	Forbidden	Forbidden	D	36
G	Depth charges, see Charges, depth	UN3380	I	4.1	None	211	None	Forbidden	Forbidden	D	28, 36
G	Desensitized explosive, liquid, n.o.s.	UN0360	II	1.1B	None	62	None	Forbidden	Forbidden	11	
G	Desensitized explosive, solid, n.o.s.	UN0361	II	1.4B	63(f), 63(g)	62	None	Forbidden	Forbidden	06	
	Detonating relays, see Detonators, etc	UN0500	II	1.4S	63(f), 63(g)	62	None	Forbidden	Forbidden	05	
	Detonator assemblies, non-electric for blasting	UN0030	II	1.1B	63(f), 63(g)	62	None	Forbidden	Forbidden	11	
	Detonator assemblies, non-electric, for blasting	UN0255	II	1.4B	63(f), 63(g)	62	None	Forbidden	Forbidden	06	
	Detonator, assemblies, non-electric for blasting	UN0456	II	1.4S	63(f), 63(g)	62	None	Forbidden	Forbidden	05	
	Detonators, electric, for blasting	UN0073	II	1.1B	None	62	None	Forbidden	Forbidden	11	
	Detonators, electric for blasting	UN0364	II	1.2B	None	62	None	Forbidden	Forbidden	11	
	Detonators for ammunition	UN0365	II	1.4B	None	62	None	Forbidden	Forbidden	06	
	Detonators for ammunition	UN0366	II	1.4S	None	62	None	Forbidden	Forbidden	06	
	Detonators, non-electric, for blasting	UN0029	II	1.1B	None	62	None	Forbidden	Forbidden	11	
	Detonators, non-electric, for blasting	UN0267	II	1.4B	63(f), 63(g)	62	None	Forbidden	Forbidden	06	
	Detonators, non-electric, for blasting	UN0455	II	1.4S	63(f), 63(g)	62	None	Forbidden	Forbidden	05	
	Deuterium, compressed	UN1957		2.1	306	302	None	Forbidden	Forbidden	E	40
	Devices, small, hydrocarbon gas powered or Hydrocarbon gas refills for small devices with re-lease device.	UN3150		2.1	306	304	None	Forbidden	Forbidden	B	40
	Di-n-amyamine	UN2841	III	3, 6.1	B1, IB3, T4, TP1	150	242	220 L	220 L	A	
	Di-n-butyl peroxydicarbonate, with more than 52 percent in solution	UN2248	II	8, 3	IB2, T7, TP2	None	243	30 L	30 L	A	
	Di-n-butylamine	UN2372	II	3	IB2, T4, TP1	150	242	60 L	60 L	B	
	Di-(tert-butylperoxy) butane, with more than 55 percent in solution										
	Di-(tert-butylperoxy) phthalate, with more than 55 percent in solution										
	Di-2-Di-(4,4-di-tert-butylperoxyhexyl) propane, with more than 42 percent with inert solid										
	Di-2,4-dichlorobenzoyl peroxide, with more than 75 percent with water										
	1,2-Di-(dimethylamino)ethane										
	Di-2-ethylhexyl phosphoric acid, see Diisooctyl acid phosphate										
	Di-(1-hydroxytetraole) (dry)										
	Di-(1-naphthyl) peroxide										
	a.a-Di-(nitroxy) methyl ether	UN1148	II	3	IB2, T4, TP1	150	242	5 L	5 L	B	
	Di-(beta-nitroxyethyl) ammonium nitrate		III	3	B1, IB3, T2, TP1	150	242	60 L	220 L	A	
	Diacetone alcohol										
	Diacetone alcohol peroxides, with more than 57 percent in solution with more than 9 percent hydrogen peroxide, less than 26 percent diacetone alcohol and less than 9 percent water, total active oxygen content more than 9 percent by mass.										
	Diacetyl, see Butanedione										
	Diacetyl peroxide, solid, or with more than 25 percent in solution	UN2359	II	3, 6.1, 8	IB2, T7, TP1	150	243	1 L	1 L	B	21, 40, 100
	Diallylamine	UN2360	II	3, 6.1	IB2, N12, T7, TP1, TP13	150	243	1 L	60 L	E	40
	Diallyl ether	UN2651	III	6.1	IB8, IP3, T1, TP33	153	240	100 kg	200 kg	A	
	4,4'-Diaminodiphenyl methane										
	p-Diazobenzene										
	1,2-Diazoethane										
	1,1'-Diazobis(naphthalene										
	Diazaminotetrazole (dry)										
	Diazodinitrophenol (dry)										
	Diazodinitrophenol, wetted with not less than 40 percent water or mixture of alcohol and water, by mass.	UN0074	II	1.1A	111, 117	None	62	Forbidden	Forbidden	12	
	Diazodiphenylmethane										
	Diazonium nitrates (dry)										
	Diazonium perchlorates (dry)										
	1,3-Diazopropane										
	Dibenzyl peroxydicarbonate, with more than 87 percent with water										
	Dibenzylchlorosilane	UN2434	II	8	B2, IB2, T7, TP2, TP13	154	242	1 L	30 L	C	40
	Diborane	UN1911		2.3, 2.1	None	302	None	Forbidden	Forbidden	D	40, 57
	Diborane mixtures	NA1911		2.1	None	302	245	Forbidden	Forbidden	D	40, 57
	Diphenylacetylene	UN2648	II	6.1	IB2	153	243	5 L	60 L	B	40
	1,2-Dibromobutan-3-one	UN2872	III	6.1	IB2, T7, TP2	153	243	5 L	60 L	A	
	Dibromochloropropane		III	6.1	IB3, T4, TP1	153	241	60 L	220 L	A	

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stow-age		
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
A	Dibromodifluoromethane, R12B2	9	UN1941	III	None	T11, TP2	155	203	241	100 L	220 L	A	25	
	1,2-Dibromoethane, see Ethylene dibromide													
	Dibromomethane	6.1	UN2664	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A		
	Dibutyl ethers	3	UN1149	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Dibutylmethanol	6.1	UN2873	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A		
	N,N-Dichloroazodicarbonylamine (salts of) (dry)	Forbidden												
	1,1-Dichloro-1-nitroethane	6.1	UN2650	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	12, 40, 74	
	3,5-Dichloro-2,4,6-trifluoropyridine	6.1	NA9264	I	6.1	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	40	
	Dichloroacetic acid	8	UN1764	II	8	A3, A6, A7, B2, IB2, N34, T8, TP2, TP12	154	202	242	1 L	30 L	A		
	1,3-Dichloroacetone	6.1	UN2649	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	12, 40	
Dichloroacetyl chloride	8	UN1765	II	8	A3, A6, A7, B2, B6, IB2, N34, T7, TP2	154	202	242	1 L	30 L	D	40		
+	Dichloroacetylene	Forbidden												
	Dichloroanilines, liquid	6.1	UN1590	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40	
	Dichloroanilines, solid	6.1	UN3442	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40	
	o-Dichlorobenzene	6.1	UN1591	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A		
	2,2-Dichloroethyl ether	6.1	UN1916	II	6.1, 3	IB2, N33, N34, T7, TP2	153	202	243	5 L	60 L	A		
	Dichlorodifluoromethane and difluoroethane azeotropic mixture or Refrigerant gas R 500 with approximately 74 percent dichlorodifluoromethane	2.2	UN2602			2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	Dichlorodifluoromethane or Refrigerant gas R 12	2.2	UN1028			2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	Dichlorodimethyl ether, symmetrical	6.1	UN2249	I	6.1, 3	IB2, T4, TP1	None	201	243	315	Forbidden	Forbidden	B	40
	1,1-Dichloroethane	3	UN2362	II	3		150	202	242	5 L	60 L	B	40	
	1,2-Dichloroethane, see Ethylene dichloride													
Dichloroethyl sulfide	Forbidden													
1,2-Dichloroethylene	3	UN1150	II	3										
Dichlorofluoromethane or Refrigerant gas R21	2.2	UN1029			2.2	T50	306	304	314, 315	5 L	150 kg	A		
Dichloroisocyanuric acid, dry or Dichloroisocyanuric acid salts	5.1	UN2465	II	5.1		28, IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	13	
Dichloroisopropyl ether	6.1	UN2490	II	6.1		IB2, T7, TP2	153	202	243	5 L	60 L	B		
Dichloromethane	6.1	UN1593	III	6.1		IB3, IP8, N36, T7, TP2	153	203	241	60 L	220 L	A		
Dichloropentanes	3	UN1152	III	3		B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
Dichlorophenyl isocyanates	6.1	UN2250	II	6.1		IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	25, 40, 48	
Dichlorophenyltrichlorosilane	8	UN1766	II	8		A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40	
1,2-Dichloropropane	3	UN1279	II	3		IB2, N36, T4, TP1	150	202	242	5 L	60 L	B		
1,3-Dichloropropanol-2	6.1	UN2750	II	6.1		IB2, T7, TP2	153	202	243	5 L	60 L	A	12, 40	
Dichloropropene and propylene dichloride mixture, see 1,2-Dichloropropane														
Dichloropropenes	3	UN2047	III	3		IB2, T4, TP1	150	202	242	5 L	60 L	B		
Dichlorosilane	2.3	UN2189			2.3, 2.1, 2.2	B1, IB3, T2, TP1	150	203	242	5 L	220 L	A		
						2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	17, 40	
1,2-Dichloro-1,1,2,2-tetrafluoroethane or Refrigerant gas R 114	2.2	UN1958			2.2	T50	306	304	314, 315	75 kg	150 kg	A		
Dichlorovinylchloroarsine	Forbidden													
Dicycloheptadiene, see Bicyclo [2.2.1] hepta-2,5-diene, stabilized														
Dicyclohexylamine	8	UN2565	III	8		IB3, T4, TP1	154	203	241	5 L	60 L	A		
Dicyclohexylammonium nitrite	4.1	UN2687	III	4.1		IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	48	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifica-tion Num-bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
G	Dyes, solid, toxic, n.o.s. or Dye intermediates, solid, toxic, n.o.s.	6.1	UN3143	I	6.1	A5, IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	
				II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	<i>Dynamite, see Explosive, blasting, type A</i>												
	<i>Electrolyte (acid or alkali) for batteries, see Battery fluid, acid or Battery fluid, alkali</i>												
	<i>Elevated temperature liquid, flammable, n.o.s., with flash point above 37.8 C, at or above its flash point</i>	3	UN3256	III	3	IB1, T3, TP3, TP29	None	None	247	Forbidden	Forbidden	A	
	<i>Elevated temperature liquid, n.o.s., at or above 100 C and below its flash point (including molten metals, molten salts, etc.)</i>	9	UN3257	III	9	IB1, T3, TP29	None	None	247	Forbidden	Forbidden	A	85
	<i>Elevated temperature solid, n.o.s., at or above 240 C, see § 173.247(h)(4)</i>	9	UN3258	III	9	TP29	247(h)	None	247	Forbidden	Forbidden	A	85
	<i>Engines, internal combustion, flammable gas powered</i>	9	UN3166		9	135	220	220	220	Forbidden	No limit	A	
	<i>Engines, internal combustion, flammable liquid powered</i>	9	UN3166		9	135	220	220	220	Forbidden	No limit	A	
G	<i>Environmentally hazardous substances, liquid, n.o.s.</i>	9	UN3082	III	9	8, 146, IB3, T4, TP1, TP29	155	203	241	No limit	No limit	A	
G	<i>Environmentally hazardous substances, solid, n.o.s.</i>	9	UN3077	III	9	8, 146, B64, IB8, IP3, N20, T1, TP33	155	213	240	No limit	No limit	A	
+	<i>Epibromohydrin</i>	6.1	UN2558	I	6.1, 3	T14, TP2, TP13	None	201	243	Forbidden	Forbidden	D	40
	<i>Epichlorohydrin</i>	6.1	UN2023	I	6.1, 3	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	A	40
	<i>1,2-Epoxy-3-ethoxypropane</i>	3	UN2752	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	<i>Esters, n.o.s.</i>	3	UN3272	II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
	<i>Etching acid, liquid, n.o.s., see Hydrofluoric acid, solution etc</i>												
	<i>Toxins, extracted from living sources, solid, n.o.s.</i>	6.1	UN3462	I	6.1	141, IB7, IP1, T6, TP33	None	211	243	5 kg	50 kg	B	
D	<i>Ethane-Propane mixture, refrigerated liquid</i>			II	6.1	141, IB8, IP2, IP4, T3, TP33	None	212	243	25 kg	100 kg	B	
	<i>Ethane, refrigerated liquid</i>												
	<i>Ethanol amine dinitrate</i>												
	<i>Ethanol or Ethyl alcohol or Ethanol solutions or Ethyl alcohol solutions</i>	3	UN1170	II	3	24, IB2, T4, TP1	150	202	242	5 L	60 L	A	
				III	3	24, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	<i>Ethanolamine or Ethanolamine solutions</i>			III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	<i>Ether, see Diethyl ether</i>												
	<i>Ethers, n.o.s.</i>	3	UN3271	II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
	<i>Ethyl acetate</i>			II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	<i>Ethyl acrylate, stabilized</i>			II	3	IB2, T4, TP1, TP13	150	202	242	5 L	60 L	B	40
	<i>Ethyl alcohol, see Ethanol</i>												
	<i>Ethyl aldehyde, see Acetaldehyde</i>												
	<i>Ethyl amyl ketone</i>												
	<i>N-Ethylbenzyloluidines, solid</i>	6.1	UN2271	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
				III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	<i>N-Ethyl-N-benzylaniline</i>	6.1	UN2274	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	<i>Ethyl borate</i>	3	UN1176	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	<i>Ethyl bromide</i>	6.1	UN1891	II	6.1	IB2, IP8, T7, TP2, TP13	153	202	243	5 L	60 L	B	40, 85
	<i>Ethyl bromoacetate</i>	6.1	UN1603	II	6.1, 3	IB2, T7, TP2	None	202	243	Forbidden	Forbidden	D	40
	<i>Ethyl butyl ether</i>	3	UN1179	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
	<i>Ethyl butyrate</i>	3	UN1160	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	

UN1037	UN1181	UN1182	UN2935	UN2826	UN1862	UN2453	UN1190	UN2385	UN2481	UN1192	UN2363	UN2277	UN1039	UN1193	UN1194	UN2524	UN2525	NA2927	NA2845	NA2927	UN1195	UN2615	UN2462	UN1036	UN2270	UN2272	UN2273	UN1175	UN2753	UN2275	UN1177	UN1178	UN1892	UN1183	UN3138	UN1135	UN1962			
2.1	6.1	6.1	3	8	3	2.1	3	3	3	3	3	2.1	3	3	3	3	6.1	6.1	6.1	6.1	3	3	2.1	2.1	3	6.1	6.1	6.1	6.1	3	3	3	3	6.1	4.3	2.1	6.1	2.1		
II	6.1, 3	6.1, 3, 8	III	II	II	2.1	II	II	I	III	I	II	II	II	III	III	I	I	I	I	I	II	II	II	II	III	III	III	III	III	III	III	I	I	I	I	I			
B77, T50	IB2, T7, TP2	2, B9, B14, B32, B74, N34, T20, TP2, TP13, TP38, TP45	B1, IB3, T2, TP1	2, B9, B14, B32, B74, T20, TP2, TP38, TP45	IB2, T4, TP2	IB2, T4, TP1	IB2, T4, TP1	IB2, T4, TP1	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	B1, IB3, T2, TP1	A6, T11, TP2, TP13	IB2, T4, TP1	IB2, T4, TP1	IB2, T4, TP1	IB2, T4, TP1	B1, IB3, T2, TP1	IB3, T4, TP1	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	IB2, T4, TP1	IB2, T4, TP1	B77, T50	IB2, T7, TP1	IB3, T4, TP1	IB3, T4, TP1	IB3, T4, TP1	IB3, T7, TP1	B1, IB3, T2, TP1	B1, IB3, T2, TP1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	A2, A3, A7, N34, T10, TP2, TP7, TP13	T75, TP5	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45					
None	153	None	150	None	150	306	150	150	None	150	None	150	None	150	None	150	153	None	None	None	None	150	150	None	None	150	153	153	150	153	150	150	150	150	None	None	None	None	306	
322	202	227	203	227	202	304	202	202	226	203	201	202	201	202	201	202	203	203	227	227	227	202	202	304	321	202	203	203	202	203	203	203	202	202	201	201	304	227	304	
314, 315, 243	243	244	242	244	242	314, 315	242	242	244	242	243	242	314, 315	242	242	242	241	244	244	244	244	242	242	314, 315	314, 315	243	241	241	242	241	242	242	242	242	244	244	314, 315	244	244	302
Forbidden	5 L Forbidden	Forbidden	60 L Forbidden	Forbidden	60 L B	150 kg E	60 L E	60 L B	Forbidden	60 L A	Forbidden	5 L Forbidden	60 L A	220 L A	220 L A	220 L A	220 L A	220 L A	220 L A	220 L A	220 L A	220 L A	220 L A	150 kg D	150 kg D	5 L B	220 L A	220 L A	60 L B	220 L A	220 L A	220 L A	60 L B	1 L D	Forbidden	Forbidden	Forbidden	Forbidden	150 kg E	
40	21, 40, 100	40	40	40	40	40	40	40	40, 52	95, 102	40	40	40	40	40, 105	40	40	40	40	40	40	40	40	40	40	40	52, 74, 52, 74	40	40	40	40	40	21, 28, 40, 49, 100, 40, 57	40	40	40				

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identifica-tion Num-bers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stow-age	
							Excep-tions (8A)	Non-bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air-craft only (9B)	Loca-tion (10A)	Other (10B)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Ethylene diamine diperchlorate	Forbidden 6.1	UN1605	I	6.1	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
	Ethylene dibromide	Forbidden											
	Ethylene dibromide and methyl bromide liquid mixtures, see Methyl bromide and ethylene dibromide, liquid mixtures.												
	Ethylene dichloride	3	UN1184	II	3, 6.1	IB2, N36, T7, TP1	150	202	243	1 L	60 L	B	40
	Ethylene glycol diethyl ether	3	UN1153	III	3	IB2, T4, TP1	150	202	242	5 L	60 L	A	
	Ethylene glycol dimethyl ether	Forbidden				B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Ethylene glycol dimethyl ether acetate	3	UN1171	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Ethylene glycol monomethyl ether	3	UN1172	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Ethylene glycol monomethyl ether acetate	3	UN1188	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Ethylene glycol monomethyl ether acetate	3	UN1189	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Ethylene oxide and carbon dioxide mixture with more than 87 percent ethylene oxide	2.3	UN3300		2.3	4	None	304	314	Forbidden	Forbidden	D	40
	Ethylene oxide and carbon dioxide mixtures with more than 9 percent but not more than 87 percent ethylene oxide	2.1	UN1041		2.1	T50	306	304	314, 315	Forbidden	25 kg	B	40
	Ethylene oxide and carbon dioxide mixtures with not more than 9 percent ethylene oxide	2.2	UN1952		2.2		306	304	314, 315	75 kg	150 kg	A	
	Ethylene oxide and chlorotetrafluoroethane mixture with not more than 8.8 percent ethylene oxide	2.2	UN3297		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	Ethylene oxide and dichlorodifluoroethane mixture, with not more than 12.5 percent ethylene oxide	2.2	UN3070		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	Ethylene oxide and pentafluoroethane mixture with not more than 7.9 percent ethylene oxide	2.2	UN3298		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	Ethylene oxide and propylene oxide mixtures, with not more than 30 percent ethylene oxide	3	UN2983	I	3, 6.1	5, A11, N4, N34, T14, TP2, TP7, TP13	None	201	243	Forbidden	30 L	E	40
	Ethylene oxide and tetrafluoroethane mixture with not more than 5.6 percent ethylene oxide	2.2	UN3299		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
	Ethylene oxide or Ethylene oxide with nitrogen up to a total pressure of 1MPa (10 bar) at 50 degrees C.	2.3	UN1040		2.3	4, T50, TP20	None	323	323	Forbidden	Forbidden	D	40
	Ethylene, refrigerated liquid (cryogenic liquid)	2.1	UN1038		2.1	T75, TP5	None	316	318, 319	Forbidden	Forbidden	D	40
	Ethylenediamine	8	UN1604	II	8, 3	IB2, T7, TP2	154	202	243	1 L	30 L	A	40
	Ethylenimine, stabilized	6.1	UN1185	I	6.1, 3	1, B9, B14, B30, B72, B77, N25, N32, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
	Ethylhexaldehyde, see Octyl aldehydes etc												
	2-Ethylhexyl chloroformate	6.1	UN2748	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100
	2-Ethylhexylamine	3	UN2276	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	40
	Ethylphenylchlorosilane	8	UN2435	II	8	A7, B2, IB2, N84, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	
	1-Ethylpiperidine	3	UN2386	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	
	N-Ethyloluidines	6.1	UN2754	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Ethylchlorosilane	3	UN1196	II	3, 8	A7, IB1, N34, T7, TP2, TP13	150	202	243	1 L	5 L	B	40
	Etologic agent, see Infectious substances, etc												
	Explosive articles, see Articles, explosive, n.o.s. etc												
	Explosive, blasting, type A	1.1D	UN0081	II	1.1D		None	62	None	Forbidden	Forbidden	10	21E, 29E
	Explosive, blasting, type B	1.1D	UN0082	II	1.1D		None	62	None	Forbidden	Forbidden	10	29E
	Explosive, blasting, type B or Agent blasting, Type B	1.5D	UN0331	II	1.5D	105, 106	None	62	None	Forbidden	Forbidden	10	29E
	Explosive, blasting, type C	1.1D	UN0083	II	1.1D	123	None	62	None	Forbidden	Forbidden	10	22E
	Explosive, blasting, type D	1.1D	UN0084	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Explosive, blasting, type E	1.1D	UN0241	II	1.1D		None	62	None	Forbidden	Forbidden	10	19E, 29E

UN332	1.5D	UN332	II	1.5D	105, 106	None	62	None	Forbidden	Forbidden	10	29E
Explosive, blasting, type E or Agent blasting, Type E	Forbidden											
Explosive, forbidden. See § 173.54												
Explosive substances, see Substances, explosive, n.o.s. etc												
Explosives, slurry, see Explosive, blasting, type E												
Explosives, water gels, see Explosive, blasting, type E												
Extracts, aromatic, liquid	3	UN1169	II	3	149, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
Extracts, flavoring, liquid	3	UN1197	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
			II	3	149, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
			III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Fabric with animal or vegetable oil, see Fibers or fabrics, etc	6.1	UN1606	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Ferric arsenate	6.1	UN1607	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Ferric arsenite	8	UN1773	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
Ferric chloride, anhydrous	8	UN2592	III	8	B15, IB3, T4, TP1	154	203	241	5 L	60 L	A	
Ferric chloride, solution	5.1	UN1466	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
Ferric nitrate	4.1	UN1323	II	4.1	59, A19, IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	A	
Ferrocenium	4.3	UN1408	III	4.3	A1, A19, B6, IB8, IP4, IP7, T1, TP33	151	213	240	25 kg	100 kg	A	13, 40, 52, 53, 85, 103
Ferrosilicon with 30 percent or more but less than 90 percent silicon	6.1			6.1								
Ferrous arsenate	6.1	UN1608	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Ferrous chloride, solid	8	NA1759	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	
Ferrous chloride, solution	8	NA1760	II	8	B3, IB2, T11, TP2, TP27	154	202	242	1 L	30 L	B	40
Ferrous metal borings or Ferrous metal shavings or Ferrous metal turnings or Ferrous metal cuttings in a form liable to self-heating	4.2	UN2793	III	4.2	A1, A19, IB8, IP3, IP7	None	213	241	25 kg	100 kg	A	
Fertilizer ammoniating solution with free ammonia	2.2	UN1043		2.2		306	304	314, 315	Forbidden	150 kg	E	40
Fibers, animal or Fibers, vegetable burnt, wet or damp	4.2	UN1372	III			151	213	240	Forbidden	Forbidden	A	
Fibers, vegetable, dry	4.1	UN3360	III	4.1	137, IB8, IP3, T1, TP33	151	213	240	No Limit	No Limit	A	
Fibers or Fabrics, animal or vegetable or Synthetic, n.o.s. with animal or vegetable oil	4.2	UN1373	III	4.2		None	213	241	Forbidden	Forbidden	A	
Fibers or Fabrics impregnated with weakly nitrated nitrocellulose, n.o.s.	4.1	UN1353	III	4.1	A1, IB8, IP3	None	213	240	25 kg	100 kg	D	
Films, nitrocellulose base, from which gelatine has been removed; film scrap, see Celluloid scrap	4.1	UN1324	III	4.1		None	183	None	25 kg	100 kg	D	28
Films, nitrocellulose base, gelatine coated (except scrap)	8	UN1774	II	8	N41	154	202	None	1 L	30 L	A	
Fire extinguisher charges, corrosive liquid	2.2	UN1044		2.2	18, 110	309	309	None	75 kg	150 kg	A	
Fire extinguisher charges, expelling, explosive, see Cartridges, power device	4.1	UN2623	III	4.1	A1, A19	None	213	None	25 kg	100 kg	A	52
Fire extinguishers containing compressed or liquefied gas	1.1G	UN0333	II	1.1G	108	None	62	None	Forbidden	Forbidden	07	
Fireworks	1.2G	UN0334	II	1.2G	108	None	62	None	Forbidden	Forbidden	07	
Fireworks	1.3G	UN0335	II	1.3G	108	None	62	None	Forbidden	Forbidden	07	
Fireworks	1.4G	UN0336	II	1.4G	108	None	62	None	75 kg	100 kg	06	
Fireworks	1.4S	UN0337	II	1.4S	108	None	62	None	25 kg	100 kg	05	
First aid kits	9	UN3316		9	15	161	161	None	10 kg	10 kg	A	88, 122, 128
Fish meal, stabilized or Fish scrap, stabilized	9	UN2216	III	None	155, IB8, IP3, T1, TP33	155	218	218	No limit	No limit	B	
Fish meal, unstabilized or Fish scrap, unstabilized	4.2	UN1374	II	4.2	155, A1, A19, IB8, IP2, IP4, T3, TP33	None	212	241	15 kg	50 kg	B	18, 128
Fissile radioactive materials, see Radioactive material, fissile, n.o.s.												
Flammable compressed gas, see Compressed or Liquefied gas, flammable, etc												
Flammable compressed gas (small receptacles not fitted with a dispersion device, not refillable), see Receptacles, etc.												
Flammable gas in lighters, see Lighters or lighter refills, cigarettes, containing flammable gas												
Flammable liquid, toxic, corrosive, n.o.s.	3	UN3286	I	3, 6.1, 8	T14, TP2, TP13, TP27	None	201	243	Forbidden	2.5 L	E	21, 40, 100
			II	3, 6.1, 8	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	5 L	B	21, 40, 100
			I	3, 8	T14, TP2	None	201	243	0.5 L	2.5 L	E	40
			II	3, 8	IB2, T11, TP2, TP27	150	202	243	1 L	5 L	B	40
			III	3, 8	B1, IB3, T7, TP1, TP28	150	203	242	5 L	60 L	A	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
G	Flammable liquids, n.o.s.	3	UN1993	I	3	T11, TP1, TP27 IB2, T7, TP1, TP8, TP28	150	201	243	1 L	30 L	E	
				III	3	B1, B52, IB3, T4, TP1, TP29	150	202	242	5 L	60 L	B	
G	Flammable liquids, toxic, n.o.s.	3	UN1992	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	E	40
				II	3, 6.1	IB2, T7, TP2, TP13	150	202	243	1 L	60 L	B	40
				III	3, 6.1	B1, IB3, T7, TP1, TP28	150	203	242	60 L	220 L	A	
G	Flammable solid, corrosive, inorganic, n.o.s.	4.1	UN3180	II	4.1, 8	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	D	40
				III	4.1, 8	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	D	40
G	Flammable solid, inorganic, n.o.s.	4.1	UN3178	II	4.1	A1, IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	B	
				III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	B	
G	Flammable solid, organic, molten, n.o.s.	4.1	UN3176	II	4.1	IB1, T3, TP3, TP26	151	212	240	Forbidden	Forbidden	C	
				III	4.1	IB1, T1, TP3, TP26	151	213	240	Forbidden	Forbidden	C	
G	Flammable solid, oxidizing, n.o.s.	4.1	UN3097	II	4.1, 5.1	131	None	214	214	Forbidden	Forbidden	E	40
				III	4.1, 5.1	131, T1, TP33	None	214	214	Forbidden	Forbidden	D	40
G	Flammable solid, toxic, inorganic, n.o.s.	4.1	UN3179	II	4.1, 6.1	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	B	40
				III	4.1, 6.1	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	B	40
G	Flammable solids, corrosive, organic, n.o.s.	4.1	UN2925	II	4.1, 8	A1, IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	D	40
				III	4.1, 8	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	D	40
G	Flammable solids, organic, n.o.s.	4.1	UN1325	II	4.1	A1, IB8, IP2, IP4, T3, TP33	151	212	240	15 kg	50 kg	B	
				III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	B	
G	Flammable solids, toxic, organic, n.o.s.	4.1	UN2926	II	4.1, 6.1	A1, IB6, IP2, T3, TP33	151	212	242	15 kg	50 kg	B	40
				III	4.1, 6.1	A1, IB6, T1, TP33	151	213	242	25 kg	100 kg	B	40
	Flares, aerial	1.3G	UN0093	II	1.3G		None	62	None	Forbidden	75 kg	07	
	Flares, aerial	1.4G	UN0403	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Flares, aerial	1.4S	UN0404	II	1.4S		None	62	None	Forbidden	100 kg	05	
	Flares, aerial	1.1G	UN0420	II	1.1G		None	62	None	Forbidden	25 kg	07	
	Flares, aerial	1.2G	UN0421	II	1.2G		None	62	None	Forbidden	Forbidden	07	
	Flares, signal, see Cartridges, signal												
	Flares, surface	1.3G	UN0092	II	1.3G		None	62	None	Forbidden	75 kg	07	
	Flares, surface	1.1G	UN0418	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Flares, surface	1.2G	UN0419	II	1.2G		None	62	None	Forbidden	Forbidden	07	
	Flares, water-activated, see Contrivances, water-activated, etc												
	Flash powder	1.1G	UN0094	II	1.1G		None	62	None	Forbidden	Forbidden	15	
	Flash powder	1.3G	UN0305	II	1.3G		None	62	None	Forbidden	Forbidden	15	
	Flue dusts, poisonous, see Arsenical dust												
	Fluoric acid, see Hydrofluoric acid, etc												
	Fluorine, compressed	2.3	UN1045		2.3, 5.1, 8		None	302	None	Forbidden	Forbidden	D	40, 89, 90
	Fluoroacetic acid	6.1	UN2642	I	6.1	IB7, IP1, T6, TP33	None	211	242	1 kg	15 kg	E	
	Fluoroanilines	6.1	UN2941	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Fluorobenzene	3	UN2387	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	

Fluoroboric acid	8	UN1775	II	8	A6, A7, B2, B15, IB2, N3, N34, T7, TP2	154	202	242	1 L	30 L	A	52
Fluorophosphoric acid anhydrous	8	UN1776	II	8	A6, A7, B2, IB2, N3, N34, T8, TP2, TP12	None	202	242	1 L	30 L	A	
Fluorosilicates, n.o.s.	6.1	UN2856	III	6.1	IB8, IP3, T1, TP2, TP12	153	213	240	100 kg	200 kg	A	
Fluorosilicic acid	8	UN1778	II	8	A6, A7, B2, B15, IB2, N3, N34, T8, TP2, TP12	None	202	242	1 L	30 L	A	
Fluorosulfonic acid	8	UN1777	I	8	A3, A6, A7, A10, B6, B10, N3, N36, T10, TP2, TP12	None	201	243	0.5 L	2.5 L	D	40
Fluorotoluenes	3	UN2388	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Forbidden materials. See § 173.21	Forbidden											
Formaldehyde, solutions, flammable	3	UN1198	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	40
Formaldehyde, solutions, with not less than 25 percent formaldehyde	8	UN2209	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	
Formalin, see Formaldehyde, solutions												
Formic acid	8	UN1779	II	8	B2, B28, IB2, T7, TP2	154	202	242	1 L	30 L	A	40
Fracturing devices, explosive, without detonators for oil wells	1.1D	UN0099	II	1.1D	144, T11, TP1, TP8, TP28	None	62	None	Forbidden	Forbidden	07	
Fuel, aviation, turbine engine	3	UN1863	I	3	144, T11, TP1, TP8, TP28	150	201	243	1 L	30 L	E	
Fuel oil (No. 1, 2, 4, 5, or 6)	3	NA1993	III	3	144, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
Fuel system components (including fuel control units (FCU), carburetors, fuel lines, fuel pumps) see Dangerous Goods in Apparatus or Dangerous Goods in Machinery.												
Fulminate of mercury (dry)	Forbidden											
Fulminate of mercury, wet, see Mercury fulminate, etc												
Fulminating gold	Forbidden											
Fulminating mercury	Forbidden											
Fulminating platinum	Forbidden											
Fulminating silver	Forbidden											
Fulminic acid	Forbidden											
Fumaryl chloride	8	UN1780	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	C	8, 40
Fumigated lading, see §§ 172.302(g), 173.9 and 176.76(h)												
Fumigated transport vehicle or freight container see 173.9												
Furaldehydes	6.1	UN1199	II	6.1, 3	IB2, T7, TP2	153	202	243	5 L	60 L	A	
Furan	3	UN2389	I	3	T12, TP2, TP13	None	201	243	1 L	30 L	E	40
Furfuryl alcohol	6.1	UN2874	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52, 74
Furfurylamine	3	UN2526	III	3, 8	B1, IB3, T4, TP1	150	203	242	5 L	60 L	A	40
Fuse, detonating, metal clad, see Cord, detonating, mild effect, metal clad												
Fuse, igniter tubular metal clad	1.4G	UN0103	II	1.4G		None	62	None	Forbidden	75 kg	06	
Fuse, non-detonating instantaneous or quickmatch	1.3G	UN0101	II	1.3G		None	62	None	Forbidden	100 kg	07	
Fuse, safety	1.4S	UN0105	II	1.4S		None	62	None	25 kg	100 kg	05	
Fusee (railway or highway)	4.1	NA1325	II	4.1		None	184	None	15 kg	50 kg	B	
Fusel oil	3	UN1201	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
Fuses, tracer, see Tracers for ammunition												
Fuzes, combination, percussion and time, see Fuzes, detonating (UN0257, UN0367); Fuzes, igniting (UN0317, UN0368).												
Fuzes, detonating	1.1B	UN0106	II	1.1B		None	62	None	Forbidden	Forbidden	11	
Fuzes, detonating	1.2B	UN0107	II	1.2B	116	None	62	None	Forbidden	Forbidden	11	
Fuzes, detonating	1.4B	UN0257	II	1.4B	116	None	62	None	75 kg	75 kg	06	
Fuzes, detonating	1.4S	UN0367	II	1.4S		None	62	None	100 kg	100 kg	05	
Fuzes, detonating, with protective features	1.1D	UN0408	II	1.1D		None	62	None	Forbidden	Forbidden	07	
Fuzes, detonating, with protective features	1.2D	UN0409	II	1.2D	116	None	62	None	Forbidden	Forbidden	07	
Fuzes, detonating, with protective features	1.4D	UN0410	II	1.4D		None	62	None	Forbidden	Forbidden	07	
Fuzes, igniting	1.3G	UN0316	II	1.3G		None	62	None	Forbidden	Forbidden	07	
Fuzes, igniting	1.4G	UN0317	II	1.4G		None	62	None	75 kg	75 kg	06	
Fuzes, igniting	1.4S	UN0368	II	1.4S		None	62	None	100 kg	100 kg	05	
Galactosan trinitrate	Forbidden											
Gallium	8	UN2803	III	8	T1, TP33	None	162	240	20 kg	20 kg	B	48
Gas cartridges, (flammable) without a release device, non-refillable	2.1	UN2037		2.1		306	304	None	1 kg	15 kg	B	40
Gas generator assemblies (aircraft), containing a non-flammable non-toxic gas and a propellant cartridge.	2.2			2.2		None	335	None	75 kg	150 kg	A	
Gas identification set	2.3	NA9035		2.3		None	194	None	Forbidden	Forbidden	D	
Gas oil	3	UN1202	III	3	144, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	

D

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identifica-tion Num-bers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stow-age	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G	Gas, refrigerated liquid, flammable, n.o.s. (cryogenic liquid)	2.1	UN3312		2.1	T75, TP5	None	316	318	Forbidden	Forbidden	D	40
G	Gas, refrigerated liquid, n.o.s. (cryogenic liquid)	2.2	UN3158		2.2	T75, TP5	320	316	318	500 kg	500 kg	D	
G	Gas, refrigerated liquid, oxidizing, n.o.s. (cryogenic liquid)	2.2	UN3311		2.2	T75, TP5, TP22	320	316	318	Forbidden	Forbidden	D	
	Gas sample, non-pressurized, flammable, n.o.s., not refrigerated liquid	2.1	UN3167		2.1		306	302, 304	None	1 L	5 L	D	
	Gas sample, non-pressurized, toxic, flammable, n.o.s., not refrigerated liquid	2.3	UN3168		2.3	6	306	302	None	Forbidden	1 L	D	
	Gas sample, non-pressurized, toxic, n.o.s., not refrigerated liquid	2.3	UN3169		2.3	6	306	302, 304	None	Forbidden	1 L	D	
D	Gasohol gasoline mixed with ethyl alcohol, with not more than 20 percent alcohol	3	NA1203	II	3	144	150	202	242	5 L	60 L	E	
	Gasoline	3	UN1203	II	3	139, B33, B101, T8	150	202	242	5 L	60 L	E	
	Gasoline, casinghead, see Gasoline												
	Gelatine, blasting, see Explosive, blasting, type A												
	Gelatine dynamites, see Explosive, blasting, type A												
	Germane	2.3	UN2192		2.3	2	None	302	245	Forbidden	Forbidden	D	40
	Glycerol-1,3-dinitrate	Forbidden											
	Glycerol gluconate trinitrate	Forbidden											
	Glycerol lactate trinitrate	Forbidden											
	Glycerol alpha-monochlorohydrin	6.1	UN2699	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Glycidaldehyde	3	UN2622	II	3, 6.1	IB2, IP8, TP7, TP1	150	202	243	1 L	60 L	A	40
	Grenades, hand or rifle, with bursting charge	1.1D	UN0284	II	1.1D			62	None	Forbidden	Forbidden	07	
	Grenades, hand or rifle, with bursting charge	1.2D	UN0285	II	1.2D			62	None	Forbidden	Forbidden	07	
	Grenades, hand or rifle, with bursting charge	1.1F	UN0292	II	1.1F			62	None	Forbidden	Forbidden	08	
	Grenades, hand or rifle, with bursting charge	1.2F	UN0293	II	1.2F			62	None	Forbidden	Forbidden	08	
	Grenades, illuminating, see Ammunition, illuminating, etc												
	Grenades, practice, hand or rifle	1.4S	UN0110	II	1.4S			62	None	25 kg	100 kg	05	
	Grenades, practice, hand or rifle	1.3G	UN0318	II	1.3G			62	None	Forbidden	Forbidden	07	
	Grenades, practice, hand or rifle	1.2G	UN0372	II	1.2G			62	None	Forbidden	Forbidden	07	
	Grenades, practice, hand or rifle	1.4G	UN0452	II	1.4G			62	None	Forbidden	75 kg	06	
	Grenades, smoke, see Ammunition, smoke, etc												
	Guandine nitrate	5.1	UN1467	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	73
	Guanyl nitrosaminoquanylidene hydrazine (dry)	Forbidden											
	Guanyl nitrosaminoquanylidene hydrazine, wetted with not less than 30 percent water, by mass	1.1A	UN0113	II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	
	Guanyl nitrosaminoquanyltetrazone (dry)	Forbidden											
	Guanyl nitrosaminoquanyltetrazone, wetted or Tetrazone, wetted with not less than 30 percent water or mixture of alcohol and water, by mass	1.1A	UN0114	II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	
	Gunpowder, compressed or Gunpowder in pellets, see Black powder (UN 0028)												
	Gunpowder, granular or as a meal, see Black powder (UN 0027)												
	Hafnium powder, dry	4.2	UN2545	I	4.2	A19, A20, IB6, IP2, N34, T3, TP33	None	211	242	Forbidden	Forbidden	D	
				II	4.2		None	212	241	15 kg	50 kg	D	
	Hafnium powder, wetted with not less than 25 percent water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns	4.1	UN1326	III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	D	74
	Hand signal device, see Signal devices, hand												
	Hazardous substances, liquid or solid, n.o.s., see Environmentally hazardous substances, etc												
D	Hazardous waste, liquid, n.o.s.	9	NA3082	III	9	IB3, T2, TP1	155	203	241	No limit	No limit	A	
D	Hazardous waste, liquid, n.o.s.	9	NA3077	III	9	B54, IB8, IP2, T1, TP33	155	213	240	No limit	No limit	A	
	Hazardous waste, solid, n.o.s.												
	Heating oil, light	3	UN1202	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	85
	Helium, compressed	2.2	UN1046		2.2		306	302	302, 314	75 kg	150 kg	A	
	Helium-oxygen mixture, see Flare gases and oxygen mixtures												
	Helium, refrigerated liquid (cryogenic liquid)	2.2	UN1963		2.2	T75, TP5	320	316	314	50 kg	500 kg	B	
	Heptafluoropropane or Refrigerant gas R 227	2.2	UN3296		2.2	T50	306	304	314	75 kg	150 kg	A	
	n-Heptaldehyde	3	UN3056	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	

Heptanes	3	UN1206	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
n-Heptene	3	UN2278	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Hexachloroacetone	6.1	UN2661	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	B	12, 40
Hexachlorobenzene	6.1	UN2729	III	6.1	B3, IB8, IP3, T1, TP33	153	203	241	60 L	220 L	A	40
Hexachlorobutadiene	6.1	UN2279	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	40
Hexachlorocyclopentadiene	6.1	UN2646	I	6.1	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
Hexachlorophene	6.1	UN2875	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Hexadecyltrichlorosilane	8	UN1781	II	8	A7, B2, B6, IB2, N34, T7, TP2	None	202	242	Forbidden	30 L	C	40
Hexadienes	3	UN2458	II	3	IB2, T4, TP1	None	202	242	5 L	60 L	B	40
Hexaethyl tetraphosphate and compressed gas mixtures	2.3	UN1612	II	2.3	3	None	334	None	Forbidden	Forbidden	D	40
Hexaethyl tetraphosphate, liquid	6.1	UN1611	II	6.1	IB2, N76, T7, TP2	153	202	243	5 L	60 L	E	40
Hexaethyl tetraphosphate, solid	6.1	UN1611	II	6.1	IB8, IP2, IP4, N76	153	212	242	25 kg	100 kg	E	40
Hexafluoroacetone	2.3	UN2420	II	2.3, 8	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
Hexafluoroacetone hydrate, liquid	6.1	UN2552	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	B	40
Hexafluoroacetone hydrate, solid	6.1	UN3436	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	40
Hexafluoroethane, or Refrigerant gas R 116	2.2	UN2193	II	2.2	306	306	304	314, 315	75 kg	150 kg	A	40
Hexafluorophosphoric acid	8	UN1782	II	8	A6, A7, B2, IB2, N3, N34, T8, TP2, TP12	None	202	242	1 L	30 L	A	40
Hexafluoropropylene compressed or Refrigerant gas R 1216	2.2	UN1858	II	2.2	T50	306	304	314, 315	75 kg	150 kg	A	40
Hexaldehyde	3	UN1207	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	13, 40
Hexamethylene diisocyanate	6.1	UN2281	II	6.1	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	C	40
Hexamethylene triperoxide diamine (dry)	Forbidden	UN2280	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12
Hexamethylenediamine, solid	8	UN1783	II	8	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
Hexamethylenediamine solution	8	UN1783	II	8	IB2, T7, TP2, TP33	None	202	242	1 L	30 L	A	40
Hexamethylenimine	3	UN2493	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	40
Hexamethylenetetramine	4.1	UN1328	III	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	40
Hexamethylol benzene hexanitrate	Forbidden	UN1328	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	40
Hexanes	3	UN1208	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
2,2',4,4',6,6'-Hexanitro-3,3'-dihydroxyazobenzene (dry)	Forbidden	UN1208	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
Hexanitroazoxy benzene	Forbidden	UN1208	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
N,N'-(hexanitrodiphenyl) ethylene dinitramine (dry)	Forbidden	UN1208	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
Hexanitrodiphenyl urea	Forbidden	UN1208	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
2,2',3',4',4',6-Hexanitrodiphenylamine	Forbidden	UN1208	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
Hexanitrodiphenylamine or Dipicylamine or Hexyl	1.1D	UN0079	II	1.1D	IB2, T4, TP1	None	62	None	Forbidden	Forbidden	10	40
Hexanitroethane	Forbidden	UN0079	II	1.1D	IB2, T4, TP1	None	62	None	Forbidden	Forbidden	10	40
Hexanitroethane	Forbidden	UN0079	II	1.1D	IB2, T4, TP1	None	62	None	Forbidden	Forbidden	10	40
Hexanitrooxanilide	Forbidden	UN0079	II	1.1D	IB2, T4, TP1	None	62	None	Forbidden	Forbidden	10	40
Hexanitrostilbene	1.1D	UN0392	II	1.1D	IB2, T4, TP1	None	62	None	Forbidden	Forbidden	10	40
Hexanoic acid, see Corrosive liquids, n.o.s.	3	UN2292	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	74
Hexanol	3	UN2370	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
1-Hexene	3	UN2370	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
Hexogen and cyclotetramethylenetetranitramine mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.	Forbidden	UN2370	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
Hexogen and HMX mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.	Forbidden	UN2370	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
Hexogen and octogen mixtures, wetted or desensitized see RDX and HMX mixtures, wetted or desensitized etc.	Forbidden	UN2370	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
Hexogen, see Cyclotrimethylenetetranitramine, etc.	Forbidden	UN2370	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	E	40
Hexolite, or Hexotol dry or wetted with less than 15 percent water, by mass	1.1D	UN0118	II	1.1D	IB2, T4, TP1	None	62	None	Forbidden	Forbidden	10	40
Hexotonal	1.1D	UN0393	II	1.1D	IB2, T4, TP1	None	62	None	Forbidden	Forbidden	10	40
Hexyl, see Hexanitrodiphenylamine	8	UN1784	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
Hexyltrichlorosilane	8	UN1784	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
High explosives, see individual explosives' entries	8	UN2029	I	8, 3, 6.1	A3, A6, A7, A10, B7, B16, B53	None	201	243	Forbidden	2.5 L	D	40, 125
HMX, see Cyclotetramethylenetetranitramine, etc.	8	UN2029	I	8, 3, 6.1	A3, A6, A7, A10, B7, B16, B53	None	201	243	Forbidden	2.5 L	D	40, 125
Hydrazine, anhydrous	8	UN2029	I	8, 3, 6.1	A3, A6, A7, A10, B7, B16, B53	None	201	243	Forbidden	2.5 L	D	40, 125

Hydrogen bromide, anhydrous	2.3	UN1048	.....	.....	2.3, 8	3, B14	None	304	314, 315	Forbidden	D	40
Hydrogen chloride, anhydrous	2.3	UN1050	.....	.....	2.3, 8	3	None	304	None	Forbidden	D	40
Hydrogen chloride, refrigerated liquid	2.3	UN2186	.....	.....	2.3, 8	3, B6	None	None	314, 315	Forbidden	B	40
Hydrogen, compressed	2.1	UN1049	.....	.....	2.1		306	302	302, 314	Forbidden	E	40, 57
Hydrogen cyanide, solution in alcohol with not more than 45 percent hydrogen cyanide	6.1	UN3294	I	.....	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	D	40
Hydrogen cyanide, stabilized with less than 3 percent water	6.1	UN1051	I	.....	6.1, 3	1, B35, B61, B65, B77, B82	None	195	244	Forbidden	D	40
Hydrogen cyanide, stabilized, with less than 3 percent water and absorbed in a porous inert material	6.1	UN1614	I	.....	6.1	3, B7, B46, B71, B77, T10, TP2	None	195	None	Forbidden	D	25, 40
Hydrogen fluoride, anhydrous	8	UN1052	I	.....	8, 6.1	3, B7, B46, B71, B77, T10, TP2	None	163	243	Forbidden	D	40
Hydrogen in a metal hydride storage system	2.1	UN3468	.....	.....	2.1	167	None	214	None	Forbidden	D	40
Hydrogen iodide, anhydrous	2.3	UN2197	.....	.....	2.3	3, B14	None	304	314, 315	Forbidden	D	40
Hydrogen iodide solution, see Hydroiodic acid, solution												
Hydrogen peroxide and peroxyacetic acid mixtures, stabilized with acids, water and not more than 5 percent peroxyacetic acid	5.1	UN3149	II	.....	5.1, 8	145, A2, A3, A6, B53, IB2, IP5, T7, TP2, TP6, TP7, TP24, TP37	None	202	243	1 L	D	25, 66, 75
Hydrogen peroxide, aqueous solutions with more than 40 percent but not more than 60 percent hydrogen peroxide (stabilized as necessary)	5.1	UN2014	II	.....	5.1, 8	12, B53, B80, B81, B85, IB2, T7, TP2, TP6, TP24, TP37	None	202	243	Forbidden	D	25, 66, 75
Hydrogen peroxide, aqueous solutions with not less than 20 percent but not more than 40 percent hydrogen peroxide (stabilized as necessary)	5.1	UN2014	II	.....	5.1, 8	A2, A3, A6, B53, IB2, IP5, T7, TP2, TP6, TP24, TP37	None	202	243	1 L	D	25, 66, 75
Hydrogen peroxide, aqueous solutions with not less than 8 percent but less than 20 percent hydrogen peroxide (stabilized as necessary)	5.1	UN2984	III	.....	5.1	A1, IB2, IP5, T4, TP1, TP6, TP24, TP37	152	203	241	2.5 L	B	25, 66, 75
Hydrogen peroxide, stabilized or Hydrogen peroxide aqueous solutions, stabilized with more than 60 percent hydrogen peroxide	5.1	UN2015	I	.....	5.1, 8	12, B53, B80, B81, B85, T10, TP2, TP6, TP24, TP37	None	201	243	Forbidden	D	25, 66, 75
Hydrogen, refrigerated liquid (cryogenic liquid)	2.1	UN1966	.....	.....	2.1	T75, TP5	None	316	318, 319	Forbidden	D	40
Hydrogen selenide, anhydrous	2.3	UN2202	.....	.....	2.3	1	None	192	245	Forbidden	D	40
Hydrogen sulfate, see Sulfuric acid												
Hydrogen sulfide	2.3	UN1053	.....	.....	2.3	2, B9, B14	None	304	314, 315	Forbidden	D	40
Hydrogendifluorides, n.o.s.	8	UN1740	II	.....	8	IB8, IP2, IP4, N3, N34, T3, TP33	None	212	240	15 kg	A	25, 40, 52
Hydroquinone, solid	6.1	UN2662	III	.....	8	IB8, IP2, IP4, N3, N34, T3, TP33	154	213	240	25 kg	A	25, 40, 52
Hydroquinone solution	6.1	UN3495	III	.....	6.1	IB8, IP3, T1, IP5, N34, T7, TP33	153	213	240	100 kg	A	25, 40, 52
Hydroxycolluric acid, see Fluorosilicic acid												
Hydroxylamine iodide	8	UN2865	III	.....	8	IB3, T4, TP1	153	203	241	60 L	A	25, 40, 52
Hydroxylamine sulfate	8	UN1791	III	.....	8	IB8, IP3, T1, IP5, N34, T7, TP33	154	213	240	25 kg	A	25, 40, 52
Hypochlorite solutions	8	UN1791	II	.....	8	A7, B2, B15, IB2, IP5, N34, T7, TP2, TP24, TP3, TP33	154	202	242	1 L	B	26
Hypochlorites, inorganic, n.o.s.	5.1	UN3212	III	.....	8	IB3, N34, T4, TP2, TP24	154	203	241	5 L	B	26
			II	.....	5.1	A9, IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	D	4, 48, 52, 56, 58, 69, 106, 116, 118
Hyponitrous acid	Forbidden		.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Igniter fuse, metal clad, see Fuse, igniter, tubular, metal clad	1.1G	UN0121	II	.....	1.1G	.....	None	62	None	Forbidden	07	.....
Igniters	1.2G	UN0314	II	.....	1.2G	.....	None	62	None	Forbidden	07	.....
Igniters	1.3G	UN0315	II	.....	1.3G	.....	None	62	None	Forbidden	07	.....

