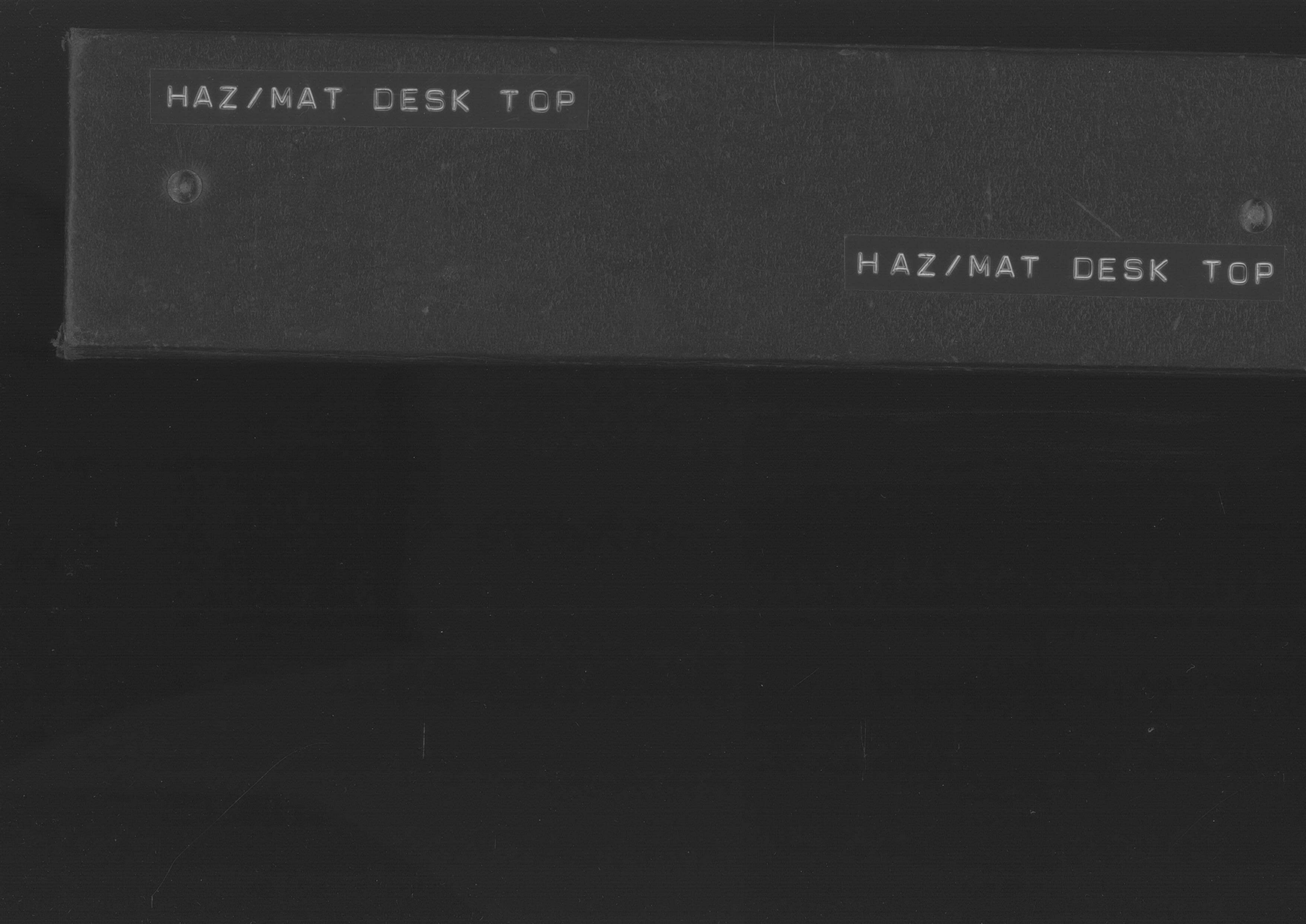
HAZ/MAT DESK TOP
HAZ/MAT DESK TOP

MOTOR TRANSPORT
HAZARDOUS WASTE
AND
HAZARDOUS MATERIAL
DESK TOP

DESK TOP PROCEDURES FOR MOTOR TRANSPORT HAZ-MAT REPRESENTATIVES

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ASSIGMENT LETTER

UNITED STATES MARINE CORPS
HEADQUARTERS & SERVICE COMPANY
2D ASSAULT AMPHIBIAN BATTALION
2D MARINE DIVISION
PSC BOX 20070
CAMP LEJEUNE, NORTH CAROLINA 28542-0070