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age		
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other	
G	Igniters	1.4G	UN0325	II	1.4G		None	62	None	None	Forbidden	75 kg	06	
	Igniters	1.4S	UN0454	II	1.4S		None	62	None	None	Forbidden	100 kg	05	
	3,3'-Iminodipropylamine	8	UN2269	III	8	IB3, T4, TP2	154	203	241	5 L	Forbidden	60 L	A	
	Infectious substances, affecting animals only	6.2	UN2900		6.2	A81, A82	134	196	None	50 mL or 5 L	Forbidden	4 L or 4 kg	B	
	Infectious substances, affecting humans	6.2	UN2814		6.2	A81, A82	134	196	None	50 mL or 50 g	Forbidden	4 L or 4 kg	B	
	Diagnostic specimen	6.2				A82	134	199	None	4 L or 4 kg	Forbidden	4 L or 4 kg	A	
	Inflammable, see Flammable													
	Inflaming explosives (dry)	Forbidden												
	Inositol hexanitrate (dry)	Forbidden												
	Insecticide gases, n.o.s.	2.2	UN1988			2.2		306	314	314	75 kg	Forbidden	150 kg	A
	Insecticide gases, flammable, n.o.s.	2.1	UN3354			2.1	T50	306	304	314, 315	Forbidden	150 kg	D	
	Insecticide gases, toxic, flammable, n.o.s. Inhalation hazard Zone A	2.3	UN3355			2.3, 2.1	1	192	245	315	Forbidden	Forbidden	Forbidden	D
	Insecticide gases, toxic, flammable, n.o.s. Inhalation hazard Zone B	2.3	UN3355			2.3, 2.1	2, B9, B14	302	314	314	Forbidden	Forbidden	Forbidden	D
	Insecticide gases, toxic, flammable, n.o.s. Inhalation hazard Zone C	2.3	UN3355			2.3, 2.1	3, B14	302	305	314, 315	Forbidden	Forbidden	Forbidden	D
	Insecticide gases, toxic, flammable, n.o.s. Inhalation hazard Zone D	2.3	UN3355			2.3, 2.1	4	302	314	314, 315	Forbidden	Forbidden	Forbidden	D
Insecticide gases, toxic, n.o.s.	2.3	UN1967			2.3	3	193	245	334	Forbidden	Forbidden	Forbidden	D	
Inulin trinitrate (dry)	Forbidden													
Iodine azide (dry)	Forbidden													
Iodine monochloride	8	UN1792		II	8	B6, IB8, IP2, IP4, N41, T7, TP2	None	212	240	Forbidden	50 kg	D	40, 66, 74, 89, 90	
Iodine pentafluoride	5.1	UN2495		I	5.1, 6.1, 8		None	205	243	Forbidden	Forbidden	Forbidden	D	
2-Iodobutane	3	UN2390		II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
Iodomethylpropanes	3	UN2391		II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
Iodopropanes	3	UN2392		III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
Iodoxy compounds (dry)	Forbidden													
Iridium nitropentamine iridium nitrate	Forbidden													
Iron chloride, see Ferric chloride														
Iron oxide, spent, or iron sponge, spent obtained from coal gas purification	4.2	UN1376		III	4.2	B18, IB8, IP3, T1, TP33	None	213	240	Forbidden	Forbidden	Forbidden	E	
Iron pentacarbonyl	6.1	UN1994		I	6.1, 3	1, B9, B14, B30, B72, B77, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	Forbidden	D	
Iron sesquichloride, see Ferric chloride														
Irritating material, see Tear gas substances, etc														
Isobutane see also Petroleum gases, liquefied														
Isobutanol or isobutyl alcohol	3	UN1212		III	3	B1, IB3, T2, TP1	306	304	314, 315	Forbidden	150 kg	E	40	
Isobutyl acetate	3	UN1213		III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
Isobutyl acrylate, stabilized	3	UN1213		III	3	B1, IB3, T2, TP1	150	203	242	5 L	60 L	B		
Isobutyl alcohol, see Isobutanol														
Isobutyl aldehyde, see Isobutyraldehyde														
Isobutyl chloroformate	6.1	NA2742		I	6.1, 3, 8	2, B9, B14, B32, B74, T20, TP4, TP12, TP13, TP38, TP45	None	227	244	1 L	30 L	A	12, 13, 22, 25, 40, 48, 100	
Isobutyl formate	3	UN2393		II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B		
Isobutyl isobutyrate	3	UN2528		III	3	B1, IB3, T2, TP1	150	203	242	Forbidden	Forbidden	Forbidden	D	
Isobutyl isocyanate	3	UN2486		I	3, 6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP27	None	226	244	Forbidden	Forbidden	Forbidden	D	
Isobutyl methacrylate, stabilized	3	UN2283		III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
Isobutyl propionate	3	UN2394		III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	B		

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UN Number	Proper Name	Class	Subclass	Label	Quantity	Special Provisions	Other	UN Number	Proper Name	Class	Subclass	Label	Quantity	Special Provisions	Other
3 UN1214	Isobutylamine	3	UN1214	II	3, 8	IB2, T7, TP1	150	202	243	243	1 L	5 L	40		
2.1 UN1055	Isobutylene	2.1	UN1055	.....	2.1	19, 150	306	304	314	314	Forbidden	150 kg	40		
3 UN2045	Isobutyraldehyde or Isobutyl aldehyde	3	UN2045	II	3	IB2, T4, TP1	150	202	242	315	5 L	60 L	40		
3 UN2529	Isobutyric acid	3	UN2529	III	3, 8	B1, IB3, T4, TP1	150	203	242	242	5 L	60 L	40		
3 UN2284	Isobutyronitrile	3	UN2284	II	3, 6.1	IB2, T7, TP2, TP13	150	202	243	243	1 L	60 L	40		
3 UN2395	Isobutyl chloride	3	UN2395	II	3, 8	IB1, T7, TP2	150	202	243	243	1 L	5 L	40		
3 UN2478	Isocyanates, flammable, toxic, n.o.s. or Isocyanate solutions, flammable, toxic, n.o.s. flash point less than 23 degrees C.	3	UN2478	II	3, 6.1	5, A3, A7, IB2, T11, TP2, TP13, TP27	150	202	243	243	1 L	60 L	40		
6.1 UN3080	Isocyanates, toxic, n.o.s. or Isocyanate solutions, toxic, flammable, n.o.s., flash point not less than 23 degrees C but not more than 61 degrees C and boiling point less than 300 degrees C.	6.1	UN3080	II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	243	5 L	60 L	25, 40, 48		
6.1 UN2206	Isocyanates, toxic, n.o.s. or Isocyanate solutions, toxic, n.o.s., flash point more than 61 degrees C and boiling point less than 300 degrees C.	6.1	UN2206	III	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	243	5 L	60 L	25, 40, 48		
6.1 UN2285	Isocyanatobenzotrifluorides	6.1	UN2285	II	6.1, 3	IB2, T4, TP1	150	202	242	242	5 L	60 L	25, 40, 48		
3 UN2287	Isocyanates	3	UN2287	II	3	IB2, T4, TP1	150	202	242	242	5 L	60 L	25, 40, 48		
3 UN2288	Isocyanates	3	UN2288	II	3	IB2, T4, TP1	150	202	242	242	5 L	60 L	25, 40, 48		
3 UN1216	Isocyanates	3	UN1216	II	3	IB2, T4, TP1	150	202	242	242	5 L	60 L	25, 40, 48		
3 UN2371	Isocyanates	3	UN2371	I	3	T11, TP2	150	201	243	243	1 L	30 L	40		
6.1 UN2290	Isocyanates	6.1	UN2290	III	6.1	IB3, T4, TP2	153	203	241	241	60 L	220 L	40		
3 UN2289	Isocyanates	3	UN2289	III	8	IB3, T4, TP1	154	203	241	241	5 L	60 L	40		
3 UN1218	Isocyanates	3	UN1218	II	3	T11, TP2	150	201	243	243	1 L	30 L	40		
3 UN1219	Isocyanates	3	UN1219	II	3	IB2, T4, TP1	150	202	242	242	5 L	60 L	25, 40, 48		
3 UN2403	Isocyanates	3	UN2403	III	3	IB2, T4, TP1	150	202	242	242	5 L	60 L	25, 40, 48		
3 UN2303	Isocyanates	3	UN2303	III	3	IB2, T4, TP1	150	203	242	242	5 L	60 L	25, 40, 48		
3 UN1220	Isocyanates	3	UN1220	III	3	IB2, T4, TP1	150	202	242	242	5 L	60 L	25, 40, 48		
8 UN1793	Isocyanates	8	UN1793	III	8	IB2, T4, TP1	154	213	240	240	25 kg	100 kg	40		
3 UN2405	Isopropyl alcohol, see Isopropanol	3	UN2405	III	3	B1, IB3, T2, TP1	150	203	242	242	60 L	220 L	40		
3 UN2947	Isopropyl butyrate	3	UN2947	III	3	B1, IB3, T2, TP1	150	203	242	242	60 L	220 L	40		
6.1 UN2407	Isopropyl chloroacetate	6.1	UN2407	I	6.1, 3, 8	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP44	None	227	244	244	Forbidden	Forbidden	40		
3 UN2934	Isopropyl 2-chloropropionate	3	UN2934	III	3	B1, IB3, T2, TP1	150	203	242	242	60 L	220 L	40		
3 UN2406	Isopropyl isobutyrate	3	UN2406	III	3	IB2, T4, TP1	150	202	242	242	5 L	60 L	40		
3 UN2483	Isopropyl isocyanate	3	UN2483	I	3, 6.1	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	244	Forbidden	Forbidden	40		
3 UN1222	Isopropyl mercaptan, see Propanethiols	3	UN1222	II	3	IB99	150	202	None	None	5 L	60 L	40		
3 UN2409	Isopropyl nitrate	3	UN2409	II	3	IB2, T4, TP1	150	202	242	242	5 L	60 L	40		
3 UN1221	Isopropyl phosphoric acid, see Isopropyl acid phosphate	3	UN1221	III	3, 8	T11, TP2	None	201	243	243	0.5 L	2.5 L	40		
3 UN1918	Isopropylamine	3	UN1918	III	3	B1, IB3, T2, TP1	150	203	242	242	60 L	220 L	40		
4.1 UN2907	Isopropylbenzene	4.1	UN2907	II	4.1	IB6, IP2, N85	None	212	None	None	15 kg	50 kg	28, 36		
4.1 UN3251	Isopropylcumyl hydroperoxide, with more than 72 percent in solution	4.1	UN3251	III	4.1	66, IB8	151	213	240	240	Forbidden	Forbidden	12		
1.1D UN0124	Isosorbide dinitrate mixture with not less than 60 percent lactose, mannose, starch or calcium hydrogen phosphate	1.1D	UN0124	II	1.1D	55, 56	None	62	None	None	Forbidden	Forbidden	07		
1.4D UN0494	Isosorbide dinitrate mixture with not less than 60 percent lactose, mannose, starch or calcium hydrogen phosphate	1.4D	UN0494	II	1.4D	55, 56	None	62	None	None	Forbidden	Forbidden	06		
1.4D UN0494	Isosorbide dinitrate mixture with not less than 60 percent lactose, mannose, starch or calcium hydrogen phosphate	1.4D	UN0494	II	1.4D	55, 114	None	62	None	None	Forbidden	Forbidden	06		
3 UN1223	Isotrichloroacetic acid	3	UN1223	III	3	144, B1, IB3, TP2	150	203	242	242	60 L	220 L	40		
3 UN1224	Isotrichloroacetic acid	3	UN1224	I	3	T11, TP1, TP8, TP27	None	201	243	243	1 L	30 L	40		

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
(1)						(7)							
				II	3	IB2, T7, TP1, TP8, TP28	150	202	242	5 L	60 L	B	
				III	3	B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A	
	Krypton, compressed		UN1056		2.2		306	302	None	75 kg	150 kg	A	
	Krypton, refrigerated liquid (cryogenic liquid)	2.2	UN1970		2.2	T75, TP5	320	None	None	50 kg	500 kg	B	
	Lacquer base or lacquer chips, nitrocellulose, etc. (UN 2557)												
	Lacquer base or lacquer chips, plastic, wet with alcohol or solvent, see Nitrocellulose (UN2059, UN2555, UN2556, UN2557) or Paint, etc. (UN1263).												
	Lead acetate	6.1	UN1616	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Lead arsenates	6.1	UN1617	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Lead arsenites	6.1	UN1618	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Lead azide (dry)	Forbidden											
	Lead azide, wetted with not less than 20 percent water or mixture of alcohol and water, by mass.	1.1A	UN0129	II	1.1A	111, 117	None	62	None	Forbidden	Forbidden	12	
	Lead compounds, soluble, n.o.s.	6.1	UN2291	III	6.1	138, IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Lead cyanide	6.1	UN1620	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	52
	Lead dioxide	5.1	UN1872	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Lead dross, see Lead sulfate, with more than 3 percent free acid												
	Lead nitrate	5.1	UN1469	II	5.1, 6.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	
	Lead nitroselenate (dry)	Forbidden											
	Lead perchlorate, solid	5.1	UN1470	II	5.1, 6.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Lead perchlorate, solution	5.1	UN3408	III	5.1, 6.1	IB2, T4, TP1	152	203	242	2.5 L	30 L	A	56, 58
	Lead peroxide, see Lead dioxide												
	Lead phosphite, dibasic												
	Lead picrate (dry)												
	Lead stannate (dry)												
	Lead stannate, wetted or Lead trinitroselenate, wetted with not less than 20 percent water or mixture of alcohol and water, by mass.												
	Lead sulfate with more than 3 percent free acid												
	Lead trinitroselenate, see Lead stannate, etc.												
	Life-saving appliances, not self inflating containing dangerous goods as equipment												
	Life-saving appliances, self inflating												
	Lighter replacement cartridges containing liquefied petroleum gases (and similar devices, each not exceeding 65 grams), see Lighters or lighter refills etc. containing flammable gas.												
	Lighters, fuse	1.4S	UN0131	II	1.4S		None	62	None	25 kg	100 kg	05	
	Lighters or lighter refills containing flammable gas	2.1	UN1057		2.1	N10	None	21, 308	None	1 kg	15 kg	B	40
	Lime, unslaked, see Calcium oxide												
G	Liquefied gas, flammable, n.o.s.	2.1	UN3161		2.1	T50	306	304	314, 315	Forbidden	150 kg	D	40
G	Liquefied gas, n.o.s.	2.2	UN3163		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
G	Liquefied gas, oxidizing, n.o.s.	2.2	UN3157		2.2, 5.1	A14	306	304	314, 315	75 kg	150 kg	D	
G I	Liquefied gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone A	2.3	UN3308		2.3, 8	1	None	192	315	Forbidden	Forbidden	D	40
G I	Liquefied gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone B	2.3	UN3308		2.3, 8	2, B9, B14	None	304	314, 315	Forbidden	Forbidden	D	40
G I	Liquefied gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone C	2.3	UN3308		2.3, 8	3, B14	None	304	314, 315	Forbidden	Forbidden	D	40

G I	Liquefied gas, toxic, corrosive, n.o.s. Inhalation Hazard Zone D	2.3	UN3308	2.3, 8	4	None	304	314, 315.	Forbidden	Forbidden	40
G I	Liquefied gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone A	2.3	UN3309	2.3, 2.1, 8	1	None	192	245	Forbidden	Forbidden	17, 40
G I	Liquefied gas toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone B	2.3	UN3309	2.3, 2.1, 8	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	17, 40
G I	Liquefied gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone C	2.3	UN3309	2.3, 2.1, 8	3, B14	None	304	314, 315.	Forbidden	Forbidden	17, 40
G I	Liquefied gas, toxic, flammable, corrosive, n.o.s. Inhalation Hazard Zone D	2.3	UN3309	2.3, 2.1, 8	4	None	304	314, 315.	Forbidden	Forbidden	17, 40
G	Liquefied gas, toxic, flammable, n.o.s. Inhalation Hazard Zone A	2.3	UN3160	2.3, 2.1	1	None	192	245	Forbidden	Forbidden	40
G	Liquefied gas, toxic, flammable, n.o.s. Inhalation Hazard Zone B	2.3	UN3160	2.3, 2.1	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	40
G	Liquefied gas, toxic, flammable, n.o.s. Inhalation Hazard Zone C	2.3	UN3160	2.3, 2.1	3, B14	None	304	314, 315.	Forbidden	Forbidden	40
G	Liquefied gas, toxic, flammable, n.o.s. Inhalation Hazard Zone D	2.3	UN3160	2.3, 2.1	4	None	304	314, 315.	Forbidden	Forbidden	40
G	Liquefied gas, toxic, n.o.s. Inhalation Hazard Zone A	2.3	UN3162	2.3	1	None	192	245	Forbidden	Forbidden	40
G	Liquefied gas, toxic, n.o.s. Inhalation Hazard Zone B	2.3	UN3162	2.3	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	40
G	Liquefied gas, toxic, n.o.s. Inhalation Hazard Zone C	2.3	UN3162	2.3	3, B14	None	304	314, 315.	Forbidden	Forbidden	40
G	Liquefied gas, toxic, n.o.s. Inhalation Hazard Zone D	2.3	UN3162	2.3	4	None	304	314, 315.	Forbidden	Forbidden	40
G I	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. Inhalation Hazard Zone A	2.3	UN3310	2.3, 5.1, 8	1	None	192	245	Forbidden	Forbidden	40, 89, 90
G I	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. Inhalation Hazard Zone B	2.3	UN3310	2.3, 5.1, 8	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	40, 89, 90
G I	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. Inhalation Hazard Zone C	2.3	UN3310	2.3, 5.1, 8	3, B14	None	304	314, 315.	Forbidden	Forbidden	40, 89, 90
G I	Liquefied gas, toxic, oxidizing, corrosive, n.o.s. Inhalation Hazard Zone D	2.3	UN3310	2.3, 5.1, 8	4	None	304	314, 315.	Forbidden	Forbidden	40, 89, 90
G	Liquefied gas, toxic, oxidizing, n.o.s. Inhalation Hazard Zone A	2.3	UN3307	2.3, 5.1	1	None	192	245	Forbidden	Forbidden	40
G	Liquefied gas, toxic, oxidizing, n.o.s. Inhalation Hazard Zone B	2.3	UN3307	2.3, 5.1	2, B9, B14	None	304	314, 315.	Forbidden	Forbidden	40
G	Liquefied gas, toxic, oxidizing, n.o.s. Inhalation Hazard Zone C	2.3	UN3307	2.3, 5.1	3, B14	None	304	314, 315.	Forbidden	Forbidden	40
G	Liquefied gas, toxic, oxidizing, n.o.s. Inhalation Hazard Zone D	2.3	UN3307	2.3, 5.1	4	None	304	314, 315.	Forbidden	Forbidden	40
	Liquefied gases, non-flammable charged with nitrogen, carbon dioxide or air	2.2	UN1058	2.2		306	304	None	75 kg	150 kg	
	Liquefied hydrocarbon gas, see Hydrocarbon gas mixture, liquefied, n.o.s.										
	Liquefied natural gas, see Methane, etc. (UN 1972)										
	Liquefied petroleum gas see Petroleum gases, liquefied										
	Lithium	4.3	UN1415	4.3	A7, A19, IB4, IP1, N45	None	211	244	Forbidden	15 kg	52
	Lithium acetylacrylate ethylenediamine complex, see Water reactive solid etc										
	Lithium alkyls, liquid	4.2	UN2445	4.2, 4.3	B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	
	Lithium alkyls, solid	4.2	UN3433	4.2, 4.3	B11, T21, TP7, TP33	None	181	244	Forbidden	Forbidden	
	Lithium aluminum hydride	4.3	UN1410	4.3	A2, A3, A11, N34	None	211	242	Forbidden	15 kg	52
	Lithium aluminum hydride, ethereal	4.3	UN1411	4.3, 3		None	201	244	Forbidden	1 L	40
	Lithium batteries, contained in equipment	9	UN3091	9	29, A54, A55	185	185	None	5 kg	5 kg	
	Lithium batteries packed with equipment	9	UN3091	9	29, A54, A55	185	185	None	5 kg gross	35 kg gross	
	Lithium battery	9	UN3090	9	29, A54, A55	185	185	None	5 kg gross	35 kg gross	
	Lithium borohydride	4.3	UN1413	4.3	A19, N40	None	211	242	Forbidden	15 kg	52
	Lithium ferrosilicon	4.3	UN2850	4.3	A19, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg	40, 85, 103
	Lithium hydride	4.3	UN1414	4.3	A8, A19, A20, IB4, T3, TP33	None	211	242	Forbidden	15 kg	52
	Lithium hydride, fused solid	4.3	UN2805	4.3		151	212	241	15 kg	50 kg	52
	Lithium hydroxide	8	UN2680	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	
	Lithium hydroxide, solution	8	UN2679	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	29

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifica-tion Num-bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
(1)	Lithium in cartridges, see Lithium	5.1	UN1471	III	8	IB3, T4, TP2	154	203	241	60 L	60 L	29, 96	
	Lithium hypochlorite, dry with more than 39% available chlorine (8.8% available oxygen) or Lithium hypochlorite mixtures, dry with more than 39% available chlorine (8.8% available oxygen).	5.1	UN1471	II	5.1	A9, IB8, IP2, IP4, N34	152	212	240	5 kg	25 kg	4, 48, 52, 56, 58, 69, 106, 116	
	Lithium nitrate	5.1	UN2722	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg		
	Lithium nitride	4.3	UN2806	I	4.3	A19, IB4, IP1, N40	None	211	242	Forbidden	15 kg		
	Lithium peroxide	5.1	UN1472	II	5.1	A9, IB6, IP2, N34, T3, TP33	152	212	None	5 kg	25 kg	13, 52, 66, 75, 85, 103	
	Lithium silicon	4.3	UN1417	II	4.3	A19, A20, IB7, IP2, T3, TP33	151	212	241	15 kg	50 kg		
	LNG, see Methane etc. (UN 1972)	6.1	UN1621	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg		
	LPG, see Petroleum gases, liquefied	4.2	UN3053	I	4.2, 4.3	B11, T21, TP2, TP7	None	181	244	Forbidden	Forbidden	18	
	Lye, see Sodium hydroxide, solutions	4.3	UN1419	I	4.3, 6.1	A19, N34, N40	None	211	242	Forbidden	15 kg	40, 52, 85	
	Magnesium alkyls	6.1	UN1622	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg		
	Magnesium aluminum phosphide	5.1	UN1473	II	5.1	A1, IB8, IP4, T3, TP33	152	212	242	5 kg	25 kg	56, 58	
	Magnesium bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.	5.1	UN2723	II	5.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	56, 58	
	Magnesium bromate	4.2	UN2004	II	4.2	A8, A19, A20, IB6, T3, TP33	None	212	241	15 kg	50 kg		
	Magnesium chlorate	4.2	UN2005	I	4.2	T21, TP7, TP33	None	187	244	Forbidden	Forbidden		
	Magnesium diamide	6.1	UN2853	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	52	
	Magnesium diphenyl	4.3	UN2950	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	240	25 kg	100 kg	52	
	Magnesium dross, wet or hot	4.3	UN2010	I	4.3	A19, N40	None	211	242	Forbidden	15 kg	52	
	Magnesium fluorosilicate	4.1	UN1869	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	39, 52, 53, 74, 101	
	Magnesium granules, coated, particle size not less than 149 microns	5.1	UN1474	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg		
	Magnesium hydride	5.1	UN1475	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	56, 58	
	Magnesium or Magnesium alloys with more than 50 percent magnesium in pellets, turnings or ribbons.	5.1	UN1476	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	13, 52, 66, 75, 40, 52, 85	
	Magnesium nitrate	4.3	UN2011	I	4.3, 6.1	A19, N40	None	211	None	Forbidden	15 kg	39, 52	
	Magnesium perchlorate	4.3	UN1418	I	4.3, 4.2	A19, B56	None	211	244	Forbidden	15 kg	39, 52	
	Magnesium peroxide	4.3	UN2011	I	4.3, 6.1	A19, B56, IB5, IP2, T3, TP33	None	212	241	15 kg	50 kg	39, 52	
	Magnesium phosphide	4.3	UN2011	III	4.3, 4.2	A19, B56, IB8, IP4, T1, TP33	None	213	241	25 kg	100 kg	39, 52	
	Magnesium, powder or Magnesium alloys, powder	4.3	UN2624	II	4.3	IP2, T3, TP33	151	212	241	15 kg	50 kg	85, 103	
	Magnesium scrap, see Magnesium, etc. (UN 1869)	8	UN2215	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg		
	Magnesium silicide	8	UN2215	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg		
	Magnetized material, see § 173.21	8	UN2215	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg		
	Maleic anhydride	8	UN2215	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg		
	Maleic anhydride, molten	8	UN2215	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg		

UN Number	Proper Name	Class	Label	Quantity	Weight	Volume	Temperature	Other
UN2647	Malononitrile	6.1	II 6.1	153	212	242	25 kg	100 kg A
UN2210	Mancozeb (manganese ethylenebisdithiocarbamate complex with zinc) see Maneb Maneb or Maneb preparations with not less than 60 percent maneb	4.2	III 4.2, 4.3	None	213	242	25 kg	100 kg A
UN2968	Maneb stabilized or Maneb preparations, stabilized against self-heating	4.3	III 4.3	151	213	242	25 kg	100 kg B
UN2724	Manganese nitrate	5.1	III 5.1	152	213	240	25 kg	100 kg A
UN1330	Manganese resinates	4.1	III 4.1	151	213	240	25 kg	100 kg A
UN0133	Mannitol tetranitrate Mannitol hexanitrate (dry) Mannitol hexanitrate, wetted with not less than 40 percent water, or mixture of alcohol and water, by mass Marine pollutants, liquid or solid, n.o.s., see Environmentally hazardous substances, liquid or solid, n.o.s.	Forbidden Forbidden 1.1D	II 1.1D	None	62	None	Forbidden	Forbidden 10
UN2254	Matches, block see Matches, strike anywhere	4.1	III 4.1	186	186	None	Forbidden	Forbidden A
UN1944	Matches, fusee	4.1	III 4.1	186	186	None	25 kg	100 kg A
UN1331	Matches, safety (book, card or strike on box)	4.1	III 4.1	186	186	None	25 kg	100 kg B
UN1945	Matches, strike anywhere	4.1	III 4.1	186	186	None	25 kg	100 kg B
UN3248	Matches, wax, Vesta	3	III 3, 6.1	150	202	None	1 L	B
UN1851	Matting acid, see Sulfuric acid	6.1	III 6.1	150	203	None	5 L	A
UN3249	Medicine, liquid, flammable, toxic, n.o.s.	6.1	III 6.1	153	203	None	5 L	C
UN3336	Medicine, solid, toxic, n.o.s.	6.1	III 6.1	153	213	None	5 kg	C
UN3336	Medicine, solid, toxic, n.o.s.	3	I 3	150	201	243	1 L	E
UN1228	Methyltrioxyphthalic anhydride, see Corrosive liquids, n.o.s. Mercaptans, liquid, flammable, n.o.s. or Mercaptan mixture, liquid, flammable, n.o.s.	3	III 3	150	202	242	5 L	B
UN3071	Mercaptans, liquid, flammable, toxic, n.o.s. or Mercaptan mixtures, liquid, flammable, toxic, n.o.s., flash point not less than 23 degrees C	6.1	III 3, 6.1	150	203	242	60 L	B
UN0448	Mercaptans, liquid, flammable, n.o.s. or Mercaptan mixture, liquid, flammable, n.o.s.	1.4C	II 6.1, 3	None	202	243	5 L	A
UN1623	5-Mercaptotetrazol-1-acetic acid	6.1	II 6.1	153	212	242	25 kg	75 kg 09 100 kg A
UN1624	Mercuric arsenate	6.1	II 6.1	153	212	242	25 kg	100 kg A
UN1625	Mercuric chloride	6.1	II 6.1	153	212	242	25 kg	100 kg A
UN1626	Mercuric compounds, see Mercury compounds, etc Mercuric nitrate	6.1	I 6.1	None	211	242	5 kg	50 kg A
UN1627	Mercuric potassium cyanide	6.1	II 6.1	153	212	242	25 kg	100 kg A
UN2809	Mercuric sulfocyanate, see Mercury thiocyanate Mercuriol, see Mercury nucleate Mercurous azide Mercurous compounds, see Mercury compounds, etc Mercurous nitrate	8 6.1	III 8 II 6.1	164 153	164 212	240 242	35 kg 25 kg	35 kg B 100 kg A
UN1630	Mercury acetate	6.1	II 6.1	153	212	242	25 kg	100 kg A
UN2778	Mercury acetylacrylate Mercury ammonium chloride	3	I 3, 6.1	None	201	243	Forbidden	30 L B
UN3012	Mercury based pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	6.1	II 3, 6.1	150	202	243	1 L	60 L B
UN3011	Mercury based pesticides, liquid, toxic	6.1	I 6.1	None	201	243	1 L	30 L B
UN3011	Mercury based pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	I 6.1, 3	None	201	243	1 L	30 L B

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifica-tion Num-bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
A	Mercury based pesticides, solid, toxic	6.1	UN2777	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
	Mercury benzoate	6.1	UN1631	II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	A	40
	Mercury bromides	6.1	UN1634	II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	A	40
	Mercury compounds, liquid, n.o.s.	6.1	UN2024	I	6.1	IB2, IB3, IB7, IP1, T6, TP33	None	201, 203, 211	243, 241, 242	1 L, 5 L, 60 L, 5 kg	30 L, 60 L, 220 L, 50 kg	B, B, B, A	40, 40, 40
	Mercury compounds, solid, n.o.s.	6.1	UN2025	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
	Mercury fulminate, wetted with not less than 20 percent water, or mixture of alcohol and water, by mass.	1.1A	UN0135	II	1.1A	IB8, IP2, IP4, T3, TP33	None	62	None	Forbidden	Forbidden	12	None
	Mercury gluconate	6.1	UN1637	II	6.1	IB2, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	A	40, 97
	Mercury iodide	6.1	UN1638	II	6.1	IB2, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	A	52
	Mercury iodide aquabasic ammonobasic (iodide of Millon's base)	Forbidden											
	Mercury nitride	Forbidden											
	Mercury nucleate	6.1	UN1639	II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	A	None
	Mercury oleate	6.1	UN1640	II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	A	None
	Mercury oxide	6.1	UN1641	II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	A	None
	Mercury oxycyanide	Forbidden											
	Mercury oxycyanide, desensitized	6.1	UN1642	II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	A	52, 91
	Mercury potassium iodide	6.1	UN1643	II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	A	None
	Mercury salicylate	6.1	UN1644	II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	A	None
	Mercury sulfates	6.1	UN1645	II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	A	None
	Mercury thiocyanate	6.1	UN1646	II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	A	None
	Mesityl oxide	3	UN1229	III	3	IB1, IB3, T2, TP1, TP33	None	203	242	60 L	220 L	A	None
	Metal carbonyls, liquid, n.o.s.	6.1	UN3281	I	6.1	IB2, T11, TP2, TP33	None	201	243	1 L	30 L	B	40
				II	6.1	IB2, T11, TP2, TP33	None	202	243	5 L	60 L	B	40
				III	6.1	IB3, T7, TP1, TP28	None	203	241	60 L	220 L	A	40
				I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	D	40
Metal carbonyls, solid, n.o.s.	6.1	UN3466	II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	B	40	
			III	6.1	IB8, IP3, T1, TP33	None	213	240	100 kg	200 kg	B	40	

UN Number	Proper Name	Section	Class	Subclass	Quantity	Labeling	Special Provisions	Other
4.2	Metal catalyst, dry	UN2881	I	4.2	None	187	None	Forbidden
			II	4.2	None	187	242	50 kg
			III	4.2	None	187	241	100 kg
4.2	Metal catalyst, wetted with a visible excess of liquid	UN1378	II	4.2	None	212	None	50 kg
4.1	Metal hydrides, flammable, n.o.s.	UN3182	II	4.1	151	212	240	50 kg
			III	4.1	151	213	240	100 kg
4.3	Metal hydrides, water reactive, n.o.s.	UN1409	I	4.3	None	211	242	15 kg
			II	4.3	151	212	242	50 kg
4.2	Metal powder, self-heating, n.o.s.	UN3189	II	4.2	None	212	241	50 kg
			III	4.2	None	213	241	100 kg
4.1	Metal powders, flammable, n.o.s.	UN3089	II	4.1	151	212	240	50 kg
			III	4.1	151	213	240	100 kg
	Metal salts of methyl nitramine (dry)	UN3181	II	4.1	151	212	240	50 kg
	Metal salts of organic compounds, flammable, n.o.s.		III	4.1	151	213	240	100 kg
4.1	Metalddehyde	UN1332	III	4.1	151	213	240	100 kg
4.3	Metallic substance, water-reactive, n.o.s.	UN3208	I	4.3	None	211	242	15 kg
			II	4.3	151	212	242	50 kg
			III	4.3	151	213	242	100 kg
3	Methacrylaldehyde, stabilized	UN2396	II	3, 6.1	150	202	243	60 L
8	Methacrylic acid, stabilized	UN2531	II	8	154	202	242	30 L
3	Methacrylonitrile, stabilized	UN3079	I	3, 6.1	None	227	244	Forbidden
3	Methyl alcohol	UN2614	III	3	150	203	242	220 L
2.1	Methane and hydrogen, mixtures, see Hydrogen and methane, mixtures, etc.	UN1971		2.1	306	302	302	150 kg
2.1	Methane, compressed or Natural gas, compressed (with high methane content)	UN1972		2.1	None	None	318	Forbidden
6.1	Methane, refrigerated liquid (cryogenic liquid) or Natural gas, refrigerated liquid (cryogenic liquid), with high methane content	UN3246	I	6.1, 8	None	227	244	Forbidden
3	Methanesulfonyl chloride							40
3	Methanol	UN1230	II	3, 6.1	150	202	242	60 L
3	Methanol	UN1230	II	3	150	202	242	60 L
3	Methazoic acid		III	3	150	203	242	220 L
3	4-Methoxy-4-methylpentan-2-one	UN2093	III	3	150	203	242	220 L
3	1-Methoxy-2-propanol	UN3092	I	3, 6.1	None	226	244	Forbidden
3	Methoxymethyl isocyanate	UN2605						40
3	Methyl acetate	UN1231	II	3	150	202	242	60 L
2.1	Methyl acetylene and propadiene mixtures, stabilized	UN1060		2.1	306	304	314, 315	150 kg
3	Methyl acrylate, stabilized	UN1919	II	3	150	202	242	60 L
	Methyl alcohol, see Methanol							
	Methyl allyl chloride	UN2554	II	3	150	202	242	60 L
	Methyl aryl ketone, see Amyl methyl ketone							

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifica-tion Num-bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Methyl bromide	2.3	UN1062		2.3	3, B14, T50	None	193	314, 315	Forbidden	Forbidden	D	40
	<i>Methyl bromide and chloropicrin mixtures with more than 2 percent chloropicrin, see Chloropicrin and methyl bromide mixtures.</i>												
	<i>Methyl bromide and chloropicrin mixtures with not more than 2 percent chloropicrin, see Methyl bromide.</i>	6.1	UN1647	I	6.1	2, B9, B14, B32, B74, N65, T20, TP2, TP13, TP38, TP44	None	227	244	Forbidden	Forbidden	C	40
	Methyl bromide and ethylene dibromide mixtures, liquid												
	Methyl bromoacetate	6.1	UN2643	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	D	40
	2-Methylbutanal	3	UN3371	II		3B2, T4, TP1	150	202	242	5 L	60 L	B	
	2-Methyl-1-butene	3	UN2459	I	3	T11, TP2	None	201	243	1 L	30 L	E	
	2-Methyl-2-butene	3	UN2460	II	3	IB2, IP8, T7, TP1	None	202	242	5 L	60 L	E	
	3-Methyl-1-butene	3	UN2561	I	3	T11, TP2	None	201	243	1 L	30 L	E	
	Methyl tert-butyl ether	3	UN2398	II	3	IB2, T7, TP1	150	202	242	5 L	60 L	E	
	Methyl butyrate	3	UN1237	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl chloride, or Refrigerant gas R 40	2.1	UN1063		2.1	T50	306	304	314, 315	100 kg		D	40
	<i>Methyl chloride and chloropicrin mixtures, see Chloropicrin and methyl chloride mixtures</i>												
	Methyl chloride and methylene chloride mixtures	2.1	UN1912		2.1	T50	306	304	314, 315	Forbidden	Forbidden	D	40
	Methyl chloroacetate	6.1	UN2295	I	6.1, 3	T14, TP2, TP13	None	201	243	1 L	30 L	D	
	<i>Methyl chloroacetate, see Methyl chloroformate</i>												
	<i>Methyl chloroform, see 1,1,1-Trichloroethane</i>												
	Methyl chloroformate	6.1	UN1238	I	6.1, 3, 8	1, B9, B14, B30, B72, N34, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	21, 40, 100
	Methyl chloromethyl ether	6.1	UN1239	I	6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40
	Methyl 2-chloropropionate	3	UN2933	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Methyl dichloroacetate	6.1	UN2299	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	<i>Methyl ethyl ether, see Ethyl methyl ether</i>												
	<i>Methyl ethyl ketone, see Ethyl methyl ketone</i>												
	<i>Methyl ethyl ketone peroxide, in solution with more than 9 percent by mass active oxygen</i>	Forbidden											
	2-Methyl-5-ethylpyridine	6.1	UN2300	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Methyl fluoride, or Refrigerant gas R 41	2.1	UN2454		2.1		306	304	314, 315	Forbidden	150 kg	E	40
	Methyl formate	3	UN1243	I	3	T11, TP2	150	201	243	1 L	30 L	E	
	2-Methyl-2-heptanethiol	6.1	UN3023	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40, 102
	Methyl iodide	6.1	UN2644	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	12, 40
	Methyl isobutyl carbonyl	3	UN2053	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Methyl isobutyl ketone	3	UN1245	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	<i>Methyl isobutyl ketone peroxide, in solution with more than 9 percent by mass active oxygen</i>	Forbidden											
	Methyl isocyanate	6.1	UN2480	I	6.1, 3	1, B9, B14, B30, B72, T22, TP2, TP13, TP38, TP44	None	226	244	Forbidden	Forbidden	D	40, 52
	Methyl isopropenyl ketone, stabilized	3	UN1246	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl isothiocyanate	6.1	UN2477	I	6.1, 3	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	A	
	Methyl isovalerate	3	UN2400	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Methyl magnesium bromide, in ethyl ether	4.3	UN1928	I	4.3, 3	3, B7, B9, B14, T50	None	201	243	Forbidden	1 L	D	
	Methyl mercaptan	2.3	UN1064		2.3, 2.1		None	304	314, 315	Forbidden	Forbidden	D	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identifica-tion Num-bers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stow-age	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Methylphenyldichlorosilane	8	UN2437	II	8	IB2, T7, TP2, TP13	154	202	242	1 L	30 L	C	40
	1-Methylpiperidine	3	UN2399	II	3, 8	IB2, T7, TP1	150	202	243	1 L	5 L	B	
	Methylterahydrofuran	3	UN2536	II	3	IB2, T4, TP1	150	202	243	5 L	60 L	B	
	Methyltrichlorosilane	3	UN1250	I	3, 8	A7, B6, B77, N34, T11, TP2, TP13	None	201	243	Forbidden	2.5 L	B	40
	alpha-Methylvaleraldehyde	3	UN2367	II	3	B1, IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Mine rescue equipment containing carbon dioxide, see Carbon dioxide												
	Mines with bursting charge	1.1F	UN0136	II	1.1F					Forbidden	Forbidden	08	
	Mines with bursting charge	1.1D	UN0137	II	1.1D					Forbidden	Forbidden	03	
	Mines with bursting charge	1.2D	UN0138	II	1.2D					Forbidden	Forbidden	03	
	Mines with bursting charge	1.2F	UN0294	II	1.2F					Forbidden	Forbidden	08	
	Mixed acid, see Nitric acid, mixtures etc												
	Mobility aids, see Battery powered equipment or Battery powered vehicle												
D	Model rocket motor	1.4C	NA0276	II	1.4C	51	None	62	None	Forbidden	75 kg	06	
D	Model rocket motor	1.4S	NA0323	II	1.4S	51	None	62	None	25 kg	100 kg	05	
	Molybdenum pentachloride	8	UNE2508	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	C	40
	Monochloroacetone (unstabilized)	Forbidden											
	Monochloroethylene, see Vinyl chloride, stabilized												
	Monoethanolamine, see Ethanolamine, solutions												
	Monoethylamine, see Ethylamine												
	Morpholine	8	UN2054	I	8, 3	A6, T10, TP2	None	201	243	0.5 L	2.5 L	A	
	Morpholine, aqueous, mixture, see Corrosive liquids, n.o.s.												
	Motor fuel anti-knock compounds see Motor fuel anti-knock mixtures												
	Motor fuel anti-knock mixtures	6.1	UN1649	I	6.1, 3	14, 151, B9, B90, T14, TP2, TP13	None	201	244	Forbidden	30 L	D	25, 40
	Motor spirit, see Gasoline												
	Muratic acid, see Hydrochloric acid												
	Musk xylene, see 5-tert-Butyl-2,4,6-trinitro-m-xylene												
	Naphtha see Petroleum distillates n.o.s.												
	Naphthalene, crude or Naphthalene, refined	4.1	UN1334	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	
	Naphthalene diazonide	Forbidden											
	beta-Naphthylamine	6.1	UN1650	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	beta-Naphthylamine, solid	6.1	UN1650	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	beta-Naphthylamine solution	6.1	UN3411	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	alpha-Naphthylamine	6.1	UN2077	III	6.1	IB8, IP3, T1, TP33	153	203	241	60 L	220 L	A	
	Naphthalene, molten	4.1	UN2304	III	4.1	IB1, T1, TP3	151	213	241	100 kg	Forbidden	C	
	Naphthylamineperchlorate	Forbidden											
	Naphthylthiourea	6.1	UN1651	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Naphthylurea	6.1	UN1652	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Natural gases (with high methane content), see Methane, etc. (UN 1971, UN 1972)												
	Neohexane, see Hexanes												
	Neon, compressed	2.2	UN1065		2.2		306	302	302	75 kg	150 kg	A	
	Neon, refrigerated liquid (cryogenic liquid)	2.2	UN1913		2.2		320	316	None	50 kg	500 kg	B	
	New explosive or explosive device, see §§173.51 and 173.56												
	Nickel carbonyl	6.1	UN1259	I	6.1, 3	IB8, IP2, IP4, N74, N75, T3, TP33	None	198	None	Forbidden	Forbidden	D	18, 40
	Nickel cyanide	6.1	UN1653	II	6.1		153	212	242	25 kg	100 kg	A	52
	Nickel nitrate	5.1	UN2725	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Nickel nitrite	5.1	UN2726	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Nickel picrate	Forbidden											
	Nicotine	6.1	UN1654	II	6.1	IB2	153	202	243	5 L	60 L	A	

UN Number	Classification	Proper Name	Substance	Quantity	Labeling	Other	Regulation	Notes
UN3144	6.1	Nicotine compounds, liquid, n.o.s. or Nicotine preparations, liquid, n.o.s.	IB2, T11, TP2, TP27	1 L	243	201	None	40
UN1655	6.1	Nicotine compounds, solid, n.o.s. or Nicotine preparations, solid, n.o.s.	IB3, T7, TP1, TP28	5 L	243	202	153	40
UN1656	6.1	Nicotine hydrochloride liquid or solution	IB7, IP1, T6, TP33	60 L	241	203	153	40
UN3444	6.1	Nicotine hydrochloride, solid	IB8, IP2, IP4, T3, TP33	5 kg	242	211	None	
UN1657	6.1	Nicotine salicylate	IB8, IP3, T1, TP33	25 kg	242	212	153	
UN1658	6.1	Nicotine sulfate solution	IB8, IP2, IP4, T3, TP33	100 kg	240	213	153	
UN3445	6.1	Nicotine sulphate, solid	IB2, T7, TP2, TP33	200 kg	243	202	153	
UN1659	6.1	Nicotine tartrate	IB3, T7, TP2, TP33	60 L	241	203	153	
UN3218	Forbidden	Nitrated paper (unstable)	IB8, IP2, IP4, T3, TP33	25 kg	242	212	153	
UN1477	5.1	Nitrates, inorganic, aqueous solution, n.o.s.	IB8, IP2, IP4, T3, TP33	25 kg	242	212	153	
UN1826	8	Nitrates, inorganic, n.o.s.	IB8, IP2, IP4, T3, TP33	25 kg	242	212	153	
UN1796	8	Nitrates of diazonium compounds	IB8, IP3, T1, TP33	25 kg	240	213	152	
UN1796	8	Nitrating acid mixtures spent with more than 50 percent nitric acid	A7, T10, TP2, TP12, TP13	Forbidden	243	158	None	56, 58, 133
UN1796	8	Nitrating acid mixtures spent with more than 50 percent nitric acid	A7, B2, IB2, T8, TP2, TP12	Forbidden	242	158	None	56, 58, 133
UN1796	8	Nitrating acid mixtures spent with more than 50 percent nitric acid	A7, T10, TP2, TP12, TP13	Forbidden	243	158	None	56, 58
UN1796	8	Nitrating acid mixtures with more than 50 percent nitric acid	A7, B2, IB2, T8, TP2, TP12, TP13	Forbidden	242	158	None	
UN2031	8	Nitric acid other than red fuming, with more than 70 percent nitric acid	A3, B47, B53, T10, TP2, TP12, TP13	Forbidden	243	158	None	44, 66, 89, 90, 110, 111
UN2031	8	Nitric acid other than red fuming, with not more than 70 percent nitric acid	A6, B2, B47, B53, IB2, T8, TP2, TP12	Forbidden	242	158	None	44, 66, 89, 90, 110, 111
UN2032	8	Nitric acid, red fuming	2, B9, B32, B74, T20, TP2, TP12, TP13, TP38, TP45	Forbidden	244	227	None	40, 66, 74, 89, 90
UN1660	2.3	Nitric oxide, compressed	1, B37, B46, B50, B60, B77	Forbidden	None	337	None	40, 89, 90
UN1975	2.3	Nitric oxide and dinitrogen tetroxide mixtures or Nitric oxide and nitrogen dioxide mixtures	1, B7, B9, B14, B45, B46, B61, B66, B67, B77, T14, TP2, TP13, TP27	Forbidden	None	337	None	40, 89, 90
UN3273	3	Nitrides, flammable, toxic, n.o.s.	IB2, T11, TP2, TP13, TP27	30 L	243	201	None	40, 52
UN3275	6.1	Nitrides, toxic, flammable, n.o.s.	IB2, T11, TP2, TP13, TP27	60 L	243	202	150	40, 52
UN3276	6.1	Nitrides, toxic, liquid, n.o.s.	5, T14, TP2, TP13, TP27	30 L	243	201	None	40, 52
UN3439	6.1	Nitrides, toxic, solid, n.o.s.	IB2, T11, TP2, TP13, TP27	30 L	243	202	153	40, 52
UN3276	6.1	Nitrides, toxic, liquid, n.o.s.	5, T14, TP2, TP13, TP27	5 L	243	201	None	40, 52
UN3276	6.1	Nitrides, toxic, liquid, n.o.s.	IB7, IP1, T6, TP33	1 L	243	201	None	52
UN3276	6.1	Nitrides, toxic, liquid, n.o.s.	IB2, T11, TP2, TP27	5 kg	242	211	None	52
UN3439	6.1	Nitrides, toxic, solid, n.o.s.	IB2, T11, TP2, TP27	5 L	243	202	153	52
UN3439	6.1	Nitrides, toxic, solid, n.o.s.	IB8, IP2, IP4, T3, TP33	25 kg	242	212	153	52

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions	Non- bulk	Bulk	Passenger aircraft/rail	Cargo air- craft only	Loca- tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G	Nitrites, toxic, liquid, n.o.s.	6.1	UN3276	III	6.1	IB3, T7, TP1, TP28	153	203	241	60 L	220 L	A	52
G	Nitrites, toxic, solid, n.o.s.	6.1	UN3439	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
	Nitrites, inorganic, aqueous solution, n.o.s.	5.1	UN3219	II	5.1	IB1, T4, TP1	152	202	242	1 L	5 L	B	46, 56, 58, 133
	Nitrites, inorganic, n.o.s.	5.1	UN2627	III	5.1	IB2, T4, TP1	152	203	241	2.5 L	30 L	B	46, 56, 58, 133
	3-Nitro-4-chlorobenzotrifluoride	6.1	UN2307	II	6.1	33, IB8, IP4, T3, TP33	152	212	None	5 kg	25 kg	A	46, 56, 58, 133, 40
	6-Nitro-4-diazotoluene-3-sulfonic acid (dry)	Forbidden		II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Nitro isobutane triol trinitrate	Forbidden		III	6.1	IB8, IP2, IP4, T3, TP33	153	203	241	60 L	220 L	A	
	N-Nitro-N-methylglycolamide nitrate	Forbidden		III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	2-Nitro-2-methylpropanol nitrate	Forbidden		II	1.1D		None	62	None	Forbidden	Forbidden	10	
	Nitro urea	1.1D	UN0147	II	6.1		None	62	None	Forbidden	Forbidden	10	
	N-Nitroaniline	Forbidden		II	6.1		153	212	242	25 kg	100 kg	A	
	Nitroanilines (o-; m-; p-)	6.1	UN1661	II	6.1	IB8, IP2, IP4, T3, TP33	153	202	242	1 L	30 L	A	
	Nitroanisole, liquid	6.1	UN2730	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Nitroanisoles, solid	6.1	UN3458	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Nitrobenzene	6.1	UN1662	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	m-Nitrobenzene diazonium perchlorate	Forbidden		II	8	B2, B4, IB8, IP2, IP4, T3, TP33	154	202	242	1 L	30 L	A	
	Nitrobenzenesulfonic acid	1.1D	UN2305	II	6.1		None	62	None	Forbidden	Forbidden	10	
	Nitrobenzol, see Nitrobenzene	1.1D	UN0385	II	1.1D		None	62	None	Forbidden	Forbidden	10	
	5-Nitrobenzotriazol	6.1	UN2306	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
	Nitrobenzotrifluorides, liquid	6.1	UN3431	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
	Nitrobenzotrifluorides, solid	6.1	UN2732	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Nitrobromobenzenes, liquid	6.1	UN3459	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Nitrobromobenzenes, solid	6.1	UN0340	II	1.1D		None	62	None	Forbidden	Forbidden	13	27E
	Nitrocellulose, dry or wetted with less than 25 percent water (or alcohol), by mass	1.1D	UN3270	II	4.1	43, A1	151	212	240	15 kg	15 kg	D	
	Nitrocellulose membrane filters, with not more than 12.6 percent nitrogen, by dry mass	1.3C	UN0343	II	1.3C		None	62	None	Forbidden	Forbidden	10	
	Nitrocellulose, plasticized with not less than 18 percent plasticizing substance, by mass	3	UN2059	I	3	T11, TP1, TP8, TP27	None	201	243	1 L	30 L	E	
	Nitrocellulose, solution, flammable with not more than 12.6 percent nitrogen, by mass, and not more than 55 percent nitrocellulose.	3		II	3	IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
	Nitrocellulose, unmodified or plasticized with less than 18 percent plasticizing substance, by mass	1.1D	UN0341	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Nitrocellulose, wetted with not less than 25 percent alcohol, by mass	1.3C	UN0342	II	1.3C		None	62	None	Forbidden	Forbidden	13	27E
	Nitrocellulose with alcohol with not less than 25 percent alcohol by mass, and with not more than 12.6 percent nitrogen, by dry mass.	4.1	UN2556	II	4.1		None	212	None	Forbidden	Forbidden	10	28
	Nitrocellulose, with not more than 12.6 percent nitrogen, or Nitrocellulose mixture with pigment or Nitrocellulose mixture with plasticizer or Nitrocellulose mixture with pigment and plasticizer.	4.1	UN2557	II	4.1	44	151	212	None	1 kg	15 kg	D	28
	Nitrocellulose with water with not less than 25 percent water, by mass	4.1	UN2555	II	4.1		151	212	None	15 kg	50 kg	E	28
	Nitrochlorobenzene, see Chloronitrobenzenes etc	6.1	UN2446	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Nitroresols, solid	6.1	UN3434	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Nitroresols, liquid	3	UN2842	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Nitroethane	Forbidden		II	2.2		306	302	314, 315	75 kg	150 kg	A	
	Nitroethyl nitrate	Forbidden		II	2.2								
	Nitroethylene polymer	Forbidden		II	2.2								
	Nitrogen, compressed	2.2	UN1066										
	Nitrogen dioxide, see Dinitrogen tetroxide												
	Nitrogen fertilizer solution, see Fertilizer ammoniating solution etc												
	Nitrogen mixtures with rare gases, see Rare gases and nitrogen mixtures												
	Nitrogen peroxide, see Dinitrogen tetroxide												
	Nitrogen, refrigerated liquid cryogenic liquid	2.2	UN1977		2.2	T75, TP5	320	316	318	50 kg	500 kg	D	

Table with multiple columns: Chemical name, UN number, Hazard class, Packing group, Label code, and Quantity/Weight. Entries include Nitrogen tetroxide, Nitrogen trioxide, Nitro compounds, and various nitro derivatives.

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
(1)	Nonliquefied gases, see Compressed gases, etc Nonliquefied hydrocarbon gas, see Hydrocarbon gas mixture, compressed, n.o.s. Nonyltrichlorosilane	8	UN1799	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
	Nordhausen acid, see Sulfuric acid, fuming etc 2,5-Norbornadiene, stabilized, see Bicyclo 2,2,1 hepta-2,5-diene, stabilized Octadecyltrichlorosilane	8	UN1800	II	8	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	242	Forbidden	30 L	C	40
	Octadiene 1,7-Octadecane-3,5-diene-1,8-dimethoxy-9-octadecyanoic acid Octafluorobut-2-ene or Refrigerant gas R 1318	3 Forbidden 2.2	UN2309 UN2422	II	3 2.2	B1, IB2, T4, TP1	None	304	314, 315	5 L 75 kg	60 L 150 kg	B A	
	Octafluorocyclobutane, or Refrigerant gas RC 318	2.2	UN1976		2.2	T50	None	304	314	75 kg	150 kg	A	
	Octafluoropropaneor Refrigerant gas R 218	2.2	UN2424		2.2	T50	None	304	314, 315	75 kg	150 kg	A	
	Octanes	3	UN1262	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Octogen, etc. see Cyclotetramethylene tetranitramine, etc Octolite or Octol, dry or wetted with less than 15 percent water, by mass Octonol	1.1D 1.1D	UN0266 UN0496	II	1.1D 1.1D		None	62	None	Forbidden	Forbidden	10	
	Octyl aldehydes Octyltrichlorosilane	3 8	UN1191 UN1801	III II	3 8	B1, IB3, T2, TP1 A7, B2, B6, IB2, N34, T7, TP2, TP13	150 None	203 202	242 242	60 L Forbidden	220 L 30 L	A C	40
	Oil gas, compressed	2.3	UN1071		2.3, 2.1	6	None	304	314, 315	Forbidden	25 kg	D	40
G	Oleum, see Sulfuric acid, fuming Organic peroxide type A, liquid or solid Organic peroxide type B, liquid	Forbidden 5.2	UN3101	II	5.2, 1	53	152	225	None	Forbidden	Forbidden	D	12, 40, 52, 53
G	Organic peroxide type B, liquid, temperature controlled	5.2	UN3111	II	5.2, 1	53	None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type B, solid	5.2	UN3102	II	5.2, 1	53	152	225	None	Forbidden	Forbidden	D	12, 40, 52, 53
G	Organic peroxide type B, solid, temperature controlled	5.2	UN3112	II	5.2, 1	53	None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type C, liquid	5.2	UN3103	II	5.2		152	225	None	5 L	10 L	D	12, 40, 52, 53
G	Organic peroxide type C, liquid, temperature controlled	5.2	UN3113	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type C, solid	5.2	UN3104	II	5.2		152	225	None	5 kg	10 kg	D	2, 40, 52, 53
G	Organic peroxide type C, solid, temperature controlled	5.2	UN3114	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type D, liquid	5.2	UN3105	II	5.2		152	225	None	5 L	10 L	D	12, 40, 52, 53
G	Organic peroxide type D, liquid, temperature controlled	5.2	UN3115	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type D, solid	5.2	UN3106	II	5.2		152	225	None	5 kg	10 kg	D	12, 40, 52, 53
G	Organic peroxide type D, solid, temperature controlled	5.2	UN3116	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type E, liquid	5.2	UN3107	II	5.2		152	225	None	10 L	25 L	D	12, 40, 52, 53
G	Organic peroxide type E, liquid, temperature controlled	5.2	UN3117	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type E, solid	5.2	UN3108	II	5.2		152	225	None	10 kg	25 kg	D	12, 40, 52, 53
G	Organic peroxide type E, solid, temperature controlled	5.2	UN3118	II	5.2		None	225	None	Forbidden	Forbidden	D	2, 40, 52, 53
G	Organic peroxide type F, liquid	5.2	UN3109	II	5.2	IP5	152	225	225	10 L	25 L	D	12, 40, 52, 53

G	Organic peroxide type F, liquid, temperature controlled	5.2	UN3119	II	5.2	None	225	225	Forbiddn	Forbiddn	D	2, 40, 52, 53
G	Organic peroxide type F, solid	5.2	UN3110	II	5.2	152	225	225	10 kg	25 kg	D	12, 40, 52, 53
G	Organic peroxide type F, solid, temperature controlled	5.2	UN3120	II	5.2	None	225	225	Forbiddn	Forbiddn	D	2, 52, 53
D	Organic phosphate, mixed with compressed gas or Organic phosphorus compound, mixed with compressed gas or Organic phosphorus compound, mixed with compressed gas. Organic pigments, self-heating	2.3	NA1955	.....	2.3	None	334	None	Forbiddn	Forbiddn	D	53
G	Organoarsenic compound, liquid, n.o.s.	4.2	UN3313	II	4.2	None	212	241	15 kg	50 kg	C	40
G	Organoarsenic compound, liquid, n.o.s.	6.1	UN3280	III	4.2	None	213	241	25 kg	100 kg	C	
G	Organoarsenic compound, solid, n.o.s.	6.1	UN3465	I	6.1	None	211	242	5 kg	50 kg	B	
G	Organochlorine pesticides liquid, flammable, toxic, flash point less than 23 degrees C	3	UN2762	II	3, 6.1	None	201	243	Forbiddn	30 L	B	40
G	Organochlorine pesticides, liquid, toxic	6.1	UN2996	II	3, 6.1	150	202	243	1 L	60 L	B	40
G	Organochlorine pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN2995	I	6.1	None	201	243	Forbiddn	30 L	B	40
G	Organochlorine pesticides, solid, toxic	6.1	UN2761	III	6.1, 3	153	203	242	60 L	220 L	A	40
G	Organometallic compound, toxic, liquid, n.o.s.	6.1	UN3262	I	6.1	None	211	242	5 kg	50 kg	A	40
G	Organometallic compound, toxic, solid, n.o.s.	6.1	UN3467	II	6.1	153	212	242	25 kg	100 kg	A	40
G	Organometallic substance, liquid, pyrophoric	4.2	UN3392	III	6.1	153	213	240	100 kg	200 kg	A	40
G	Organometallic substance, liquid, pyrophoric, water-reactive	4.2	UN3394	I	4.2	None	181	244	Forbiddn	Forbiddn	D	143
G	Organometallic substance, liquid, water-reactive	4.3	UN3398	I	4.3	None	201	244	Forbiddn	Forbiddn	D	
G	Organometallic substance, liquid, water-reactive	4.3	UN3399	II	4.3, 3	None	202	243	Forbiddn	Forbiddn	E	40, 52
G	Organometallic substance, liquid, water-reactive, flammable	4.3	UN3399	III	4.3	None	203	242	5 L	60 L	E	40, 52
G	Organometallic substance, solid, pyrophoric	4.2	UN3391	I	4.2	None	181	244	Forbiddn	Forbiddn	D	
G	Organometallic substance, solid, pyrophoric, water-reactive	4.2	UN3393	I	4.2, 4.3	None	181	244	Forbiddn	Forbiddn	D	52

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
G	Organometallic substance, solid, self-heating	4.2	UN3400	III	4.2	IB6, T3, TP33	None	212	242	15 kg	50 kg	C	.....
G	Organometallic substance, solid, water-reactive	4.3	UN3395	I	4.2, 4.3	IB8, T1, TP33 N40, T9, TP7, TP33	None	203	242	25 kg	100 kg	C	.....
G	Organometallic substance, solid, water-reactive, flammable	4.3	UN3396	III	4.3	IB4, T3, TP33 IB6, T1, TP33 N40, T9, TP7, TP33	None	212	242	15 kg	50 kg	E	40, 52
G	Organometallic substance, solid, water-reactive, self-heating	4.3	UN3397	I	4.3, 4.2, 4.3, 4.4	IB4, T3, TP33 IB6, T1, TP33 N40, T9, TP7, TP33	None	211	242	25 kg	100 kg	E	40, 52
G	Organophosphorus compound, toxic, flammable, n.o.s.	6.1	UN3279	III	6.1, 3	IB6, T1, TP33 5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
G	Organophosphorus compound, toxic, liquid, n.o.s.	6.1	UN3278	I	6.1, 3	IB2, T11, TP2, TP13, TP27 5, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
G	Organophosphorus compound, toxic, solid, n.o.s.	6.1	UN3464	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	.....
G	Organophosphorus pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	3	UN2784	I	3, 6.1	IB8, IP2, IP4, T3, TP33	None	212	242	25 kg	100 kg	B	.....
G	Organophosphorus pesticides, liquid, toxic	6.1	UN3018	III	6.1	IB8, IP3, T1, TP33	None	213	240	100 kg	200 kg	A	.....
G	Organophosphorus pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN3017	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
G	Organophosphorus pesticides, solid, toxic	6.1	UN2783	I	6.1	IB2, T11, TP2, TP13, TP27 N76, T14, TP2, TP13, TP27	None	202	243	1 L	60 L	B	40
G	Organophosphorus pesticides, solid, toxic	6.1	UN2788	III	6.1	IB2, N76, T11, TP2, TP13, TP27 IB3, N76, T7, TP2, TP28	None	203	241	60 L	220 L	A	40
G	Organophosphorus pesticides, solid, toxic	6.1	UN2783	I	6.1	N76, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
G	Organophosphorus pesticides, solid, toxic	6.1	UN2783	II	6.1, 3	IB2, N76, T11, TP2, TP13, TP27 B1, IB3, N76, T7, TP2, TP28	None	202	243	5 L	60 L	B	40
G	Organophosphorus pesticides, solid, toxic	6.1	UN2783	III	6.1, 3	IB7, IP1, N77, T6, TP33	None	203	242	60 L	220 L	A	40
G	Organophosphorus pesticides, solid, toxic	6.1	UN2783	I	6.1	IB8, IP2, IP4, N77, T3, TP33	None	211	242	5 kg	50 kg	A	40
G	Organophosphorus pesticides, solid, toxic	6.1	UN2783	II	6.1	N77, T3, TP33	None	212	242	25 kg	100 kg	A	40
G	Organophosphorus pesticides, solid, toxic	6.1	UN2783	III	6.1	IB8, IP3, N77, T1, TP33	None	213	240	100 kg	200 kg	A	40
G	Organotin compounds, liquid, n.o.s.	6.1	UN2788	I	6.1	A3, N33, N34, T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
G	Organotin compounds, liquid, n.o.s.	6.1	UN2788	II	6.1	A3, IB2, N33, N34, T11, TP2, TP13, TP27	None	202	243	5 L	60 L	A	40
G	Organotin compounds, liquid, n.o.s.	6.1	UN2788	III	6.1	IB3, T7, TP2, TP28	None	203	241	60 L	220 L	A	40

Organotin compounds, solid, n.o.s.	6.1	UN3146	I	6.1	A5, IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	40
.....	.....	.....	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
.....	.....	.....	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Organotin pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	3	UN2787	I	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B	40
.....	.....	.....	II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
.....	.....	.....	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
Organotin pesticides, liquid, toxic	6.1	UN3020	II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
.....	.....	.....	III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
Organotin pesticides, liquid, toxic, flammable, flash point not less than 23 degrees C	6.1	UN3019	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
.....	.....	.....	II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
.....	.....	.....	III	6.1, 3	B1, IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
Organotin pesticides, solid, toxic	6.1	UN2786	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
.....	.....	.....	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
.....	.....	.....	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Orthoaniline, see Nitroanilines etc	.....	.....	I	6.1	A8, IB7, IP1, N33, N34, T6, TP33	None	211	242	5 kg	50 kg	B	40
Osmium tetroxide	6.1	UN2471	III	9	IB3, T2, TP1	155	203	241	No limit	No limit	A	.....
Other regulated substances, liquid, n.o.s.	9	NA3082	III	9	B54, IB8, IP2, T1, TP33	155	213	240	No limit	No limit	A	.....
Other regulated substances, solid, n.o.s.	9	NA3077	I	5.1, 8	A6	None	201	244	Forbidden	2.5 L	D	13, 56, 58, 106, 138
Oxidizing liquid, corrosive, n.o.s.	5.1	UN3098	II	5.1, 8	IB1	None	202	243	1 L	5 L	B	34, 56, 58, 106, 138
.....	.....	.....	III	5.1, 8	IB2	152	203	242	2.5 L	30 L	B	34, 56, 58, 106, 138
Oxidizing liquid, n.o.s.	5.1	UN3139	I	5.1	127, A2, A6	None	201	243	Forbidden	2.5 L	D	56, 58, 106, 138
.....	.....	.....	II	5.1	127, A2, IB2	152	202	242	1 L	5 L	B	56, 58, 106, 138
.....	.....	.....	III	5.1	127, A2, IB2	152	203	241	2.5 L	30 L	B	56, 58, 106, 138
Oxidizing liquid, toxic, n.o.s.	5.1	UN3099	I	5.1, 6.1	A6	None	201	244	Forbidden	2.5 L	D	56, 58, 106, 138
.....	.....	.....	II	5.1, 6.1	IB1	152	202	243	1 L	5 L	B	56, 58, 106, 138
.....	.....	.....	III	5.1, 6.1	IB2	152	203	242	2.5 L	30 L	B	56, 58, 106, 138
Oxidizing solid, corrosive, n.o.s.	5.1	UN3085	I	5.1, 8	IB6, IP2, T3, TP33	None	211	242	1 kg	15 kg	D	13, 56, 58, 106, 138
.....	II	5.1, 8	None	212	242	5 kg	25 kg	B	13, 34, 56, 58, 106, 138

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							Excep- tions (8A)	Non- bulk (8B)	Bulk (8C)	Passenger aircraft/rail (9A)	Cargo air- craft only (9B)	Loca- tion (10A)	Other (10B)
G	Oxidizing solid, flammable, n.o.s.	5.1	UN3137	I	5.1, 4.1.	IB5, IP1	None	214	214	Forbidden	Forbidden		
G	Oxidizing solid, n.o.s.	5.1	UN1479	I	5.1	IB8, IP2, IP4, T3, TP33	152	212	240	5 kg	25 kg	B	13, 34, 56, 58, 106, 138
G	Oxidizing solid, self-heating, n.o.s.	5.1	UN3100	III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	B	56, 58, 106, 138
G	Oxidizing solid, toxic, n.o.s.	5.1	UN3087	I	5.1, 4.2, 4.2, 5.1, 6.1.	IB6, IP2, T3, TP33	None	214	242	1 kg	15 kg	D	56, 58, 106, 138
G	Oxidizing solid, water-reactive, n.o.s.	5.1	UN3121	III	5.1, 4.3.	IB8, IP3, T1, TP33	None	214	240	25 kg	100 kg	B	56, 58, 106, 138
	Oxygen and carbon dioxide mixtures, see Carbon dioxide and oxygen mixtures	2.2	UN1072		2.2, 5.1.	A14, A52	306	302	314, 315.	75 kg	150 kg	A	
	Oxygen difluoride, compressed	2.3	UN2190		2.3, 5.1, 8.	1	None	304	None	Forbidden	Forbidden	D	13, 40, 59, 90
	Oxygen generator, chemical (including when contained in associated equipment, e.g., pas- senger service units (PSUs), portable breathing equipment (PBE), etc).	5.1	UN3356	II	5.1	60, A51	None	212	None	Forbidden	25 kg gross	D	56, 58, 69, 106
+	Oxygen generator, chemical, spent	9	NA3356	III	9	61	None	213	None	Forbidden	Forbidden	A	
	Oxygen, mixtures with rare gases, see Rare gases and oxygen mixtures	2.2	UN1073		2.2, 5.1.	T75, TP5, TP22	320	316	318	Forbidden	Forbidden	D	
	Oxygen, refrigerated liquid (cryogenic liquid)	2.2	UN1263	I	3	T11, TP1, TP8	150	201	243	1 L	30 L	E	
	Paint including paint, lacquer, enamel, stain, shellac solutions, varnish, polish, liquid filler, and liquid lacquer base.	3	UN1263	II	3	149, B52, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	
	Paint or Paint related material	8	UN3066	III	8	B1, B52, IB3, T2, TP1	150	173	242	60 L	220 L	A	
	Paint related material including paint thinning, drying, removing, or reducing compound	3	UN1263	II	3	B2, IB2, T7, TP2	154	173	242	1 L	30 L	A	
				III	8	B52, IB3, T4, TP1	154	173	241	5 L	60 L	A	
				I	3	T11, TP1, TP8	150	201	243	1 L	30 L	E	
				II	3	149, B52, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	
				III	3	B1, B52, IB3, T2, TP1	150	173	242	60 L	220 L	A	
	Paper, unsaturated oil treated incompletely dried (including carbon paper)	4.2	UN1379	III	4.2	IB8, IP3	None	213	241	Forbidden	Forbidden	A	
	Parafomaldehyde	4.1	UN2213	III	4.1	A1, IB8, IP3, T1, TP33	151	213	240	25 kg	100 kg	A	
	Paraldehyde	3	UN1264	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Paranitroaniline, solid, see Nitroanilines etc						None	334	245	Forbidden	Forbidden	E	
D	Parathion and compressed gas mixture	2.3	NA1967		2.3	3	None	334	245	Forbidden	Forbidden	E	40
	Paris green, solid, see Copper acetoarsenite						None	334	245	Forbidden	Forbidden	E	

UN Number	Proper Name	Classification	Label	Quantity	Special Provisions	Other	Quantity	Special Provisions	Other	Quantity	Special Provisions	Other
UN1380	PCB, see Polychlorinated biphenyls	4.2	I	4.2, 6.1	1	None	205	245	Forbiddn	Forbiddn	D	
UN1669	Pentaborane	6.1	II	6.1	IB2, T7, TP2	153	202	243	60 L	60 L	A	40
UN3155	Pentachloroethane	6.1	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
UN3344	Pentachlorophenol	Forbidden					214	None	Forbiddn	Forbiddn	E	
UN0411	Pentaerythrite tetranitrate (dry)	4.1	II	4.1	118, N85	None	62	None	Forbiddn	Forbiddn	10	
UN0150	Pentaerythrite tetranitrate or Pentaerythritol tetranitrate or PETN, with not less than 7 percent wax by mass	1.1D	II	1.1D	121	None	62	None	Forbiddn	Forbiddn	10	
UN3220	Pentaerythrite tetranitrate, desensitized, solid, n.o.s. with more than 10 percent but not more than 20 percent PETN, by mass	2.2		2.2	T50	306	304	314, 315	75 kg	150 kg	A	
UN2266	Pentaerythrite tetranitrate, wetted, or PETN, wetted with not less than 25 percent water, by mass, or Pentaerythrite tetranitrate, or Pentaerythritol tetranitrate, desensitized with not less than 15 percent phlegmatizer by mass	3	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
UN2310	Pentamethylheptane	3	III	3, 6.1	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	
UN1265	Pentane-2,4-dione	3	II	3	T11, TP2	150	201	243	1 L	30 L	E	
Forbidden	Pentanes	Forbidden			IB2, IP8, T4, TP1	150	202	242	5 L	60 L	E	
UN1105	Pentanitroaniline (dry)	3	II	3	IB2, T4, TP1, TP29	150	202	242	5 L	60 L	B	
UN1108	Pentanols	3	III	3	B1, B3, IB3, T2, TP1	150	203	242	60 L	220 L	A	
UN2705	1-Pentene (n-amylyene)	3	I	3	T11, TP2	150	201	243	1 L	30 L	E	
UN0151	1-Pentol	8	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	B	26, 27
UN3211	Pentolite, dry or wetted with less than 15 percent water, by mass	1.1D	II	1.1D		None	62	None	Forbiddn	Forbiddn	10	
UN3211	Pepper spray, see Aerosols, etc. or Self-defense spray, non-pressurized	5.1	II	5.1	IB2, T4, TP1	152	202	242	1 L	5 L	B	56, 58, 133
UN1481	Perchlorates, inorganic, aqueous solution, n.o.s.	5.1	III	5.1	IB2, T4, TP1	152	202	241	2.5 L	30 L	B	56, 58, 69, 133, 56, 58
UN1873	Perchlorates, inorganic, n.o.s.	5.1	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	
UN1802	Perchloric acid, with more than 72 percent acid by mass	8	III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
UN1670	Perchloric acid with more than 50 percent but not more than 72 percent acid, by mass	6.1	I	6.1	A2, A3, N41, T10, TP1, TP12	None	201	243	Forbiddn	Forbiddn	D	66
UN3083	Perchloric acid with not more than 50 percent acid by mass	2.3	II	8, 5.1	IB2, N41, T7, TP2	None	202	243	Forbiddn	Forbiddn	C	66
UN3154	Perchloroethylene, see Tetrachloroethylene	2.1				None	227	244	Forbiddn	Forbiddn	D	40
UN3154	Perchloromethyl mercaptan	2.1			2, B9, B14, B32, B74, N34, T20, TP2, TP13, TP38, TP45	None	302	314, 315	Forbiddn	Forbiddn	D	40
UN3154	Perchloryl fluoride	2.1			2, B9, B14	None	302	314, 315	Forbiddn	Forbiddn	D	40
UN3154	Perfusion caps, see Primers, cap type	2.1				306	302, 304, 305	314, 315	Forbiddn	Forbiddn	E	40
UN3154	Perfluoro(ethyl vinyl ether)	2.1				306	302, 304, 305	314, 315	Forbiddn	Forbiddn	E	40
UN3153	Perfluoro(methyl vinyl ether)	2.1				306	302, 304, 305	314, 315	Forbiddn	Forbiddn	E	40
UN1266	Perfumery products with flammable solvents	3	II	3	149, IB2, T4, TP1, TP8	150	202	242	15 L	60 L	B	
UN3214	Permanganates, inorganic, aqueous solution, n.o.s.	5.1	III	5.1	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	56, 58, 133, 138
UN1482	Permanganates, inorganic, n.o.s.	5.1	II	5.1	26, A30, IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
UN1483	Peroxides, inorganic, n.o.s.	5.1	III	5.1	26, A30, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	D	56, 58, 138
Forbidden	Peroxyacetic acid, with more than 43 percent and with more than 6 percent hydrogen peroxide	Forbidden			A7, A20, IB6, IP2, N34, T3, TP33	None	212	242	5 kg	25 kg	A	13, 52, 66, 75
Forbidden		Forbidden			A7, A20, IB8, IP3, N34, T1, TP33	152	213	240	25 kg	100 kg	A	13, 52, 66, 75

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identifica-tion Num-bers	PG	Label Codes	Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age		
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)	
G	Persulfates, inorganic, aqueous solution, n.o.s.	5.1	UN3216	III	5.1	IB2, T4, TP1, TP29	152	203	241	2.5 L	30 L	A	56, 133	
	Persulfates, inorganic, n.o.s.	5.1	UN3215	III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58	
	Pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	3	UN3021	I	3, 6.1	B5, T14, TP2, TP13, TP27	None	201	243	Forbidden	30 L	B		
	Pesticides, liquid, toxic, flash point not less than 23 degrees C	6.1	UN2903	II	3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B		
	Pesticides, liquid, toxic, flammable, n.o.s.	6.1	UN2903	I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40	
	Pesticides, solid, toxic, n.o.s.	6.1	UN2903	II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40	
	Pesticides, liquid, toxic, n.o.s.	6.1	UN2902	III	6.1, 3	B1, IB3, T7, TP2, T14, TP2, TP13, TP27	153	203	242	60 L	220 L	A	40	
	Pesticides, solid, toxic, n.o.s.	6.1	UN2902	II	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40	
	PETN, see Pentaerythrite tetranitrate													
	PETN/TNT, see Pentolite, etc													
D	Petrol, see Gasoline													
	Petroleum crude oil	3	UN1267	I	3	144, T11, TP1, TP8	150	201	243	1 L	30 L	E		
	Petroleum distillates, n.o.s. or Petroleum products, n.o.s.	3	UN1268	II	3	144, IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B		
	Petroleum gases, liquefied or Liquefied petroleum gas	2.1	UN1075	III	3	144, B1, IB3, T2, TP1	150	203	242	60 L	220 L	A		
	Petroleum oil	3	NA1270	I	3	144, T11, TP1, TP8	150	201	243	1 L	30 L	E		
	Phenacetyl bromide	6.1	UN2645	III	3	144, IB2, T7, TP1, TP8, TP28	306	304	314, 315	Forbidden	150 kg	E	40	
	Phenetidines	6.1	UN2311	I	3	144, IB2, T7, TP1	None	201	243	1 L	30 L	E		
	Phenol, molten	6.1	UN2312	II	3	144, IB2, T7, TP1	150	202	242	5 L	60 L	B		
	Phenol, solid	6.1	UN1671	III	3	144, B1, IB3, T4, TP1, TP29	150	203	242	60 L	220 L	A		
	Phenol solutions	6.1	UN2821	III	3	144, IB2, T7, TP1	150	203	242	60 L	220 L	A		
+	Phenolsulfonic acid, liquid	8	UN1803	III	8	N78, T3, TP33	153	202	243	5 L	60 L	A		
	Phenoxyacetic acid derivative pesticide, liquid, flammable, toxic flash point less than 23 degrees C	3	UN3346	I	3, 6.1	IB3, T4, TP1	153	202	241	60 L	220 L	A		
	Phenoxyacetic acid derivative pesticide, liquid, toxic	6.1	UN3348	II	3, 6.1	IB2, T7, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40	
	Phenoxyacetic acid derivative pesticide, liquid, toxic	6.1	UN3348	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40	
	Phenoxyacetic acid derivative pesticide, liquid, toxic	6.1	UN3348	II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40	
	Phenoxyacetic acid derivative pesticide, liquid, toxic	6.1	UN3348	III	6.1	T14, TP2, TP13, TP27	153	203	242	60 L	220 L	A		
	Phenoxyacetic acid derivative pesticide, liquid, toxic	6.1	UN3348	II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40	
	Phenoxyacetic acid derivative pesticide, liquid, toxic	6.1	UN3348	I	6.1	T14, TP2, TP13, TP27	153	203	242	60 L	220 L	A		
	Phenoxyacetic acid derivative pesticide, liquid, toxic	6.1	UN3348	II	6.1	IB2, T11, TP2, TP27	153	202	243	5 L	60 L	B	40	
	Phenoxyacetic acid derivative pesticide, liquid, toxic	6.1	UN3348	III	6.1	T14, TP2, TP13, TP27	153	203	242	60 L	220 L	A		

Phenoxyacetic acid derivative pesticide, liquid, toxic, flammable, flash point not less than 23 degrees C.	6.1	UN3347	III	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
			I	6.1, 3	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
			II	6.1, 3	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
			III	6.1, 3	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
Phenoxyacetic acid derivative pesticide, solid, toxic	6.1	UN3345	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40
Phenyl chloroformate	6.1	UN2746	II	6.1, 8	IB2, T7, TP2, TP13	153	202	243	1 L	30 L	A	12, 13, 21, 25, 40, 100, 40
Phenyl isocyanate	6.1	UN2487	I	6.1, 3	2, B9, B14, B32, B74, B77, N33, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40, 52
Phenyl mercaptan	6.1	UN2337	I	6.1, 3	2, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40, 52
Phenyl phosphorus dichloride	8	UN2798	II	8	B2, B15, IB2, T7, TP2	154	202	242	Forbidden	30 L	B	40
Phenyl phosphorus trichloride	8	UN2799	II	8	B2, B15, IB2, T7, TP2	154	202	242	Forbidden	30 L	B	40
Phenylacetone, liquid	6.1	UN2470	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	52
Phenylacetyl chloride	8	UN2577	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	C	40
Phenylcarbamylamine chloride	6.1	UN1672	I	6.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	D	40
<i>m</i> -Phenylenediamine	Forbidden	UN1673	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Phenyldiazine	6.1	UN2572	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	40
Phenylmercuric acetate	6.1	UN1674	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Phenylmercuric compounds, n.o.s.	6.1	UN2026	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	
			II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
			III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
Phenylmercuric hydroxide	6.1	UN1894	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Phenylmercuric nitrate	6.1	UN1895	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
Phenyltrichlorosilane	8	UN1804	II	8	A7, B6, IB2, N34, T7, TP2	None	202	242	Forbidden	30 L	C	40
Phosgene	2.3	UN1076	II	2.3, 8	1, B7, B46	None	192	314	Forbidden	Forbidden	D	40
9-Phosphabicyclononanes or Cyclooctadiene phosphines	4.2	UN2940	II	4.2	A19, IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	A	
Phosphine	2.3	UN2199	II	2.3, 2.1	T3, TP33	None	192	245	Forbidden	Forbidden	D	40
Phosphoric acid solution	8	UN1805	III	8	A7, IB3, N34, T4, TP1	154	203	241	5 L	60 L	A	
Phosphoric acid, solid	8	UN3453	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
Phosphoric acid triethyleneimine, see Tris-(1-aziridinyl)phosphine oxide, solution												
Phosphoric anhydride, see Phosphorus pentoxide												
Phosphorus acid	8	UN2894	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	48
Phosphorus, amorphous	4.1	UN1338	III	4.1	A1, A19, B1, B9, B26, IB8, IP3, T1, TP33	None	213	243	25 kg	100 kg	A	74
Phosphorus bromide, see Phosphorus tribromide												
Phosphorus chloride, see Phosphorus trichloride												
Phosphorus heptafluoride, free from yellow or white phosphorus	4.1	UN1339	II	4.1	A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	B	74

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
	Phosphorus oxybromide	8	UN1939	II	8	B8, IB8, IP2, IP4, N41, N43, T3, TP33	None	212	240	Forbidden	50 kg	C	12, 40
	Phosphorus oxybromide, molten	8	UN2576	II	8	B2, B8, IB1, N41, N43, T7, TP3, TP13	None	202	242	Forbidden	Forbidden	C	40
+	Phosphorus oxychloride	8	UN1810	II	8, 6.1	2, B9, B14, B32, B74, B77, N34, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
	Phosphorus pentabromide	8	UN2691	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	Forbidden	50 kg	B	12, 40, 53, 55
	Phosphorus pentachloride	8	UN1806	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	None	212	240	Forbidden	50 kg	C	40, 44, 89, 100, 141
	Phosphorus	2.3	UN2198		2.3, 8	2, B9, B14	None	302, 304	314, 315	Forbidden	Forbidden	D	40
	Phosphorus pentasulfide, free from yellow or white phosphorus	4.3	UN1340	II	4.3, 4.1	A20, B59, IB4, T3, TP33	151	212	242	15 kg	50 kg	B	74
	Phosphorus pentoxide	8	UN1807	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	
	Phosphorus sesquisulfide, free from yellow or white phosphorus	4.1	UN1341	II	4.1	A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	B	74
	Phosphorus tribromide	8	UN1808	II	8	A3, A6, A7, B2, B25, IB2, N34, N43, T7, TP2	None	202	242	Forbidden	30 L	C	40
	Phosphorus trichloride	6.1	UN1809	I	6.1, 8	2, B9, B14, B15, B32, B74, B77, N34, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
	Phosphorus trioxide	8	UN2578	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12
	Phosphorus trisulfide, free from yellow or white phosphorus	4.1	UN1343	II	4.1	A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	B	74
	Phosphorus, white dry or Phosphorus, white, under water or Phosphorus white, in solution or Phosphorus, yellow dry or Phosphorus, yellow, under water or Phosphorus, yellow, in solution.	4.2	UN1381	I	4.2, 6.1	B9, B26, N34, T9, TP3, TP31	None	188	243	Forbidden	Forbidden	E	
	Phosphorus white, molten	4.2	UN2447	I	4.2, 6.1	B9, B26, N34, T21, TP3, TP7, TP26	None	188	243	Forbidden	Forbidden	D	
	Phosphorus (white or red) and a chlorate, mixtures of	Forbidden											
	Phosphoryl chloride, see Phosphorus oxychloride	8	UN2214	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Phthalic anhydride with more than .05 percent maleic anhydride	3	UN2313	III	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	40
	Picolines												
	Picric acid, see Trinitrophenol, etc												
	Picrite, see Nitroguanidine, etc												
	Picryl chloride, see Trinitrochlorobenzene												
	Pine oil	3	UN1272	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	alpha-Pinene	3	UN2368	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	
	Piperazine	8	UN2579	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	12, 52
	Piperidine	8	UN2401	I	8, 3	A10, T10, TP2	None	201	243	0.5 L	2.5 L	B	52
	Pivaloyl chloride, see Trimethylacetyl chloride												
	Plastic molding compound in dough, sheet or extruded rope form evolving flammable vapor	9	UN3314	III	9	32, IB8, IP3, IP7	155	221	221	100 kg	200 kg	A	85, 87
	Plastic solvent, n.o.s., see Flammable liquids, n.o.s.												
	Plastics, nitrocellulose-based, self-heating, n.o.s.	4.2	UN2006	III	4.2		None	213	None	Forbidden	Forbidden	C	
	Poisonous gases, n.o.s., see Compressed or liquefied gases, flammable or toxic, n.o.s.												
	Polyalkylamines, n.o.s., see Amines, etc												
	Polychlorinated biphenyls, liquid	9	UN2315	II	9	9, 81, 140, IB3, T4, TP1	155	202	241	100 L	220 L	A	95
	Polychlorinated biphenyls, solid	9	UN3432	II	9	9, 81, 140, IB8, T3, TP33	155	212	240	100 kg	200 kg	A	95