5090
BEMD
9 SEP 04

From: Commanding Officer, 2d Assault Amphibian Battalion, 2d Marine Division
To: PFC Kissinger A. J. 309 96 0703

Ref: (a) CG, MCB ltr 5090 BEMD of 20 Jul 98
(b) MCO P5090.2A

Encl: (1) Hazardous Waste Site Manager (HWSM) List of Responsibilities

Subj: HAZARDOUS WATES SITE MANAGER (HWSM) ASSIGNMENT LETTER

1. Background. Reference (a) lists the four environmental titles and position objectives at the installation; clarifies the specific responsibilities of each of the four environmental positions aboard the installation; provides a standard format for the four environmental positions aboard the installations; and directs tenants and tenant commands to modify environmental training records to include the pertinent environmental assignment letter contained herein.

2. Responsibilities. The HWSM for 2d Assault Amphibian Battalion will ensure the environmental compliance is maintained in accordance with the Commanding General, Marine Corps Base (MCB), Camp Lejeune's direction. References (a) and (b) are provided to guide you in the accomplishment of your duties. The enclosure is a specific list of Environmental Management Department (EMD) responsibilities that will be followed in the accomplishment of your assigned duties.

3. Action.

a. Attach this letter and the enclosure as part of your permanent environmental training record in accordance with reference (a). Modification of this assignment letter and the enclosure is not authorized.

b. Successfully complete MCB, Camp Lejeune CETP HMHW102 initial training within six months of the date of this letter and refresher training annually there after.

c. Attend MCB, Camp Lejeune, EMB sponsored meetings, seminars, evaluations, and functions as required to accomplish the duties listed in the enclosure.

T. G. HOLDEN

5090
BMED

FIRST ENDORSEMENT

From: PFC Kissinger A. J. 309 96 0703
To: Commanding Officer, 2d Assault Amphibian Battalion, 2d Marine Division

1. I have read and understand the referenced and I am aware of my duties and responsibilities as a Hazardous Waste Site Manager for this organization.

A. J. KISSINGER

Hazardous Waste Site Manager (HWSM) List of Responsibilities:

1. Ensure installation and command management requirements are implemented for each type of HW or HM routinely collected and managed for disposal.

2. Ensures that only authorized, properly trained, and supervised HW personnel are allowed to handle HW or perform associated inspections and record keeping.

3. Requests initial HW training for each newly assigned assistant HW Site Manager or HW Handler.

4. Provides, or ensures other qualified, trained HW personnel provide direct supervision of each assistant HW Site Manager or HW Handler until adequate initial HW management training is provided and documented.

5. Conducts annual reviews of HW training records for unit HW personnel.

6. Conducts and properly documents weekly inspections of HW accumulation areas per Federal and State HW regulations and performs and documents follow-up actions required to ensure compliance with EMD direction.

7. Ensures all HW containers are clearly marked in accordance with EMD directives.

8. Ensures all leaks, releases or spills are managed in accordance with EMD guidance.

9. Notifies immediate superior and ECO immediately upon becoming aware of the generation or the proposed generation of a new type of HW.

10. Notifies immediate superior and ECO immediately upon discovering existing or potential violations or deficiencies suspected of posing a threat of a HW spill, fire, explosion, or other danger to human health and safety or to property.

11. Notifies immediate superior and ECO immediately upon discovering the presence of HW in the 90 Day Site with an ASD over 75 days old which has not been processed for removal.

HWSM List of Responsibilities (continued):

12. Ensures the day-to-day collection and storage of HW or UW and excess HM awaiting disposal. Initiates action to dispose of accumulated HW, US, or excess HM.

13. Provides instructions and supervision required to ensure all HW, UW, and HM disposal activities shall be carried out in compliance with EMD directives.

14. Ensures that all HW, UW, and other designated wastes by EMD are managed in a manner which prevents contamination by unknown items, damage, vandalism, fires, spills, explosions, or other situation likely to pose a hazard to human health, or the environment.

15. Ensures containers of HW are confined to authorized and approved SAA's and 90-day accumulation areas, which are managed in compliance with EMD direction.

16. Initiates disposal of HW, UW, and excess HM by:

a. Preparing and submitting HW/HM Disposal Worksheet to the cognizant ECO within five working days after a container of HW, UW, or HM becomes full.

b. Providing personnel, equipment, and supplies required to consolidate, repackage, or repack HW, UW, and HM as directed by EMD.

17. Performs and ensure unit UST monitoring requirements are accomplished according to EMD directives.

18. Informs the unit ECO of the need for any new projects or modifications to current structures which may have a potential effect on the environment.