Polyester resin kit	3	UN2699	3	II	9	40, 149 IB2	152	225	None	5 kg	B	95
Polyhalogenated biphenyls, liquid or Polyhalogenated terphenyls liquid	9	UN3151	9	II	9	IB8, IP2, IP4, T3, TP33	155	204	241	220 L	A	95
Polyhalogenated biphenyls, solid or Polyhalogenated terphenyls, solid	9	UN3152	9	II	9	32, IB8, IP3, IP7, T1, TP33	155	204	241	200 kg	A	95
Polymeric beads, expandable, evolving flammable vapor	9	UN2211	9	III	9	A7, A19, A20, B27, IB4, IP1, N6, N34, T9, TP7, TP33	None	211	244	200 kg	A	85, 87
Potassium	4.3	UN2257	4.3	I	4.3	IB8, IP2, IP4, T3, TP33	None	212	242	15 kg	D	52
Potassium arsenate	6.1	UN1677	6.1	II	6.1	None	None	212	242	100 kg	A	
Potassium arsenite	6.1	UN1678	6.1	II	6.1	None	None	212	242	100 kg	A	
Potassium bisulfite solution, see Bisulfites, aqueous solutions, n.o.s.												
Potassium borohydride	4.3	UN1870	4.3	I	4.3	A19, N40	None	211	242	Forbiddén	E	52
Potassium bromate	5.1	UN1484	5.1	II	5.1	IB8, IP4, T3, TP33	152	212	242	25 kg	A	56, 58
Potassium carbonyl	Forbiddén											
Potassium chlorate	5.1	UN1485	5.1	II	5.1	A9, IB8, IP4, N34, T3, TP33	152	212	242	25 kg	A	56, 58
Potassium chlorate, aqueous solution	5.1	UN2427	5.1	II	5.1	A2, IB2, T4, TP1	152	202	241	5 L	B	56, 58, 133
Potassium chlorate mixed with mineral oil, see Explosive, blasting, type C												
Potassium cuprocyanide	6.1	UN1679	6.1	II	6.1	A2, IB2, T4, TP1	152	203	241	30 L	B	56, 58, 69, 133
Potassium cyanide, solid	6.1	UN1680	6.1	I	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	100 kg	A	52
Potassium cyanide solution	6.1	UN3413	6.1	I	6.1	B69, B77, IB7, IP1, N74, N75, T6, TP33	None	211	242	50 kg	B	52
.....												
.....												
Potassium dichloro isocyanurate or Potassium dichloro-s-triazinetrione, see Dichloroisocyanuric acid, dry or Dichloroisocyanuric acid salts etc.												
Potassium dithionite or Potassium hydrosulfite	4.2	UN1929	4.2	II	4.2	B69, B77, IB7, IP1, N74, N75, T7, TP2, TP13, TP27	153	203	241	220 L	A	52
.....												
.....												
Potassium fluoride, solid	6.1	UN1812	6.1	III	6.1	TP2, TP13, TP28	None	212	241	15 kg	E	13
Potassium fluoride solution	6.1	UN3422	6.1	III	6.1	A8, A19, A20, IB6, IP2, T3, TP33	None	212	241	50 kg	E	13
Potassium fluoroacetate	6.1	UN2628	6.1	I	6.1	IB8, IP3, T1, TP33	153	213	240	200 kg	A	52
Potassium fluorosilicate	6.1	UN2655	6.1	III	6.1	IB3, T4, TP1	153	203	241	220 L	A	52
.....												
.....												
Potassium hydrate, see Potassium hydroxide, solid												
Potassium hydrogen fluoride, see Potassium hydrogen difluoride												
Potassium hydrogen fluoride solution, see Corrosive liquid, n.o.s.	8	UN2509	8	II	8	IB7, IP1, T6, TP33	154	212	240	50 kg	A	
Potassium hydrogen sulfate	8	UN1811	8	II	8, 6.1	IB8, IP3, T1, TP33	153	213	240	200 kg	A	52
Potassium hydrogendifluoride solid												
Potassium hydrogendifluoride solution	8	UN3421	8	II	8, 6.1	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	A	25, 40, 52
.....												
Potassium hydrosulfite, see Potassium dithionite												
Potassium hydroxide, liquid, see Potassium hydroxide solution												
Potassium hydroxide, solid	8	UN1813	8	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	A	
Potassium hydroxide, solution	8	UN1814	8	II	8	IB2, N3, N34, T7, TP2	154	202	243	30 L	A	25, 40, 52
Potassium hypochlorite, solution, see Hypochlorite solutions, etc.												
Potassium, metal alloys, liquid	4.3	UN1420	4.3	I	4.3	IB3, N3, N34, T4, TP1	154	203	241	60 L	A	40, 52

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym-bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Division	(4) Identifica-tion Num-bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow-age	
							(8A) Excep-tions	(8B) Non-bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air-craft only	(10A) Loca-tion	(10B) Other
	Potassium, metal alloys, solid	4.3	UN3404	I	4.3	A19, A20, B27, IB4, IP1, T9, TP7, TP33	None	211	244	Forbidden	15 kg	D	
	Potassium metal, liquid alloy, see Alkali metal alloys, liquid, n.o.s.	6.1	UN2864	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Potassium metavanadate	8	UN2033	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	29
	Potassium monoxide	5.1	UN1486	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Potassium nitrate and sodium nitrite mixtures	5.1	UN1487	II	5.1	B78, IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	56, 58
	Potassium nitrite	5.1	UN1488	II	5.1	IB8, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Potassium perchlorate	5.1	UN1489	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Potassium permanganate	5.1	UN1490	II	5.1	IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	D	56, 58, 138
	Potassium peroxide	5.1	UN1491	I	5.1	A20, IB6, IP1, N34	None	211	None	Forbidden	15 kg	B	13, 52, 66, 75
	Potassium persulfate	5.1	UN1492	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Potassium phosphide	4.3	UN2012	I	4.3	A19, N40, 6.1	None	211	None	Forbidden	15 kg	E	40, 52, 85
	Potassium selenate, see Selenates or Selenites												
	Potassium selenite, see Selenates or Selenites												
	Potassium sodium alloys, solid	4.3	UN3403	I	4.3	A19, B27, N34, N40, T9, TP7, TP33	None	211	244	Forbidden	15 kg	D	52
	Potassium sodium alloys, solid	4.3	UN3404	I	4.3	A19, B27, N34, N40, T9, TP7, TP33	None	211	244	Forbidden	15 kg	D	52
	Potassium sodium alloys, liquid	4.3	UN1422	I	4.3	A7, A19, B27, N34, N40, T9, TP3, TP7, TP31	None	201	244	Forbidden	1 L	E	40, 52
	Potassium sulfide, anhydrous or Potassium sulfide with less than 30 percent water of crystallization	4.2	UN1382	II	4.2	A19, A20, B16, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	A	52
	Potassium sulfide, hydrated with not less than 30 percent water of crystallization	8	UN1847	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	52
	Potassium superoxide	5.1	UN2466	I	5.1	A20, IB6, IP1	None	211	None	Forbidden	15 kg	B	13, 52, 66, 75
	Powder cake, wetted or Powder paste, wetted with not less than 17 percent alcohol by mass	1.1C	UN0433	II	1.1C		None	62	None	Forbidden	Forbidden	10	
	Powder cake, wetted or Powder paste, wetted with not less than 25 percent water, by mass	1.3C	UN0159	II	1.3C		None	62	None	Forbidden	Forbidden	10	
	Powder, smokeless	1.1C	UN0160	II	1.1C		None	62	None	Forbidden	Forbidden		
	Powder, smokeless	1.3C	UN0161	II	1.3C		None	62	None	Forbidden	Forbidden		
	Power device, explosive, see Cartridges, power device	1.4S	UN0044	II	None		None	62	None	25 kg	100 kg	05	
	Primers, cap type	1.1B	UN0377	II	1.1B		None	62	None	Forbidden	Forbidden	11	
	Primers, cap type	1.4B	UN0378	II	1.4B		None	62	None	Forbidden	75 kg	06	
	Primers, small arms, see Primers, cap type												
	Primers, tubular	1.3G	UN0319	II	1.3G		None	62	None	Forbidden	Forbidden	07	
	Primers, tubular	1.4G	UN0320	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Primers, tubular	1.4S	UN0376	I	None		None	62	None	25 kg	100 kg	05	
	Printing ink, flammable or Printing ink related material (including printing ink thinning or reducing compound), flammable.	3	UN1210	I	3	T11, TP1, TP8	150	173	243	1 L	30 L	E	
				II	3	149, IB2, T4, TP1, TP8	150	173	242	5 L	60 L	B	
				III	3	B1, IB3, T2, TP1	150	173	242	60 L	220 L	A	
	Projectiles, illuminating, see Ammunition, illuminating, etc												
	Projectiles, inert with tracer	1.4S	UN0345	II	1.4S		62	None	None	25 kg	100 kg	01	
	Projectiles, inert with tracer	1.3G	UN0424	II	1.3G		62	None	None	Forbidden	Forbidden	03	
	Projectiles, inert, with tracer	1.4G	UN0425	II	1.4G		62	None	None	Forbidden	75 kg	02	
	Projectiles, with burstier or expelling charge	1.2D	UN0346	II	1.2D		62	None	None	Forbidden	Forbidden	03	

Projectiles, with burster or expelling charge	UN0347	II 1.4D	None	62	None	Forbidden	75 kg	02	40
Projectiles, with burster or expelling charge	UN0426	II 1.2F	None	62	None	Forbidden	Forbidden	08	40
Projectiles, with burster or expelling charge	UN0427	II 1.4F	None	62	None	Forbidden	Forbidden	03	95, 102
Projectiles, with burster or expelling charge	UN0434	II 1.2G	None	62	None	Forbidden	Forbidden	08	40
Projectiles, with burster or expelling charge	UN0435	II 1.4G	None	62	None	Forbidden	75 kg	02	40
Projectiles, with bursting charge	UN0167	II 1.1F	None	62	None	Forbidden	Forbidden	08	40
Projectiles, with bursting charge	UN0168	II 1.1D	None	62	None	Forbidden	Forbidden	03	40
Projectiles, with bursting charge	UN0169	II 1.2D	None	62	None	Forbidden	Forbidden	03	40
Projectiles, with bursting charge	UN0324	II 1.2F	None	62	None	Forbidden	Forbidden	08	40
Projectiles, with bursting charge	UN0344	II 1.4D	None	62	None	Forbidden	75 kg	02	40
Propadiene, stabilized	UN2200	2.1	314, 315	304	314, 315	Forbidden	150 kg	B	40
Propadiene mixed with methyl acetylene, see Methyl acetylene and propadiene mixtures, stabilized.									
Propane see also Petroleum gases, liquefied	UN1978	2.1	306	306	314, 315	Forbidden	150 kg	E	40
Propanethiols	UN2402	3	19, T50	150	242	5 L	60 L	E	95, 102
n-Propanol or Propyl alcohol, normal	UN1274	3	A6, IB2, T4, TP1, TP13	150	242	5 L	60 L	B	40
Propellant, liquid	UN0495	III 3	B1, IB2, T4, TP1	150	242	5 L	220 L	A	40
Propellant, liquid	UN0497	III 3	B1, IB3, T2, TP1	None	None	Forbidden	Forbidden	10	40
Propellant, solid	UN0498	III 1.3C	37	62	None	Forbidden	Forbidden	10	40
Propellant, solid	UN0499	III 1.1C	37	62	None	Forbidden	Forbidden	10	40
Propellant, solid	UN0501	III 1.3C	37	62	None	Forbidden	Forbidden	10	40
Propionamide	UN1275	III 1.4C	None	62	None	Forbidden	Forbidden	A	40
Propionic acid	UN1848	III 3	IB2, T7, TP1	150	242	5 L	60 L	E	40
Propionic anhydride	UN2496	III 8	IB3, T4, TP1	154	203	241	60 L	A	40
Propionitrile	UN2404	III 8	IB3, T4, TP1	154	203	241	60 L	A	40
Propionyl chloride	UN1815	III 3, 6.1	IB2, T7, TP1	None	243	Forbidden	60 L	E	40
n-Propyl acetate	UN1276	III 3, 8	IB1, T7, TP1	150	202	243	5 L	B	40
Propyl alcohol, see Propanol	UN2364	III 3	IB2, T4, TP1	150	202	242	60 L	B	40
n-Propyl benzene	UN2740	I 6.1, 3, 8	B1, IB3, T2, TP1	150	203	242	220 L	A	21, 40, 100
n-Propyl chloroformate			2, B9, B14, B32, B72, T2, TP2, TP13, TP38, TP44	None	227	244	Forbidden	B	40
Propyl chloride see 1-Chloropropane									
Propyl formates	UN1281	II 3	IB2, T4, TP1	150	202	242	60 L	B	40
n-Propyl isocyanate	UN2482	I 6.1, 3	1, B9, B14, B30, B72, T2, TP2, TP13, TP38, TP44	None	226	244	Forbidden	D	40
Propyl mercaptan, see Propanethiols									
n-Propyl nitrate	UN1865	II 3	IB99	150	202	None	5 L	D	44, 89, 90, 100
Propylamine	UN1277	II 3, 8	A7, IB2, N34, T7, TP1	150	202	243	5 L	E	40
Propylene see also Petroleum gases, liquefied	UN1077	2.1	19, T50	306	314, 315	Forbidden	150 kg	E	40
Propylene chlorohydrin	UN2611	II 6.1, 3	IB2, T7, TP2, TP13	153	202	243	5 L	A	12, 40, 48
Propylene oxide	UN1280	I 3	A3, N34, T11, TP2, TP7	None	201	243	30 L	E	40
Propylene tetramer	UN2860	III 3	B1, IB3, T2, TP1	150	203	242	220 L	A	40
1,2-Propylenediamine	UN2258	II 8, 3	A3, A6, IB2, N34, T7, TP2	None	202	243	30 L	A	40
Propyleneimine, stabilized	UN1921	I 3, 6.1	A3, N34, T14, TP2, TP13	None	201	243	30 L	B	40
Propyltrichlorosilane	UN1816	II 8, 3	A7, B2, B6, IB2, N34, T7, TP2, TP13	None	202	243	30 L	C	40
Prussic acid, see Hydrogen cyanide									
Pyrethroid pesticide, liquid, flammable, toxic, flash point less than 23 degrees C	UN3350	I 3, 6.1	T14, TP2, TP13, TP27	None	201	243	30 L	B	40
Pyrethroid pesticide, liquid toxic	UN3352	II 3, 6.1	IB2, T11, TP2, TP13, TP27	150	202	243	60 L	B	40
Pyrethroid pesticide, liquid, toxic, flammable, flash point not less than 23 degrees C		I 6.1	T14, TP2, TP13, TP27	None	211	242	30 L	A	40
		II 6.1	IB2, T11, TP2, TP27	153	212	242	60 L	A	40
		III 6.1	IB3, T7, TP2, TP28	153	213	240	220 L	A	40
Pyrethroid pesticide, liquid, toxic, flammable, flash point not less than 23 degrees C	UN3351	I 6.1, 3	T14, TP2, TP13, TP27	None	201	243	30 L	B	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identifica-tion Num-bers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stow-age	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Rockets, line-throwing	1.2G	UN0238	II	1.2G		None	62	None	Forbidden	Forbidden	07	
	Rockets, line-throwing	1.3G	UN0240	II	1.3G		None	62	None	Forbidden	75 kg	07	
	Rockets, line-throwing	1.4G	UN0453	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Rockets, liquid fueled with bursting charge	1.1J	UN0397	II	1.1J		None	62	None	Forbidden	Forbidden	04	23E
	Rockets, liquid fueled with bursting charge	1.2J	UN0398	II	1.2J		None	62	None	Forbidden	Forbidden	04	23E
	Rockets, with bursting charge	1.1F	UN0160	II	1.1F		None	62	None	Forbidden	Forbidden	08	
	Rockets, with bursting charge	1.1E	UN0181	II	1.1E		None	62	None	Forbidden	Forbidden	08	
	Rockets, with bursting charge	1.2E	UN0182	II	1.2E		None	62	None	Forbidden	Forbidden	08	
	Rockets, with bursting charge	1.2F	UN0295	II	1.2F		None	62	None	Forbidden	Forbidden	08	
	Rockets, with expelling charge	1.2C	UN0436	II	1.2C		None	62	None	Forbidden	Forbidden	03	
	Rockets, with expelling charge	1.3C	UN0437	II	1.3C		None	62	None	Forbidden	Forbidden	03	
	Rockets, with expelling charge	1.4C	UN0438	II	1.4C		None	62	None	Forbidden	75 kg	02	
	Rockets, with inert head	1.3C	UN0183	II	1.3C		None	62	None	Forbidden	Forbidden	03	
	Rosin oil	3	UN1286	III	3		None	150	None	Forbidden	60 L	B	1E, 5E
	Rubber solution	3	UN1287	III	3		None	202	242	5 L	220 L	A	
	Rubber scrap or stoddy, powdered or granulated, not exceeding 840 microns and rubber con-tent exceeding 45%	4.1	UN1345	II	4.1		None	212	240	15 kg	50 kg	A	
	Rubber solution	3	UN1287	III	3		None	203	242	60 L	220 L	A	
	Rubidium	4.3	UN1423	I	4.3		None	211	242	Forbidden	15 kg	D	52
	Rubidium hydroxide	8	UN2678	II	8		None	212	240	15 kg	50 kg	A	29
	Rubidium hydroxide solution	8	UN2677	II	8		None	202	242	1 L	30 L	A	29
	Safety fuse, see Fuse, safety			III	8		None	203	241	5 L	60 L	A	29
	Sand acid, see Fluosilicic acid						None						
	Seed cake, containing vegetable oil solvent extractions and expelled seeds, with not more than 10 percent of oil and when the amount of moisture is higher than 11 percent, with not more than 20 percent of oil and moisture combined.	4.2	UN1366	III	None		None	213	241	Forbidden	Forbidden	A	13
	Seed cake with more than 1.5 percent oil and not more than 11 percent moisture	4.2	UN2217	III	None		None	213	241	Forbidden	Forbidden	E	13
	Seed cake with not more than 1.5 percent oil and not more than 11 percent moisture	6.1	UN2630	I	6.1		None	211	242	5 kg	50 kg	E	
	Selenates or Selenites						None	211	242	Forbidden	25 kg	A	
	Selenic acid	8	UN1905	I	8		None	211	242	Forbidden	25 kg	A	
	Selenium compound, solid, n.o.s.	6.1	UN3283	I	6.1		None	211	242	5 kg	50 kg	B	
	Selenium compound, liquid, n.o.s.	6.1	UN3440	I	6.1		None	201	243	1 L	30 L	B	
	Selenium compound, solid, n.o.s.	6.1	UN3283	II	6.1		None	212	242	25 kg	100 kg	B	
	Selenium compound, liquid, n.o.s.	6.1	UN3440	II	6.1		None	202	243	5 L	60 L	B	
	Selenium compound, solid, n.o.s.	6.1	UN3283	III	6.1		None	213	240	100 kg	200 kg	A	
	Selenium compound, liquid, n.o.s.	6.1	UN3440	III	6.1		None	203	241	60 L	220 L	A	
	Selenium disulfide	6.1	UN2657	II	6.1		None	212	242	25 kg	100 kg	A	
	Selenium hexafluoride	2.3	UN2194		2.3, 8		None	302	None	Forbidden	Forbidden	D	40
	Selenium nitride	Forbidden	UN2879	I	8, 6.1		None	201	243	0.5 L	2.5 L	E	40
	Selenium oxychloride						None	203	243	No limit	No limit	A	
	Self-defense spray, aerosol, see Aerosols, etc	9	NA3334	III	9		None	203	243	5 L	5 L	C	
	Self-defense spray, non-pressurized	4.2	UN3188	III	4.2, 8		None	202	243	1 L	60 L	C	
	Self-heating liquid, corrosive, inorganic, n.o.s.	4.2	UN3185	III	4.2, 8		None	202	243	1 L	5 L	C	
	Self-heating liquid, corrosive, organic, n.o.s.	4.2	UN3185	III	4.2, 8		None	202	243	1 L	5 L	C	
	Self-heating liquid, inorganic, n.o.s.	4.2	UN3186	III	4.2		None	202	242	1 L	5 L	C	
	Self-heating liquid, organic, n.o.s.	4.2	UN3186	III	4.2		None	203	241	5 L	60 L	C	

G	Self-heating liquid, organic, n.o.s.	4.2	UN3183	II 4.2	IB2	None	202	242	1 L	5 L
G	Self-heating liquid, toxic, inorganic, n.o.s.	4.2	UN3187	III 4.2	IB2	None	203	241	5 L	60 L
G	Self-heating liquid, toxic, organic, n.o.s.	4.2	UN3184	II 4.2, 6.1	IB2	None	202	243	1 L	5 L
G	Self-heating solid, corrosive, inorganic, n.o.s.	4.2	UN3192	III 4.2, 6.1	IB2	None	203	241	5 L	60 L
G	Self-heating, solid, corrosive, organic, n.o.s.	4.2	UN3126	II 4.2, 8	IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg
G	Self-heating solid, inorganic, n.o.s.	4.2	UN3190	III 4.2, 8	IB8, IP3, T1, TP33	None	213	242	25 kg	100 kg
G	Self-heating, solid, oxidizing, n.o.s.	4.2	UN3127	III 4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg
G	Self-heating solid, toxic, inorganic, n.o.s.	4.2	UN3191	III 4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg
G	Self-heating, solid, toxic, organic, n.o.s.	4.2	UN3088	II 4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg
G	Self-propelled vehicle, see Engines or Batteries etc	4.1	UN3221	II 4.1	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg
G	Self-reactive liquid type B	4.1	UN3231	II 4.1	53	None	224	None	Forbidden	Forbidden
G	Self-reactive liquid type C	4.1	UN3223	II 4.1	53	None	224	None	Forbidden	Forbidden
G	Self-reactive liquid type D	4.1	UN3225	II 4.1	53	None	224	None	5 L	10 L
G	Self-reactive liquid type E	4.1	UN3227	II 4.1	53	None	224	None	10 L	25 L
G	Self-reactive liquid type F	4.1	UN3237	II 4.1	53	None	224	None	Forbidden	Forbidden
G	Self-reactive solid type B	4.1	UN3222	II 4.1	T23	None	224	None	10 L	25 L
G	Self-reactive solid type C	4.1	UN3224	II 4.1	53	None	224	None	Forbidden	Forbidden
G	Self-reactive solid type D	4.1	UN3226	II 4.1	53	None	224	None	Forbidden	Forbidden
G	Self-reactive solid type E	4.1	UN3228	II 4.1	53	None	224	None	10 kg	25 kg
G	Self-reactive solid type F	4.1	UN3230	II 4.1	53	None	224	None	10 kg	25 kg
G	Shale oil	3	UN1288	I 3	T11, TP1, TP8, TP27	None	201	243	1 L	30 L
G	Strapped charges, see Charges, shaped, etc	1.4G	UN0191	II 1.4G	IB2, T4, TP1, TP8	None	202	242	5 L	60 L
G	Signal devices, hand	1.4S	UN0373	III 3	B1, IB3, T2, TP1	None	203	242	60 L	220 L
G	Signal devices, hand	1.4S	UN0373	II 1.4S	None	None	62	None	Forbidden	75 kg
G	Signal devices, hand	1.4S	UN0373	II 1.4S	None	None	162	None	25 kg	100 kg

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (§172.102)	(8) Packaging (§173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
	Signals, distress, ship	1.1G	UN0194	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Signals, distress, ship	1.3G	UN0195	II	1.3G		None	62	None	Forbidden	75 kg	07	
	Signals, highway, see Signal devices, hand						None	62	None	Forbidden	75 kg	07	
	Signals, railway track, explosive	1.1G	UN0192	II	1.1G		None	62	None	Forbidden	Forbidden	07	
	Signals, railway track, explosive	1.4S	UN0193	II	1.4S		None	62	None	25 kg	100 kg	05	
	Signals, railway track, explosive	1.3G	UN0492	II	1.3G		None	62	None	Forbidden	Forbidden	07	
	Signals, railway track, explosive	1.4G	UN0493	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Signals, ship distress, water-activated, see Containers, water-activated, etc						None	62	None	Forbidden	Forbidden	07	
	Signals, smoke	1.1G	UN0196	II	1.1G		None	62	None	Forbidden	75 kg	06	
	Signals, smoke	1.4G	UN0197	II	1.4G		None	62	None	Forbidden	75 kg	06	
	Signals, smoke	1.2G	UN0313	II	1.2G		None	62	None	Forbidden	Forbidden	07	
	Signals, smoke	1.3G	UN0487	II	1.3G		None	62	None	Forbidden	Forbidden	07	
	Silane	2.1	UN2203	II	2.1		None	302	None	Forbidden	Forbidden	E	40, 57, 104
	Silicofluoric acid, see Fluorosilicic acid						None						
	Silicon chloride, see Silicon tetrachloride						None	213	240	100 kg	100 kg	A	74
	Silicon powder, amorphous	4.1	UN1346	III	4.1	A1, IB8, IP3, T1, TP33	None	213	240	25 kg	30 L	C	40
	Silicon tetrachloride	8	UN1818	II	8	A3, A6, B2, B6, IB2, T7, TP2, TP7	154	202	242	1 L	Forbidden	Forbidden	40
	Silicon tetrafluoride	2.3	UN1859	II	2.3, 8	2	None	302	None	Forbidden	Forbidden	D	40
	Silver acetylide (dry)	Forbidden	UN1693	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Silver arsenite	6.1	UN1693	II	6.1		None	212	242	Forbidden	Forbidden		
	Silver azide (dry)	Forbidden					None						
	Silver chlorite (dry)	Forbidden					None						
	Silver cyanide	6.1	UN1684	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40, 52
	Silver fulminate (dry)	Forbidden					None						
	Silver nitrate	5.1	UN1493	II	5.1	IB8, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	
	Silver oxalate (dry)	Forbidden					None						
	Silver picrate (dry)	Forbidden					None						
	Silver picrate, wetted with not less than 30 percent water, by mass	4.1	UN1347	I	4.1	A3, A7, B2, IB2, N34, T8, TP2, TP12, TP28	None	211	None	Forbidden	Forbidden	D	28, 36
	Sludge, acid	8	UN1906	II	8		None	202	242	Forbidden	Forbidden	C	14
D	Smokeless powder for small arms (100 pounds or less)	4.1	NA3178	I	4.1		None	171	None	Forbidden	7.3 kg	A	
	Soda lime with more than 4 percent sodium hydroxide	8	UN1907	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Sodium	4.3	UN1428	I	4.3	A7, A8, A19, A20, B9, B48, B68, IB4, IP1, N34, T9, TP7, TP33, TP46	None	211	244	Forbidden	15 kg	D	52
	Sodium aluminate, solid	8	UN2812	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	
	Sodium aluminate, solution	8	UN1819	II	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	
	Sodium aluminum hydride	4.3	UN2895	II	4.3	IB3, T4, TP1	154	203	241	5 L	60 L	A	
	Sodium ammonium vanadate	6.1	UN2863	II	6.1	A8, A19, A20, IB4, T3, TP33	151	212	242	Forbidden	50 kg	E	52
	Sodium arseniate	6.1	UN2473	III	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Sodium arsenate	6.1	UN1685	II	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Sodium arsenite, aqueous solutions	6.1	UN1686	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Sodium arsenite, solid	6.1	UN2027	III	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Sodium azide	6.1	UN1687	II	6.1	IB3, T4, TP2	153	203	241	60 L	220 L	A	
	Sodium bifluoride, see Sodium hydrogendifluoride	6.1	UN1687	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
							153	212	242	25 kg	100 kg	A	36, 52, 91

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
	Sodium methylate	4.2	UN1431	II	4.2, 8	A7, A19, IB5, IP2, T3, TP33	None	212	242	15 kg	50 kg	B	
	Sodium methylate solutions in alcohol	3	UN1289	II	3, 8	IB2, T7, TP1, TP8	150	202	243	1 L	5 L	B	
	Sodium monoxide	8	UN1825	III	3, 8	B1, IB3, T4, TP1, IB8, IP2, IP4, T3, TP33	150	203	242	5 L	60 L	A	
	Sodium nitrate	5.1	UN1498	III	5.1	A1, A29, IB8, IP3, T1, TP33	154	212	240	15 kg	50 kg	A	
	Sodium nitrate and potassium nitrate mixtures	5.1	UN1499	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Sodium nitrite	5.1	UN1500	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	
	Sodium pentachlorophenate	6.1	UN2567	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	Sodium perborate monohydrate	5.1	UN3377	III	5.1	IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	13, 48, 75
	Sodium perchlorate	5.1	UN1502	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
	Sodium permanganate	5.1	UN1503	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
	Sodium peroxide	5.1	UN1504	I	5.1	A20, IB5, IP1, N34	None	211	None	Forbidden	15 kg	B	13, 52, 66, 75
	Sodium peroxoborate, anhydrous	5.1	UN3247	II	5.1	IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	13, 25
	Sodium persulfate	5.1	UN1505	III	5.1	A1, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	56, 58
	Sodium phosphide	4.3	UN1432	I	4.3, 6.1	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
	Sodium picramate, dry or wetted with less than 20 percent water, by mass	1.3C	UN0235	II	1.3C	23, A8, A19, N41	None	62	None	Forbidden	Forbidden	10	5E
	Sodium picramate, wetted with not less than 20 percent water, by mass	4.1	UN1349	I	4.1		None	211	None	Forbidden	15 kg	E	28, 36
	Sodium picryl peroxide	Forbidden											
	Sodium potassium alloys, see Potassium sodium alloys												
	Sodium selenate, see Selenates or Selenites												
	Sodium sulfide, anhydrous or Sodium sulfide with less than 30 percent water of crystallization	4.2	UN1385	II	4.2	A19, A20, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	A	52
	Sodium sulfide, hydrated with not less than 30 percent water	8	UN1849	II	8	IB8, IP2, IP4, T3, TP33	154	212	240	15 kg	50 kg	A	26
	Sodium superoxide	5.1	UN2547	I	5.1	A20, IB6, IP1, N34	None	211	None	Forbidden	15 kg	E	13, 52, 66, 75
G	Sodium tetranitride	Forbidden											
	Solids containing corrosive liquid, n.o.s.	8	UN3244	II	8	49, IB5, T3, TP33	154	212	240	15 kg	50 kg	B	40
G	Solids containing flammable liquid, n.o.s.	4.1	UN3175	II	4.1	47, IB6, IP2, T3, TP33	151	212	240	15 kg	50 kg	B	
G	Solids containing toxic liquid, n.o.s.	6.1	UN3243	II	6.1	48, IB2, T2, TP33	153	212	240	25 kg	100 kg	B	40
	Sounding devices, explosive	1.2F	UN0204	II	1.2F		None	62	None	Forbidden	Forbidden	08	
	Sounding devices, explosive	1.1F	UN0296	II	1.1F		None	62	None	Forbidden	Forbidden	08	
	Sounding devices, explosive	1.1D	UN0374	II	1.1D		None	62	None	Forbidden	Forbidden	07	
	Sounding devices, explosive	1.2D	UN0375	II	1.2D		None	62	None	Forbidden	Forbidden	07	
	Spirits of salt, see Hydrochloric acid												
	Squibs, see Igniters etc												
	Stannic chloride, anhydrous	8	UN1827	III	8	B2, IB2, T7, TP2, IB8, IP3, T1, TP33	154	202	242	1 L	30 L	C	
	Stannic chloride pentahydrate	8	UN2440	III	8		154	213	240	25 kg	100 kg	A	
	Stannic phosphide	4.3	UN1433	I	4.3, 6.1	A19, N40	None	211	242	Forbidden	15 kg	E	40, 52, 85
	Steel swarf, see Ferrous metal borings, etc												
	Stibine	2.3	UN2676		2.3, 2.1	1	None	304	None	Forbidden	Forbidden	D	40
	Storage batteries, wet, see Batteries, wet etc												
	Strontium arsenite	6.1	UN1691	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
	Sulfur hexafluoride	2.2	UN1080		2.2		306	304	314, 315	75 kg	150 kg	A	
D	Sulfur, molten	9	NA2448	III	9		None	213	247	Forbidden	Forbidden	C	61
I	Sulfur, molten	4.1	UN2448	III	4.1		None	213	247	Forbidden	Forbidden	C	61
	Sulfur tetrafluoride	2.3	UN2418		2.3, 8		None	302	245	Forbidden	Forbidden	D	40, 52
+	Sulfur trioxide, stabilized	8	UN1829	I	8, 6.1		None	227	244	Forbidden	Forbidden	A	40
	<i>Sulfuretted hydrogen, see Hydrogen sulfide</i>												
	Sulfuric acid, fuming with less than 30 percent free sulfur trioxide	8	UN1831	I	8	B84, N34, T20, TP2, TP12, TP13	None	201	243	Forbidden	2.5 L	C	14, 40
+	Sulfuric acid, fuming with 30 percent or more free sulfur trioxide	8	UN1831	I	8, 6.1	2, A3, A6, A7, B9, B14, B32, B74, B77, B84, N34, T20, TP2, TP12, TP13	None	227	244	Forbidden	Forbidden	C	14, 40
	Sulfuric acid, spent	8	UN1832	II	8	A3, A7, B2, B83, B84, IB2, N34, T8, TP2, TP12	None	202	242	Forbidden	30 L	C	14
	Sulfuric acid with more than 51 percent acid	8	UN1830	II	8	A3, A7, B3, B83, B84, IB2, N34, T8, TP2, TP12	154	202	242	1 L	30 L	C	14
	Sulfuric acid with not more than 51% acid	8	UN2796	II	8	A3, A7, B2, B15, IB2, N6, N34, T8, TP2, TP12	154	202	242	1 L	30 L	B	
	Sulfuric and hydrofluoric acid mixtures, see Hydrofluoric and sulfuric acid mixtures												
	Sulfuric anhydride, see Sulfur trioxide, stabilized												
+	Sulfurous acid	8	UN1833	II	8	B3, IB2, T7, TP2	154	202	242	1 L	30 L	B	40
	Sulfuryl chloride	8	UN1834	I	8, 6.1	1, B6, B9, B10, B14, B30, B74, B77, N34, T22, TP2, TP12, TP38, TP44	None	226	244	Forbidden	Forbidden	C	40
	Sulfuryl fluoride	2.3	UN2191		2.3	4	None	304	314, 315	Forbidden	Forbidden	D	40
	Tars, liquid including road asphalt and oils, bitumen and cut backs	3	UN1999	II	3	149, B13, IB2, T3, TP3, TP29	150	202	242	5 L	60 L	B	
	Tear gas candles	6.1	UN1700	II	6.1, 4.1	B1, B13, IB3, T1, TP3	None	340	None	Forbidden	50 kg	D	40
D	Tear gas cartridges, see Ammunition, tear-producing, etc.	6.1	NA1693	I	6.1		None	340	None	Forbidden	Forbidden	D	40
	Tear gas devices with more than 2 percent tear gas substances, by mass	6.1	UN3448	II	6.1	T6, TP33	None	340	None	Forbidden	Forbidden	D	40
	Tear gas devices, with not more than 2 percent tear gas substances, by mass, see Aerosols, etc.												
G	Tear gas grenades, see Tear gas candles	6.1	UN1693	I	6.1	IB2	None	201	None	Forbidden	Forbidden	D	40
	Tear gas substances, liquid, n.o.s.	6.1	UN3448	II	6.1	T6, TP33	None	211	242	Forbidden	5 L	D	40
G	Tear gas substance, solid, n.o.s.	6.1	UN3284	II	6.1	IB8, IP2, IP4, T3, TP33	None	212	242	Forbidden	25 kg	D	40
	Tellurium compound, n.o.s.	6.1	UN3284	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	B	
	Tellurium hexafluoride	2.3	UN2195	III	2.3, 8	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	B	
	Terpene hydrocarbons, n.o.s.	3	UN2319	III	3	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	Terpinolene	3	UN2541	III	3	B1, IB3, T4, TP1, TP29	None	302	None	Forbidden	Forbidden	D	40
							150	203	242	60 L	220 L	A	

Tetraazido benzene quinone	Forbiddén	UN2504	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	40
Tetrabromoethane	6.1	UN1702	II	6.1	IB2, N36, T7, TP2	153	202	243	5 L	60 L	A	40
1,1,2,2-Tetrachloroethane	6.1	UN1897	III	6.1	IB3, N36, T4, TP1	153	203	241	60 L	220 L	A	40
Tetrachloroethylene	6.1	UN1704	II	6.1	IB2, T7, TP2	153	212	242	25 kg	100 kg	D	40
Tetraethyl dithiophosphate	3	UN1292	III	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
Tetraethyl silicate	Forbiddén	UN2320	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	40
Tetraethylammonium perchlorate (dry)	2	UN3159	.....	2.2	T50	306	304	314	75 kg	150 kg	A	40
Tetraethylenepentamine	8	UN1081	.....	2.1	.....	306	304	None	Forbiddén	150 kg	E	40
1,1,1,2-Tetrafluoroethane or Refrigerant gas R 134a	2.1	UN1982	.....	2.2	.....	None	302	None	75 kg	150 kg	A	40
Tetrafluoroethylene, stabilized	2.2	UN2498	.....	3	B1, IB3, T2, TP1	150	203	242	220 L	220 L	A	40
Tetrafluoromethane or Refrigerant gas R 14	3	UN2056	.....	3	IB2, T4, TP1	None	202	242	5 L	60 L	B	40
1,2,3,6-Tetrahydrobenzaldehyde	3	UN2943	.....	3	B1, IB3, T2, TP1	150	203	242	60 L	220 L	A	40
Tetrahydrofuran	3	UN2698	.....	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	40
Tetrahydrofurfurylamine	8	UN2410	.....	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
Tetrahydrophthalic anhydrides with more than 0.05 percent of maleic anhydride	3	UN2412	.....	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
1,2,3,6-Tetrahydropyridine	3	UN3423	.....	8	B2, IB8, IP2, IP4, T3, TP33	154	213	240	15 kg	50 kg	A	52
Tetrahydrothiophene	3	UN1835	.....	8	B2, IB2, T7, TP2	154	202	242	1 L	30 L	A	52
Tetramethylammonium hydroxide, solid	8	Forbiddén	.....	8	B2, IB3, T7, TP2	154	203	241	5 L	60 L	A	52
Tetramethylammonium hydroxide solution	.....	.....	.....	.....	A7, T14, TP2	None	201	243	Forbiddén	30 L	D	.....
Tetramethylene diperoxide dicarbamide	Forbiddén	UN2749	I	3	.....	None	62	None	Forbiddén	Forbiddén	10	.....
Tetramethylsilane	3	UN0207	.....	1.1D	.....	None	227	None	Forbiddén	Forbiddén	D	40, 66
Tetranitro diglycerin	1.1D	UN1510	.....	5.1	2, B9, B14, B32, B74, T20, TP2, TP13, TP38, TP44	None	.....	.....	.....	.....	.....	.....
Tetranitroamine	5.1	.....	.....	6.1	.....	.....	.....	.....	.....	.....	.....	.....
Tetranitromethane	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tetramethylene diisocyanate	Forbiddén	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tetrazole	Forbiddén	UN2413	.....	3	B1, IB3, T4, TP1	150	203	242	60 L	220 L	A	.....
1H-Tetrazole	1.4C	UN0407	.....	1.4C	.....	None	62	None	Forbiddén	75 kg	09	.....
Tetrazolyl azide (dry)	1.1D	UN0504	.....	1.1D	.....	None	62	None	Forbiddén	Forbiddén	B	.....
Tetrazolyl azide (dry)	1.1D	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tetryl, see Trinitrophenylmethylnitramine	4.2	UN1857	.....	4.2	IB6, IP2, T3, TP33	151	213	240	Forbiddén	Forbiddén	A	.....
Textile waste, wet	5.1	UN2573	.....	5.1	IB8, IP2, IP4, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Thallium chlorate	6.1	UN1707	.....	6.1	.....	153	212	242	25 kg	100 kg	A	.....
Thallium compounds, n.o.s.	6.1	UN2727	.....	6.1	IB6, IP2, T3, TP33	153	212	242	5 kg	25 kg	A	.....
Thallium nitrate	6.1	UN2785	.....	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	D	25, 49
4-Thiapentanal	3	UN2436	.....	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	.....
Thioacetate acid	3	UN2772	.....	3, 6.1	T14, TP2, TP13, TP27	None	201	243	Forbiddén	30 L	B	40
Thiocarbamate pesticide, liquid, flammable, toxic, flash point less than 23 degrees C	6.1	UN3005	.....	6.1, 3	IB2, T11, TP2, TP13, TP27	150	202	243	1 L	60 L	B	40
Thiocarbamate pesticide, liquid, toxic, flash point not less than 23 degrees C	6.1	UN3006	.....	6.1, 3	T14, TP2, TP13	None	201	243	1 L	30 L	B	40
Thiocarbamate pesticide, liquid, toxic	6.1	.....	.....	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
Thiocarbamate pesticide, solid, toxic	6.1	UN2771	.....	6.1	IB3, T7, TP2, TP28	153	203	242	60 L	220 L	A	40
Thiocarbamate pesticides, solid, toxic	6.1	.....	.....	6.1	T14, TP2, TP13	None	201	243	1 L	30 L	B	40
Thiocarbamate pesticides, liquid, toxic	6.1	.....	.....	6.1	IB2, T11, TP2, TP13, TP27	153	202	243	5 L	60 L	B	40
Thiocarbamate pesticides, solid, toxic	6.1	.....	.....	6.1	IB3, T7, TP2, TP28	153	203	241	60 L	220 L	A	40
Thiocarbamate pesticides, liquid, toxic	6.1	.....	.....	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
Thiocarbamate pesticides, solid, toxic	6.1	.....	.....	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	40
Thiocarbamate pesticides, liquid, toxic	6.1	.....	.....	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	40

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identification Numbers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stow-age	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
	Thiocarbonylchloride, see Thiophosgene												
	Thioglycol	6.1	UN2966	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Thioglycolic acid	8	UN1940	II	8	A7, B2, IB2, N34, T7, TP2	154	202	242	1 L	30 L	A	
	Thioacetic acid	6.1	UN2936	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Thionyl chloride	8	UN1836	I	8	B6, B10, N34, T10, TP2, TP12, TP13	None	201	243	Forbidden	Forbidden	C	40
	Thiophene	3	UN2414	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	40
+	Thiophosgene	6.1	UN2474	II	6.1	2, B9, B14, B32, B74, N33, N34, T20, TP2, TP38, TP45	None	227	244	Forbidden	Forbidden	B	40, 52
	Thiophosphoryl chloride	8	UN1837	II	8	A3, A7, B2, B8, B25, IB2, N34, T7, TP2	None	202	242	Forbidden	30 L	C	40
	Thiourea dioxide	4.2	UN3341	II	4.2	IB6, IP2, T3, TP33	None	212	241	15 kg	50 kg	D	
	Tin chloride, fuming, see Stannic chloride, anhydrous												
	Tin perchloride or Tin tetrachloride, see Stannic chloride, anhydrous												
	Tinctures, medicinal			III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	D	
	Trimming flux, see Zinc chloride												
	Titanium disulphide	4.2	UN3174	III	4.2	IB2, T4, TP1, TP8	150	202	242	5 L	60 L	B	
	Titanium hydride	4.1	UN1871	II	4.1	B1, IB3, T2, TP1	None	203	242	60 L	220 L	A	
	Titanium powder, dry	4.2	UN2546	II	4.2	IB8, IP3, T1, TP33	None	212	241	15 kg	50 kg	E	
	Titanium powder, wetted with not less than 25 percent water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns.	4.1	UN1352	II	4.1	A19, A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	E	74
	Titanium sponge granules or Titanium sponge powders	4.1	UN2878	III	4.1	A1, IB8, IP3, T1, TP33	None	213	240	25 kg	100 kg	D	
+	Titanium tetrachloride	8	UN1838	II	8, 6.1	2, B7, B9, B14, B32, B74, B77, T20, TP2, TP13, TP38, TP45	None	227	244	Forbidden	Forbidden	C	40
	Titanium trichloride mixtures	8	UN2869	II	8	A7, IB8, IP2, IP4, N34, T3, TP33	154	212	240	15 kg	50 kg	A	40
	Titanium trichloride, pyrophoric or Titanium trichloride mixtures, pyrophoric	4.2	UN2441	I	4.2, 8	A7, IB8, IP3, N34, T1, TP33	None	181	244	Forbidden	Forbidden	D	40
	TNT mixed with aluminum, see Tritonal												
	TNT, see Trinitrotoluene, etc												
	Toluene	3	UN1294	II	3	IB2, T4, TP1	150	202	242	5 L	60 L	B	
	Toluene diisocyanate	6.1	UN2078	II	6.1	IB2, T7, TP2, TP13	153	202	243	5 L	60 L	D	25, 40
+	Toluene sulfonic acid, see Alkyl, or Aryl sulfonic acid etc												
	Toluidines, liquid	6.1	UN1708	II	6.1	IB2, T7, TP2	153	202	243	5 L	60 L	A	
	Toluidines, solid	6.1	UN3451	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg	100 kg	A	
	2,4-Toluylenediamine, solid or 2,4-Toluylenediamine, solid	6.1	UN1709	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	
	2,4-Toluylenediamine solution or 2,4-Toluylenediamine solution	1.3J	UN0418	III	6.1	IB3, T4, TP1	153	203	241	60 L	220 L	A	
	Torpedoes, liquid fueled, with inert head	1.1J	UN0450	II	1.3J		62	62	None	Forbidden	Forbidden	O4	23E
	Torpedoes, liquid fueled, with or without bursting charge	1.1E	UN0449	II	1.1E		62	62	None	Forbidden	Forbidden	O4	23E
	Torpedoes with bursting charge	1.1E	UN0329	II	1.1E		62	62	None	Forbidden	Forbidden	O3	