UNITED STATES MARINE CORPS
SECOND ASSAULT AMPHIBIAN BATTALION
2D MARINE DIVISION
PSC BOX 20070
CAMP LEJEUNE, NORTH CAROLINA 28542-0070

IN REPLY REFER TO:
4000
MT/rsg
22 March 2006

From: Motor Transportation Officer, 2d Assault Amphibious Battalion
To: Lance Corporal Kissinger A. J. 309 96 0703/3521

Subj: APPOINTMENT AS MOTOR TRANSPORT HAZMAT NCO

Ref: (a) MCO P5090.2A
(b) MCO 5100.8
(c) Local Unit Order P5100
(d) MCO 5100.25

1. In accordance with the references, you are hereby appointed as the Motor Transport HAZMAT NCO.

2. You will be guided in the performance of your duties by the instructions contained in references (a) through (d). You will establish and maintain a desktop procedure/turnover folder for the billet to which you are assigned.

3. By your endorsement hereon, you will certify that you have read and understand the instructions contained in reference to your duties as the Motor Transport Hazmat NCO.

Robert S Grabowski
R.S. GRABOWSKI

4000
MT/rsg

FIRST ENDORSEMENT

From: Lance Corporal Kissinger A. J. 309 96 0703/3521
To: Motor Transportation Officer

1. I have read and understand the references and I am aware of my duties and responsibilities as a Hazardous Waste Site Manager for this organization.

A. J. Kissinger

UNITED STATES MARINE CORPS
2D ASLT AMPHIBIAN BN 2D MAR DIV
PSC BOX 20070
CAMP LEJEUNE NC 28542-0070

IN REPLY REFER TO:
4000
MT/JKH
7 Apr 05

From: Motor Transport Officer
To: PFC Zimmerman D.M. 215 11 7732

Subj: APPOINTMENT AS MOTOR TRANSPORT HAZMAT NCO

Ref: (a) MCO P5090.2A
(b) MCO 5100.8
(c) Local Unit Order P5100
(d) MCO 5100.25

1. In accordance with the references, you are hereby appointed as the Motor Transport HAZMAT NCO.

2. You will be guided in the performance of your duties by the instructions contained in references (a) through (e). You will establish and maintain a desktop procedure/turnover folder for the billet to which you are assigned.

3. By your endorsement hereon, you will certify that you have read and understand the instructions contained in reference to your duties as the Motor Transport HAZMAT NCO.

J.K. HAVERTY

FIRST ENDORSMENT

From: PFC Zimmerman D.M. 215 11 7732
To: Commanding Officer, 2D Assault Amphibian Battalion, 2D Marine Division

1. I have read and understand the referenced and I aware of my duties and responsibilities.

D.M. Zimmerman

UNITED STATES MARINE CORPS
HEADQUARTERS & SERVICE COMPANY
2D ASSAULT AMPHIBIAN BATTALION
2D MARINE DIVISION
PSC BOX 20070
CAMP LEJEUNE, NORTH CAROLINA 28542-0070

4000
MT/BG
9 SEP 04

From: Motor Transport Officer
To: PFC Kissinger A. J. 309 96 0703

Subj: APPOINTMENT AS MOTORO TRANSPORT HAZMAT NCO

Ref: (a) MCO P5090.2A
(b) MCO 5100.8
(c) Local Unit Order P5100
(d) MCO 5100.25

1. In accordance with the references, you are hereby appointed as the Motor Transport HAZMAT NCO.

2. You will be guided in the performance of your duties by the instructions contained in references (a) through (e). You will establish and maintain a desktop procedure/turnover folder for the billet to which you are assigned.

3. By your endorsement hereon, you will certify that you have read and understand the instructions contained in reference to your duties as the Motor Transport HAZMAT NCO.

B.A. GILSDORF

4000
MT/BG

FIRST ENDORSEMENT

From: PFC Kissinger A. J. 309 96 0703
To: Commanding Officer, 2d Assault Amphibian Battalion, 2d Marine Division

1. I have read and understand the referenced and I am aware of my duties and responsibilities as a Hazardous Waste Site Manager for this organization.