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

Sym-bols	Hazardous materials descriptions and proper shipping names	Hazard class or Division	Identifica-tion Num-bers	PG	Label Codes	Special provisions (§172.102)	Packaging (§173.***)			Quantity limitations		Vessel stow-age	
							Excep-tions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo air-craft only	Loca-tion	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
G	Toxic solid, corrosive, inorganic, n.o.s.	6.1	UN3290	I	6.1, 4.3, 6.1, 8, 6.1, 8	IB2, IB7, T6, TP33, IB6, IP2, T3, TP33	None	202	243	1 L	5 L	E	40
G	Toxic solid, inorganic, n.o.s.	6.1	UN3288	I	6.1	IB7, T6, TP33, IB8, IP2, IP4, T3, TP33	None	211	242	1 kg	25 kg	A	
G	Toxic solids, corrosive, organic, n.o.s.	6.1	UN2928	II	6.1, 8, 6.1, 8	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	A	
G	Toxic solids, flammable, organic, n.o.s.	6.1	UN2930	I	6.1, 4.1, 6.1	IB6, T6, TP33	None	211	242	1 kg	15 kg	B	40
G	Toxic solids, organic, n.o.s.	6.1	UN2811	I	6.1	IB8, IP2, IP4, T3, TP33	None	211	242	5 kg	50 kg	B	
G	Toxic solids, oxidizing, n.o.s.	6.1	UN3086	I	6.1, 5.1, 6.1	T6, TP33	None	211	242	1 kg	15 kg	C	
G	Toxic solids, self-heating, n.o.s.	6.1	UN3124	I	6.1, 5.1, 6.1	IB6, IP2, T3, TP33	None	212	242	15 kg	50 kg	C	
G	Toxic solids, water-reactive, n.o.s.	6.1	UN3125	II	6.1, 4.2, 6.1, 4.3, 6.1	IB6, IP2, T3, TP33	None	212	242	5 kg	100 kg	D	40
D	Toy Caps Tracers for ammunition Tracers for ammunition Tractors, see Vehicle, etc Tri-(o-nitroxyethyl) ammonium nitrate Triallyl borate Triethylamine Triazine pesticides, liquid, flammable, toxic, flash point less than 23 degrees C	1.4S 1.3G 1.4G Forbidden	NA0337 UN2609 UN2610 UN2764	II III III I	1.4S 1.3G 1.4G 6.1 3, 8 1, 3, 6.1	IB3, IB1, IB3, T4, TP1, T14, TP2, TP13, TP27, IB2, T11, TP2, TP13, TP13, TP27, TP13, TP27, IB3, T7, TP2, TP28, T14, TP2, TP13, TP27, TP27, IB2, T11, TP2, TP13, TP13, TP27, TP13, TP27, IB3, T7, TP2, TP28	None None None None	62 62 62	None None None	25 kg Forbidden Forbidden	100 kg Forbidden 75 kg	05 07 06	
	Triazine pesticides, liquid, toxic	6.1	UN2998	I	6.1	T14, TP2, TP13, TP27	None	201	243	1 L	30 L	B	40
	Triazine pesticides, liquid, toxic, flash point not less than 23 degrees C	6.1	UN2997	I	6.1, 3, 6.1	T14, TP2, TP13, TP27	None	202	243	1 L	30 L	B	40
	Triazine pesticides, solid, toxic	6.1	UN2763	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	40
	Tributylamine	6.1	UN2542	II	6.1	IB2, T11, TP2, TP13, TP27, IB3, T7, TP2, TP28	None	212	242	25 kg	100 kg	A	40
	Tributylphosphane	4.2	UN3254	I	4.2	T21, TP7, TP33	None	211	242	5 L	Forbidden	A	136

Chemical Name	UN Number	Class	Label	Quantity	Special Provisions	Other	Notes
Trichloro-s-triazinetrone dry, with more than 39 percent available chlorine, see Trichloroisocyanuric acid, dry.	UN1839	8	II 8	154	A7, IB8, IP2, IP4, N34, T3, TP33	212	50 kg A
Trichloroacetic acid	UN2564	8	II 8	154	A3, A6, A7, B2, IB2, N34, T7, TP2	242	30 L B
Trichloroacetic acid, solution							
Trichloroacetyl chloride	UN2442	8	III 8, 6.1	154	A3, A6, A7, IB3, N34, T4, TP1	241	60 L B
Trichlorobenzene, liquid	UN2321	6.1	III 6.1	153	2, B9, B14, B32, B74, N34, T20, TP2, TP38, TP45	241	Forbidden D
Trichlorobutene	UN2322	6.1	III 6.1	153	IB3, T4, TP1	243	220 L A
1,1,1-Trichloroethane	UN2831	6.1	III 6.1	153	IB2, T7, TP2	243	60 L A
Trichloroethylene	UN1710	6.1	III 6.1	153	IB3, N36, T4, TP1	241	220 L A
Trichloroisocyanuric acid, dry	UN2468	5.1	II 5.1	152	IB8, IP4, T3, TP33	240	25 kg A
Trichloromethyl perchlorate	Forbidden	Forbidden					
Trichlorosilane	UN1295	4.3	I 4.3, 3, 8	None	N34, T14, TP2, TP7, TP13	244	Forbidden D
Tricresyl phosphate with more than 3 percent ortho isomer	UN2574	6.1	II 6.1	153	A3, IB2, N33, N34, T7, TP2	243	60 L A
Triethyl phosphite	UN2323	3	III 3	150	B1, IB3, T2, TP1	242	220 L A
Triethylamine	UN1296	3	III 3, 8	150	IB2, T7, TP1	243	5 L B
Triethylenetriamine	UN2259	8	II 8	154	B2, IB2, T7, TP2	242	30 L B
Trifluoroacetic acid	UN2699	8	I 8	None	A3, A6, A7, B4, N3, N34, N36, T10, TP2, TP12	243	2.5 L B
Trifluoroacetyl chloride	UN3057	2.3	.....	None	2, B7, B9, B14, T50, TP21	314, 315	Forbidden D
Trifluorochloroethylene, stabilized	UN1082	2.3	.....	None	3, B14, T50	314, 315	Forbidden D
Trifluoromethane or Refrigerant gas R 23	UN1984	2.2	.....	306		314, 315	150 kg A
1,1,1-Trifluoroethane or Refrigerant gas, R 143a	UN2035	2.1	.....	306	T50	314, 315	150 kg B
Trifluoromethane, refrigerated liquid	UN3136	2.2	.....	306	T75, TP5	314, 315	500 kg D
2-Trifluoromethylaniline	UN2942	6.1	III 6.1	153	IB3	241	220 L A
3-Trifluoromethylaniline	UN2948	6.1	II 6.1	153	IB2, T7, TP2	243	60 L A
Triformoxime trinitrate	Forbidden	Forbidden					
Trisobutylene	UN2324	3	III 3	150	B1, IB3, T4, TP1	242	220 L A
Trisopropyl borate	UN2616	3	III 3	150	IB2, T4, TP1	242	60 L A
Trimethoxyisilane	NA9269	6.1	I 6.1, 3	None	B1, IB3, T2, TP1	242	220 L A
Trimethyl borate	UN2416	3	III 3	150	2, B9, B14, B32, B74, N34, T20, TP2, TP13, TP38, TP45	244	Forbidden E
Trimethyl phosphite	UN2329	3	III 3	150	IB2, T7, TP1	242	60 L B
1,3,5-Trimethyl-2,4,6-trinitrobenzene	UN2498	6.1	I 6.1, 8, 3	None	B1, IB3, T2, TP1	242	220 L A
Trimethylacetyl chloride	UN1083	2.1	.....	306	2, B3, B9, B14, B32, B74, N34, T20, TP2, TP13, TP38, TP45	244	Forbidden D
Trimethylamine, anhydrous	UN1297	3	I 3, 8	None	T50	314, 315	150 kg B
Trimethylamine, aqueous solutions with not more than 50 percent trimethylamine by mass	UN2325	3	II 3, 8	150	T11, TP1	243	2.5 L D
Trimethylchlorosilane	UN1298	3	III 3, 8	150	B1, IB3, T7, TP1	242	5 L B
Trimethylcyclohexylamine	UN2326	8	III 8	154	B1, IB3, T7, TP1	242	60 L A
Trimethylene glycol diperchlorate	UN2328	6.1	III 6.1	153	B1, IB3, T2, TP1	242	220 L B
Trimethylhexamethylene diisocyanate	UN2327	8	III 8	154	IB3, T4, TP2, TP13	241	60 L A
Trimethylhexamethylenediamines	UN2327	8	III 8	154	IB3, T4, TP1	241	60 L A
Trimethylol nitromethane trinitrate	UN2016	1.1D	II 1.1D	None		None	Forbidden
Trinitro-meta-cresol							10

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§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)		(9) Quantity limitations		(10) Vessel stow- age	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
	2,4,6-Trinitro-1,3-diazobenzene	Forbidden										
	2,4,6-Trinitro-1,3,5-triazido benzene (dry)	Forbidden										
	Trinitroacetic acid	Forbidden										
	Trinitroacetanitrile	Forbidden										
	Trinitroamine cobalt	Forbidden										
	Trinitroaniline or Picramide	1.1D	UN0153	II	1.1D							
	Trinitroanisole	1.1D	UN0213	II	1.1D							
	Trinitrobenzene (picryl chloride), wetted, with not less than 10% water by mass	4.1	UN3365	I	4.1	162, A8, A19, N41, N84						
	Trinitrobenzene, wetted, with not less than 10% water, by mass	4.1	UN3367	I	4.1	162, A8, A19, N41, N84						
	Trinitrobenzene, dry or wetted with less than 30 percent water, by mass	1.1D	UN0214	II	1.1D	23, A2, A8, A19, N41						
	Trinitrobenzene, wetted with not less than 30 percent water, by mass	4.1	UN1354	I	4.1							
	Trinitrobenzenesulfonic acid	1.1D	UN0386	II	1.1D							
	Trinitrobenzoic acid, dry or wetted with less than 30 percent water, by mass	1.1D	UN0215	II	1.1D							
	Trinitrobenzoic acid, wetted with not less than 10% water by mass	4.1	UN3368	I	4.1	162, A8, A19, N41, N84						
	Trinitrobenzoic acid, wetted with not less than 30 percent water, by mass	4.1	UN1355	I	4.1	23, A2, A8, A19, N41						
	Trinitrochlorobenzene or Picryl chloride	1.1D	UN0155	II	1.1D							
	Trinitroethanol	Forbidden										
	Trinitroethyltriate	Forbidden										
	Trinitrofluorenone	1.1D	UN0387	II	1.1D							
	Trinitromethane	Forbidden										
	1,3,5-Trinitrophenylalene	Forbidden										
	Trinitronaphthalene	1.1D	UN0217	II	1.1D							
	Trinitrophenetole	1.1D	UN0218	II	1.1D							
	Trinitrophenol (picric acid), wetted, with not less than 10 percent water by mass	4.1	UN3364	I	4.1	162, A8, A19, N41, N84						
	Trinitrophenol or Picric acid, dry or wetted with less than 30 percent water, by mass	1.1D	UN0154	II	1.1D	23, A8, A19, N41						
	Trinitrophenol, wetted with not less than 30 percent water, by mass	4.1	UN1344	I	4.1							
	2,4,6-Trinitrophenyl guanidine (dry)	Forbidden										
	2,4,6-Trinitrophenyl nitramine	Forbidden										
	2,4,6-Trinitrophenyl trimethylol methyl nitramine trinitrate (dry)	Forbidden										
	Trinitrophenylmethylnitramine or Tetyl	1.1D	UN0208	II	1.1D							
	Trinitroresorcinol or Syphnic acid, dry or wetted with less than 20 percent water, or mixture of alcohol and water, by mass	1.1D	UN0219	II	1.1D							
	Trinitroresorcinol, wetted or Syphnic acid, wetted with not less than 20 percent water, or mixture of alcohol and water by mass	1.1D	UN0394	II	1.1D							
	2,4,6-Trinitroso-3-methyl nitraminoanisole	Forbidden										
	Trinitrotetramine cobalt nitrate	Forbidden										
	Trinitrotoluene and Trinitrobenzene mixtures or TNT and trinitrobenzene mixtures or TNT and hexanitrosilbene mixtures or Trinitrofluorenone and hexanitrosilbene mixtures, containing trinitrobenzene and hexanitrosilbene	1.1D	UN0389	II	1.1D							
	Trinitrotoluene or TNT, dry or wetted with less than 30 percent water, by mass	1.1D	UN0209	II	1.1D							
	Trinitrotoluene (TNT), wetted, with not less than 10 percent water by mass	4.1	UN3366	I	4.1	162, A8, A19, N41, N84						
	Trinitrotoluene, wetted with not less than 30 percent water, by mass	4.1	UN1356	I	4.1	23, A2, A8, A19, N41						
	Tripropylamine	3	UN2260	III	3, 8	B1, IB3, T4, TP1						
	Tripropylene	3	UN2057	III	3	IB2, T4, TP1						
	Tris-(1-aziridinyl)phosphine oxide, solution	6.1	UN2501	III	6.1	B1, IB3, T2, TP1						
	Tris, bis-bifluoroamino difluoro propane (TVOPA)	Forbidden										
	Trisilanol	1.1D	UN0390	II	1.1D							
	Tungsten hexafluoride	2.3	UN2196	III	2.3, 8	B1, IB3, T2, TP1	2					
	Turpentine	3	UN1299	III	3	T11, TP1, TP6, TP27						
	Turpentine substitute	3	UN1300	III	3							
	Undecane	3	UN2330	III	3	IB2, T4, TP1						

UN number	Proper shipping name	Class	Division	Subdivision	Special provisions	Quantity	Label	Other
5.1 UN1511	Urea hydrogen peroxide	III	5.1, 8	A1, A7, A29, IB8, IP3, T1, TP33	152	213	240	100 kg
1.1D UN0220	Urea nitrate, dry or wetted with less than 20 percent water, by mass	II	1.1D	119	None	62	None	Forbidden
4.1 UN0370	Urea nitrate, wetted, with not less than 10 percent water, by mass	I	4.1	162, A8, A19, N41, N84	None	211	None	0.5 kg
4.1 UN1357	Urea nitrate, wetted with not less than 20 percent water, by mass	I	4.1	23, 39, A8, A19, N41	None	211	None	15 kg
3 UN2058	Urea peroxide, see Urea hydrogen peroxide	II	3	IB2, T4, TP1	150	202	242	60 L
8 UN2502	Valeraldehyde	II	8, 3	A3, A6, A7, B2, IB2, N34, T7, TP2	154	202	243	30 L
6.1 UN3285	Valeric acid, see Corrosive liquids, n.o.s.	I	6.1	IB7, IP1, T6, TP33	None	211	242	50 kg
8 UN2443	Valeryl chloride	III	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	100 kg
6.1 UN2862	Vanadium compound, n.o.s.	III	6.1	IB8, IP3, T1, TP33	153	213	240	200 kg
8 UN2443	Vanadium oxytrichloride	II	8	A3, A6, A7, B2, B16, IB2, N34, T7, TP2	154	202	242	30 L
6.1 UN2862	Vanadium pentoxide, non-fused form	III	6.1	IB8, IP3, T1, TP33	153	213	240	200 kg
8 UN2444	Vanadium tetrachloride	I	8	A3, A6, A7, B4, N34, T10, TP2	None	201	243	2.5 L
8 UN2475	Vanadium trichloride	III	8	IB8, IP3, T1, TP33	154	213	240	100 kg
6.1 UN2931	Vanadyl sulfate	II	6.1	IB8, IP2, IP4, T3, TP33	153	212	242	25 kg
9 UN3166	Vehicle, flammable gas powered	.....	9	TP33	220	220	220	No limit
9 UN3166	Vehicle, flammable liquid powered	.....	9	135, 157	220	220	220	No limit
3 UN1301	Very signal cartridge, see Cartridges, signal	II	3	IB2, T4, TP1	150	202	242	60 L
2.1 UN1085	Vinyl acetate, stabilized	.....	2.1	150	306	304	314	5 L
3 UN2838	Vinyl bromide, stabilized	II	3	IB2, T4, TP1	150	202	242	150 kg
2.1 UN1086	Vinyl butyrate, stabilized	.....	2.1	21, B44, T50	306	304	314	5 L
6.1 UN2589	Vinyl chloride, stabilized	.....	6.1, 3	IB2, T4, TP1	153	202	243	150 kg
3 UN1302	Vinyl chloroacetate	II	3	IB2, T7, TP2	153	202	243	60 L
2.1 UN1860	Vinyl ethyl ether, stabilized	I	3	A3, T11, TP2	None	201	243	30 L
3 UN1304	Vinyl fluoride, stabilized	II	3	IB2, T4, TP1	150	202	242	150 kg
2.1 UN1087	Vinyl isobutyl ether, stabilized	.....	2.1	IB2, T4, TP1	150	202	242	5 L
Forbidden	Vinyl methyl ether, stabilized	.....	2.1	B44, T50	306	304	314	150 kg
3 UN1303	Vinyl nitrate polymer	I	3	T12, TP2, TP7	150	201	243	30 L
6.1 UN3073	Vinylidene chloride, stabilized	II	6.1, 3, 8	IB1, T7, TP2, TP13	153	202	243	30 L
3 UN2618	Vinylpyridines, stabilized	III	3	B1, IB3, T2, TP1	150	203	242	220 L
3 UN1305	Vinyltoluenes, stabilized	I	3, 8	A3, A7, B6, N34, T11, TP2, TP13	None	201	243	2.5 L
1.4D UN0370	Vinyltrichlorosilane, stabilized	II	1.4D	None	None	62	None	75 kg
1.4F UN0371	Warheads, rocket with burster or expelling charge	II	1.4F	None	None	62	None	Forbidden
1.1D UN0286	Warheads, rocket with bursting charge	II	1.1D	None	None	62	None	Forbidden
1.2D UN0287	Warheads, rocket with bursting charge	II	1.2D	None	None	62	None	Forbidden
1.1F UN0369	Warheads, rocket with bursting charge	II	1.1F	None	None	62	None	Forbidden
1.1D UN0221	Warheads, torpedo with bursting charge	II	1.1D	None	None	62	None	Forbidden
4.3 UN3129	Water-reactive liquid, corrosive, n.o.s.	III	4.3, 8	IB1	None	201	243	1 L
4.3 UN3148	Water-reactive liquid, n.o.s.	III	4.3, 8	IB2	None	202	243	5 L
4.3 UN3130	Water-reactive liquid, toxic, n.o.s.	III	4.3	IB1	None	201	243	60 L
4.3 UN3131	Water-reactive liquid, corrosive, n.o.s.	III	4.3, 8	A4	None	201	243	5 L
4.3 UN3131	Water-reactive solid, corrosive, n.o.s.	III	4.3, 8	IB1	None	202	243	1 L
4.3 UN3131	Water-reactive solid, corrosive, n.o.s.	III	4.3, 8	IB2	None	203	242	5 L
4.3 UN3131	Water-reactive solid, corrosive, n.o.s.	III	4.3, 8	IB4, IP1, N40	None	211	242	15 kg
4.3 UN3131	Water-reactive solid, corrosive, n.o.s.	III	4.3, 8	IB6, IP2, T3, TP33	151	212	242	50 kg
4.3 UN3131	Water-reactive solid, corrosive, n.o.s.	III	4.3, 8	IB8, IP4, T1, TP33	151	213	241	100 kg

§ 172.101 HAZARDOUS MATERIALS TABLE—Continued

(1) Sym- bols	(2) Hazardous materials descriptions and proper shipping names	(3) Hazard class or Di- vision	(4) Identifica- tion Num- bers	(5) PG	(6) Label Codes	(7) Special provisions (\$172.102)	(8) Packaging (\$173.***)			(9) Quantity limitations		(10) Vessel stow- age	
							(8A) Excep- tions	(8B) Non- bulk	(8C) Bulk	(9A) Passenger aircraft/rail	(9B) Cargo air- craft only	(10A) Loca- tion	(10B) Other
G	Water-reactive solid, flammable, n.o.s.	4.3	UN3132	I	4.3, 4.1.	IB4, N40	None	211	242	Forbidden	15 kg	D	
							151	212	242	15 kg	50 kg	E	
							151	213	241	25 kg	100 kg	E	
G	Water-reactive solid, n.o.s.	4.3	UN2813	I	4.3	IB4, N40 IB7, IP2, T3, TP33	None	211	242	Forbidden	15 kg	E	40
							151	212	242	15 kg	50 kg	E	40
							151	213	241	25 kg	100 kg	E	40
G	Water-reactive, solid, oxidizing, n.o.s.	4.3	UN3133	II	4.3, 5.1.	N40	None	214	214	Forbidden	Forbidden	E	40
							None	214	214	Forbidden	Forbidden	E	40
							None	211	242	Forbidden	15 kg	E	
G	Water-reactive solid, self-heating, n.o.s.	4.3	UN3135	I	4.3, 4.2.	N40	None	212	242	15 kg	50 kg	E	
							None	213	241	25 kg	100 kg	E	
							None	211	242	Forbidden	15 kg	D	
G	Water-reactive solid, toxic, n.o.s.	4.3	UN3134	I	4.3, 6.1.	N40	None	212	242	15 kg	50 kg	E	85
							None	213	241	25 kg	100 kg	E	85
							None	211	242	Forbidden	15 kg	D	
I	Wheel chair, electric, see Battery powered vehicle or Battery powered equipment White acid, see Hydrofluoric acid White asbestos (chrysotile, actinolite, anthophyllite, tremolite)	9	UN2590	III	9	156, IB8, IP2, IP3, T1, TP33 149, IB2, T4, TP1, TP8	155	216	240	200 kg	200 kg	A	34, 40
							150	202	242	5 L	60 L	B	
							150	203	242	60 L	220 L	A	40
A | W	Wool waste, wet Xanthates	4.2	UN1387 UN3342	III	4.2	B1, IB3, T2, TP1 IB6, IP2, T3, TP33	151	213	240	Forbidden	50 kg	D	40
							None	212	241	15 kg	50 kg	D	40
							None	213	241	25 kg	100 kg	D	40
	Xenon Xenon, refrigerated liquid (cryogenic liquids) Xylenes Xylenols, solid	2.2	UN2036 UN2591 UN1307		2.2	T75, TP5 IB2, T4, TP1 B1, IB3, T2, TP1 IB8, IP2, IP4, T3, TP33	306	302	None	75 kg	150 kg	A	
							320	None	None	500 kg	500 kg	B	
							150	202	242	5 L	60 L	B	
	Xylenols, liquid Xylenols, solid	6.1	UN2261	II	6.1	IB8, IP2, IP4, T3, TP33	153	203	242	220 L	220 L	A	
							153	212	242	25 kg	100 kg	A	
							153	212	242	25 kg	100 kg	A	
	Xylyl bromide, liquid	6.1	UN1701	II	6.1	A3, A6, A7, IB2, N83, T7, TP2, TP13	None	340	None	Forbidden	60 L	D	40
							None	340	None	Forbidden	100 kg	B	40
							None	340	None	Forbidden	100 kg	B	40
	p-Xylyl diazide Zinc ammonium nitrite	Forbidden	UN1512	II	5.1	IB8, IP4, T3, TP33	None	212	242	5 kg	25 kg	E	
							None	212	242	25 kg	100 kg	A	
							None	213	241	25 kg	100 kg	A	
	Zinc arsenate or Zinc arsenite or Zinc arsenate and zinc arsenite mixtures Zinc ashes	4.3	UN1435	III	4.3	A1, A19, IB8, IP4, T1, TP33	151	213	241	25 kg	100 kg	A	
							152	213	240	25 kg	100 kg	A	56, 58
							152	213	240	25 kg	100 kg	A	56, 58

Zinc chlorate	5.1	UN1513	II	5.1	A9, IB8, IP2, IP4, N34, T3, TP33	152	212	242	5 kg	25 kg	A	56, 58
Zinc chloride, anhydrous	8	UN2331	III	8	IB8, IP3, T1, TP33	None	213	240	25 kg	100 kg	A	.....
Zinc chloride, solution	8	UN1840	III	8	IB3, T4, TP1	154	203	241	5 L	60 L	A	.....
Zinc cyanide	6.1	UN1713	I	6.1	IB7, IP1, T6, TP33	None	211	242	5 kg	50 kg	A	52
Zinc dithionite or Zinc hydrosulfite	9	UN1931	III	None	IB8, IP3, T1, TP33	155	204	240	100 kg	200 kg	A	49
Zinc ethyl, see Diethylzinc												
Zinc fluosulfate	6.1	UN2855	III	6.1	IB8, IP3, T1, TP33	153	213	240	100 kg	200 kg	A	52
Zinc hydrosulfite, see Zinc dithionite												
Zinc murexide solution, see Zinc chloride, solution												
Zinc nitrate	5.1	UN1514	II	5.1	IB8, IP4, T3, TP33	152	212	240	5 kg	25 kg	A	.....
Zinc permanganate	5.1	UN1515	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	D	56, 58, 138
Zinc peroxide	5.1	UN1516	II	5.1	IB6, IP2, T3, TP33	152	212	242	5 kg	25 kg	A	13, 52, 66, 75
Zinc phosphide	4.3	UN1714	I	4.3, 6.1	A19, N40	None	211	None	Forbidden	15 kg	E	40, 52, 85
Zinc powder or Zinc dust	4.3	UN1436	I	4.3, 4.2	A19, IB4, IP1, N40	None	211	242	Forbidden	15 kg	A	52, 53
			II	4.3, 4.2	A19, IB7, IP2, T3, TP33	None	212	242	15 kg	50 kg	A	52, 53
			III	4.3, 4.2	IB8, IP4, T1, TP33	None	213	242	25 kg	100 kg	A	52, 53
Zinc resinat	4.1	UN2714	III	4.1	A1, IB6, T1, TP33	151	213	240	25 kg	100 kg	A	.....
Zinc selenate, see Selenates or Selenites												
Zinc selenite, see Selenates or Selenites												
Zinc silicofluoride, see Zinc fluosulfate												
Zirconium, dry, coiled wire, finished metal sheets, strip (thinner than 254 microns but not thinner than 18 microns)	4.1	UN2858	III	4.1	A1	151	213	240	25 kg	100 kg	A	.....
Zirconium, dry, finished sheets, strip or coiled wire	4.2	UN2009	III	4.2	A1, A19	None	213	240	25 kg	100 kg	D	.....
Zirconium hydride	4.1	UN1437	II	4.1	A19, A20, IB4, N34, T3, TP33	None	212	240	15 kg	50 kg	E	.....
Zirconium nitrate	5.1	UN2728	III	5.1	A1, A29, IB8, IP3, T1, TP33	152	213	240	25 kg	100 kg	A	.....
Zirconium picramate, dry or wetted with less than 20 percent water, by mass	1.3C	UN0236	II	1.3C	None	None	62	None	Forbidden	Forbidden	10	5E
Zirconium picramate, wetted with not less than 20 percent water, by mass	4.1	UN1517	I	4.1	23, N41	None	211	None	1 kg	15 kg	D	28, 36
Zirconium powder, dry	4.2	UN2008	I	4.2	T21, TP7, TP33	None	211	242	Forbidden	Forbidden	D	.....
			II	4.2	A19, A20, IB6, IP2, N5, N34, T3, TP33	None	212	241	15 kg	50 kg	D	.....
Zirconium powder, wetted with not less than 25 percent water (a visible excess of water must be present) (a) mechanically produced, particle size less than 53 microns; (b) chemically produced, particle size less than 840 microns	4.1	UN1358	III	4.2	IB8, IP3, T1, TP33	None	213	241	25 kg	100 kg	D	.....
Zirconium scrap	4.2	UN1932	III	4.2	A19, A20, IB6, IP2, N34, T3, TP33	None	212	241	15 kg	50 kg	E	74
Zirconium suspended in a liquid	3	UN1308	I	3	IB8, IP3, N34, T1, TP33	None	213	240	Forbidden	Forbidden	D	.....
			II	3	IB2	None	201	243	Forbidden	Forbidden	B	.....
			III	3	B1, IB2	None	202	242	5 L	60 L	B	.....
			III	8	IB8, IP3, T1, TP33	154	203	242	60 L	220 L	B	.....
Zirconium tetrachloride	8	UN2503	III	8	IB8, IP3, T1, TP33	154	213	240	25 kg	100 kg	A	.....

* * * * *

10. In Appendix B to § 172.101, the List of Marine Pollutants is amended by removing three entries, revising one entry and adding one entry in appropriate alphabetical order to read as follows:

Appendix B to § 172.101—List of Marine Pollutants

* * * * *

LIST OF MARINE POLLUTANTS	
S, M, P	Marine Pollutant
(1)	(2)
[Remove:]	Isoamyl mercaptan Pentanethiols Tetrachlorophenol
[Revise:] PP	2, 6-Di-tert-Butylphenol
[Add:]	
* * * * *	Chloropicrin
* * * * *	

11. In § 172.102:

a. Paragraphs (b)(3), (b)(4) and (b)(8) are revised and a new paragraph (b)(9) is added.

b. In paragraph (c)(1), Special Provisions 47, 135, and 137 are revised; Special Provisions 163, 164, 165, 166, 167, 170 and 171 are added; and Special Provision 143 and 153 are removed.

c. In paragraph (c)(2), Special Provision A11 is revised and a new Special Provision A14 is added.

d. The introductory text of paragraph (c)(3) is revised; in paragraph (c)(3) Special Provision B69 is revised and paragraph (c)(4) is revised.

e. Paragraphs (c)(7)(viii) and (c)(8) are redesignated as paragraphs (c)(8) and (c)(9) respectively, the introductory paragraph of (c)(8) is revised, a new paragraph (c)(8)(ii) is added, Special Provisions TP3 and TP6 are revised and a new Special Provision TP32 is added.

f. Paragraph (c)(7) is revised.

The additions and revisions read as follows:

§ 172.102 Special provisions.

* * * * *

(b) * * *

(3) A code containing the letter “B” refers to a special provision that applies only to bulk packaging requirements. Unless otherwise provided in this subchapter, these special provisions do not apply to UN portable tanks or IBCs.

(4) A code containing the letters “IB” or “IP” refers to a special provision that applies only to transportation in IBCs.

* * * * *

(8) A code containing the letters “TP” refers to a special provision for UN portable tanks that is in addition to those provided by the portable tank instructions or the requirements in part 178 of this subchapter.

(9) A code containing the letter “W” refers to a special provision that applies only to transportation by water.

(c) * * *
(1) * * *

Code/Special Provisions

* * * * *

47 Mixtures of solids that are not subject to this subchapter and flammable liquids may be transported under this entry without first applying the classification criteria of Division 4.1, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Except when the liquids are fully absorbed in solid material contained in sealed bags, each packaging must correspond to a design type that has passed a leakproofness test at the Packing Group II level. Small inner packagings consisting of sealed packets containing less than 10 mL of a Class 3 liquid in Packing Group II or III absorbed into a solid material are not subject to this subchapter provided there is no free liquid in the packet.

* * * * *

135 The entries “Vehicle, flammable gas powered” or “Vehicle, flammable liquid powered,” as appropriate, must be used when internal combustion engines are installed in a vehicle. These entries include hybrid electric vehicles powered by both an internal combustion engine and batteries.

* * * * *

137 Cotton, dry; flax, dry; and sisal, dry are not subject to the requirements of this subchapter when they are baled in accordance with ISO 8115, “Cotton Bales—Dimensions and Density” (IBR, see § 171.7 of this subchapter) to a density of not less than 360 kg/m³ (22.1 lb/ft³) for cotton, 400 kg/m³ (24.97 lb/ft³) for flax and 620 kg/m³ (38.71 lb/ft³) for sisal and transported in a freight container or closed transport vehicle.

* * * * *

163 Substances must satisfactorily pass Test Series 8 of the UN Manual of Tests and Criteria, Part I, Section 18 (IBR, see § 171.7 of this subchapter).

164 Substances must not be transported under this entry unless approved by the Associate Administrator on the basis of the results of appropriate tests according to Part I of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter). The material must be packaged so that the

percentage of diluent does not fall below that stated in the approval, at any time during transportation.

165 These substances are susceptible to exothermic decomposition at elevated temperatures. Decomposition can be initiated by heat, moisture or by impurities (e.g., powdered metals (iron, manganese, cobalt, magnesium)). During the course of transportation, packages containing these substances must be shaded from direct sunlight and all sources of heat and be placed in adequately ventilated areas.

166 When transported in non-friable tablet form calcium hypochlorite, dry or hydrated, may be transported as a Packing Group III material.

167 These storage systems shall always be considered as containing hydrogen.

170 Air must be eliminated from the vapor space by nitrogen or other means.

171 This entry may only be used when the material is transported in non-friable tablet form or for granular or powdered mixtures that have been shown to meet the PG III criteria in § 173.127.

* * * * *

(2) “A” codes. These provisions apply only to transportation by aircraft:

Code/Special Provisions

* * * * *

A11 Only specification cylinders constructed of metals which are compatible with the hazardous material may be used.

* * * * *

A14 This material is not authorized to be transported as a limited quantity or consumer commodity in accordance with § 173.306 of this subchapter when transported aboard an aircraft.

* * * * *

(3) “B” codes. These provisions apply only to bulk packagings. Unless otherwise provided in this subchapter, these special provisions do not apply to UN portable tanks or IBCs:

Code/Special Provisions

* * * * *

B69 Dry sodium cyanide or potassium cyanide may be shipped in sift-proof weather-resistant metal covered hopper cars, covered motor vehicles, portable tanks or non-specification bins. Bins must be approved by the Associate Administrator.

* * * * *

(4) Table 1 and Table 2—IB Codes and IP Special IBC Packing Provisions. These provisions apply only to transportation in IBCs. When no IBC code is assigned in the § 172.101 Table for a specific proper shipping name, or

in § 173.225(e) for Type F organic peroxides, an IBC may not be used unless authorized by the Associate Administrator. The letter “Z” shown in

the marking code for composite IBCs must be replaced with a capital code letter designation found in § 178.702(a)(2) of this subchapter to

specify the material used for the outer packaging. Tables 1 and 2 follow:

TABLE 1.—IB CODES (IBC CODES)

IBC code	Authorized IBCs
IB1	<i>Authorized IBCs:</i> Metal (31A, 31B and 31N). <i>Additional Requirement:</i> Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized.
IB2	<i>Authorized IBCs:</i> Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). <i>Additional Requirement:</i> Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130kPa at 55 °C (1.3 bar at 131 °F) are authorized.
IB3	<i>Authorized IBCs:</i> Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). <i>Additional Requirement:</i> Only liquids with a vapor pressure less than or equal to 110 kPa at 50 °C (1.1 bar at 122 °F), or 130 kPa at 55 °C (1.3 bar at 131 °F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 3 for UN2672).
IB4	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N).
IB5	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 21HZ1 and 31HZ1).
IB6	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2). <i>Additional Requirement:</i> Composite IBCs 11HZ2 and 21HZ2 may not be used when the hazardous materials being transported may become liquid during transport.
IB7	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Wooden (11C, 11D and 11F). <i>Additional Requirement:</i> Liners of wooden IBCs must be sift-proof.
IB8	<i>Authorized IBCs:</i> Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 11HZ2, 21HZ1, 21HZ2, 31HZ1 and 31HZ2); Fiberboard (11G); Wooden (11C, 11D and 11F); Flexible (13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 or 13M2).
IB9	IBCs are only authorized if approved by the Associate Administrator.

TABLE 2.—IP CODES

IP1	IBCs must be packed in closed freight containers or a closed transport vehicle.
IP2	When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle.
IP3	Flexible IBCs must be sift-proof and water-resistant or must be fitted with a sift-proof and water-resistant liner.
IP4	Flexible, fiberboard or wooden IBCs must be sift-proof and water-resistant or be fitted with a sift-proof and water-resistant liner.
IP5	IBCs must have a device to allow venting. The inlet to the venting device must be located in the vapor space of the IBC under maximum filling conditions.
IP6	Non-specification bulk bins are authorized.
IP7	For UN identification numbers 1327, 1363, 1364, 1365, 1386, 1841, 2211, 2217, 2793 and 3314, IBCs are not required to meet the IBC performance tests specified in part 178, subpart N of this subchapter.
IP8	Ammonia solutions may be transported in rigid or composite plastic IBCs (31H1, 31H2 and 31HZ1) that have successfully passed, without leakage or permanent deformation, the hydrostatic test specified in § 178.814 of this subchapter at a test pressure that is not less than 1.5 times the vapor pressure of the contents at 55 °C (131 °F).
IP13	Transportation by vessel in IBCs is prohibited.
IP14	Air shall be eliminated from the vapor space by nitrogen or other means.
IP20	Dry sodium cyanide or potassium cyanide is also permitted in siftproof, water-resistant, fiberboard IBCs when transported in closed freight containers or transport vehicles.

* * * * *

(7) “T” codes. (i) These provisions apply to the transportation of hazardous materials in UN portable tanks. Portable tank instructions specify the requirements applicable to a portable tank when used for the transportation of a specific hazardous material. These requirements must be met in addition to the design and construction specifications in part 178 of this subchapter. Portable tank instructions T1 through T22 specify the applicable minimum test pressure, the minimum shell thickness (in reference steel),

bottom opening requirements and pressure relief requirements. Liquefied compressed gases are assigned to portable tank instruction T50. Refrigerated liquefied gases that are authorized to be transported in portable tanks are specified in tank instruction T75.
(ii) The following table specifies the portable tank requirements applicable to “T” Codes T1 through T22. Column 1 specifies the “T” Code. Column 2 specifies the minimum test pressure, in bar (1 bar = 14.5 psig), at which the periodic hydrostatic testing required by

§ 180.605 of this subchapter must be conducted. Column 3 specifies the section reference for minimum shell thickness or, alternatively, the minimum shell thickness value. Column 4 specifies the applicability of § 178.275(g)(3) of this subchapter for the pressure relief devices. When the word “Normal” is indicated, § 178.275(g)(3) of this subchapter does not apply. Column 5 references the applicable requirements for bottom openings in part 178 of this subchapter or references “Prohibited” which means bottom openings are prohibited. The table follows:

TABLE OF PORTABLE TANK T CODES T1–T22

[Portable tank codes T1–T22 apply to liquid and solid hazardous materials of Classes 3 through 9 which are transported in portable tanks.]

Portable tank instruction (1)	Minimum test pressure (bar) (2)	Minimum shell thickness (in mm-reference steel) (See § 178.274(d)) (3)	Pressure-relief requirements (See § 178.275(g)) (4)	Bottom opening requirements (See § 178.275(d)) (5)
T1	1.5	§ 178.274(d)(2)	Normal	§ 178.275(d)(2)
T2	1.5	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T3	2.65	§ 178.274(d)(2)	Normal	§ 178.275(d)(2)
T4	2.65	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T5	2.65	§ 178.274(d)(2)	§ 178.275(g)(3)	Prohibited
T6	4	§ 178.274(d)(2)	Normal	§ 178.275(d)(2)
T7	4	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T8	4	§ 178.274(d)(2)	Normal	Prohibited
T9	4	6 mm	Normal	Prohibited
T10	4	6 mm	§ 178.275(g)(3)	Prohibited
T11	6	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T12	6	§ 178.274(d)(2)	§ 178.275(g)(3)	§ 178.275(d)(3)
T13	6	6 mm	Normal	Prohibited
T14	6	6 mm	§ 178.275(g)(3)	Prohibited
T15	10	§ 178.274(d)(2)	Normal	§ 178.275(d)(3)
T16	10	§ 178.274(d)(2)	§ 178.275(g)(3)	§ 178.275(d)(3)
T17	10	6 mm	Normal	§ 178.275(d)(3)
T18	10	6 mm	§ 178.275(g)(3)	§ 178.275(d)(3)
T19	10	6 mm	§ 178.275(g)(3)	Prohibited
T20	10	8 mm	§ 178.275(g)(3)	Prohibited
T21	10	10 mm	Normal	Prohibited
T22	10	10 mm	§ 178.275(g)(3)	Prohibited

(iii) T50. When portable tank instruction T50 is referenced in Column (7) of the § 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of § 173.313 of this subchapter.

(iv) T75. When portable tank instruction T75 is referenced in Column (7) of the § 172.101 Table, the applicable refrigerated liquefied gases are authorized to be transported in portable tanks in accordance with the requirements of § 178.277 of this subchapter.

(v) UN and IM portable tank codes/special provisions. When a specific portable tank instruction is specified by a “T” Code in Column (7) of the § 172.101 Table for a specific hazardous material, a specification portable tank conforming to an alternative tank instruction may be used if:

(A) The alternative portable tank has a higher or equivalent test pressure (for example, 4 bar when 2.65 bar is specified);

(B) The alternative portable tank has greater or equivalent wall thickness (for example, 10 mm when 6 mm is specified);

(C) The alternative portable tank has a pressure relief device as specified in the “T” Code. If a frangible disc is required in series with the reclosing pressure relief device for the specified portable tank, the alternative portable

tank must be fitted with a frangible disc in series with the reclosing pressure relief device; and

(D) With regard to bottom openings—

(1) When two effective means are specified, the alternative portable tank is fitted with bottom openings having two or three effective means of closure or no bottom openings; or

(2) When three effective means are specified, the portable tank has no bottom openings or three effective means of closure; or

(3) When no bottom openings are authorized, the alternative portable tank must not have bottom openings.

(vi) Except when an organic peroxide is authorized under § 173.225(g), if a hazardous material is not assigned a portable tank “T” Code or TP9 is referenced in Column (7) of the § 172.101 Table, the hazardous material may not be transported in a portable tank unless approved by the Associate Administrator.

(8) “TP” codes. (i) These provisions apply to the transportation of hazardous materials in UN Specification portable tanks. Portable tank special provisions are assigned to certain hazardous materials to specify requirements that are in addition to those provided by the portable tank instructions or the requirements in part 178 of this subchapter. Portable tank special provisions are designated with the abbreviation TP (tank provision) and are

assigned to specific hazardous materials in Column (7) of the § 172.101 Table.

(ii) The following is a list of the portable tank special provisions:

* * * * *

Code/Special Provisions

* * * * *

TP3 The maximum degree of filling (in %) for solids transported above their melting points and for elevated temperature liquids shall be determined by the following:

$$\left(\text{Degree of filling} = 95 \frac{d_r}{d_f} \right).$$

Where:

d_f and d_r are the mean densities of the liquid at the mean temperature of the liquid during filling and the maximum mean bulk temperature during transport respectively.

* * * * *

TP6 The tank must be equipped with pressure release devices which prevent a tank from bursting under fire engulfment conditions (the conditions prescribed in CGA pamphlet S–1.2 (see § 171.7 of this subchapter) or alternative conditions approved by the Associate Administrator may be used to consider the fire engulfment condition), taking into account the properties of the hazardous material to be transported.

* * * * *

TP32 Portable tanks may be used subject to the following conditions:

(a) Each portable tank constructed of metal must be fitted with a pressure-relief device consisting of a reclosing spring loaded type, a frangible disc or a fusible element. The set to discharge for the spring loaded pressure relief device and the burst pressure for the frangible disc, as applicable, must not be greater than 2.65 bar for portable tanks with minimum test pressures greater than 4 bar;

(b) The suitability for transport in tanks must be demonstrated using test 8 (d) in Test Series 8 (see UN Manual of Tests and Criteria, Part 1, Sub-section 18.7) (IBR, see § 171.7 of this subchapter) or an alternative means approved by the Associate Administrator.

* * * * *

12. In § 172.202, paragraph (a)(5)(i) is revised to read as follows:

§ 172.202 Description of hazardous material on shipping papers.

(a) * * *

(5) * * *

(i) For Class I materials, the quantity must be the net explosive mass. For an explosive that is an article, such as Cartridges, small arms, the quantity must be the net mass of the article.

* * * * *

13. In § 172.203, paragraphs (f), (m)(2) and (o)(3) are revised and a new paragraph (i)(3) is added to read as follows:

§ 172.203 Additional description requirements.

* * * * *

(f) *Transportation by air.* A statement indicating that the shipment is within the limitations prescribed for either passenger and cargo aircraft or cargo aircraft only must be entered on the shipping paper.

* * * * *

(i) * * *

(3) For a hazardous material consigned under an "n.o.s." entry not included in the segregation groups listed in section 3.1.4 of the IMDG Code

but belonging, in the opinion of the consignor, to one of these groups, the appropriate segregation group must be shown in association with the basic description. When no segregation group is applicable, there is no requirement to indicate that condition.

(m) * * *

(2) For materials that are poisonous by inhalation (see § 171.8 of this subchapter), the words "Poison-Inhalation Hazard" or "Toxic-Inhalation Hazard" and the words "Zone A", "Zone B", "Zone C", or "Zone D", for gases or "Zone A" or "Zone B" for liquids, as appropriate, must be entered on the shipping description. The word "Poison" or "Toxic" or the phrase "Poison-Inhalation Hazard" or "Toxic Inhalation Hazard" need not be repeated if it otherwise appears in the shipping description.

* * * * *

(o) * * *

(3) The word "SAMPLE" must be included in association with the basic description when a sample of a Division 4.1 (self-reactive) material (see § 173.224(c)(3) of this subchapter) or Division 5.2 (organic peroxide) material (see § 173.225(b)(2) of this subchapter) is offered for transportation.

14. In § 172.204, paragraph (c)(3) is revised to read as follows:

§ 172.204 Shipper's certification.

* * * * *

(c) * * *

(3) *Additional certification requirements.* Effective October 1, 2006, each person who offers a hazardous material for transportation by air must add to the certification required in this section the following statement:

"I declare that all of the applicable air transport requirements have been met." Each person who offers any package or overpack of hazardous materials for transport by air must ensure that:

(a) The articles or substances are not prohibited for transport by air (see the § 172.101 Table);

(b) The articles or substances are properly classed, marked and labeled

and otherwise in a condition for transport as required by this subchapter;

(c) The articles or substances are packaged in accordance with all the applicable air transport requirements, including appropriate types of packaging that conform to the packing requirements and the "A" Special Provisions in § 172.102; inner packaging and maximum quantity per package limits; the compatibility requirements (see, for example, § 173.24 of this subchapter); and requirements for closure for both inner and outer packagings, absorbent materials, and pressure differential in § 173.27 of this subchapter. Other requirements may also apply. For example, single packagings may be prohibited, inner packaging may need to be packed in intermediate packagings, and certain materials may be required to be transported in packagings meeting a more stringent performance level.

* * * * *

15. A new § 172.317 is added to read as follows:

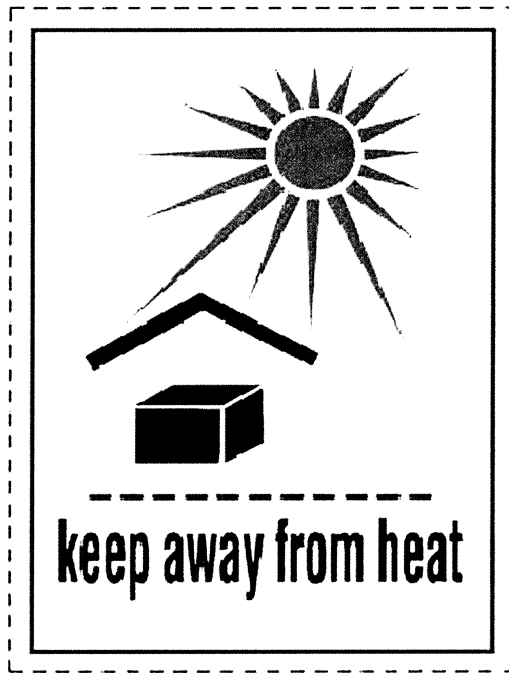
§ 172.317 Keep away from heat handling mark.

(a) *General.* For transportation by aircraft, each package containing self-reactive substances of Division 4.1 or organic peroxides of Division 5.2 must be marked with the KEEP AWAY FROM HEAT handling mark specified in this section.

(b) *Location and design.* The marking must be a rectangle measuring at least 105 mm (4.1 inches) in height by 74 mm (2.9 inches) in width. Markings with not less than half this dimension are permissible where the dimensions of the package can only bear a smaller mark.

(c) *KEEP AWAY FROM HEAT handling mark.* The KEEP AWAY FROM HEAT handling mark must conform to the following:

(1) Except for size, the KEEP AWAY FROM HEAT handling mark must appear as follows:



(2) The symbol, letters and border must be black and the background white, except for the starburst which must be red.

(3) The KEEP AWAY FROM HEAT handling marking required by paragraph (a) of this section must be durable, legible and displayed on a background of contrasting color.

§ 172.321 [Removed]

16. Section 172.321 is removed.

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

17. The authority citation for part 173 continues to read as follows:

Authority: 49 U.S.C. 5101–5127, 44701; 49 CFR 1.45, 1.53.

18. In § 173.3, paragraph (c) introductory text is revised to read as follows:

§ 173.3 Packaging and exceptions.

* * * * *

(c) *Salvage drums.* Packages of hazardous materials that are damaged, defective, found to be not conforming to the requirements of this subchapter after having been placed in transportation, or found leaking, and hazardous materials that have spilled or leaked may be placed in a metal or plastic removable head salvage drum that is compatible with the lading and shipped for repackaging or disposal under the following conditions:

* * * * *

19. In § 173.24, paragraphs (g) and (i) are revised to read as follows:

§ 173.24 General requirements for packagings and packages.

* * * * *

(g) *Venting.* Venting of packagings, to reduce internal pressure which may develop by the evolution of gas from the contents, is permitted only when—

(1) Transportation by aircraft is not involved;

(2) Except as otherwise provided in this subchapter, the evolved gases are not poisonous, likely to create a flammable mixture with air or be an asphyxiant under normal conditions of transportation;

(3) The packaging is designed so as to preclude an unintentional release of hazardous materials from the receptacle;

(4) For bulk packagings, other than IBCs, venting is authorized for the specific hazardous material by a special provision in the § 172.101 table or by the applicable bulk packaging specification in part 178 of this subchapter; and

(5) Intermediate bulk packagings (IBCs) may be vented when required to reduce internal pressure that may develop by the evolution of gas subject to the requirements of paragraph (g)(1) through (g)(3) of this section. The IBC must be of a type that has successfully passed (with the vent in place) the applicable design qualification tests with no release of hazardous material.

* * * * *

(i) *Air transportation.* Packages offered or intended for transportation by

aircraft are subject to requirements additional to those of other modes of transport (e.g., quantity limitations, requirements for absorbent material, pressure differential requirements appropriate closure procedures, and specific packaging requirements) and must conform to the general requirements for transportation by aircraft in § 173.27.

20. In § 173.25, paragraphs (a)(2) and (a)(4) are revised to read as follows:

§ 173.25 Authorized packagings and overpacks.

(a) * * *
* * * * *

(2) The overpack is marked with the proper shipping and identification number, when applicable, and is labeled as required by this subchapter for each hazardous material contained therein, unless marking and labels representative of each hazardous material in the overpack are visible.

* * * * *

(4) The overpack is marked with the word “OVERPACK.” Alternatively, until October 1, 2007, the overpack is marked with a statement indicating that the “inside (inner) packagings comply with prescribed specifications” when specification packagings are required, unless specification markings on the inside packages are visible.

* * * * *

21. In § 173.27, paragraph (i) is revised to read as follows:

§ 173.27 General requirements for transportation by aircraft.

* * * * *

(i) Effective October 1, 2006, each person who offers a hazardous material for transportation by aircraft must include the certification statement specified in § 172.204(c)(3).

22. In § 173.28, paragraph (c)(2) is revised to read as follows:

§ 173.28 Reuse, reconditioning and remanufacture of packagings.

* * * * *

(c) * * *

(1) * * *

(2) For the purpose of this subchapter, reconditioning of a non-bulk packaging other than a metal drum includes:

* * * * *

23. In § 173.115, a new paragraph (k) is added to read as follows:

§ 173.115 Class 2, Division 2.1, 2.2 and 2.3—Definitions.

* * * * *

(k) The following applies to aerosols (see § 171.8 of this subchapter):

(1) An aerosol must be assigned to Division 2.1 if the contents include 85% by mass or more flammable components and the chemical heat of combustion is 30 kJ/g or more;

(2) An aerosol must be assigned to Division 2.2 if the contents contain 1% by mass or less flammable components and the heat of combustion is less than 20 kJ/g.

(3) Aerosols not meeting the provisions of (a) or (b) above must be classed in accordance with the appropriate tests of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

(4) Division 2.3 gases may not be transported in an aerosol container.

(5) When the contents are classified as Division 6.1 or Class 8, PG III, the aerosol must be assigned a subsidiary hazard of Division 6.1 or Class 8.

(6) Substances of Division 6.1 or Class 8 Packing Group I and Packing Group II may not be transported in an aerosol container.

(7) Flammable components are Class 3 flammable liquids, Class 4.1 flammable solids, or Division 2.2 flammable gases. The chemical heat of combustion must be determined in accordance with the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

24. In § 173.128, paragraph (d)(1) is revised to read as follows:

§ 173.128 Class 5, Division 5.2—Definitions and types.

* * * * *

(d) *Approvals.* (1) An organic peroxide must be approved, in writing,

by the Associate Administrator, before being offered for transportation or transported, including assignment of a generic type and shipping description, except for—

(i) An organic peroxide which is identified by technical name in the Organic Peroxides Table in § 173.225(c);

(ii) A mixture of organic peroxides prepared according to § 173.225(b); or

(iii) An organic peroxide which may be shipped as a sample under the provisions of § 173.225(b).

* * * * *

25. In 173.132, paragraph (b)(1) is revised to read as follows:

173.132 Class 6, Division 6.1—Definitions.

* * * * *

(b) * * *

(1) LD₅₀ (median lethal dose) for acute oral toxicity is the statistically derived single dose of a substance that can be expected to cause death within 14 days in 50% of young adult albino rats when administered by the oral route. The LD₅₀ value is expressed in terms of mass of test substance per mass of test animal (mg/kg).

* * * * *

26. In § 173.136, paragraph (d) is added to read as follows:

§ 173.136 Class 8—Definitions.

* * * * *

(d) Steel or aluminum corrosion test data produced no later than September 30, 2005, using the procedures of § 173.137(c)(2), in effect on September 30, 2004 (see 49 CFR 173.137 revised as of October 1, 2003), for appropriate steel or aluminum types may be used for classification and assignment of packing group for Class 8 materials corrosive to steel or aluminum.

27. In § 173.137, paragraph (c)(2) is revised to read as follows:

§ 173.137 Class 8—Assignment of packing group.

* * * * *

(c) * * *

* * * * *

(2) That do not cause full thickness destruction of intact skin tissue but exhibit a corrosion on steel or aluminum surfaces exceeding 6.25 mm (0.25 inch) a year at a test temperature of 55 °C (130 °F). The corrosion must be determined in accordance with the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter).

28. In § 173.150, paragraph (a), the introductory text of paragraph (b), paragraph (b)(2) and paragraph (c) are revised to read as follows:

§ 173.150 Exceptions for Class 3 (flammable) and combustible liquids.

(a) *General.* Exceptions for hazardous materials shipments in the following paragraphs are permitted only if this section is referenced for the specific hazardous material in the §§ 172.101 Table of this subchapter.

(b) *Limited quantities.* Limited quantities of flammable liquids and combustible liquids are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

* * * * *

(2) For flammable liquids in Packing Group II, inner packagings not over 1.0 L (0.3 gallons) net capacity each, unless the material has a subsidiary hazard of Division 6.1, Packing Group II, in which case the inner packagings may not exceed 100 mL (3.38 ounces) net capacity each, packed in a strong outer packaging.

* * * * *

(c) *Consumer commodities.* Except for a material that has a subsidiary hazard of Division 6.1, Packing Group II, a limited quantity which conforms to the provisions of paragraph (b) of this section and is a "consumer commodity" as defined in 171.8 of this subchapter, may be renamed "Consumer commodity" and reclassified as ORM-D material. In addition to the exceptions provided by paragraph (b) of this section, shipments of ORM-D materials are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or are offered for transportation and transported by aircraft, and are eligible for the exceptions provided in § 173.156.

* * * * *

29. In 173.151, paragraphs (b) and (c), and the introductory text of paragraph (d) are revised to read as follows:

§ 173.151 Exceptions for Class 4.

* * * * *

(b) *Limited quantities of Division 4.1.* Limited quantities of flammable solids

(Division 4.1) in Packing Group II or III are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

(1) For flammable solids in Packing Group II, inner packagings not over 1.0 kg (2.2 pounds) net capacity each, unless the material has a subsidiary hazard of Division 6.1, Packing Group II, in which case the inner packagings may not exceed 0.5 kg (1.1 pounds) net capacity each, packed in a strong outer packaging.

(2) For flammable solids in Packing Group III, inner packagings not over 5.0 kg (11 pounds) net capacity each, packed in a strong outer packaging.

(c) *Consumer commodities.* Except for a material that has a subsidiary hazard of Division 6.1, Packing Group II, a limited quantity which conforms to the provisions of paragraph (b) of this section, and charcoal briquettes in packagings not exceeding 30 kg (66 pounds) gross weight, may be renamed "Consumer commodity" and reclassified as ORM-D material if the material is a "consumer commodity" as defined in 171.8 of this subchapter. In addition to the exceptions provided by paragraph (b) of this section, shipments of ORM-D materials are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or is offered for transportation and transported by aircraft, and are eligible for the exceptions provided in § 173.156.

(d) *Limited quantities of Division 4.3.* Limited quantities of dangerous when wet (Division 4.3) solids in Packing Group II or III are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package

must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

* * * * *

30. In § 173.152, the introductory text of paragraph (b), paragraph (b)(1), and paragraph (c) are revised to read as follows:

§ 173.152 Exceptions for Division 5.1 (oxidizers) and Division 5.2 (organic peroxides).

* * * * *

(b) *Limited quantities.* Limited quantities of oxidizers (Division 5.1) in Packing Group II and III and organic peroxides are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

(1) For oxidizers in Packing Group II, inner packagings not over 1.0 L (0.3 gallon) net capacity each for liquids or not over 1.0 kg (2.2 pounds) net capacity each for solids, unless the material has a subsidiary hazard of Division 6.1, Packing Group II, in which case the inner packagings may not exceed 100 mL (3.38 ounces) for liquids or 0.5 kg (1.1 pounds) for solids, packed in a strong outer packaging.

* * * * *

(c) *Consumer commodities.* Except for a material that has a subsidiary hazard of Division 6.1, Packing Group II, a limited quantity which conforms to the provisions of paragraph (b) of this section, and is a "consumer commodity" as defined in § 171.8 of this subchapter, may be renamed "Consumer commodity" and reclassified as ORM-D. In addition to the exceptions provided by paragraph (b) of this section, shipments of ORM-D materials are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or are offered for transportation and transported by aircraft, and are eligible for the exceptions provided in § 173.156.

31. In § 173.153, paragraph (b), and paragraph (c)(1) are revised to read as follows:

§ 173.153 Exceptions for Division 6.1 (poisonous materials).

* * * * *

(b) *Limited quantities.* The exceptions in this paragraph do not apply to poison-by-inhalation materials. Limited quantities of poisonous materials (Division 6.1) in Packing Group II and III are excepted from the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds) gross weight. The following combination packagings are authorized:

(1) For poisonous materials in Packing Group II, inner packagings not over 100 mL (3.38 ounces) each for liquids or 0.5 kg (1.1 pounds) each for solids, packed in a strong outer packaging.

(2) For poisonous materials in Packing Group III, inner packagings not over 4 L (1.0 gallon) each for liquids or 5.0 kg (11 pounds) each for solids, packed in a strong outer packaging.

(c) * * *

(1) A limited quantity of poisonous material in Packing Group III which conforms to the provisions of paragraph (b) of this section, and is a "consumer commodity" as defined in § 171.8 of this subchapter, may be renamed "Consumer commodity" and reclassified as ORM-D.

* * * * *

32. In § 173.154, the introductory text of paragraph (b), paragraph (b)(1), and paragraph (c) are revised to read as follows:

§ 173.154 Exceptions for Class 8 (corrosive materials).

* * * * *

(b) *Limited quantities.* Limited quantities of corrosive materials (Class 8) in Packing Group II and III are excepted from labeling requirements, unless the material also meets the definition of Division 6.1 or is offered for transportation or transported by aircraft, and the specification packaging requirements of this subchapter when packaged in combination packagings according to this paragraph. In addition, shipments of limited quantities are not subject to subpart F (Placarding) of part 172 of this subchapter. Each package must conform to the packaging requirements of subpart B of this part and may not exceed 30 kg (66 pounds)

gross weight. The following combination packagings are authorized:

(1) For corrosive materials in Packing Group II, inner packagings not over 1.0 L (0.3 gallon) net capacity each for liquids or not over 1.0 kg (2.2 pounds) net capacity each for solids, unless the material has a subsidiary hazard of Division 6.1, Packing Group II in which case the inner packagings may not exceed 100 mL (3.38 ounces) for liquids or 0.5 kg (1.1 pounds) for solids, packed in a strong outer packaging.

* * * * *

(c) *Consumer commodities*. Except for a material that has a subsidiary hazard of Division 6.1, Packing Group II, a limited quantity which conforms to the provisions of paragraph (b) of this section, and is a "consumer commodity" as defined in § 171.8 of this subchapter, may be renamed "Consumer commodity" and reclassified as ORM-D. In addition to the exceptions provided by paragraph (b) of this section, shipments of ORM-D materials are not subject to the shipping paper requirements of subpart C of part 172 of this subchapter, unless the material meets the definition of a hazardous substance, hazardous waste, marine pollutant, or are offered for transportation and transported by aircraft, and are eligible for the exceptions provided in § 173.156.

* * * * *

33. In Section 173.185, paragraphs (c)(3) and (e)(6) are revised to read as follows:

§ 173.185 Lithium batteries and cells.

* * * * *

(c) * * *

(3) Each cell or battery is of the type proven to be non-dangerous by testing in accordance with Tests in the UN Manual of Tests and Criteria (IBR; see § 171.7 of this subchapter). Such testing must be carried out on each type of cell or battery prior to the initial transport of that type. A cell or battery and equipment containing a cell or battery which was first transported prior to [INSERT EFFECTIVE DATE OF RULE] and is of a type proven to meet the criteria of Class 9 by testing in accordance with the tests in the UN Manual of Tests and Criteria, Third Revised Edition, 1999 is not required to be retested;

* * * * *

(e) * * *

(6) Each cell or battery is of the type proven to meet the lithium battery requirements in the UN Manual of Tests and Criteria (IBR; see § 171.7 of this subchapter). A cell or battery and equipment containing a cell or battery

which was first transported prior to [INSERT EFFECTIVE DATE OF RULE] and is of a type proven to meet the criteria of Class 9 by testing in accordance with the tests in the UN Manual of Tests and Criteria, Third Revised Edition, 1999 is not required to be retested;

* * * * *

34. In § 173.186, paragraph (e) is revised to read as follows:

§ 173.186 Matches.

* * * * *

(e) Packagings. Strike-anywhere matches must be tightly packed in securely closed chipboard, fiberboard, wooden, or metal inner packagings to prevent accidental ignition under conditions normally incident to transportation. Each inner packaging may contain no more than 700 strike-anywhere matches and must be packed in outer steel drums (1A2), aluminum drums (1B2), steel jerricans (3A2), wooden (4C1, 4C2), plywood (4D), reconstituted wood (4F) or fiberboard (4G) boxes, plywood (1D) or fiber (1G) drums. Gross weight of fiberboard boxes (4G) must not exceed 30 kg (66 pounds). Gross weight of other outer packagings must not exceed 45 kg (100 pounds).

35. In § 173.187, a new paragraph (f) is added to read as follows:

§ 173.187 Pyrophoric solids, metals or alloys, n.o.s.

* * * * *

(f) In specification cylinders, as prescribed for any compressed gas, except for Specification 8 and 3HT.

36. In § 173.211, paragraph (c) is revised to read as follows:

§ 173.211 Non-bulk packagings for solid hazardous materials in Packing Group I.

* * * * *

(c) Except for transportation by passenger aircraft, the following single packagings are authorized:

Steel drum: 1A1 or 1A2
 Aluminum drum: 1B1 or 1B2
 Metal drum other than steel or aluminum: 1N1 or 1N2
 Plastic drum: 1H1 or 1H2
 Fiber drum: 1G
 Steel jerrican: 3A1 or 3A2
 Plastic jerrican: 3H1 or 3H2
 Aluminum jerrican: 3B1 or 3B2
 Steel box with liner: 4A
 Aluminum box with liner: 4B
 Natural wood box, sift proof: 4C2
 Plastic receptacle in steel, aluminum, plywood, fiber or plastic drum: 6HA1, 6HB1, 6HD1, 6HG1 or 6HH1
 Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PG1

Glass, porcelain or stoneware in steel, aluminum, wooden or fiberboard box: 6PA2, 6PB2, 6PC or 6PG2

Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2

Cylinders, as prescribed for any compressed gas, except for Specification 8 and 3HT

37. In § 173.212, paragraph (c) is revised to read as follows:

§ 173.212 Non-bulk packagings for solid hazardous materials in Packing Group III.

* * * * *

(c) Except for transportation by passenger aircraft, the following single packagings are authorized:

Steel drum: 1A1 or 1A2
 Aluminum drum: 1B1 or 1B2
 Plywood drum: 1D
 Plastic drum: 1H1 or 1H2
 Fiber drum: 1G
 Metal drum other than steel or aluminum: 1N1 or 1N2
 Wooden barrel: 2C1 or 2C2
 Steel jerrican: 3A1 or 3A2
 Plastic jerrican: 3H1 or 3H2
 Aluminum jerrican: 3B1 or 3B2
 Steel box: 4A
 Steel box with liner: 4A
 Aluminum box: 4B
 Aluminum box with liner: 4B
 Natural wood box: 4C1
 Natural wood box, sift proof: 4C2
 Plywood box: 4D
 Reconstituted wood box: 4F
 Fiberboard box: 4G
 Expanded plastic box: 4H1
 Solid plastic box: 4H2
 Bag, woven plastic: 5H1, 5H2 or 5H3
 Bag, plastic film: 5H4
 Bag, textile: 5L1, 5L2 or 5L3
 Bag, paper, multiwall, water resistant: 5M2
 Plastic receptacle in steel, aluminum, plywood, fiber or plastic drum: 6HA1, 6HB1, 6HD1, 6HG1 or 6HH1
 Plastic receptacle in steel aluminum, wood, plywood or fiberboard box: 6HA2, 6HB2, 6HC, 6HD2 or 6HG2
 Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PG1
 Glass, porcelain or stoneware in steel, aluminum, wooden or fiberboard box: 6PA2, 6PB1, 6PC or 6PG2
 Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2
 Cylinders, as prescribed for any compressed gas, except for Specification 8 and 3HT
 38. In § 173.213, paragraph (c) is revised to read as follows:

§ 173.213 Non-bulk packagings for solid hazardous materials in Packing Group III.

* * * * *

(c) The following single packagings are authorized:

Steel drum: 1A1 or 1A2
 Aluminum drum: 1B1 or 1B2
 Plywood drum: 1D
 Plastic drum: 1H1 or 1H2
 Fiber drum: 1G
 Metal drum other than steel or aluminum: 1N1 or 1N2
 Wooden barrel: 2C1 or 2C2
 Steel jerrican: 3A1 or 3A2
 Plastic jerrican: 3H1 or 3H2
 Aluminum jerrican: 3B1 or 3B2
 Steel box: 4A
 Steel box with liner: 4A
 Aluminum box: 4B
 Aluminum box with liner: 4B
 Natural wood box: 4C1
 Natural wood box, sift proof: 4C2
 Plywood box: 4D
 Reconstituted wood box: 4F
 Fiberboard box: 4G
 Expanded plastic box: 4H1
 Solid plastic box: 4H2
 Bag, woven plastic: 5H1, 5H2 or 5H3
 Bag, plastic film: 5H4
 Bag, textile: 5L1, 5L2 or 5L3
 Bag, paper, multiwall, water resistant: 5M2
 Plastic receptacle in steel, aluminum, plywood, fiber or plastic drum: 6HA1, 6HB1, 6HD1, 6HG1 or 6HH1
 Plastic receptacle in steel aluminum, wood, plywood or fiberboard box: 6HA2, 6HB2, 6HC, 6HD2 or 6HG2
 Glass, porcelain or stoneware in steel, aluminum, plywood or fiber drum: 6PA1, 6PB1, 6PD1 or 6PG1
 Glass, porcelain or stoneware in steel, aluminum, wooden or fiberboard box: 6PA2, 6PB1, 6PC or 6PG2
 Glass, porcelain or stoneware in expanded or solid plastic packaging: 6PH1 or 6PH2
 Cylinders, as prescribed for any compressed gas, except for Specification 8 and 3HT

39. Section 173.219 is revised to read as follows:

§ 173.219 Life-saving appliances.

(a) A life-saving appliance, self-inflating or non-self-inflating, containing small quantities of hazardous materials that are required as part of the life-saving appliance must conform to the requirements of this section. Packagings must conform to the general packaging requirements of subpart B of this part but need not conform to the requirements of part 178 of this subchapter. The appliances must be packed, so that they cannot be accidentally activated and, except for life vests, the hazardous materials must be in inner packagings packed so as to prevent movement. The hazardous materials must be an integral part of the

appliance and in quantities that do not exceed those appropriate for the actual appliance when in use.

(b) Life saving appliances may contain:

- (1) Division 2.2 compressed gases, including oxygen. However, oxygen generators are not permitted;
- (2) Signal devices (Class 1), which may include smoke and illumination signal flares;
- (3) Electric storage batteries and lithium batteries (Life saving appliances containing lithium batteries must be transported in accordance with § 173.185.);
- (4) First aid or repair kits conforming to the applicable material and quantity limitations of § 173.161 of this subchapter;
- (5) Strike-anywhere matches;
- (6) For self-inflating life saving appliances only, cartridges power device of Division 1.4S, for purposes of the self-inflating mechanism provided that the quantity of explosives per appliance does not exceed 3.2 g; or
- (7) Limited quantities of other hazardous materials.

(c) Hazardous materials in life saving appliances must be packaged as follows:

- (1) Division 2.2 compressed gases must be packaged in cylinders in accordance with the requirements of this subchapter;
- (2) Signal devices (Class 1) must be in packagings that prevent them from being inadvertently activated;
- (3) Strike-anywhere matches must be cushioned to prevent movement or friction in a metal or composition receptacle with a screw-type closure in a manner that prevents them from being inadvertently activated;
- (4) Limited quantities of other hazardous materials must be packaged in accordance with the requirements of this subchapter; and
- (5) For other than transportation by aircraft, life saving appliances containing no hazardous materials other than carbon dioxide cylinders with a capacity not exceeding 100 cm³ are not subject to the provisions of this subchapter provided they are overpacked in rigid outer packagings with a maximum gross mass of 40 kg.

40. In § 173.220, paragraph (b)(2) is revised to read as follows:

§ 173.220 Internal combustion engines, self-propelled vehicles, mechanical equipment containing internal combustion engines, and battery powered vehicles or equipment.

* * * * *

(b) * * *
 (2) *Flammable liquefied or compressed gas fuel.* (i) For

transportation by motor vehicle, rail car or vessel, fuel tanks and fuel systems containing flammable liquefied or compressed gas fuel must be securely closed. For transportation by vessel, the requirements of §§ 176.78(k) and 176.905 of this subchapter apply.

(ii) For transportation by aircraft:

(A) Flammable gas-powered vehicles, machines, equipment or cylinders containing the flammable gas must be completely emptied of flammable gas. Lines from vessels to gas regulators, and gas regulators themselves, must also be drained of all traces of flammable gas. To ensure that these conditions are met, gas shut-off valves must be left open and connections of lines to gas regulators must be left disconnected upon delivery of the vehicle to the operator. Shut-off valves must be closed and lines reconnected at gas regulators before loading the vehicle aboard the aircraft; or alternatively

(B) Flammable gas powered vehicles, machines or equipment, which have cylinders (fuel tanks) that are equipped with electrically operated valves, may be transported under the following conditions:

- (1) The valves must be in the closed position and in the case of electrically operated valves, power to those valves must be disconnected;
- (2) After closing the valves, the vehicle, equipment or machinery must be operated until it stops from lack of fuel before being loaded aboard the aircraft;
- (3) In no part of the system between the pressure receptacle and the shut off valve shall the pressure exceed more than 5% of the maximum allowable working pressure of the system; and
- (4) There must not be any residual liquefied gas in the system, including the fuel tank.

41. In § 173.224, paragraph (b) (4) is revised to read as follows:

§ 173.224 Packaging and control and emergency temperatures for self-reactive materials.

* * * * *
 (b) * * *

(4) *Packing method.* Column 4 specifies the highest packing method which is authorized for the self-reactive material. A packing method corresponding to a smaller package size may be used, but a packing method corresponding to a larger package size may not be used. The Table of Packing Methods in § 173.225(d) defines the packing methods. Bulk packagings for Type F self-reactive substances are authorized by § 173.225(f) for IBCs and § 173.225(h) for bulk packagings other than IBCs. Additional bulk packagings

are authorized if approved by the Associate Administrator.

* * * * *

42. Section 173.225 is revised to read as follows:

§ 173.225 Packaging requirements and other provisions for organic peroxides.

(a) *General.* When the § 172.101 table specifies that an organic peroxide must be packaged under this section, the organic peroxide must be packaged and offered for transportation in accordance with the provisions of this section. Each packaging must conform to the general requirements of subpart B of part 173 and to the applicable requirements of part 178 of this subchapter. Non-bulk packagings must meet Packing Group II performance levels. To avoid unnecessary confinement, metallic non-bulk packagings meeting Packing Group I are not authorized. No used material, other than production residues or regrind from the same production process, may be used in plastic packagings. Organic peroxides that require temperature control are subject to the provisions of § 173.21(f). When an IBC or bulk packaging is authorized and meets the requirements of paragraph (f) or (h) of this section, respectively, lower control temperatures than those specified for non-bulk packaging may be required. An organic peroxide not identified in paragraph (c), (e), or (g) of this section by technical name or formulation of identified organic peroxides must conform to the provisions of paragraph (c) of § 173.128.

(b) *New organic peroxides, formulations and samples.* (1) Except as provided for samples in paragraph (b)(2) of this section, no person may offer for transportation an organic peroxide that is not identified by technical name in the Organic Peroxides Table, Organic Peroxide IBC Table, or the Organic Peroxide Portable Tank Table of this section, or a formulation of one or more organic peroxides that are identified by technical name in one of those tables, unless the organic peroxide is assigned a generic type and shipping description and is approved by the Associate Administrator under the provisions of § 173.128(d) of this subchapter.

(2) *Samples.* Samples of new organic peroxides or new formulations of organic peroxides identified in the Organic Peroxides Table in paragraph (c) of this section, for which complete test data are not available, and that are to be transported for further testing or product evaluation, may be assigned an appropriate shipping description for organic peroxide Type C, packaged and offered for transportation, under the following conditions:

(i) Data available to the person offering the material for transportation must indicate that the sample would pose a level of hazard no greater than that of an organic peroxide Type B and that the control temperature, if any, is sufficiently low to prevent any dangerous decomposition and sufficiently high to prevent any dangerous phase separation;

(ii) The sample must be packaged in accordance with packing method OP2, for a liquid or solid, respectively;

(iii) Packages of the organic peroxide may be offered for transportation and transported in a quantity not to exceed 10 kg (22 pounds) per transport vehicle; and

(iv) One of the following shipping descriptions must be assigned:

(A) Organic peroxide Type C, liquid, 5.2, UN 3103;

(B) Organic peroxide Type C, solid, 5.2, UN 3104;

(C) Organic peroxide Type C, liquid, temperature controlled, 5.2, UN 3113; or

(D) Organic peroxide Type C, solid, temperature controlled, 5.2, UN 3114.

(3) *Mixtures.* Mixtures of organic peroxides individually identified in the Organic Peroxides Table in paragraph (c) of this section may be classified as the same type of organic peroxide as that of the most dangerous component and be transported under the conditions for transportation given for this type. If the stable components form a thermally less stable mixture, the SADT of the mixture must be determined and the new control and emergency temperature derived under the provisions of § 173.21(f).

(c) *Organic peroxides table.* The following Organic Peroxides Table specifies by technical name those organic peroxides that are authorized for transportation and not subject to the approval provisions of § 173.128 of this part. An organic peroxide identified by technical name in the following table is authorized for transportation only if it conforms to all applicable provisions of the table. The column headings of the Organic Peroxides Table are as follows:

(1) *Technical name.* The first column specifies the technical name.

(2) *ID number.* The second column specifies the identification (ID) number which is used to identify the proper shipping name in the § 172.101 table. The word "EXEMPT" appearing in the column denotes that the material is not regulated as an organic peroxide.

(3) *Concentration of organic peroxide.* The third column specifies concentration (mass percent) limitations, if any, in mixtures or solutions for the organic peroxide. Limitations are given as minimums,

maximums, or a range, as appropriate. A range includes the lower and upper limits (*i.e.*, "53–100" means from, and including, 53 % to, and including 100 %). See introductory paragraph of § 172.203(k) of this subchapter for additional description requirements for an organic peroxide that may qualify for more than one generic listing, depending on its concentration.

(4) *Concentration of diluents.* The fourth column specifies the type and concentration (mass percent) of diluent or inert solid, when required. Other types and concentrations of diluents may be used if approved by the Associate Administrator.

(i) The required mass percent of "Diluent type A" is specified in column 4a. A diluent type A is an organic liquid that does not detrimentally affect the thermal stability or increase the hazard of the organic peroxide and with a boiling point not less than 150 °C at atmospheric pressure. Type A diluents may be used for desensitizing all organic peroxides.

(ii) The required mass percent of "Diluent type B" is specified in column 4b. A diluent type B is an organic liquid which is compatible with the organic peroxide and which has a boiling point, at atmospheric pressure, of less than 150 °C (302 °F) but at least 60 °C (140 °F), and a flash point greater than 5 °C (41 °F). Type B diluents may be used for desensitizing all organic peroxides, when specified in the organic peroxide tables, provided that the boiling point is at least 60 °C (140 °F) above the SADT of the peroxide in a 50 kg (110 lbs) package. A type A diluent may be used to replace a type B diluent in equal concentration.

(iii) The required mass percent of "Inert solid" is specified in column 4c. An inert solid is a solid that does not detrimentally affect the thermal stability or hazard of the organic peroxide.

(5) *Concentration of water.* Column 5 specifies, in mass percent, the minimum amount of water, if any, which must be in formulation.

(6) *Packing method.* Column 6 specifies the highest packing method (largest packaging capacity) authorized for the organic peroxide. Lower numbered packing methods (smaller packaging capacities) are also authorized. For example, if OP3 is specified, then OP2 and OP1 are also authorized. The Table of Packing Methods in paragraph (d) of this section defines the non-bulk packing methods.

(7) *Temperatures.* Column 7a specifies the control temperature. Column 7b specifies the emergency temperature. Temperatures are specified

only when temperature controls are required. (See § 173.21(f)).

(8) Notes. Column 8 specifies other applicable provisions, as set forth in notes following the table.

ORGANIC PEROXIDE TABLE

Technical name (1)	ID number (2)	Concentration (mass %) (3)	Diluent (mass %)			Water (mass %) (5)	Packing method (6)	Temperature (°C)		Notes (8)
			A (4a)	B (4b)	I (4c)			Control (7a)	Emer- gency (7b)	
Acetyl acetone peroxide	UN3105	≤42	≥48 ..	.....	.....	≥8	OP7 .....	.....	.....	2
Acetyl acetone peroxide [as a paste] ...	UN3106	≤32 .....	.....	.....	.....	.....	OP7 .....	.....	.....	21
Acetyl cyclohexanesulfonyl peroxide	UN3112	≤82 .....	.....	.....	.....	≥12	OP4	- 10	0	.....
Acetyl cyclohexanesulfonyl peroxide	UN3115	≤32 .....	.....	≥68 ..	.....	.....	OP7	- 10	0	.....
tert-Amyl hydroperoxide	UN3107	≤88	≥6 .....	.....	.....	≥6	OP8 .....	.....	.....	.....
tert-Amyl peroxyacetate	UN3105	≤62	≥38 ..	.....	.....	.....	OP7 .....	.....	.....	.....
tert-Amyl peroxybenzoate	UN3103	≤100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	.....
tert-Amyl peroxy-2-ethylhexanoate	UN3115	≤100 .....	.....	.....	.....	.....	OP7	+20	+25 ..	.....
tert-Amyl peroxy-2-ethylhexyl car- bonate.	UN3105	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	.....
tert-Amyl peroxy isopropyl carbonate ...	UN3103	≤77	≥23 ..	.....	.....	.....	OP5 .....	.....	.....	.....
tert-Amyl peroxyneodecanoate	UN3115	≤77 .....	.....	≥23 ..	.....	.....	OP7	0	+10 ..	.....
tert-Amyl peroxy-pivalate	UN3113	≤77 .....	.....	≥23 ..	.....	.....	OP5	+10	+15 ..	.....
tert-Amyl peroxy-3,5,5- trimethylhexanoate.	UN3101	≤100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	.....
tert-Butyl cumyl peroxide	UN3107	>42-100 .....	.....	.....	.....	.....	OP8 .....	.....	.....	1
tert-Butyl cumyl peroxide	UN3108	≤52 .....	.....	.....	≥48 ..	.....	OP8 .....	.....	.....	1
n-Butyl-4,4-di-(tert-butylperoxy)valerate	UN3103	>52-100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	.....
n-Butyl-4,4-di-(tert-butylperoxy)valerate	UN3108	≤52 .....	.....	.....	≥48 ..	.....	OP8 .....	.....	.....	.....
tert-Butyl hydroperoxide	UN3103	>79-90 .....	.....	.....	.....	≥10	OP5 .....	.....	.....	13
tert-Butyl hydroperoxide	UN3105	≤80	≥20 ..	.....	.....	.....	OP7 .....	.....	.....	4, 13
tert-Butyl hydroperoxide	UN3107	≤79 .....	.....	.....	.....	>14	OP8 .....	.....	.....	13, 16
tert-Butyl hydroperoxide	UN3109	≤72 .....	.....	.....	.....	≥28	OP8 .....	.....	.....	13
tert-Butyl hydroperoxide [and] Di-tert- butylperoxide.	UN3103	<82+>9 .....	.....	.....	.....	≥7	OP5 .....	.....	.....	13
tert-Butyl monoperoxy-maleate	UN3102	>52-100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	.....
tert-Butyl monoperoxy-maleate	UN3103	≤52	≥48 ..	.....	.....	.....	OP6 .....	.....	.....	.....
tert-Butyl monoperoxy-maleate	UN3108	≤52 .....	.....	.....	≥48 ..	.....	OP8 .....	.....	.....	.....
tert-Butyl monoperoxy-maleate [as a paste].	UN3108	≤52 .....	.....	.....	.....	.....	OP8 .....	.....	.....	.....
tert-Butyl peroxyacetate	UN3101	>52-77	≥23 ..	.....	.....	.....	OP5 .....	.....	.....	.....
tert-Butyl peroxyacetate	UN3103	>32-52	≥48 ..	.....	.....	.....	OP6 .....	.....	.....	.....
tert-Butyl peroxyacetate	UN3109	≤32 .....	.....	≥68 ..	.....	.....	OP8 .....	.....	.....	.....
tert-Butyl peroxybenzoate	UN3103	>77-100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	.....
tert-Butyl peroxybenzoate	UN3105	>52-77	≥23 ..	.....	.....	.....	OP7 .....	.....	.....	1
tert-Butyl peroxybenzoate	UN3106	≤52 .....	.....	.....	≤48 ..	.....	OP7 .....	.....	.....	.....
tert-Butyl peroxybutyl fumarate	UN3105	≤52	≥48 ..	.....	.....	.....	OP7 .....	.....	.....	.....
tert-Butyl peroxy-crotonate	UN3105	≤77	≥23 ..	.....	.....	.....	OP7 .....	.....	.....	.....
tert-Butyl peroxydiethylacetate	UN3113	≤100 .....	.....	.....	.....	.....	OP5	+20	+25 ..	.....
tert-Butyl peroxy-2-ethylhexanoate	UN3113	>52-100 .....	.....	.....	.....	.....	OP6	+20	+25 ..	.....
tert-Butyl peroxy-2-ethylhexanoate	UN3117	>32-52 .....	.....	≥48 ..	.....	.....	OP8	+30	+35 ..	.....
tert-Butyl peroxy-2-ethylhexanoate	UN3118	≤52 .....	.....	.....	≥48 ..	.....	OP8	+20	+25 ..	.....
tert-Butyl peroxy-2-ethylhexanoate	UN3119	≤32 .....	.....	≥68 ..	.....	.....	OP8	+40	+45 ..	.....
tert-Butyl peroxy-2-ethylhexanoate [and] 2,2-di-(tert-butylperoxy)butane.	UN3106	≤12+≤14	≥14 ..	.....	≥60 ..	.....	OP7 .....	.....	.....	.....
tert-Butyl peroxy-2-ethylhexanoate [and] 2,2-di-(tert-butylperoxy)butane.	UN3115	≤31+≤36 .....	.....	≥33 ..	.....	.....	OP7	+35	+40 ..	.....
tert-Butyl peroxy-2-ethylhexylcarbonate	UN3105	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	.....
tert-Butyl peroxyisobutyrate	UN3111	>52-77 .....	.....	≥23 ..	.....	.....	OP5	+15	+20 ..	.....
tert-Butyl peroxyisobutyrate	UN3115	≤52 .....	.....	≥48 ..	.....	.....	OP7	+15	+20 ..	.....
tert-Butylperoxy isopropylcarbonate	UN3103	≤77	≥23 ..	.....	.....	.....	OP5 .....	.....	.....	.....
1-(2-tert-Butylperoxy isopropyl)-3- isopropenylbenzene.	UN3105	≤77	≥23 ..	.....	.....	.....	OP7 .....	.....	.....	.....
1-(2-tert-Butylperoxy isopropyl)-3- isopropenylbenzene.	UN3108	≤42 .....	.....	.....	≥58 ..	.....	OP8 .....	.....	.....	.....
tert-Butyl peroxy-2-methylbenzoate	UN3103	≤100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	.....
tert-Butyl peroxyneodecanoate	UN3115	>77-100 .....	.....	.....	.....	.....	OP7	- 5 ..	+5 .....	.....
tert-Butyl peroxyneodecanoate	UN3115	≤77 .....	.....	≥23 ..	.....	.....	OP7	0	+10 ..	.....
tert-Butyl peroxyneodecanoate [as a stable dispersion in water].	UN3119	≤52 .....	.....	.....	.....	.....	OP8	0	+10 ..	.....
tert-Butyl peroxyneodecanoate [as a stable dispersion in water (frozen)].	UN3118	≤42 .....	.....	.....	.....	.....	OP8	0	+10 ..	.....
tert-Butyl peroxyneodecanoate	UN3119	≤32	≥68 ..	.....	.....	.....	OP8	0	+10 ..	.....

ORGANIC PEROXIDE TABLE—Continued

Technical name (1)	ID number (2)	Concentration (mass %) (3)	Diluent (mass %)			Water (mass %) (5)	Packing method (6)	Temperature (°C)		Notes (8)
			A	B	I			Control	Emer- gency	
			(4a)	(4b)	(4c)						(7a)	(7b)
tert-Butyl peroxyneohexanoate	UN3115	≤77	≥23 ..	.....	.....	OP7	0	+10 ..	29
tert-Butyl peroxyneohexanoate [as a stable dispersion in water].	UN3117	≤42 .....	.....	.....	.....	OP8	0	+10 ..	
tert-Butyl peroxyneopentanoate	UN3113	>67–77	≥23 ..	.....	.....	OP5	0	+10 ..	
tert-Butyl peroxyneopentanoate	UN3115	≤67 .....	.....	≥33 ..	.....	OP7	0	+10 ..	
tert-Butyl peroxyneopentanoate	UN3115	>27–67 .....	.....	≥33 ..	.....	OP7	0	+10 ..	
tert-Butyl peroxyneopentanoate	UN3119	≤27 .....	.....	≥73 ..	.....	OP8	+30 ..	+35 ..	
tert-Butyl peroxyneopentanoate	UN3106	≤100 .....	.....	.....	.....	OP7 .....	.....	.....
tert-Butyl peroxy-3,5,5-trimethylhexanoate.	UN3105	>32–100 .....	.....	.....	.....	OP7 .....	.....	.....
tert-Butyl peroxy-3,5,5-trimethylhexanoate.	UN3109	≤32 .....	.....	≥68 ..	.....	OP8 .....	.....	.....
3-Chloroperoxybenzoic acid	UN3102	>57–86 .....	.....	.....	≥14 ..	OP1 .....	.....	.....
3-Chloroperoxybenzoic acid	UN3106	≤57 .....	.....	.....	≥3	≥40	OP7 .....	.....	
3-Chloroperoxybenzoic acid	UN3106	≤77 .....	.....	.....	≥6	≥17	OP7 .....	.....	
Cumyl hydroperoxide	UN3107	>90–98	≤10 ..	.....	.....	OP8 .....	.....	.....	13
Cumyl hydroperoxide	UN3109	≤90	≥10 ..	.....	.....	OP8 .....	.....	.....	13, 15
Cumyl peroxyneodecanoate	UN3115	≤77 .....	.....	≥23 ..	.....	OP7	–10 ..	0	
Cumyl peroxyneodecanoate [as a stable dispersion in water].	UN3119	≤52 .....	.....	.....	.....	OP8	–10 ..	0	
Cumyl peroxyneohexanoate	UN3115	≤77	≥23 ..	.....	.....	OP7	–10 ..	0	
Cumyl peroxyneopentanoate	UN3115	≤77 .....	.....	≥23 ..	.....	OP7	–5 ..	+5	
Cyclohexanone peroxide(s)	UN3104	≤91 .....	.....	.....	.....	≥9	OP6 .....	.....	13
Cyclohexanone peroxide(s)	UN3105	≤72	≥28 ..	.....	.....	OP7 .....	.....	.....	5
Cyclohexanone peroxide(s) [as a paste].	UN3106	≤72 .....	.....	.....	.....	OP7 .....	.....	.....	5, 21
Cyclohexanone peroxide(s)	Exempt ..	≤32 .....	.....	.....	≥68 ..	.....	Exempt ..	.....	.....
Diacetone alcohol peroxides	UN3115	≤57	≥26	≥8	OP7	+40 ..	+45 ..	5
Diacetyl peroxide	UN3115	≤27	≥73	OP7	+20 ..	+25 ..	8, 13
Di-tert-amyl peroxide	UN3107	≤100 .....	.....	.....	.....	.....	OP8 .....	.....	.....
1,1-Di-(tert-amylperoxy)cyclohexane ...	UN3103	≤82	≥18 ..	.....	.....	.....	OP6 .....	.....	.....
Dibenzoyl peroxide	UN3102	>51–100	≤48	OP2	3
Dibenzoyl peroxide	UN3102	>77–94	≥6	OP4	3
Dibenzoyl peroxide	UN3104	≤77 .....	.....	.....	.....	≥23	OP6 .....	.....	.....
Dibenzoyl peroxide	UN3106	≤62 .....	.....	.....	≥28 ..	≥10	OP7 .....	.....	.....
Dibenzoyl peroxide [as a paste]	UN3106	>52–62	OP7	21
Dibenzoyl peroxide	UN3106	>35–52 .....	.....	.....	.....	.....	OP7 .....	.....	.....
Dibenzoyl peroxide	UN3107	>36–42	≥18 ..	.....	.....	≤40	OP8 .....	.....	.....
Dibenzoyl peroxide [as a paste]	UN3108	≤56.5 .....	.....	.....	.....	≥15	OP8 .....	.....	.....
Dibenzoyl peroxide [as a paste]	UN3108	≤52	OP8	21
Dibenzoyl peroxide [as a stable disper- sion in water].	UN3109	≤42 .....	.....	.....	.....	.....	OP8 .....	.....	.....
Dibenzoyl peroxide	Exempt ..	≤35 .....	.....	.....	≥65 ..	.....	Exempt ..	.....	.....
Di-(4-tert-butylcyclohexyl)peroxydicarbonate.	UN3114	≤100 .....	.....	.....	.....	.....	OP6	+30 ..	+35 ..
Di-(4-tert-butylcyclohexyl)peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42 .....	.....	.....	.....	.....	OP8	+30 ..	+35 ..
Di-tert-butyl peroxide	UN3107	>52–100 .....	.....	.....	.....	.....	OP8 .....	.....	.....
Di-tert-butyl peroxide	UN3109	≤52	≥48	OP8	24
Di-tert-butyl peroxyazelaate	UN3105	≤52	≥48 ..	.....	.....	.....	OP7 .....	.....	.....
2,2-Di-(tert-butylperoxy)butane	UN3103	≤52	≥48 ..	.....	.....	.....	OP6 .....	.....	.....
1,6-Di-(tert-butylperoxy)hexane.	UN3103	≤72	≥28 ..	.....	.....	.....	OP5 .....	.....	.....
1,1-Di-(tert-butylperoxy)cyclohexane ...	UN3101	>80–100 .....	.....	.....	.....	.....	OP5 .....	.....	.....
1,1-Di-(tert-butylperoxy)cyclohexane ...	UN3103	>52–80	≥20 ..	.....	.....	.....	OP5 .....	.....	.....
1,1-Di-(tert-butylperoxy)cyclohexane ...	UN3105	≤52	≥48	OP7	29
1,1-Di-(tert-butylperoxy)cyclohexane ...	UN3105	>42–52	≥48 ..	.....	.....	.....	OP7 .....	.....	.....
1,1-Di-(tert-butylperoxy)cyclohexane ...	UN3106	≤42	≥13 ..	.....	≥45 ..	.....	OP7 .....	.....	.....
1,1-Di-(tert-butylperoxy)cyclohexane ...	UN3107	≤27	≥25	OP8	22
1,1-Di-(tert-butylperoxy)cyclohexane ...	UN3109	≤42	≥58 ..	.....	.....	.....	OP8 .....	.....	.....
1,1-Di-(tert-butylperoxy)cyclohexane ...	UN3109	≤25	≥25 ..	≥50	OP8	29
1,1-Di-(tert-butylperoxy)cyclohexane ...	UN3109	≤13	≥13 ..	≥74 ..	.....	.....	OP8 .....	.....	.....
Di-n-butyl peroxydicarbonate	UN3115	>27–52 .....	.....	≥48 ..	.....	.....	OP7	–15 ..	–5 ..
Di-n-butyl peroxydicarbonate	UN3117	≤27 .....	.....	≥73 ..	.....	.....	OP8	–10 ..	0
Di-n-butyl peroxydicarbonate [as a stable dispersion in water (frozen)].	UN3118	≤42 .....	.....	.....	.....	.....	OP8	–15 ..	–5 ..