A. J. KISSINGER

CLASS/TRAINING ATTENDANCE ROSTER

CLASS/TRAINING: Haz-Mat

DATE: 050331 TIME: 0930

INSTRUCTOR (S): PFC Zimmerman

	NAME/INT (PRINT)	RANK	PLT	SIGNATURE
1.	Hawthorne, Ronnie	Sgt	M.T	Ronnie D. Hawthorne
2.	Hatmaker, Eric J	PFC	MT	
3.	Brown, Robert W	Lcpl	MT	
4.	Delacruz, Alejandro	PFC	MT	
5.	Galarza, David	Lcpl	MT	
6.	Valenzuela, Patrick	PFC	MT	
7.	Ribiero Jose	PFC	MT	
8.	Scott, BRUCE L.	PFC	MT	
9.	Sweeney Todd A	Lcpl	MT	
10.	Spangler Brandon	CPL	MT	
11.	Kirk Ryan	CPL	MT	
12.	LITTY JOSEPH M	CPL	MT	
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				
21.				
22.				
23				

CLASS/TRAINING ATTENDANCE ROSTER

CLASS/TRAINING: HAZMAT / SAFETY

DATE: Jan. 24 2002 TIME: 0800

INSTRUCTOR (S): Cpl BARRERA / HAZMAT NCO.

	NAME/INT (PRINT)	RANK	PLT	SIGNATURE
1.	Shanghai V	Pvt	MT	
2.	Waits A.D	Lcpl	MT	
3.	VAZ, M	Lcpl	MT	
4.	Gilliam, JL	Lcpl	MT	
5.	Ross, S.A.	PFC	MT	
6.	Kings, J.F	LCPL	MT	
7.	NAUMANN J.W.	Lcpl	MT	
8.	Ragan M.J.	Lcpl	MT	
9.	Goldsmith JM	LCPL	MT	
10.	Miller BG	LCPL	MT	
11.	Poirier LP	Cpl	MT	
12.	LINTON RM	Cpl	MT	
13.	Mills T	Cpl	MT	
14.	FORTUNATI DD	SGT	MT	
15.	Kim, CL	Cpl	MT	
16.				
17.				
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CURRENT REFERENCES

HAZARDOUS WASTE PROFILE SHEET

PART I

A. GENERAL INFORMATION

WASTE PROFILE NO. _____

1. GENERATOR NAME

2. FACILITY ADDRESS

5. ZIP CODE

3. GENERATOR USEPA ID

4. GENERATOR STATE ID

6. TECHNICAL CONTACT

7. TITLE

PHONE ( )

B. 1 NAME OF WASTE _____

2 USEPA/or/STATE WASTE CODE(S) _____

3. PROCESS GENERATING WASTE _____

4. PROJECTED ANNUAL VOLUME/UNITS _____ / _____ 5. MODE OF COLLECTION _____

6. IS THIS WASTE A DIOXIN LISTED WASTE AS DEFINED IN 40 CFR 261.31 (e.g., F020, F021, F022, F023, F026, F027, OR F028)? ☐ YES ☐ NO

7. IS THIS WASTE RESTRICTED FROM LAND DISPOSAL (40 CFR 268)? ☐ YES ☐ NO
HAS AN EXEMPTION BEEN GRANTED? ☐ YES ☐ NO
DOES THE WASTE MEET APPLICABLE TREATMENT STANDARDS? ☐ YES ☐ NO REFERENCE STANDARDS _____

PART II

1. MATERIAL CHARACTERIZATION
(OPTIONAL-NOT REQUIRED DATA)

COLOR _____

DENSITY _____ BTU/LB _____

TOTAL SOLIDS _____ ASH CONTENT _____

LAYERING ☐ MULTILAYERED ☐ BILAYERED ☐ SINGLE PHASE

2. RCRA CHARACTERISTICS

PHYSICAL STATE: ☐ SOLID ☐ LIQUID ☐ SEMI-SOLID ☐ GAS ☐ OTHER

TREATMENT GROUP: ☐ WASTEWATER ☐ NON-WASTEWATER

☐ IGNITABLE (D001)
FLASH POINT (F) _____
☐ HIGH TOC (> 10%)
☐ LOW TOC (< 10%)

☐ REACTIVE (D003)
☐ WATER REACTIVE
☐ CYANIDE REACTIVE
☐ SULFIDE REACTIVE

☐ CORROSIVE (D002)
pH _____
☐ CORRODES STEEL

☐ TOXICITY CHARACTERISTIC *(SEE REVERSE FOR LISTING)*

3. CHEMICAL COMPOSITION (ppm or mg/L)

COPPER _____ PHENOLICS _____
NICKEL _____ TOTAL HALOGENS _____
ZINC _____ VOLATILE ORGANICS _____
CHROMIUM-HEX _____ PCBs _____
(OTHER) _____