ORGANIC PEROXIDE TABLE—Continued

Technical name (1)	ID number (2)	Concentration (mass %) (3)	Diluent (mass %)			Water (mass %) (5)	Packing method (6)	Temperature (°C)		Notes (8)
			A (4a)	B (4b)	I (4c)			Control (7a)	Emergency (7b)	
Di-sec-butyl peroxydicarbonate	UN3113	>52–100 .....	.....	.....	.....	.....	OP4	–20	–10	6
Di-sec-butyl peroxydicarbonate	UN3115	≤52 .....	.....	≥48 ..	.....	.....	OP7	–15	–5 ..	6
Di-(2-tert-butylperoxyisopropyl)benzene(s).	UN3106	>42–100 .....	.....	.....	≤57 ..	.....	OP7 .....	.....	.....	1
Di-(2-tert-butylperoxyisopropyl)benzene(s).	Exempt ..	≤42 .....	.....	.....	≥58 ..	.....	Exempt ..	.....	.....	1
Di-(tert-butylperoxy)phthalate	UN3105	>42–52	≥48 ..	.....	.....	.....	OP7 .....	.....	.....	21
Di-(tert-butylperoxy)phthalate [as a paste].	UN3106	≤52 .....	.....	.....	.....	.....	OP7 .....	.....	.....	21
Di-(tert-butylperoxy)phthalate	UN3107	≤42	≥58 ..	.....	.....	.....	OP8 .....	.....	.....	21
2,2-Di-(tert-butylperoxy)propane	UN3105	≤52	≥48 ..	.....	.....	.....	OP7 .....	.....	.....	21
2,2-Di-(tert-butylperoxy)propane	UN3106	≤42	≥13 ..	.....	≥45 ..	.....	OP7 .....	.....	.....	21
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3101	>90–100 .....	.....	.....	.....	.....	OP5 .....	.....	.....	21
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3103	>57–90	≥10 ..	.....	.....	.....	OP5 .....	.....	.....	21
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3103	≤77 .....	.....	≥23 ..	.....	.....	OP5 .....	.....	.....	21
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3110	≤57 .....	.....	.....	≥43 ..	.....	OP8 .....	.....	.....	21
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3107	≤57	≥43 ..	.....	.....	.....	OP8 .....	.....	.....	21
1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane.	UN3107	≤32	≥26 ..	≥42 ..	.....	.....	OP8 .....	.....	.....	21
Dicetyl peroxydicarbonate	UN3116	≤100 .....	.....	.....	.....	.....	OP7	+30	+35 ..	21
Dicetyl peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42 .....	.....	.....	.....	.....	OP8	+30	+35 ..	21
Di-4-chlorobenzoyl peroxide	UN3102	≤77 .....	.....	.....	.....	≥23	OP5 .....	.....	.....	21
Di-4-chlorobenzoyl peroxide [as a paste].	UN3106	≤52 .....	.....	.....	.....	.....	OP7 .....	.....	.....	21
Di-4-chlorobenzoyl peroxide	Exempt ..	≤32 .....	.....	.....	≥68 ..	.....	Exempt ..	.....	.....	11
Dicumyl peroxide	UN3110	>52–100 .....	.....	.....	≤48 ..	.....	OP8 .....	.....	.....	11
Dicumyl peroxide	Exempt ..	≤52 .....	.....	.....	≥48 ..	.....	Exempt ..	.....	.....	11
Dicyclohexyl peroxydicarbonate	UN3112	>91–100 .....	.....	.....	.....	.....	OP3	+10	+15 ..	11
Dicyclohexyl peroxydicarbonate	UN3114	≤91 .....	.....	.....	.....	≥9	OP5	+10	+15 ..	11
Dicyclohexyl peroxydicarbonate [as a stable dispersion in water].	UN3119	≤42 .....	.....	.....	.....	.....	OP8	+15	+20 ..	11
Didecanoyl peroxide	UN3114	≤100 .....	.....	.....	.....	.....	OP6	+30	+35 ..	11
2,2-Di-(4,4-di(tert-butylperoxy)cyclohexyl)propane.	UN3106	≤42 .....	.....	.....	≥58 ..	.....	OP7 .....	.....	.....	29
2,2-Di-(4,4-di(tert-butylperoxy)cyclohexyl)propane.	UN3107	≤25 .....	.....	≥75 ..	.....	.....	OP8 .....	.....	.....	29
2,2-Di-(4,4-di(tert-butylperoxy)cyclohexyl)propane.	UN3107	≤22 .....	.....	≥78 ..	.....	.....	OP8 .....	.....	.....	29
Di-2,4-dichlorobenzoyl peroxide	UN3102	≤77 .....	.....	.....	.....	≥23	OP5 .....	.....	.....	29
Di-2,4-dichlorobenzoyl peroxide [as a paste with silicone oil].	UN3106	≤52 .....	.....	.....	.....	.....	OP7 .....	.....	.....	29
Di-(2-ethoxyethyl) peroxydicarbonate ...	UN3115	≤52 .....	.....	≥48 ..	.....	.....	OP7	–10	0	17
Di-(2-ethylhexyl) peroxydicarbonate	UN3113	>77–100 .....	.....	.....	.....	.....	OP5	–20	–10	17
Di-(2-ethylhexyl) peroxydicarbonate	UN3115	≤77 .....	.....	≥23 ..	.....	.....	OP7	–15	–5 ..	17
Di-(2-ethylhexyl) peroxydicarbonate [as a stable dispersion in water].	UN3117	≤62 .....	.....	.....	.....	.....	OP8	–15	–5 ..	17
Di-(2-ethylhexyl) peroxydicarbonate [as a stable dispersion in water].	UN3119	≤52 .....	.....	.....	.....	.....	OP8	–15	–5 ..	17
Di-(2-ethylhexyl) peroxydicarbonate [as a stable dispersion in water (frozen)].	UN3120	≤52 .....	.....	.....	.....	.....	OP8	–15	–5 ..	17
2,2-Dihydroperoxypropane	UN3102	≤27 .....	.....	.....	≥73 ..	.....	OP5 .....	.....	.....	17
Di-(1-hydroxycyclohexyl)peroxide	UN3106	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	17
Diisobutyl peroxide	UN3111	>32–52 .....	.....	≥48 ..	.....	.....	OP5	–20	–10	17
Diisobutyl peroxide	UN3115	≤32 .....	.....	≥68 ..	.....	.....	OP7	–20	–10	17
Diisopropylbenzene dihydroperoxide	UN3106	≤82	≥5 .....	.....	.....	≥5	OP7 .....	.....	.....	17
Diisopropyl peroxydicarbonate	UN3112	>52–100 .....	.....	.....	.....	.....	OP2	–15	–5 ..	17
Diisopropyl peroxydicarbonate	UN3115	≤52 .....	.....	≥48 ..	.....	.....	OP7	–20	–10	17
Diisopropyl peroxydicarbonate	UN3115	≤28	≥72 ..	.....	.....	.....	OP7	–15	–5 ..	17
Dilauroyl peroxide	UN3106	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	17

ORGANIC PEROXIDE TABLE—Continued

Technical name (1)	ID number (2)	Concentration (mass %) (3)	Diluent (mass %)			Water (mass %) (5)	Packing method (6)	Temperature (°C)		Notes (8)
			A (4a)	B (4b)	I (4c)			Control (7a)	Emer- gency (7b)	
Dilauroyl peroxide [as a stable disper- sion in water].	UN3109	≤42 .....	.....	.....	.....	.....	OP8 .....	.....	.....
Di-(3-methoxybutyl) peroxydicarbonate	UN3115	≤52 .....	.....	≥48 ..	.....	.....	OP7	- 5 ..	+5 ...	
Di-(2-methylbenzoyl)peroxide	UN3112	≤87 .....	.....	.....	.....	≥13	OP5	+30	+35 ..	
Di-(4-methylbenzoyl)peroxide [as a paste with silicone oil].	UN3106	≤52 .....	.....	.....	.....	.....	OP7 .....	.....	.....
Di-(3-methylbenzoyl) peroxide + Ben- zoyl (3-methylbenzoyl) peroxide + Dibenzoyl peroxide.	UN3115	≤20+≤18+≤4	.....	≥58 ..	.....	.....	OP7	+30	+40 ..	
2,5-Dimethyl-2,5-di- (benzoylperoxy)hexane.	UN3102	>82-100 .....	.....	.....	.....	.....	OP5 .....	.....	.....
2,5-Dimethyl-2,5-di- (benzoylperoxy)hexane.	UN3106	≤82 .....	.....	.....	≥18 ..	.....	OP7 .....	.....	.....
2,5-Dimethyl-2,5-di- (benzoylperoxy)hexane.	UN3104	≤82 .....	.....	.....	.....	≥18	OP5 .....	.....	.....
2,5-Dimethyl-2,5-di-(tert- butylperoxy)hexane.	UN3105	>52-100 .....	.....	.....	.....	.....	OP7 .....	.....	.....
2,5-Dimethyl-2,5-di-(tert- butylperoxy)hexane.	UN3108	≤77 .....	.....	.....	≥23 ..	.....	OP8 .....	.....	.....
2,5-Dimethyl-2,5-di-(tert- butylperoxy)hexane.	UN3109	≤52	≥48 ..	.....	.....	.....	OP8 .....	.....	.....
2,5-Dimethyl-2,5-di-(tert- butylperoxy)hexane [as a paste].	UN3108	≤47 .....	.....	.....	.....	.....	OP8 .....	.....	.....
2,5-Dimethyl-2,5-di-(tert- butylperoxy)hexyne-3.	UN3101	>86-100 .....	.....	.....	.....	.....	OP5 .....	.....	.....
2,5-Dimethyl-2,5-di-(tert- butylperoxy)hexyne-3.	UN3103	>52-86	≥14 ..	.....	.....	.....	OP5 .....	.....	.....
2,5-Dimethyl-2,5-di-(tert- butylperoxy)hexyne-3.	UN3106	≤52 .....	.....	.....	≥48 ..	.....	OP7 .....	.....	.....
2,5-Dimethyl-2,5-di-(2- ethylhexanoylperoxy)hexane.	UN3113	≤100 .....	.....	.....	.....	.....	OP5	+20	+25 ..	
2,5-Dimethyl-2,5-dihydroperoxyhexane	UN3104	≤82 .....	.....	.....	.....	≥18	OP6 .....	.....	.....
2,5-Dimethyl-2,5-di-(3,5,5- trimethylhexanoylperoxy)hexane.	UN3105	≤77	≥23 ..	.....	.....	.....	OP7 .....	.....	.....
1,1-Dimethyl-3- hydroxybutylperoxyneohexanoate.	UN3117	≤52	≥48 ..	.....	.....	.....	OP8	0	+10 ..	
Dimyristyl peroxydicarbonate	UN3116	≤100 .....	.....	.....	.....	.....	OP7	+20	+25 ..	
Dimyristyl peroxydicarbonate [as a sta- ble dispersion in water].	UN3119	≤42 .....	.....	.....	.....	.....	OP8	+20	+25 ..	
Di-(2- neodecanoylperoxyisopropy- l)benzene.	UN3115	≤52	≥48 ..	.....	.....	.....	OP7	- 10	0	
Di-n-nonanoyl peroxide	UN3116	≤100 .....	.....	.....	.....	.....	OP7	0	+10 ..	
Di-n-octanoyl peroxide	UN3114	≤100 .....	.....	.....	.....	.....	OP5	+10	+15 ..	
Di-(2-phenoxyethyl)peroxydicarbonate	UN3102	>85-100 .....	.....	.....	.....	.....	OP5 .....	.....	.....
Di-(2-phenoxyethyl)peroxydicarbonate	UN3106	≤85 .....	.....	.....	.....	≥15	OP7 .....	.....	.....
Dipropionyl peroxide	UN3117	≤27 .....	.....	≥73 ..	.....	.....	OP8	+15	+20 ..	
Di-n-propyl peroxydicarbonate	UN3113	≤100 .....	.....	.....	.....	.....	OP3	- 25	- 15	
Di-n-propyl peroxydicarbonate	UN3113	≤77 .....	.....	≥23 ..	.....	.....	OP5	- 20	- 10	
Disuccinic acid peroxide	UN3102	>72-100 .....	.....	.....	.....	.....	OP4 .....	.....	.....	18
Disuccinic acid peroxide	UN3116	≤72 .....	.....	.....	.....	≥28	OP7	+10	+15 ..	
Di-(3,5,5-trimethylhexanoyl)peroxide	UN3115	>38-82	≥18 ..	.....	.....	.....	OP7	0	+10 ..	
Di-(3,5,5-trimethylhexanoyl)peroxide [as a stable dispersion in water].	UN3119	≤52 .....	.....	.....	.....	.....	OP8	+10	+15 ..	
Di-(3,5,5-trimethylhexanoyl)peroxide	UN3119	≤38	≥62 ..	.....	.....	.....	OP8	+20	+25 ..	
Ethyl 3,3-di-(tert-amyloxy)butyrate	UN3105	≤67	≥33 ..	.....	.....	.....	OP7 .....	.....	.....
Ethyl 3,3-di-(tert-butylperoxy)butyrate ...	UN3103	>77-100 .....	.....	.....	.....	.....	OP5 .....	.....	.....
Ethyl 3,3-di-(tert-butylperoxy)butyrate ...	UN3105	≤77	≥23 ..	.....	.....	.....	OP7 .....	.....	.....
Ethyl 3,3-di-(tert-butylperoxy)butyrate ...	UN3106	≤52 .....	.....	.....	≥48 ..	.....	OP7 .....	.....	.....
1-(2-ethylhexanoylperoxy)-1,3- Dimethylbutyl peroxy-pivalate.	UN3115	≤52	≥45 ..	≥10 ..	.....	.....	OP7	- 20	- 10	
tert-Hexyl peroxyneodecanoate	UN3115	≤71	≥29 ..	.....	.....	.....	OP7	0	+10 ..	
tert-Hexyl peroxy-pivalate	UN3115	≤72 .....	.....	≥28 ..	.....	.....	OP7	+10	+15 ..	
Isopropylcumyl hydroperoxide	UN3109	≤72	≥28 ..	.....	.....	.....	OP8 .....	.....	.....	13
p-Menthyl hydroperoxide	UN3105	> 72-100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	13
p-Menthyl hydroperoxide	UN3109	≤72	≥28 ..	.....	.....	.....	OP8 .....	.....	.....

ORGANIC PEROXIDE TABLE—Continued

Technical name (1)	ID number (2)	Concentration (mass %) (3)	Diluent (mass %)			Water (mass %) (5)	Packing method (6)	Temperature (°C)		Notes (8)
			A (4a)	B (4b)	I (4c)			Control (7a)	Emer- gency (7b)	
Methylcyclohexanone peroxide(s)	UN3115	≤67 .....	.....	≥33 ..	.....	.....	OP7	+35	+40 ..	
Methyl ethyl ketone peroxide(s)	UN3101	≤52	≥48 ..	.....	.....	.....	OP5 .....	.....	.....	5, 13, 29
Methyl ethyl ketone peroxide(s)	UN3105	≤45	≥55 ..	.....	.....	.....	OP7 .....	.....	.....	5, 29
Methyl ethyl ketone peroxide(s)	UN3107	≤40	≥60 ..	.....	.....	.....	OP8 .....	.....	.....	5, 29
Methyl isobutyl ketone peroxide(s)	UN3105	≤62	≥19 ..	.....	.....	.....	OP7 .....	.....	.....	5, 23
Organic peroxide, liquid, sample	UN3103	.....	.....	.....	.....	.....	OP2 .....	.....	.....	12
Organic peroxide, liquid, sample, tem- perature controlled.	UN3113	.....	.....	.....	.....	.....	OP2 .....	.....	.....	12
Organic peroxide, solid, sample	UN3104	.....	.....	.....	.....	.....	OP2 .....	.....	.....	12
Organic peroxide, solid, sample, tem- perature controlled.	UN3114	.....	.....	.....	.....	.....	OP2 .....	.....	.....	12
Peroxyacetic acid, type D, stabilized	UN3105	≤43 .....	.....	.....	.....	.....	OP7 .....	.....	.....	13, 20
Peroxyacetic acid, type E, stabilized	UN3107	≤43 .....	.....	.....	.....	.....	OP8 .....	.....	.....	13, 20
Peroxyacetic acid, type F, stabilized	UN3109	≤43 .....	.....	.....	.....	.....	OP8 .....	.....	.....	13, 20, 28
Peroxyacetic acid or peracetic acid [with not more than 7% hydrogen peroxide].	UN3107	≤36 .....	.....	.....	.....	≥15	OP8 .....	.....	.....	13, 20, 28, 29
Peroxyacetic acid or peracetic acid [with not more than 20% hydrogen peroxide].	Exempt ..	≤6 .....	.....	.....	.....	≥60	Exempt ..	.....	.....	28, 29
Peroxyacetic acid or peracetic acid [with not more than 26% hydrogen peroxide].	UN3109	≤17 .....	.....	.....	.....	.....	OP8 .....	.....	.....	13, 20, 28, 29
Peroxy lauric acid	UN3118	≤100 .....	.....	.....	.....	.....	OP8	+35	+40 ..	
Pinanyl hydroperoxide	UN3105	>56–100 .....	.....	.....	.....	.....	OP7 .....	.....	.....	13
Pinanyl hydroperoxide	UN3109	≤56	≥44 ..	.....	.....	.....	OP8 .....	.....	.....
Polyether poly-tert- butylperoxycarbonate.	UN3107	≤52 .....	.....	≥23 ..	.....	.....	OP8 .....	.....	.....
Tetrahydronaphthyl hydroperoxide	UN3106	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....
1,1,3,3-Tetramethylbutyl hydroperoxide	UN3105	≤100 .....	.....	.....	.....	.....	OP7 .....	.....	.....
1,1,3,3-Tetramethylbutyl peroxy-2- ethylhexanoate.	UN3115	≤100 .....	.....	.....	.....	.....	OP7	+15	+20 ..	
1,1,3,3-Tetramethylbutyl peroxyneodecanoate.	UN3115	≤72 .....	.....	≥28 ..	.....	.....	OP7	-5	+5	
1,1,3,3-Tetramethylbutyl peroxyneodecanoate [as a stable dispersion in water].	UN3119	≤52 .....	.....	.....	.....	.....	OP8	-5 ..	+5	
1,1,3,3-tetramethylbutyl peroxy-pivalate	UN3315	≤77	≥23 ..	.....	.....	.....	OP7	0	+10 ..	
3,6,9-Triethyl-3,6,9-trimethyl- triperoxane.	UN3105	≤42	≥58 ..	.....	.....	.....	OP7 .....	.....	.....	26

Notes:

- For domestic shipments, OP8 is authorized.
- Available oxygen must be <4.7%.
- For concentrations <80% OP5 is allowed. For concentrations of at least 80% but <85%, OP4 is allowed. For concentrations of at least 85%, maximum package size is OP2.
- The diluent may be replaced by di-tert-butyl peroxide.
- Available oxygen must be ≤9%.
- For domestic shipments, OP5 is authorized.
- [Reserved]
- Only non-metallic packagings are authorized.
- [Reserved]
- [Reserved]
- [Reserved]
- [Reserved]

- Samples may only be offered for transportation under the provisions of paragraph (c)(2) of this section.
- “Corrosive” subsidiary risk label is required.
- [Reserved]
- No “Corrosive” subsidiary risk label is required for concentrations below 80%.
- With 6% di-tert-butyl peroxide.
- With ≥8% 1-isopropylhydroperoxy-4-isopropylhydroxybenzene.
- Addition of water to this organic peroxide will decrease its thermal stability.
- [Reserved]
- Mixtures with hydrogen peroxide, water and acid(s).
- With diluent type A, with or without water.
- With ≥36% diluent type A by mass, and in addition ethylbenzene.
- With ≥19% diluent type A by mass, and in addition methyl isobutyl ketone.

- Diluent type B with boiling point >100 C.
- No “Corrosive” subsidiary risk label is required for concentrations below 56%.
- Available oxygen must be ≤7.6%.
- Formulations derived from distillation of peroxyacetic acid originating from peroxyacetic acid in a concentration of not more than 41% with water, total active oxygen less than or equal to 9.5% (peroxyacetic acid plus hydrogen peroxide).
- For the purposes of this section, the names “Peroxyacetic acid” and “Peracetic acid” are synonymous.
- For international transportation, shipments of this material must be accompanied by a Competent Authority approval from the Associate Administrator.

(d) *Packing Method Table.* Packagings for organic peroxides and self-reactive substances are listed in the Maximum

Quantity per Packing Method Table. The packing methods are designated OP1 to OP8. The quantities specified for each packing method represent the maximum that is authorized.

(1) The following types of packagings are authorized:

(i) Drums: 1A1, 1A2, 1B1, 1B2, 1D, 1G, 1H1, 1H2;

(ii) Jerricans: 3A1, 3A2, 3B1, 3B2, 3H1, 3H2;

(iii) Boxes: 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2, 4A, 4B; or

(iv) Composite packagings with a plastic inner receptacle: 6HA1, 6HA2, 6HB1, 6HB2, 6HC, 6HD1, 6HD2, 6HG1, 6HG2, 6HH1, 6HH2.

(2) Metal packaging (including inner packagings of combination packagings

and outer packagings of combination or composite packagings) are used only for packing methods OP7 and OP8.

(3) In combination packagings, glass receptacles are used only as inner packagings with a maximum content of 0.5 kg for solids or 0.5 L for liquids.

(4) The maximum quantity per packaging or package for Packing Methods OP1–OP8 must be as follows:

MAXIMUM QUANTITY PER PACKAGING/PACKAGE FOR PACKING METHODS OP1 TO OP8

Maximum Quantity	Packing Method							
	OP1	OP2	OP3	OP4 ¹	OP5	OP6	OP7	OP8
Solids and combination packagings (liquid and solid) (kg)	0.5	0.5/10	5	5	25	50	50	² 400
Liquids (L)	0.5	.....	5	.....	30	60	60	³ 225

¹ If two values are given, the first applies to the maximum net mass per inner packaging and the second to the maximum net mass of the complete package.

² 60 kg for jerricans/200 kg for boxes and, for solids, 400 kg in combination packagings with outer packagings comprising boxes (4C1, 4C2, 4D, 4F, 4G, 4H1, and 4H2) and with inner packagings of plastics or fiber with a maximum net mass of 25 kg.

³ 60 L for jerricans.

(e) *Organic Peroxide IBC Table*. The following Organic Peroxide IBC Table specifies, by technical name, those

organic peroxides that are authorized for transportation in certain IBCs and not subject to the approval provisions of

§ 173.128 of this part. Additional requirements for authorized IBCs are found in paragraph (f) of this section.

ORGANIC PEROXIDE IBC TABLE

UN No.	Organic peroxide	Type of IBC	Maximum quantity (litres)	Control temperature	Emergency temperature
3109	ORGANIC PEROXIDE, TYPE F, LIQUID				
	tert-Butyl hydroperoxide, not more than 72% with water	31A	1250		
	tert-Butyl peroxyacetate, not more than 32% in diluent type A	31A	1250		
		31HA1	1000		
	tert-Butyl peroxy-3,5,5-trimethylhexanoate, not more than 32% in diluent type A	31A	1250		
		31HA1	1000		
	Cumyl hydroperoxide, not more than 90% in diluent type A	31HA1	1250		
	Dibenzoyl peroxide, not more than 42% as a stable dispersion	31H1	1000		
	Di-tert-butyl peroxide, not more than 52% in diluent type B	31A	1250		
		31HA1	1000		
	1,1-Di-(tert-butylperoxy) cyclohexane, not more than 42% in diluent type A	31H1	1000		
	Dicumyl peroxide, less than or equal to 100%	31A	1250		
		31HA1	1000		
	Dilauroyl peroxide, not more than 42%, stable dispersion, in water	31HA1	1000		
	Isopropyl cumyl hydroperoxide, not more than 72% in diluent type A	31HA1	1250		
	p-Menthyl hydroperoxide, not more than 72% in diluent type A	31HA1	1250		
	Peroxyacetic acid, stabilized, not more than 17%	31H1	1500		
		31HA1	1500		
		31A	1500		
	Peroxyacetic acid, with not more than 26% hydrogen peroxide	31A	1500		
		31HA1	1500		
	Peroxyacetic acid, type F, stabilized	31A	1500		
		31HA1	1500		
3110	ORGANIC PEROXIDE TYPE F, SOLID				
	Dicumyl peroxide, less than or equal to 100%	31A	2000		
		31H1			
		31HA1			
3119	ORGANIC PEROXIDE, TYPE F, LIQUID, TEMPERATURE CONTROLLED				
	tert-Butyl peroxy-2-ethylhexanoate, not more than 32% in diluent type B	31HA1	1000	+30 °C ...	+35 °C
		31A	1250		
	tert-Butyl peroxyneodecanoate, not more than 32% in diluent type A	31A	1250	0 °C	+10 °C
	tert-Butyl peroxyneodecanoate, not more than 42% stable dispersion, in water	31A	1250	−5 °C ...	+5 °C

ORGANIC PEROXIDE IBC TABLE—Continued

UN No.	Organic peroxide	Type of IBC	Maximum quantity (litres)	Control temperature	Emergency temperature
	tert-Butyl peroxy-pivalate, not more than 27% in diluent type B	31HA1	1000	+10 °C ...	+15 °C
	Cumyl peroxyneodecanoate, not more than 52%, stable dispersion, in water	31A	1250	-15 °C ..	-5 °C
	Dicyclohexylperoxydicarbonate, not more than 42% as a stable dispersion, in water	31A	1250	+10 °C ...	+15 °C
	Di-(4-tert-butylcyclohexyl) peroxydicarbonate, not more than 42%, stable dispersion, in water.	31HA1	1000	+30 °C ...	+35 °C
	Dicetyl peroxydicarbonate, not more than 42%, stable dispersion, in water	31HA1	1000	+30 °C ...	+35 °C
	Di-(2-ethylhexyl) peroxydicarbonate, not more than 52%, stable dispersion, in water	31A	1250	-20 °C ..	-10 °C
	Dimyristyl peroxydicarbonate, not more than 42%, stable dispersion, in water	31HA1	1000	+15 °C ...	+20 °C
	Di-(3,5,5-trimethylhexanoyl) peroxide, not more than 38% in diluent type A	31HA1	1000	+10 °C ...	+15 °C
		31A	1250		
	Di-(3,5,5-trimethylhexanoyl) peroxide, not more than 52%, stable dispersion, in water	31A	1250	+10 °C ...	+15 °C
	1,1,3,3-Tetramethylbutyl peroxyneodecanoate, not more than 52%, stable dispersion, in water.	31A	1250	-5 °C	+5 °C

(f) *IBCs*. IBCs are authorized subject to the conditions and limitations of this section if the IBC type is authorized according to paragraph (e) of this section, as applicable, and the IBC conforms to the requirements in subpart O of part 178 of this subchapter at the Packing Group II performance level. The additional requirements in paragraphs (h)(5)(i) and (h)(5)(ii) of this section also apply. Type F organic peroxides or self-reactive substances are not authorized for transportation in IBCs other than those specified, unless approved by the Associate Administrator.

(i) IBCs shall be provided with a device to allow venting during

transportation. The inlet to the pressure relief device shall be sited in the vapor space of the IBC under maximum filling conditions during transportation.

(ii) To prevent explosive rupture of metal IBCs or composite IBCs with a complete metal casing, the emergency-relief devices shall be designed to vent all the decomposition products and vapors evolved during self-accelerating decomposition or during a period of not less than one hour of complete fire-engulfment as calculated by the formula in paragraph (h)(3)(v) of this section. The control and emergency temperatures specified in the Organic

Peroxide IBC Table are based on a non-insulated IBC.

(g) Organic Peroxide Portable Tank Table. The following Organic Peroxide Portable Tank Table provides certain portable tank requirements and identifies, by technical name, those organic peroxides that are authorized for transportation in the bulk packagings listed in paragraph (h). Organic peroxides listed in this table, provided they meet the specific packaging requirements found in paragraph (h), are not subject to the approval provisions of § 173.128 of this part.

ORGANIC PEROXIDE PORTABLE TANK TABLE

UN No.	Hazardous material	Minimum test pressure (bar)	Minimum shell thickness (mm-reference steel) See . . .	Bottom opening requirements See . . .	Pressure-relief requirements See . . .	Filling limits	Control temperature	Emergency temperature
ORGANIC PEROXIDE, TYPE F, LIQUID								
3109	tert-Butyl more hydroperoxide, not more than 72% with water. * Provided that steps have been taken to achieve the safety equivalence of 65% tert-Butyl hydroperoxide and 35% water. Cumyl hydro-peroxide, not more than 90% in diluent type A. Di-tert-butyl peroxide, not more than 32% in diluent type A. Dicumyl peroxide, less than or equal to 100% in diluent type B. Isopropyl cumyl hydro-peroxide, not more than 72% in diluent type A. p-Menthyl hydro-peroxide, not more than 72% in diluent type A. Pinanyl hydro-peroxide, not more than 56% in diluent type A.	4 4 4 4 4 4 4	§ 178.274(d)(2) § 178.274(d)(2) § 178.274(d)(2) § 178.274(d)(2) § 178.274(d)(2) § 178.274(d)(2) § 178.274(d)(2)	§ 178.275(d)(3) § 178.275(d)(3) § 178.275(d)(3) § 178.275(d)(3) § 178.275(d)(3) § 178.275(d)(3) § 178.275(d)(3)	§ 178.275(g)(1) § 178.275(g)(1) § 178.275(g)(1) § 178.275(g)(1) § 178.275(g)(1) § 178.275(g)(1) § 178.275(g)(1)	Not more than 90% at 59°F (15°C). Not more than 90% at 59°F (15°C). Not more than 90% at 59°F (15°C). Not more than 90% at 59°F (15°C). Not more than 90% at 59°F (15°C). Not more than 90% at 59°F (15°C). Not more than 90% at 59°F (15°C).	+30°C +15°C +5°C +35°C +0°C +30°C	+35°C +20°C +10°C +40°C +5°C +35°C
ORGANIC PEROXIDE, TYPE F, SOLID								
3110	Dicumyl peroxide less than or equal to 100% with inert solids * Maximum quantity per portable tank 2,000 kg.	4	§ 178.274(d)(2)	§ 178.275(d)(3)	§ 178.275(g)(1)	Not more than 90% at 59°F (15°C).		
ORGANIC PEROXIDE, TYPE F, LIQUID, TEMPERATURE CONTROLLED								
3119	tert-Butyl peroxyacetate, not more than 32% in diluent type B. tert-Butyl peroxy-2-ethylhexanoate, not more than 32% in diluent type B. tert-Butyl peroxyvalerate, not more than 27% in diluent type B. tert-Butyl peroxy-3,5,5-trimethylhexanoate, not more than 32% in diluent type B. Di-(3,5,5-trimethylhexanoyl) peroxide, not more than 38% in diluent type A. Peroxyacetic acid, distilled, stabilized, not more than 41%.	4 4 4 4 4 4	§ 178.274(d)(2) § 178.274(d)(2) § 178.274(d)(2) § 178.274(d)(2) § 178.274(d)(2) § 178.274(d)(2)	§ 178.275(d)(3) § 178.275(d)(3) § 178.275(d)(3) § 178.275(d)(3) § 178.275(d)(3) § 178.275(d)(3)	§ 178.275(g)(1) § 178.275(g)(1) § 178.275(g)(1) § 178.275(g)(1) § 178.275(g)(1) § 178.275(g)(1)	Not more than 90% at 59°F (15°C). Not more than 90% at 59°F (15°C). Not more than 90% at 59°F (15°C). Not more than 90% at 59°F (15°C). Not more than 90% at 59°F (15°C). Not more than 90% at 59°F (15°C).	+30°C +15°C +5°C +35°C +0°C +30°C	+35°C +20°C +10°C +40°C +5°C +35°C

(h) *Bulk packagings other than IBCs.* The following bulk packagings are authorized, subject to the conditions and limitations of this section, if the organic peroxide is listed in the Organic Peroxide Portable Tank Table and bulk packagings are authorized and the bulk packaging conforms to the requirements of this subchapter:

(1) *Rail cars.* Class DOT 103, 104, 105, 109, 111, 112, 114, 115, or 120 fusion-weld tank car tanks are authorized. DOT 103W, 111A60F1 and 111A60W1 tank car tanks must have bottom outlets effectively sealed from inside. Gauging devices are required on DOT 103W tank car tanks. Riveted tank car tanks are not authorized.

(2) *Cargo tanks.* Specification MC 307, MC 310, MC 311, MC 312, DOT 407, and DOT 412 cargo tank motor vehicles with a tank design pressure of at least 172 kPa (25 psig) are authorized.

(3) *Portable tanks.* The following requirements apply to portable tanks intended for the transport of Type F organic peroxides or Type F self-reactive substances. DOT 51, 57, IM 101 portable tanks, and UN portable tanks that conform to the requirements of paragraph (g) of this section. Type F organic peroxide or self-reactive substance formulations other than those indicated in the Organic Peroxide Portable Tank Table may be transported in portable tanks if approved by the Associate Administrator. The following conditions also apply:

(i) The portable tank must be designed for a test pressure of at least 0.4 MPa (4 bar).

(ii) The portable tank must be fitted with temperature-sensing devices.

(iii) The portable tank must be fitted with pressure relief devices and emergency-relief devices. Vacuum-relief devices may also be used. Pressure relief devices must operate at pressures determined according to both the properties of the hazardous material and the construction characteristics of the portable tank. Fusible elements are not allowed in the shell.

(iv) The pressure relief devices must consist of reclosing devices fitted to prevent significant build-up within the portable tank of the decomposition products and vapors released at a temperature of 50 °C (122 °F). The capacity and start-to-discharge pressure of the relief devices must be in accordance with the applicable requirements of this subchapter specified for the portable tank. The pressure relief devices must not allow liquid to escape in the event the portable tank is overturned in a loaded condition.

(v)(A) The emergency-relief devices may be of the reclosing or frangible types, or a combination of the two, designed to vent all the decomposition products and vapors evolved during a period of not less than one hour of complete fire engulfment as calculated by the following formula:

$$q = 70961 F A^{0.82}$$

Where:

q = heat absorption (W)

A = wetted area (m²)

F = insulation factor (–)

(B) Insulation factor (F) in the formula in paragraph (h)(3)(v)(A) of this section equals 1 for non-insulated vessels and for insulated vessels F is calculated using the following formula:

$$F = \frac{U(923 - T_{PO})}{47032}$$

Where:

U = K/L = heat transfer coefficient of the insulation (W·m⁻²·K⁻¹); where K = heat conductivity of insulation layer (W·m⁻¹·K⁻¹), and L = thickness of insulation layer (m).

T_{PO} = temperature of material at relieving conditions (K).

(vi) The start-to-discharge pressure of emergency-relief devices must be higher than that specified for the pressure relief devices in paragraph (h)(3)(iv) of this section. The emergency-relief devices must be sized and designed in such a way that the maximum pressure in the shell never exceeds the test pressure of the portable tank.

Note to Paragraph (h)(3)(vi): An example of a method to determine the size of emergency-relief devices is given in Appendix 5 of the UN Manual of Tests and Criteria (IBR, see § 171.7 of this subchapter). A second example of a test method for venting sizing is given in the American Institute of Chemical Engineers Process Safety Progress Journal, June 2002 issue (Vol. 21, No. 2).

(vii) For insulated portable tanks, the capacity and setting of emergency-relief devices must be determined assuming a loss of insulation from 1% of the surface area.

(viii) Vacuum-relief devices and reclosing devices on portable tanks used for flammable hazardous materials must be provided with flame arresters. Any reduction of the relief capacity caused by the flame arrester must be taken into account and the appropriate relief capacity must be provided.

(ix) Service equipment such as devices and external piping must be designed and constructed so that no

hazardous material remains in them after filling the portable tank.

(x) Portable tanks may be either insulated or protected by a sun-shield. If the SADT of the hazardous material in the portable tank is 55 °C (131 °F) or less, the portable tank must be completely insulated. The outer surface must be finished in white or bright metal.

(xi) The degree of filling must not exceed 90% at 15 °C (59 °F).

(xii) DOT 57 metal portable tanks are authorized only for tert-butyl cumyl peroxide, di-(2-tert-butylperoxyisopropyl-benzene(s)), dicumyl peroxide and mixtures of two or more of these peroxides. DOT 57 portable tanks must conform to the venting requirements of paragraph (f) of this section. These portable tanks are not subject to the requirements of paragraphs (h)(3)(ii) and (h)(3)(iv) of this section. These portable tanks are not subject to any other requirements of paragraph (h) of this section.

(4) For tertiary butyl hydroperoxide (TBHP), each tank car, cargo tank or portable tank must contain 7.6 cm (3.0 inches) low density polyethylene (PE) saddles having a melt index of at least 0.2 grams per 10 minutes (for example see, ASTM D1238, condition E) as part of the lading, with a ratio of PE to TBHP over a range of 0.008 to 0.012 by mass. Alternatively, plastic or metal containers equipped with fusible plugs having a melting point between 69 °C (156 °F) and 71 °C (160 °F) and filled with a sufficient quantity of water to dilute the TBHP to 65% or less by mass may be used. The PE saddles must be visually inspected after each trip and, at a minimum, once every 12 months, and replaced when discoloration, fracture, severe deformation, or other indication of change is noted.

43. Section 173.226 is revised to read as follows:

§ 173.226 Materials poisonous by inhalation, Division 6.1, Packing Group I, Hazard Zone A.

Division 6.1, Packing Group I, Zone A poisonous by inhalation (see § 173.133) must be packed in non-bulk packagings in accordance with the following paragraphs:

(a) In seamless specification cylinders conforming to the requirements of § 173.40.

(b) In 1A1, 1B1, 1H1, 1N1, or 6HA1 drums further packed in a 1A2 or 1H2 drum. Both inner and outer drums must conform to the performance test requirements of subpart M of part 178 of this subchapter at the Packing Group I performance level. The outer drums may be tested either as a package

intended to contain inner packagings (combination package) or as a single packaging intended to contain solids or liquids at a mass corresponding to the mass of the assembled packaging system. All outer drums, even those tested to contain inner packaging or as single packagings for solids, must withstand a hydrostatic test pressure of 100 kPa (15 psig). The outer drum must have a minimum thickness of 1.35 mm (0.053 inch) for a 1A2 outer drum or 6.3 mm (0.248 inch) for a 1H2 outer drum. In addition, the inner drum must—

(1) Be capable of satisfactorily withstanding the hydrostatic pressure test in § 178.605 of this subchapter at a test pressure of 300 kPa (45 psig);

(2) Satisfactorily withstand the leakproofness test in § 178.604 of this subchapter using an internal air pressure of at least twice the vapor pressure at 55 °C (131 °F) of the material to be packaged;

(3) Have screw-type closures that are—

(i) Closed and tightened to a torque prescribed by the closure manufacturer, using a properly calibrated device that is capable of measuring torque;

(ii) Physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during transportation; and

(iii) Provided with a cap seal that is properly applied in accordance with the cap seal manufacturer's recommendations and is capable of withstanding an internal pressure of at least 100 kPa (15 psig).

(4) Have a minimum thickness as follows:

(i) For a 1A1 or 1N1 drum, 1.3 mm (0.051 inch);

(ii) For a 1B1 drum, 3.9 mm (0.154 inch);

(iii) For a 1H1 drum, 3.16 mm (0.124 inch); and

(iv) For a 6HA1 drum, the plastic inner container shall be 1.58 mm (0.0622 inch) and the outer steel drum shall be 0.96 mm (0.0378 inch).

(5) Be isolated from the outer drum by a shock-mitigating, non-reactive material, which completely surrounds the inner packaging on all sides.

(c) In combination packagings, consisting of an inner packaging system and an outer packaging, as follows:

(1) Outer packagings:

Steel drum: 1A2

Aluminum drum: 1B2

Metal drum, other than steel or aluminum: 1N2

Plywood drum: 1D

Fiber drum: 1G

Plastic drum: 1H2

Steel box: 4A

Aluminum box: 4B

Natural wood box: 4C1 or 4C2

Plywood box: 4D

Reconstituted wood box: 4F

Fiberboard box: 4G

Expanded plastic box: 4H2

Solid plastic box: 4H2

(2) Inner packaging system. The inner packaging system consists of two packagings:

(i) an impact-resistant receptacle of glass, earthenware, plastic or metal securely cushioned with a non-reactive, absorbent material, and

(A) Capacity of each inner receptacle may not exceed 4 L (1 gallon).

(B) An inner receptacle that has a closure must have a closure which is physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during transportation.

(ii) Packed within a leak-tight packaging of metal or plastic.

(iii) This combination packaging in turn is packed within the outer packaging.

(A) The total amount of liquid contained in the outer packaging may not exceed 16 L (4 gallons).

(iv) the inner packaging system must conform to the performance test requirements of subpart M of part 178 of this subchapter, at the Packaging Group I performance level when subjected to the following tests:

(A) 178.603—Drop Test

(B) 178.604—Leakproofness Test

(C) 178.605—Hydrostatic Pressure Test

(v) The inner packaging system must meet the above tests without the benefit of the outer packaging.

(vi) The leakproofness and hydrostatic pressure test may be conducted on either the inner receptacle or the outer packaging of the inner packaging system.

(vii) In addition to the requirements in 173.226(b), the outer package must conform to the performance test requirements of subpart M of part 178 of this subchapter, at the Packaging Group I performance level as applicable for the type of package being used.

(d) If approved by the Associate Administrator, 1A1, 1B1, 1H1, 1N1, 6HA1 or 6HH1 drums described in paragraph (b) of this section may be used without being further packed in a 1A2 or 1H2 drum if the shipper loads the material, palletizes the drums, blocks and braces the drums within the transport vehicle and seals the transport vehicle used. Drums may not be stacked (double decked) within the transport vehicle. Shipments must be from one origin to one destination only without any intermediate pickup or delivery.

(e) Prior to reuse, all authorized inner drums must be leakproofness tested and marked in accordance with 173.28 using a minimum test pressure as indicated in paragraph (b)(2) of this section.

44. Section 173.227 is revised to read as follows:

§ 173.227 Materials poisonous by inhalation. Division 6.1, Packing Group I, Hazard Zone B.

(a) In packagings as authorized in § 173.226 and seamless and welded specification cylinders conforming to the requirements of § 173.40.

(b) 1A1, 1B1, 1N1 or 1H1 drum or 6HA1 composite further packed in a 1A2 or 1H2 drum. Both the inner and outer drums must conform to the performance test requirements of subpart M of part 178 of this subchapter at the Packaging Group I performance level. The outer drum must have a minimum thickness of 1.35 mm (0.053 inches) for a 1A2 outer drum or 6.30 mm (0.248 inches) for a 1H2 outer drum. Outer 1A2 and 1H2 drums must withstand a hydrostatic test pressure of 100 kPa (15 psig). Capacity of the inner drum may not exceed 220 liters. In addition, the inner drum must conform to all of the following requirements:

(1) Satisfactorily withstand the leakproofness test in § 178.604 of this subchapter using an internal air pressure of at least two times the vapor pressure at 55 °C (131 °F) of the material to be packaged.

(2) Have screw closures that are—

(i) Closed and tightened to a torque prescribed by the closure manufacturer, using a properly calibrated device that is capable of measuring torque;

(ii) Physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during transportation; and

(iii) Provided with a cap seal that is properly applied in accordance with the cap seal manufacturer's recommendations and is capable of withstanding an internal pressure of at least 100 kPa (15 psig).

(3) Have a minimum thickness as follows:

(i) For a 1A1 drum, 0.69 mm (0.027 inch);

(ii) For a 1B1 drum, 2.79 mm (0.110 inch);

(iii) For a 1H1 drum, 1.14 mm (0.045 inch); or

(iv) For a 6HA1 drum, the plastic inner container shall be 1.58 mm (0.0625 inch), the outer steel drum shall be 0.70 mm (0.027 inch).

(4) Be isolated from the outer drum by a shock-mitigating, non-reactive material which completely surrounds the inner packaging on all sides.

(5) Prior to reuse, all authorized inner drums must be leakproofness tested and marked in accordance with 173.28 using a minimum test pressure as indicated in paragraph (b)(1) of this section.