NOTE: EXPLOSIVES, SHOCK SENSITIVE, PYROPHORIC, RADIOACTIVE, AND ETIOLOGICAL WASTE NORMALLY ARE NOT ACCEPTED BY THE DRMO

4. MATERIAL COMPOSITION

COMPONENT	CONCENTRATION	RANGE

TOTAL _____ 100%

5. SHIPPING INFORMATION

DOT HAZARDOUS MATERIAL? ☐ YES ☐ NO

PROPER SHIPPING NAME _____

HAZARD CLASS _____ U.N. or N.A. NO. _____
ADDITIONAL DESCRIPTION _____
METHOD OF SHIPMENT ☐ BULK ☐ DRUM ☐ OTHER: _____
CERCLA REPORTABLE QUANTITY (RQ) _____
EMERGENCY RESPONSE GUIDE PAGE
DOT PUBLICATION 5800.4 PAGE NO. _____ EDITION (YR) _____
SPECIAL HANDLING INFORMATION _____

6. GENERATOR CERTIFICATION

BASIS FOR INFORMATION
☐ CHEMICAL ANALYSIS *(ATTACH TEST RESULTS)*
☐ USER KNOWLEDGE *(ATTACH SUPPORTING DOCUMENTS - Explain how and why these documents comply with RCRA requirements)* _____

I, _____ *(Print or Type Name)*, HEREBY CERTIFY THAT ALL INFORMATION SUBMITTED IN THIS AND ALL ATTACHED DOCUMENTS IS TO THE BEST OF MY KNOWLEDGE AN ACCURATE REPRESENTATION OF THE WASTE TURNED IN TO THE DRMO. ALL KNOWN OR SUSPECTED HAZARDS HAVE BEEN DISCLOSED.

SIGNATURE OF GENERATOR'S REPRESENTATIVE

DATE

DRMS Form 1930
Oct 90

SAMPLE

TOXICITY CHARACTERISTIC LIST

EFFECTIVE 25 SEP 90 - LARGE QUANTITY GENERATORS
29 MAR 91 - SMALL QUANTITY GENERATORS

CONTAMINANT	EPA HW No.	(mg/L)	CONTAMINANT	EPA HW No.	(mg/L)
☐ ARSENIC	D004		☐ HEXACHLORO-1,3,-BUTADIENE	D033	
☐ BARIUM	D005		☐ HEXACHLOROETHANE	D034	
☐ BENZENE	D018		☐ LEAD	D008	
☐ CADMIUM	D006		☐ LINDANE	D013	
☐ CARBON TETRACHLORIDE	D019		☐ MERCURY	D009	
☐ CHLORDANE	D020		☐ METHOXYCHLOR	D014	
☐ CHLOROBENZENE	D021		☐ METHYL ETHYL KETONE	D035	
☐ CHLOROFORM	D022		☐ NITROBENZENE	D036	
☐ CHROMIUM	D007		☐ PENTACHLOROPHENOL	D037	
☐ O-CRESOL	D023		☐ PYRIDINE	D038	
☐ M-CRESOL	D024		☐ SELENIUM	D010	
☐ P-CRESOL	D025		☐ SILVER	D011	
☐ CRESOL	D026		☐ TETRACHLOROETHYLENE	D039	
☐ 2,4-D	D016		☐ TOXOPHENE	D015	
☐ 1,4-DICHLOROBENZENE	D027		☐ TRICHLOROETHYLENE	D040	
☐ 1,2-DICHLOROETHANE	D028		☐ 2,4,5-TRICHLOROPHENOL	D041	
☐ 1,1-DICHLOROETHYLENE	D029		☐ 2,4,6-TRICHLOROPHENOL	D042	
☐ 2,4-DINITROTOLUENE	D030		☐ 2,4,5-TP (SILVEX)	D017	
☐ ENDRIN	D012		☐ VINYL CHLORIDE	D043	
☐ HEPTACHLOR (AND ITS HYDROXIDE)	D031				
☐ HEXACHLOROBENZENE	D032				

PART III
FOR DRMO USE ONLY
DRMO VERIFICATION

1. DATE VERIFIED _____

2. RESULTS ☐ *ATTACHED*

pH _____ FLASH POINT _____ SPECIFIC GRAVITY _____ HALIDES (TOX) _____

REACTIVITY: WATER REACTIVITY _____ CYANIDES _____ SULFIDES _____

TCLP _____

SAMPLE

UNITED STATES MARINE CORPS
2D ASSAULT AMPHIBIAN BATTALION
2D MARINE DIVISION, FLEET MARINE FORCE
CAMP LEJEUNE, NORTH CAROLINA 28542-5524