(c) 1A1, 1B1, 1H1, 1N1, 6HA1 or 6HH1 drums described in paragraph (b) of this section may be used without being further packed in a 1A2 or 1H2 drum if the shipper loads the material, blocks and braces the drums within the transport vehicle and seals the transport vehicle used. Drums may not be stacked (double decked) within the transport vehicle. Shipments must be from one origin to one destination only without any intermediate pickup or delivery.

45. In § 173.249, paragraph (c) is revised to read as follows:

§ 173.249 Bromine.

* * * * *

(c) UN portable tanks conforming to tank code T22 (see § 172.102 of this subchapter) or specification IM 101 portable tanks conforming with paragraphs (d) through (f) of this section. The total quantity in one tank may not be less than 88% nor more than 92% of the volume of the tank.

* * * * *

46. In § 173.306, paragraphs (i) and (j) are removed and a new paragraph (i) is added to read as follows:

§ 173.306 Limited quantities of compressed gases.

* * * * *

(i) *Aerosols with a capacity of less than 50 ml.* Aerosols, as defined in § 171.8 of this subchapter, with a capacity not exceeding 50 ml and with a pressure not exceeding 970 kPa (141 psig) at 55 °C (131 °F), containing no hazardous materials other than a Division 2.2 gas, are not subject to the requirements of this subchapter.

* * * * *

§ 173.307 [Amended]

47. In § 173.307, paragraph (a)(5) is removed.

48. Section 173.313 is added to read as follows:

§ 173.313 UN Portable Tank Table for Liquefied Compressed Gases.

The UN Portable Tank Table for Liquefied Compressed Gases is referenced in § 172.102(c)(7)(iii) of this subchapter for portable tanks that are used to transport liquefied compressed

gases. The table applies to each liquefied compressed gas that is identified with Special Provision T50 in Column (7) of the § 172.101 Table. In addition to providing the UN identification number and proper shipping name, the table provides maximum allowable working pressures, bottom opening requirements, pressure relief device requirements, and degree of filling requirements for liquefied compressed gas permitted for transportation in a T50 portable tank. In the minimum test pressure column, “small” means a portable tank with a diameter of 1.5 meters or less when measured at the widest part of the shell, “sunshield” means a portable tank with a shield covering at least the upper third of the shell, “bare” means no sunshield or insulation is provided, and “insulated” means a complete cladding of sufficient thickness of insulating material necessary to provide a minimum conductance of not more than 0.67 w/m²/k. In the pressure relief requirements column, the word “Normal” denotes that a frangible disc as specified in § 178.276(e)(3) of this subchapter is not required.

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (MAWP) (bar) Small; Bare; Sunshield; Insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1005	Ammonia, anhydrous	29.0, 25.7, 22.0, 19.7	Allowed	§ 178.276(e)(3)	0.53
1009	Bromotrifluoromethane or Refrigerant gas R 13B1.	38.0, 34.0, 30.0, 27.5	Allowed	Normal	1.13
1010	Butadienes, stabilized	7.5, 7.0, 7.0, 7.0	Allowed	Normal	0.55
1011	Butane	7.0, 7.0, 7.0, 7.0	Allowed	Normal	0.51
1012	Butylene	8.0, 7.0, 7.0, 7.0	Allowed	Normal	0.53
1017	Chlorine	19.0, 17.0, 15.0, 13.5	Not Allowed	§ 178.276(e)(3)	1.25
1018	Chlorodifluoromethane or Refrigerant gas R 22.	26.0, 24.0, 21.0, 19.0	Allowed	Normal	1.03
1020	Chloropentafluoroethane or Refrigerant gas R 115.	23.0, 20.0, 18.0, 16.0	Allowed	Normal	1.06
1021	1-Chloro-1,2,2,2-tetrafluoroethane or Refrigerant gas R 124.	10.3, 9.8, 7.9, 7.0	Allowed	Normal	1.2
1027	Cyclopropane	18.0, 16.0, 14.5, 13.0	Allowed	Normal	0.53
1028	Dichlorodifluoromethane or Refrigerant gas R 12.	16.0, 15.0, 13.0, 11.5	Allowed	Normal	1.15
1029	Dichlorofluoromethane or Refrigerant gas R 21.	7.0, 7.0, 7.0, 7.0	Allowed	Normal	1.23
1030	1,1-Difluoroethane or Refrigerant gas R 152a.	16.0, 14.0, 12.4, 11.0	Allowed	Normal	0.79
1032	Dimethylamine, anhydrous	7.0, 7.0, 7.0, 7.0	Allowed	Normal	0.59
1033	Dimethyl ether	15.5, 13.8, 12.0, 10.6	Allowed	Normal	0.58
1036	Ethylamine	7.0, 7.0, 7.0, 7.0	Allowed	Normal	0.61
1037	Ethyl chloride	7.0, 7.0, 7.0, 7.0	Allowed	Normal	0.8
1040	Ethylene oxide with nitrogen up to a total pressure of 1MPa (10 bar) at 50 °C.	Only authorized in 10 bar insulated portable tanks—	Not Allowed	§ 178.276(e)(3)	0.78
1041	Ethylene oxide and carbon dioxide mixture with more than 9% but not more than 87% ethylene oxide.	See MAWP definition in § 178.276(a).	Allowed	Normal	See § 173.32(f)
1055	Isobutylene	8.1, 7.0, 7.0, 7.0	Allowed	Normal	0.52
1060	Methyl acetylene and propadiene mixture, stabilized.	28.0, 24.5, 22.0, 20.0	Allowed	Normal	0.43
1061	Methylamine, anhydrous	10.8, 9.6, 7.8, 7.0	Allowed	Normal	0.58

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (MAWP) (bar) Small; Bare; Sunshield; Insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
1062	Methyl bromide	7.0, 7.0, 7.0, 7.0	Not Allowed	§ 178.276(e)(3)	1.51
1063	Methyl chloride or Refrigerant gas R 40.	14.5, 12.7, 11.3, 10.0	Allowed	Normal	0.81
1064	Methyl mercaptan	7.0, 7.0, 7.0, 7.0	Not Allowed	§ 178.276(e)(3)	0.78
1067	Dinitrogen tetroxide	7.0, 7.0, 7.0, 7.0	Not Allowed	§ 178.276(e)(3)	1.3
1075	Petroleum gas, liquefied	See MAWP definition in § 178.276(a).	Allowed	Normal	See § 173.32(f)
1077	Propylene	28.0, 24.5, 22.0, 20.0	Allowed	Normal	0.43
1078	Refrigerant gas, n.o.s.	See MAWP definition in § 178.276(a).	Allowed	Normal	See § 173.32(f)
1079	Sulphur dioxide	11.6, 10.3, 8.5, 7.6	Not Allowed	§ 178.276(e)(3)	1.23
1082	Trifluorochloroethylene, stabilized or Refrigerant gas R 1113.	17.0, 15.0, 13.1, 11.6	Not Allowed	§ 178.276(e)(3)	1.13
1083	Trimethylamine, anhydrous	7.0, 7.0, 7.0, 7.0	Allowed	Normal	0.56
1085	Vinyl bromide, stabilized	7.0, 7.0, 7.0, 7.0	Allowed	Normal	1.37
1086	Vinyl chloride, stabilized	10.6, 9.3, 8.0, 7.0	Allowed	Normal	0.81
1087	Vinyl methyl ether, stabilized	7.0, 7.0, 7.0, 7.0	Allowed	Normal	0.67
1581	Chloropicrin and methyl bromide mixture.	7.0, 7.0, 7.0, 7.0	Not Allowed	§ 178.276(e)(3)	1.51
1582	Chloropicrin and methyl chloride mixture.	19.2, 16.9, 15.1, 13.1	Not Allowed	§ 178.276(e)(3)	0.81
1858	Hexafluoropropylene compressed or Refrigerant gas R 1216.	19.2, 16.9, 15.1, 13.1	Allowed	Normal	1.11
1912	Methyl chloride and methylene chloride mixture.	15.2, 13.0, 11.6, 10.1	Allowed	Normal	0.811954
NA 1954.	Insecticide gases, flammable, n.o.s..	See MAWP definition in § 178.276(a).	Allowed	Normal	§ 173.32(f)
1958	1, 2-Dichloro-1, 1, 2,2-tetrafluoroethane or Refrigerant.	7.0, 7.0, 7.0, 7.0	Allowed	Normal	1.3
1965	Hydrocarbon gas, mixture liquefied, n.o.s.	See MAWP definition in § 178.276(a).	Allowed	Normal	See § 173.32(f)
1969	Isobutane	8.5, 7.5, 7.0, 7.0	Allowed	Normal	0.49
1973	Chlorodifluoromethane and chloropentafluoroethane mixture with fixed boiling point, with approximately 49% chlorodifluoromethane or Refrigerant gas R 502.	28.3, 25.3, 22.8, 20.3	Allowed	Normal	1.05
1974	Chlorodifluorobromomethane or Refrigerant gas R 12B1.	7.4, 7.0, 7.0, 7.0	Allowed	Normal	1.61
1976	Octafluorocyclobutane or Refrigerant gas RC 318.	8.8, 7.8, 7.0, 7.0	Allowed	Normal	1.34
1978	Propane	22.5, 20.4, 18.0, 16.5	Allowed	Normal	0.42
1983	1-Chloro-2, 2, 2-trifluoroethane or Refrigerant gas R 133a.	7.0, 7.0, 7.0, 7.0	Allowed	Normal	1.18
2035	1, 1, 1-Trifluoroethane compressed or Refrigerant gas R 143a.	31.0, 27.5, 24.2, 21.8	Allowed	Normal	0.76
2424	Octafluoropropane or Refrigerant gas R 218.	23.1, 20.8, 18.6, 16.6	Allowed	Normal	1.07
2517	1-Chloro-1, 1-difluoroethane or Refrigerant gas R 142b.	8.9, 7.8, 7.0, 7.0	Allowed	Normal	0.99
2602	Dichlorodifluoromethane and difluoroethane azeotropic mixture with approximately 74% dichlorodifluoromethane or Refrigerant gas R 500.	20.0, 18.0, 16.0, 14.5	Allowed	Normal	1.01
3057	Trifluoroacetyl chloride	14.6, 12.9, 11.3, 9.9	Not Allowed	§ 178.276(e)(3)	1.17
3070	Ethylene oxide and dichlorodifluoromethane mixture with not more than 12.5% ethylene oxide.	14.0, 12.0, 11.0, 9.0	Allowed	§ 178.276(e)(3)	1.09
3153	Pefluoro (methyl vinyl ether)	14.3, 13.4, 11.2, 10.2	Allowed	Normal	1.14
3159	1,1,1, 2-Tetrafluoroethane or Refrigerant gas R 134a.	17.7, 15.7, 13.8, 12.1	Allowed	Normal	1.04
3161	Liquefied gas, flammable, n.o.s. ..	See MAWP definition in § 178.276(a).	Allowed	Normal	§ 173.32(f)
3163	Liquefied gas, n.o.s.	See MAWP definition in § 178.276(a).	Allowed	Normal	§ 173.32(f)
3220	Pentafluoroethane or Refrigerant	34.4, 30.8, 27.5, 24.5	Allowed	Normal	0.95

UN PORTABLE TANK TABLE FOR LIQUEFIED COMPRESSED GASES—Continued

UN No.	Non-refrigerated liquefied compressed gases	Minimum design pressure (MAWP) (bar) Small; Bare; Sunshield; Insulated	Openings below liquid level	Pressure relief requirements (See § 178.276(e))	Maximum filling density (kg/l)
3252	Difluoromethane or Refrigerant gas R 32.	43.0, 39.0, 34.4, 30.5	Allowed	Normal	0.78
3296	Heptafluoropropane or Refrigerant gas R 227.	16.0, 14.0, 12.5, 11.0	Allowed	Normal	1.2
3297	Ethylene oxide and chlorotetrafluoroethane mixture, with not more than 8.8% ethylene oxide.	8.1, 7.0, 7.0, 7.0	Allowed	Normal	1.16
3298	Ethylene oxide and pentafluoroethane mixture, with not more than 7.9% ethylene oxide.	25.9, 23.4, 20.9, 18.6	Allowed	Normal	1.02
3299	Ethylene oxide and tetrafluoroethane mixture, with not more than 5.6% ethylene oxide.	16.7, 14.7, 12.9, 11.2	Allowed	Normal	1.03
3318	Ammonia solution, relative density less than 0.880 at 15 °C in water, with more than 50% ammonia.	See MAWP definition in 178.276(a).	Allowed	§ 178.276(e)(3)	173.32(f)
3337	Refrigerant gas R 404A	31.6, 28.3, 25.3, 22.5	Allowed	Normal	0.84
3338	Refrigerant gas R 407A	31.3, 28.1, 25.1, 22.4	Allowed	Normal	0.95
3339	Refrigerant gas R 4078	33.0, 29.6, 26.5, 23.6	Allowed	Normal	0.95
3340	Refrigerant gas R 407C	29.9, 26.8, 23.9, 21.3	Allowed	Normal	0.95

49. In § 173.315, paragraph (a) introductory text is revised to read as follows:

§ 173.315 Compressed gases in cargo tanks and portable tanks.

(a) Liquefied compressed gases that are transported in UN portable tanks must be loaded and offered for transportation in accordance with the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313. A liquefied compressed gas offered for transportation in a cargo tank motor vehicle or a portable tank must be prepared in accordance with this section, §§ 173.32 and 173.33 and subpart E or subpart G of part 180 of this subchapter, as applicable. For cryogenic liquids, see § 173.318. For marking requirements, see §§ 172.326 and 172.328 of this subchapter. Except for UN portable tanks, a liquefied compressed gas must be loaded and offered for transportation in accordance with the following table:

* * * * *

50. In § 173.323, paragraph (b) is revised to read as follows:

§ 173.323 Ethylene oxide.

* * * * *

(b) Ethylene oxide must be packaged in one of the following:

(1) In hermetically sealed glass or metal inner packagings suitably cushioned in an outer package authorized by § 173.201(b). The maximum quantity permitted in any

glass inner packaging is 100 g (3.5 ounces), and the maximum quantity permitted in any metal inner packaging is 340 g (12 ounces). After filling, each inner packaging shall be determined to be leak-tight by placing the inner packaging in a hot water bath at a temperature, and for a period of time, sufficient to ensure that an internal pressure equal to the vapour pressure of ethylene oxide at 55 °C is achieved. The total quantity in any outer packaging shall not exceed 2.5 kg. Each completed package must be capable of passing all Packing Group I performance tests.

(2) In specification cylinders, as authorized for any compressed gas except acetylene. Pressurizing valves and insulation are required for cylinders over 4 L (1 gallon) capacity. Eductor tubes must be provided for cylinders over 19 L (5 gallons) capacity. Cylinders must be seamless or welded steel (not brazed) with a nominal capacity of no more than 115 L (30 gallons) and may not be liquid full below 82 °C (180 °F). Before each refilling, each cylinder must be tested for leakage at no less than 103.4 kPa (15 psig) pressure. In addition, each cylinder must be equipped with a fusible type relief device with yield temperature of 69 °C to 77 °C (157 °F to 170 °F). The capacity of the relief device and the effectiveness of the insulation must be such that the charged cylinder will not explode when tested by the method described in CGA Pamphlet C-14 or other equivalent method.

(3) In 1A1 steel drums of no more than 231 L (61 gallons) and meeting Packing Group I performance standards. The drum must be lagged of all welded construction with the inner shell having a minimum thickness of 1.7 mm (0.068 inches) and the outer shell having a minimum thickness of 2.4 mm (0.095 inches). Drums must be capable of withstanding a hydrostatic test pressure of 690 kPa (100 psig). Lagging must be of sufficient thickness so that the drum, when filled with ethylene oxide and equipped with the required pressure relief device, will not rupture when exposed to fire. The drum may not be liquid full below 85 °C (185 °F), and must be marked "THIS END UP" on the top head. Before each refilling, each drum must be tested for leakage at no less than 103 kPa (15 psig) pressure. Each drum must be equipped with a fusible type relief device with yield temperature of 69 °C to 77 °C (157 °F to 170 °F), and the capacity of the relief device must be such that the filled drum is capable of passing, without rupture, the test method described in CGA Pamphlet C-14 or other equivalent method.

* * * * *

PART 175—CARRIAGE BY AIRCRAFT

51. The authority citation for part 175 continues to read as follows:

Authority: 49 U.S.C. 5101-5127; 49 CFR 1.53.

52. In § 175.10, paragraphs (a)(4)(i), (a)(4)(iii), and (a)(18) are revised to read as follows:

§ 175.10 Exceptions.

(a) * * *

(4) * * *

(i) Non-radioactive medicinal and toilet articles (including aerosols) may be carried in checked or carry-on baggage. Release devices on aerosols must be protected by a cap or other suitable means to prevent inadvertent release;

* * * * *

(iii) Other aerosols in Division 2.2 with no subsidiary risk may be carried in checked baggage only. Release devices on aerosols must be protected by a cap or other suitable means to prevent inadvertent release;

* * * * *

(18) Compressed gas cylinders of Division 2.2 worn by passengers for the operation of mechanical limbs and spare cylinders of a similar size for the same purpose in sufficient quantities to ensure an adequate supply for the duration of the journey.

* * * * *

53. Section 175.85 is revised by adding new paragraph (j) to read as follows:

§ 175.85 Cargo location.

* * * * *

(j) A package bearing a KEEP AWAY FROM HEAT handling marking must be protected from direct sunshine and stored in a cool and ventilated place, away from sources of heat.

PART 176—CARRIAGE BY VESSEL

54. The authority citation for part 176 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

55. In § 176.2, the following revisions are made:

a. The definitions for “Explosive article”, “Explosive substance” and “Magazine” are revised.

b. The term “Transport unit” is revised to read “Cargo transport unit”.

c. In the definition “In containers or the like”, the term “transport unit” is removed and the term “cargo transport unit” is added in its place.

The revisions and additions read as follows:

* * * * *

Cargo transport unit means a transport vehicle, a freight container or a portable tank. A *closed cargo transport unit* means a cargo transport unit in which the contents are totally enclosed by permanent structures. An *open cargo transport unit* means a cargo transport

unit that is not a closed cargo transport unit. Cargo transport units with fabric sides or tops are not closed cargo transport units for the purposes of this part.

* * * * *

Explosive article means an article or device which contains one or more explosive substances. Individual explosive substances are identified in column 17 of the Dangerous Goods List in the IMDG Code.

* * * * *

Explosive substance means a solid or liquid material, or a mixture of materials, which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to its surroundings. Individual explosive substances are identified in column 17 of the Dangerous Goods List in the IMDG Code.

* * * * *

In containers or the like means in any clean, substantial, weatherproof box structure which can be secured to the vessel’s structure, including a portable magazine or a closed cargo transport unit. Whenever this stowage is specified, stowage in deckhouses, mast lockers and oversized weatherproof packages (overpacks) is also acceptable.

* * * * *

Magazine means an enclosure designed to protect certain goods of Class 1 (explosive) materials from damage by other cargo and adverse weather conditions during loading, unloading, and when in transit; and to prevent unauthorized access. A magazine may be a fixed structure or compartment in the vessel, a closed freight container, a closed transport vehicle, or a portable magazine. Magazines may be positioned in any part of the ship conforming with the relevant provisions for Class 1 (explosive) materials contained in Subpart G of this part provided that magazines which are fixed structures are sited so that their doors, where fitted, are easily accessible.

* * * * *

56. Section 176.27 is revised to read as follows:

§ 176.27 Certificate.

(a) A carrier may not transport a hazardous material by vessel unless a certificate prepared in accordance with § 172.204 of this subchapter has been received.

(b) In the case of an import or export shipment of hazardous materials that 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, packaged, and labeled according to part 172 of this subchapter or in accordance with the requirements of the IMDG Code (IBR, see § 171.7 of this subchapter). See § 171.12 of this subchapter.

(c)(1) A person responsible for packing or loading a freight container or transport vehicle with packages of hazardous materials for transportation by a manned vessel in ocean or coastwise service, must provide the vessel operator, at the time the shipment is offered for transportation by vessel, with a signed container packing certificate stating, at a minimum, that—

(i) The freight container or transport vehicle is serviceable for the materials loaded therein, contains no incompatible goods, and is properly marked, labeled or placarded, as applicable; and

(ii) When the freight container or transport vehicle contains packages, those packages have been inspected prior to loading, are properly marked, labeled or placarded, as applicable; are not damaged; and are properly secured.

(2) The certification may appear on a shipping paper or on a separate document as a statement, such as “It is declared that the packing of the container has been carried out in accordance with the applicable provisions [of 49 CFR], [of the IMDG Code], or [of 49 CFR and the IMDG Code].”

57. In § 176.63, paragraph (e) is revised to read as follows:

§ 176.63 Stowage locations.

* * * * *

(e) *Closed cargo transport unit*, for the purpose of stowage of Class 1 (explosive) materials on board a vessel, means a unit which fully encloses the contents by permanent structures and can be secured to the ship’s structure, and includes a magazine. Cargo transport units with fabric sides or tops are not closed cargo transport units. Where this stowage is specified, stowage in small compartments such as deckhouses and mast lockers are acceptable alternatives. The floor of any closed cargo transport unit or compartment shall either be constructed of wood, close-boarded or so arranged that goods are stowed on sparred gratings, wooden pallets or dunnage. Provided that the necessary additional specifications are met, a closed cargo transport unit may be used for type “A” or “C” class 1 stowage or as a magazine.”

* * * * *

58. In § 176.76, paragraphs (h) and (i) are revised to read as follows:

§ 176.76 Transport vehicles, freight containers, and portable tanks containing hazardous materials.

* * * * *

(h) A fumigated cargo transport unit may only be transported on board a vessel subject to the following conditions and limitations:

(1) The fumigated cargo transport unit may be placed on board a vessel only if at least 24 hours have elapsed since the unit was last fumigated;

(2) The fumigated cargo transport unit is accompanied by a document showing the date of fumigation and the type and amount of fumigant used;

(3) Prior to loading, the master is informed of the intended placement of the fumigated cargo transport unit on board the vessel and the information provided on the accompanying document;

(4) Equipment that is capable of detecting the fumigant and instructions for the equipment's use is provided on the vessel;

(5) The fumigated cargo transport unit must be stowed at least 5 m from any opening to accommodation spaces;

(6) Fumigated cargo transport units may only be transported on deck on vessels carrying more than 25 passengers; and

(7) Fumigants may not be added to cargo transport units while on board a vessel.

(i) A cargo transport unit packed or loaded with flammable gas or flammable liquid having a flashpoint below +23 °C transported on deck must be stowed "away from" possible sources of ignition. In the case of container ships, a distance equivalent to one container space athwartships away from possible sources of ignition applied in any direction will satisfy this requirement.

59. In § 176.83:

a. Paragraphs (a)(5), (d), (e), (f)(1), (f)(3), (g)(1), (g)(2), (g)(3) and (l) are revised;

b. The headings to paragraphs (g) and (f) and the title to Table 176.83(g) are revised; and

c. A new paragraph (m) is added.

The revisions and additions read as follows:

§ 176.83 Segregation.

* * * * *

(a) * * *

(5) Whenever hazardous materials are stowed together, whether or not in a cargo transport unit, the segregation of such hazardous materials from others must always be in accordance with the most restrictive requirements for any of the hazardous materials concerned.

* * * * *

(d) *Segregation in cargo transport units:* Two hazardous materials for which any segregation is required may not be stowed in the same cargo transport unit.

(e) *Segregation of hazardous materials stowed as breakbulk cargo from those packed in cargo transport units:* (1) Hazardous materials stowed as breakbulk cargo must be segregated from materials packed in open cargo transport units in accordance with paragraph (c) of this section.

(2) Hazardous materials stowed as breakbulk cargo must be segregated from materials packed in closed cargo transport units in accordance with paragraph (c) of this section, except that:

(i) Where "away from" is required, no segregation between packages and the closed cargo transport units is required; and

(ii) Where "separated from" is required, the segregation between the packages and the closed cargo transport units may be the same as for "away from".

(f) *Segregation of cargo transport units on board container vessels:* (1) Except for hatchless container ships, this paragraph applies to segregation of cargo transport units that are carried on board container vessels, or on other types of vessels, provided these cargo spaces are properly fitted for permanent stowage of containers during transport.

* * * * *

(3) *Segregation Table:* Table § 176.83(f) sets forth the general requirements for segregation between

cargo transport units on board container vessels.

* * * * *

(g) *Segregation of cargo transport units on board trailerships and trainships:* (1) The requirements of this paragraph apply to the segregation of cargo transport units which are carried on board trailerships and trainships or in "roll-on/roll-off" cargo spaces.

(2) For trailerships and trainships which have spaces suitable for breakbulk cargo, containers, or any other method of stowage, the appropriate paragraph of this section applies to the relevant cargo space.

(3) *Segregation Table.* Table § 176.83(g) sets forth the general requirements for segregation between transport units on board trailerships and trainships.

TABLE 176.83(g).—SEGREGATION OF CARGO TRANSPORT UNITS ON BOARD TRAILERSHIPS AND TRAINSHIPS

* * * * *

(1) *Segregation of containers on board hatchless (open-top) container ships:* (1) This paragraph applies to the segregation of cargo transport units that are transported on board hatchless container ships provided that the cargo spaces are properly fitted to give permanent stowage of the cargo transport units during transport.

(2) For container ships that have both hatchless container spaces and other spaces suitable for breakbulk cargo, conventional container stowage, or any other method of stowage, the appropriate requirements of this section apply to the relevant cargo space.

(3) *Segregation Table:* Table § 176.83(l)(3) sets forth the general requirements for segregation of cargo transport units on board hatchless container ships.

(4) In Table § 176.83(l)(3), a container space means a distance of not less than 6 m (20 feet) fore and aft or not less than 2.5 m (8 feet) athwartship.

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TABLE 176.83(i) - SEGREGATION OF CARGO TRANSPORT UNITS ON BOARD HATCHLESS CONTAINER SHIPS

SEGREGATION REQUIREMENT	VERTICAL			HORIZONTAL								
	CLOSED VERSUS CLOSED	CLOSED VERSUS OPEN	OPEN VERSUS OPEN	CLOSED VERSUS CLOSED		CLOSED VERSUS OPEN		OPEN VERSUS OPEN				
				ON DECK	UNDER DECK	ON DECK	UNDER DECK	ON DECK	UNDER DECK			
"AWAY FROM" 1.	ONE ON TOP OF THE OTHER PERMITTED	OPEN ON TOP OF CLOSED PERMITTED OTHERWISE AS FOR "OPEN VERSUS OPEN"	NOT IN THE SAME VERTICAL LINE	FORE AND AFT	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	ONE CONTAINER SPACE OR ONE BULKHEAD	ONE CONTAINER SPACE	ONE CONTAINER SPACE OR ONE BULKHEAD
				ATHWART-SHIPS	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	NO RESTRICTION	ONE CONTAINER SPACE	ONE CONTAINER SPACE	ONE CONTAINER SPACE
"SEPARATED FROM" 2.			NOT IN THE SAME VERTICAL LINE	FORE AND AFT	ONE CONTAINER SPACE	ONE CONTAINER SPACE OR ONE BULKHEAD	ONE CONTAINER SPACE	ONE CONTAINER SPACE OR ONE BULKHEAD	ONE CONTAINER SPACE OR ONE BULKHEAD	ONE CONTAINER SPACE AND NOT IN OR ABOVE SAME HOLD	ONE CONTAINER SPACE	ONE BULKHEAD
				ATHWART-SHIPS	ONE CONTAINER SPACE	ONE CONTAINER SPACE	TWO CONTAINER SPACES	TWO CONTAINER SPACES	TWO CONTAINER SPACES	TWO CONTAINER SPACES AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD	ONE BULKHEAD
"SEPARATED BY A COMPLETE COMPARTMENT OR HOLD FROM" 3.		AS FOR "OPEN VERSUS OPEN"	NOT IN THE SAME VERTICAL LINE	FORE AND AFT	ONE CONTAINER SPACE AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD	ONE CONTAINER SPACE AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD	ONE BULKHEAD	TWO CONTAINER SPACES AND NOT IN OR ABOVE SAME HOLD	TWO CONTAINER SPACES AND NOT IN OR ABOVE SAME HOLD	TWO BULKHEADS
				ATHWART-SHIPS	TWO CONTAINER SPACES AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD	TWO CONTAINER SPACES AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD	ONE BULKHEAD	ONE BULKHEAD	THREE CONTAINER SPACES AND NOT IN OR ABOVE SAME HOLD	ONE BULKHEAD	TWO BULKHEADS

"SEPARATED LONGITUDINALLY BY AN INTERVENING COMPLETE COMPARTMENT OR HOLD FROM" 4.	PROHIBITED	FORE AND AFT	ATHWART-SHIPS	ONE BULKHEAD AND MINIMUM HORIZONTAL DISTANCE OF 24 M*	MINIMUM HORIZONTAL DISTANCE OF 24 M AND NOT IN OR ABOVE SAME HOLD	MINIMUM HORIZONTAL DISTANCE OF 24 M AND NOT IN OR ABOVE SAME HOLD	TWO BULKHEADS	TWO BULKHEADS
		MINIMUM HORIZONTAL DISTANCE OF 24 M AND NOT IN OR ABOVE SAME HOLD	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED
		MINIMUM HORIZONTAL DISTANCE OF 24 M AND NOT IN OR ABOVE SAME HOLD	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED
		MINIMUM HORIZONTAL DISTANCE OF 24 M AND NOT IN OR ABOVE SAME HOLD	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED
		MINIMUM HORIZONTAL DISTANCE OF 24 M AND NOT IN OR ABOVE SAME HOLD	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED
		MINIMUM HORIZONTAL DISTANCE OF 24 M AND NOT IN OR ABOVE SAME HOLD	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED	PROHIBITED

* Containers not less than 6 m (20 feet) from intervening bulkhead.
 Note: All bulkheads and decks must be resistant to fire and liquid.

(m) *Provisions for segregation groups:*
 (1) For the purpose of segregation, materials having certain similar chemical properties have been grouped together in segregation groups. The segregation groups (such as "acids", "chlorates", "permanganates") and the entries allocated to each of these groups include the substances identified in section 3.1.4 of the IMDG Code. When column (10B) of the § 172.101 Table refers to a numbered stowage provision set forth in § 176.84(b) such as "Stow "away from" acids", that particular stowage/segregation requirement applies to all the materials allocated to the respective segregation group.

(2) Not all hazardous materials falling within a segregation group are listed by name in the regulations. These materials are shipped under "n.o.s." entries. Although these "n.o.s." entries are not listed themselves in the above groups, the shipper must decide whether allocation under a segregation group is appropriate. Mixtures, solutions or preparations containing hazardous materials falling within a segregation group and shipped under an "n.o.s." entry are also considered to fall within that segregation group.

(3) The segregation groups described above do not address materials which fall outside the classification criteria of the hazardous materials regulations although it is recognized that some non-hazardous materials have certain chemical properties similar to hazardous materials listed in the segregation groups. A shipper or the person responsible for packing the materials into a cargo transport unit who does have knowledge of the chemical properties of such non-hazardous materials may identify a relevant segregation group and apply the segregation requirements for that segregation group.

60. In § 176.84, paragraph (a) is revised, in paragraph (b), Table of provisions, eleven new entries are added in appropriate numerical order and in paragraph (c)(2), three notes in the Provisions for the stowage of Class 1 (explosive) materials table are revised to read as follows:

§ 176.84 Other requirements for stowage and segregation for cargo vessels and passenger vessels.

(a) *General.* When Column 10B of the § 172.101 Table refers to a numbered or alpha-numeric stowage provision for water shipments, the meaning and requirements of that provision are set forth in this section. Terms in quotation marks are defined in § 176.83. Other terms used in the table in this section such as "acids", "chlorates" and

"permanganates" indicate different chemical groups referred to here as segregation groups. Materials falling within a segregation group are considered to have certain similar chemical properties and, although not exhaustive in nature, the materials belonging to each group include those substances identified in section 3.1.4 of the IMDG Code as set forth in § 176.83(m).

(b) * * *

Code	Provisions
* * * * *	
133 ...	Stow "separated from" sulfur.
134 ...	Stow "separated from" UN2716.
135 ...	Stow "Separated from" mercury and mercury compounds.
136 ...	Stow "Separated from" carbon tetrachloride.
137 ...	For arsenic sulphides, Stow "separated from" acids.
138 ...	Stow "Separated from" peroxides.
139 ...	Stow "Separated from" mercury salts.
140 ...	Stow "Separated from" UN3052 and UN3461.
141 ...	Stow "away from" radioactive materials.
142 ...	Packages in cargo transport units must be stowed so as to allow for adequate air circulation throughout the cargo.
143 ...	Prohibited on any vessel carrying explosives (except explosives in Division 1.4, Compatibility group S).
* * * * *	

(c) * * *
 (2) * * *

Note	Provision
* * * * *	
19E	"Away from" explosives containing chlorates or perchlorates.
* * * * *	
22E	"Away from" ammonium compounds and explosives containing ammonium compounds or salts.
23E	"Separated from" Division 1.4 and "separated longitudinally by an intervening complete compartment or hold from" Division 1.1, 1.2, 1.3, 1.5, and 1.6 except from explosives of compatibility group J.
* * * * *	

61. In § 176.116, paragraph (c) is revised and a new paragraph (f) is added to read as follows:

§ 176.116 General stowage conditions for Class 1 (explosive) materials.

* * * * *

(c) *Security:* All compartments, magazines, and cargo transport units containing Class 1 (explosive) materials must be locked or suitably secured in order to prevent unauthorized access.

* * * * *

(f) *Under deck stowage of Class 1 (explosive) materials allocated stowage categories 09 and 10:*

(1) These Class 1 (explosive) materials must not be stowed in the same compartment or hold with other cargo that is readily combustible (such as items packaged in straw).

(2) The position of stowage of these Class 1 (explosive) materials must be such as to maintain direct access to the hatchway by not overstuffing with other cargo except for other Class 1 (explosive) materials.

(3) In all cases, all cargo within the compartment or hold, including Class 1 (explosive) materials stowed in cargo transport units, must be secured so as to eliminate the possibility of significant movement. Where an entire deck is used as a magazine, the stowage must be so arranged that the Class 1 (explosive) materials stowed therein must be removed from the ship before working any cargo in any decks above or below the space in the same hold.

§ 176.122 [Removed and Reserved]

62. Section 176.122 is removed and reserved.

§ 176.124 [Removed and Reserved]

63. Section 176.124 is removed and reserved.

64. Section 176.128 is revised to read as follows:

§ 176.128 Magazine stowage types "A", "C" and Special Stowage.

(a) The stowage arrangements of Class 1 (explosive) substances and certain articles are subject to varying levels of containment, (except for compatibility group S substances), when stowed below deck. The levels are dependent on the hazard presented and the nature of the particular explosives involved. Columns (10A) and (10B) of the Hazardous Materials Table specify the stowage applicable to each substance or article. The different levels of containment are defined below as "A", "C" and "Special".

(b) *Magazine stowage type "A".* Magazine stowage type A is required for those substances that must be kept clear of steelwork.

(c) *Magazine stowage type "C".* Magazine stowage type C is required for those substances in compatibility group A.

(d) *Special Stowage.* Special Stowage is required for Explosive substances,

TABLE 176.144(A).—AUTHORIZED MIXED STOWAGE FOR EXPLOSIVES—Continued

[An “X” indicates that explosives in the two different compatibility groups reflected by the location of the “X” may not be stowed in the same compartment, magazine, or cargo transport unit]

Compatibility groups	A	B	C	D	E	F	G	H	J	K	L	N	S
S	X	.....	.....	.....	.....	.....	.....	.....	.....	.....	X		

NOTES: 1. Explosive articles in compatibility group G, other than fireworks and those requiring special stowage, may be stowed with articles of compatibility groups C, D, and E, provided no explosive substances are carried in the same compartment, magazine or cargo transport unit.

2. Explosives in compatibility group L may only be stowed in the same compartment, magazine or cargo transport unit with identical explosives within compatibility group L.

3. Different types of articles of Division 1.6, compatibility group N, may only be transported together when it is proven that there is no additional risk of sympathetic detonation between the articles. Otherwise they must be treated as division 1.1.

4. When articles of compatibility group N are transported with articles or substances of compatibility groups C, D or E, the goods of compatibility group N must be treated as compatibility group D.

5. When articles of compatibility group N are transported together with articles or substances of compatibility group S, the entire load must be treated as compatibility group N.

6. Any combination of articles in compatibility groups C, D and E must be treated as compatibility group E. Any combination of substances in compatibility groups C and D must be treated as the most appropriate compatibility group shown in Table 2 of § 173.52 taking into account the predominant characteristics of the combined load. This overall classification code must be displayed on any label or placard on a unit load or cargo transport unit as prescribed in subpart E (Labeling) and subpart F (Placarding).

(b) Where Class 1 (explosive) materials of different compatibility groups are allowed to be stowed in the same compartment, magazine, or cargo transport unit, the stowage arrangements must conform to the most stringent requirements for the entire load.

(c) Where a mixed load of Class 1 (explosive) materials of different hazard divisions and/or stowage arrangements is carried within a compartment, magazine, or cargo transport unit, the entire load must be treated as belonging to the hazard division having the greatest hazard. (For example, if a load of Division 1.1 (explosive) materials is mixed with Division 1.3 (explosive) materials, the load is treated as a Division 1.1 (explosive) material as defined in § 173.50(b) of this subchapter and the stowage must conform to the most stringent requirements for the entire load).

* * * * *

(e) Segregation on deck: When Class 1 (explosive) materials in different compatibility groups are carried on deck, they must be stored not less than 6 m (20 feet) apart unless they are allowed under Table 176.144(a) to be stowed in the same compartment, magazine, or cargo transport unit.

* * * * *

71. In § 176.146, paragraph (d)(1) is revised to read as follows:

§ 176.146 Segregation from non-hazardous materials.

* * * * *

(d) In order to avoid contamination:

(1) An explosive substance or article which has a secondary POISON hazard label must be stowed “separated from” all foodstuffs, except when such materials are stowed in separate closed

cargo transport units, the requirements for “away from” segregation apply.

* * * * *

§ 176.168 [Amended]

72. The undesignated center heading before § 176.168 is revised to read “CARGO TRANSPORT UNITS AND SHIPBORNE BARGES”.

73. In § 176.170, a new paragraph (b) is added to read as follows:

§ 176.170 Transport of Class 1 (explosive) materials in freight containers.

* * * * *

(b) Freight containers loaded with Class 1 (explosive) materials, except for explosives in Division 1.4, must not be stowed in the outermost row of containers.

* * * * *

74. In § 176.174, paragraphs (a) and (b) are revised to read as follows:

§ 176.174 Transport of Class 1 (explosive) materials in shipborne barges.

(a) Fixed magazines may be built within a shipboard barge. Freight containers may be used as magazines within a barge.

(b) Shipborne barges may be used for the carriage of all types of Class 1 (explosive) materials. When carrying Class 1 (explosive) materials requiring special stowage, the following requirements apply:

(1) Class 1 (explosive) materials in compatibility group G or H must be stowed in freight containers.

(2) Class 1 (explosive) materials in compatibility group K or L must be stowed in steel magazines.

* * * * *

§ 176.600 [Amended]

75. In § 176.600, in paragraph (a), in the last sentence, the wording “closed transport units” is removed and the

wording “closed cargo transport units” is added in its place.

PART 178—SPECIFICATIONS FOR PACKAGINGS

76. The authority citation for part 178 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

77. In § 178.274, paragraph (f)(1)(v) is revised to read as follows:

§ 178.274 Specifications for UN portable tanks.

* * * * *

(f) * * *

(1) * * *

(v) The rated flow capacity of the spring loaded pressure relief devices, frangible disc or fusible elements in standard cubic meters of air per second (m³/s). For spring loaded pressure relief device the rated flow capacity shall be determined according to ISO 4126–1 (IBR, *see* § 171.1 of this subchapter); and

* * * * *

78. In § 178.275, paragraph (i)(2) is revised to read as follows:

§ 178.275 Specification for UN Portable Tanks intended for the transportation of liquid and solid hazardous materials.

* * * * *

(i) * * *

(2) The combined delivery capacity of the pressure relief system (taking into account the reduction of the flow when the portable tank is fitted with frangible-discs preceding spring-loaded pressure-relief devices or when the spring-loaded pressure-relief devices are provided with a device to prevent the passage of the flame), in condition of complete fire engulfment of the portable tank must be sufficient to limit the pressure in the shell to 20% above the start to discharge pressure limiting device (pressure relief device). The total required capacity of

the relief devices may be determined using the formula in paragraph (i)(2)(i)(A) of this section or the table in paragraph (i)(2)(iii) of this section.

* * * * *

79. In § 178.276, paragraphs (a)(4)(ii)(A), (d), and (e)(3) are revised to read as follows:

§ 178.276 Requirements for the design, construction, inspection and testing of portable tanks intended for the transportation of non-refrigerated liquefied compressed gases.

* * * * *

- (a) * * *
- (4) * * *
- (ii) * * *

(A) Not less than the pressure specified for each liquefied compressed gas listed in the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313; and

* * * * *

(d) *Bottom openings.* Bottom openings are prohibited on portable tanks when the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313 of this subchapter indicates that bottom openings are not allowed. In this case, there may be no openings located below the liquid level of the shell when it is filled to its maximum permissible filling limit.

(e) * * *

(3) A portable tank intended for the transportation of certain liquefied compressed gases identified in the UN Portable Tank Table for Liquefied Compressed Gases in § 173.313 of this subchapter must have a pressure relief device which conforms to the requirements of this subchapter. Unless a portable tank, in dedicated service, is fitted with a relief device constructed of materials compatible with the hazardous material, the relief device must be comprised of a frangible disc preceded by a reclosing device. The space between the frangible disc and the device must be provided with a pressure gauge or a suitable tell-tale indicator. This arrangement must facilitate the detection of disc rupture, pinholing or leakage which could cause a malfunction of the pressure relief device. The frangible disc must rupture at a nominal pressure 10% above the start-to-discharge pressure of the relief device.

* * * * *

80. In § 178.602, paragraph (b) is revised to read as follows:

§ 178.602 Preparation of packagings and packages for testing.

* * * * *

(b) For the drop and stacking test, inner and single-unit receptacles other

than bags must be filled to not less than 95% of maximum capacity (see § 171.8 of this subchapter) in the case of solids and not less than 98% of maximum in the case of liquids. Bags shall be filled to the maximum mass at which they may be used. The material to be transported in the packagings may be replaced by a non-hazardous material, except for chemical compatibility testing or where this would invalidate the results of the tests.

* * * * *

81. In § 178.603, paragraphs (c)(1) and (e)(2) are revised to read as follows:

§ 178.603 Drop test.

* * * * *

(c) *Special preparation of test samples for the drop test.*

(1) Testing of plastic drums, plastic jerricans, plastic boxes other than expanded polystyrene boxes, composite packagings (plastic material), and combination packagings with plastic inner packagings other than plastic bags intended to contain solids or articles must be carried out when the temperature of the test sample and its contents has been reduced to -18 °C (0 °F) or lower. Test liquids must be kept in the liquid state, if necessary, by the addition of anti-freeze. Water/anti-freeze solutions with a minimum specific gravity of 0.95 for testing at -18 °C (0 °F) or lower are considered acceptable test liquids. Test samples prepared in this way are not required to be conditioned in accordance with § 178.602(d).

* * * * *

(e) * * *

* * * * *

(2) For liquids in single packagings and for inner packagings of combination packagings, if the test is performed with water:

* * * * *

82. In § 178.810, paragraph (b)(3) is revised to read as follows:

§ 178.810 Drop test.

* * * * *

(b) *Special preparation for the drop test.*

* * * * *

(3) Rigid plastic IBCs and composite IBCs with plastic inner receptacles must be conditioned for testing by reducing the temperature of the packaging and its contents to -18 °C (0 °F) or lower. Test liquids must be kept in the liquid state, if necessary, by the addition of anti-freeze. Water/anti-freeze solutions with a minimum specific gravity of 0.95 for testing at -18 °C (0 °F) or lower are considered acceptable test liquids. IBCs conditioned in this way are not required

to be conditioned in accordance with § 178.802.

* * * * *

PART 180—CONTINUING QUALIFICATION AND MAINTENANCE OF PACKAGINGS

83. The authority citation for part 180 continues to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

84. In § 180.350, paragraph (c) is revised to read as follows:

§ 180.350 Applicability and definitions.

* * * * *

(c) Routine maintenance of IBCs is the routine performance on:

(1) Metal, rigid plastic or composite IBCs of operations such as:

- (i) Cleaning;
- (ii) Removal and reinstallation or replacement of body closures (including associated gaskets), or of service equipment conforming to the original manufacturer's specifications provided that the leaktightness of the IBC is verified; or
- (iii) Restoration of structural equipment not directly performing a hazardous material containment or discharge pressure retention function so as to conform to the design type (for example, the straightening of legs or lifting attachments), provided the containment function of the IBC is not affected.

(2) Plastics or textile flexible IBCs of operations, such as:

- (i) Cleaning; or
- (ii) Replacement of non-integral components, such as non-integral liners and closure ties, with components conforming to the original manufacturer's specification; provided that these operations do not adversely affect the containment function of the flexible IBC or alter the design type.

85. In § 180.352, paragraph (d)(1)(iv) is revised and a new paragraph (d)(1)(v) is added to read as follow:

§ 180.352 Requirements for retest and inspection of IBCs.

* * * * *

(d) * * *

(1) * * *

(iv) Except for routine maintenance of metal, rigid plastics and composite IBCs performed by the owner of the IBC, whose State and name or authorized symbol is durably marked on the IBC, the party performing the routine maintenance shall durably mark the IBC near the manufacturer's UN design type marking to show the following:

(A) The County in which the routine maintenance was carried out; and

(B) The name or authorized symbol of the party performing the routine maintenance.

(v) Retests and inspections performed in accordance with paragraphs (d)(1)(i) and (ii) of this section may be used to

satisfy the requirements for the 2.5 and five year periodic tests and inspections required by paragraph (b) of this section, as applicable.

* * * * *

Issued in Washington, DC on May 26, 2004, under authority delegated in 49 CFR part 106.

Frits Wybenga,

Deputy Associate Administrator for Hazardous Materials Safety.

[FR Doc. 04-12411 Filed 6-21-04; 8:45 am]

BILLING CODE 4910-60-P