IN REPLY REFER TO
BnO P6240.1A
HMDO
30 Sep 92

BATTALION ORDER P6240.1A

From: Commanding Officer
To: Distribution List

Subj: STANDING OPERATING PROCEDURES FOR HAZARDOUS WASTE (HW) MANAGEMENT (SHORT TITLE: HW SOP)

Ref: (a) MCO P5090.2
(b) BO 6240.5
(c) BO 11090.1
(d) BO 11090.3

Encl: (1) LOCATOR SHEET

1. Purpose. To establish guidance, responsibilities and procedures for proper handling of hazardous waste products while remaining in compliance with regulations contained in the references.

2. Cancellation. BnO 6240.1

3. Background

a. Congress and the State of North Carolina have responded to the threats to human life and the environment caused by mismanagement and illegal spilling and dumping of toxic substances by enacting laws which not only attempt to avert these acts but impose civil and criminal penalties.

b. Laws ranging from the Federal Resource Conservation and Recovery Act (RCRA) to the State of North Carolina affect our methods of operation at Camp Lejeune. These laws provide a viable framework with which we can deal with this very difficult and controversial problem. Adherence to the basic principals contained within these laws include establishing effective containment procedures, development of a viable waste minimization program, and implementation of a well rounded training program for users, handlers, and management personnel.

c. This order formally establishes three collateral duty positions to coordinate and assist in the implementation of the Battalion Hazardous Waste Program. The Battalion Hazardous Material Disposal Officer (HMDO), Hazardous Material Site Manager (HMSM) and Hazardous Material Site Handler (HMSH). The appointment of qualified primary and alternate HMDO and Site Managers serves as a vital link in determining the overall success or failure of the Battalion's HW program.

4. Action. The S-4 will implement the Hazardous Waste program per this order. Furthermore, all company commanders, company maintenance officers and commodity leaders shall ensure that appropriate action is taken to implement the following HW management goals and objectives:

a. HW operations will be supervised by properly trained personnel who have access to equipment and supplies required for handling HW.

b. Appointment letters and written descriptions of HW duties shall be developed for the HMDO, each Site Manager and Handler. This documentation shall be maintained in training records per the guidance of reference (b).

c. All HW sites will be inspected weekly by the Site Manager and monthly by the HMDO. Site Managers will ensure that timely corrective actions are taken to rectify documented discrepancies.

d. Implement and promote hazardous waste minimization campaigns through reduction of the volume and toxicity of generated wastes, and additionally, through discontinued use of products potentially hazardous to the environment when safer alternatives are available.

e. A copy of Appendix (A) will be posted to all bulletin boards and inside every vehicle, tracked and wheeled.

5. Recommendations. Recommendations concerning changes, additions, or deletions to the subject SOP are invited. Such recommendations will be forwarded to the Battalion Hazardous Material Disposal Officer via the appropriate chain of command.

6. Summary of Revisions. This order has been extensively revised and should be reviewed in its entirety.

7. Certification. Reviewed and approved this date.

M. J. QUINLAN

DISTRIBUTION: A

Copy to: CG, 2d MarDiv (G-4/HMDC)

BnO P6240.1A
30 Sep 92

LOCATOR SHEET

Subj: STANDING OPERATING PROCEDURES FOR HAZARDOUS WASTE (HW) MANAGEMENT (SHORT TITLE: HW SOP)

Location: _____

(Indicate location(s) of copy(ies) of this manual.)

ENCLOSURE (1)

UNITED STATES MARINE CORPS
Marine Corps Base
Camp Lejeune, North Carolina 28542-5001

BO 6240.5A
NREAD/st
10 Mar 1987

BASE ORDER 6240.5A

From: Commanding General
To: Distribution List

Subj: HAZARDOUS MATERIAL DISPOSAL PROGRAM

Ref: (a) Resource Conservation and Recovery Act (Pub No. 94-580) (42 USC 6901-6987) (NOTAL)
(b) EPA Regulations contained in Code of Federal Regulations, Title: 40 Parts 260-265 (NOTAL)
(c) DOT Regulations contained in Code of Federal Regulations, Title: 49 Parts 100-179 (NOTAL)
(d) BO 11090.1B
(e) BO 11320.1G

Encl: (1) Procedures for Collection, Storage and Turn-In of Hazardous Material and Hazardous Waste for Disposal
(2) Responsibilities for Hazardous Material/Hazardous Waste Disposal
(3) Hazardous Waste Training Requirements and Guidelines

1. Purpose. To revise responsibilities, procedures and guidance for hazardous material (HM) and hazardous waste (HW) disposal and related environmental protection for the Camp Lejeune and Marine Corps Air Station, New River complex.

2. Cancellation. BO 6240.5.

3. Background

a. Congress and the state legislatures have responded to the threats to human life and the environment caused by mismanagement and illegal spilling and dumping of toxic substances by enacting laws which not only attempt to avert future threats but which impose civil and criminal penalties. In enacting many of these environmental laws, Congress waived federal supremacy, requiring federal agencies including the Marine Corps, to comply with federal, state and local environmental laws. Federal officers and employees now face the possibility that they may be personally liable for civil and criminal penalties and fines as well as imprisonment.

b. The Environmental Protection Agency (EPA) has authorized the State of North Carolina to enforce the requirements of references (a) and (b) through a state HW regulatory program. The Solid and Hazardous Waste Management Branch, Division of Health Services (DHS), is the primary enforcing agency within North Carolina. DHS enforcement personnel have authority to investigate HW spills and perform routine inspections of work sites where HW are handled and stored. These investigations and inspections can result in citations being issued to supervisors and/or personnel at the work site for civil and/or criminal violations of HW regulations.

c. State regulations promulgated under reference (a) and EPA regulations contained in reference (b) require both initial and annual refresher training for personnel involved in HW management and handling. The majority of discrepancies identified during EPA and DHS inspections can be directly, or indirectly, attributed to lack of adequate HW training. The relatively rapid rate of personnel turnover within the Camp Lejeune Complex requires that HW training be readily available. Publishing of this revised order is an essential step in strengthening the subject program. In addition to addressing the HW training issues, this revised order provides for the following: (1) better internal controls by organizations generating and handling HW; (2) improved availability of HW related supplies and equipment and; (3) formalizing efforts to reduce the volume and toxicity of HW generated within the Camp Lejeune Complex. Enclosures (1) through (3) outline revised procedures for managing HW and providing compliance with related requirements of references (a), (b) and (c).

d. This order formally establishes two collateral duty positions to coordinate and to assist with the implementation of the subject program. These positions are the Hazardous Material Disposal Coordinator (HMDC) and Hazardous Material Disposal Officer (HMDO). HMDC will be established within each major command and within Marine Aircraft Groups. HMDO's will be appointed at the Battalion, Separate Company and Squadron level (or equivalent). HMDC and HMDO responsibilities are outlined in enclosure (2). The appointment and training of qualified primary and alternate HMDCs and HMDOs are essential to implementation of the complex requirements of the subject program.

4. Action

a. Organizational commanders shall on a continuing basis take action required to implement the following HW management goals and objectives:

(1) HW operations will be supervised by properly trained personnel who have access to equipment and supplies required for handling HW.

(2) Written descriptions of HW duties will be developed for all HW managers and handlers, and appropriate records maintained to document that proper training is being provided to personnel in accordance with enclosure (3).

(3) OIC/NCOIC's will ensure that HW facilities are inspected weekly and timely corrective action is taken and properly documented per this Order and related instructions of HMDO/HMDC.

(4) OIC/NCOIC's will prepare a written HW management Standard Operating Procedure (HWMSOP) in cooperation with HMDO for each facility where HW are routinely handled and stored. SOP will be readily available at HW generation and storage sites.

(5) A system of continuous internal controls will be implemented to ensure that violations of this Order are identified and if appropriate, that disciplinary action is taken to discourage recurring violations.

b. Major commands will take action required to limit HW generation to the minimum number of locations practical, to identify HW handling and storage equipment and facilities requirements and to develop and implement a system of internal controls which provides satisfactory compliance with the requirements of this Order and related regulatory requirements. As a minimum the following action will be taken:

(1) Appoint a primary and alternate HMDC with authority and resources to implement duties outlined in enclosure (2).

(2) Maintain a current listing/directory of facilities where HW are handled and stored. Ensure timely submission of waste identification documents per enclosure (1).

(3) Require OIC/NCOIC's of HW handling and storage facilities to develop and implement a written HW SOP for each facility per enclosures (1) and (3). The SOP will be readily available to personnel routinely handling HW and related emergency response.

(4) Require Commanding Officers of each Aircraft Squadron, Regiment, Battalion and Separate Company (or equivalent) to appoint a primary and alternate HMDO with authority to carry out the duties outlined in enclosure (2).

(5) Establish and promote HW management goals and objectives for supply and maintenance functions which promote the minimization of the volume and toxicity of HW generation.

(6) Within 30 days of the date of this Order, and as requested thereafter, provide a current listing of Primary and Alternate HMDO's. The list shall contain name, rank, unit and phone number. The list will be provided to the Director, Natural Resources and Environmental Affairs Division, Marine Corps Base.

PART I

RECORD OF HAZARDOUS WASTE TRAINING

1. Employee Name: _____

2. Job Title/MOS: _____

3. Name of Organization: _____

4. Date this Record Established: _____

5. Description of HW Duty: _____

6. Description of HW Training Completed:

a. Date	b. Description of Training/Name of Trainer	c. Signature and Date

Appendix A to
ENCLOSURE (3)

PART I - Description of HW Training Completed - (continued)

a. Date	b. Description of Training/Name of Trainer	c. Signature and Date

PART II

MINIMUM LEVELS AND RECORD KEEPING FOR HAZARDOUS WASTE MANAGEMENT ORIENTATION TRAINING

Personnel routinely handling HW will be provided sufficient on-the-job training to ensure adequate awareness to the items listed below:

(1) The types and characteristics of HM/HW handled.

(2) Applicable activity oil and hazardous substance spill prevention and contingency plan contained in BO 11090.1_.

(3) Organizational procedures and policy for implementation of BO 6240.5.

(4) Procedures to follow in protecting personal safety during HM/HW emergencies.

(5) The HW Standard Operating Procedure for the organization.

(6) The employees specific HW handling responsibilities.

c. Director, Natural Resources and Environmental Affairs Division, will inspect all points of HW generation on an annual basis, or more frequently as required, to monitor and evaluate compliance with the order and related state/federal regulations. The results of the annual inspections will be provided in writing to the inspected activity via the chain of command.

d. The Assistant Chief of Staff, Logistics and Assistant Chief of Staff, Facilities will cooperate with the local Defense Reutilization and Marketing Officer in improving HW disposal services to organizations generating HW subject to this Order.

e. Officials responsible for the preparation, awarding and implementation of various types of contracts, shall ensure that all contractor activities are carried out in accordance with the requirements of this Order and related State and Federal regulations.

5. Concurrence. This Order has been coordinated and concurred in by the Commanding Generals, II Marine Amphibious Force, 2d Marine Division, FMF, 2d Force Service Support Group (Rein), FMF, 6th Marine Amphibious Brigade, FMF, and the Commanding Officers, Marine Corps Air Station, New River, Naval Hospital and the Naval Dental Clinic.

M. C. HARRINGTON
Chief of Staff

DISTRIBUTION: A
NREAD 300

PROCEDURES FOR COLLECTION, STORAGE AND TURN-IN OF HAZARDOUS WASTE (HW) AND HAZARDOUS MATERIAL (HM) FOR RECYCLING OR DISPOSAL

1. Hazardous Waste Management Standard Operating Procedures (HWMSOP). Each organization routinely generating or handling HW or disposing of HM will develop desk top procedures to be followed. As a minimum, the HWMSOP will provide the following:

a. Name and telephone number of cognizant Hazardous Material Disposal Officer (HMDO) and Hazardous Material Disposal Coordinator (HMDC).

b. A copy of BO 6240.5A, BO 11090.1B, BO 11090.3, and related local instructions.

c. Name, title, HW duties and HW training records for each employee per enclosure (3) of BO 6240.5A.

d. Waste Identification Document (WID) for each HW generated or handled. WID will be completed in accordance with attachment (A) of this enclosure.

e. Procedures and responsibilities for dealing with HW/HM spills and related emergencies, i.e., HW Spill Contingency Plan.

f. Copies of weekly inspections of HW storage areas/containers.

g. Guidance provided by HMDO/HMDC's to implement HW/HM disposal program.

h. Location sketch for each HW generation, accumulation and storage area.

i. Material Safety Data Sheets, or hard copy of Hazardous Material Information Systems Data developed per MCO 5100.25 for all HW generated.

j. Sample copies of completed turn-in documents (Form DD-1348-1) and HW labels for each type of HW generated and disposed of.

2. HM/HW Collection and Storage Procedures/Requirements.

a. Possession of a properly completed and signed WID constitutes authorization to generate the specifically named HW. Failure to submit a WID to HMDC within 30 days of date HW first generated or handled or 60 days of the date of this Order (whichever is later) will be considered a violation of this Order. HMDC's are responsible for monitoring and enforcement of this requirement.

b. Only Department of Transportation (DOT) approved containers labeled per WID or HWMSOP will be used for storage of HW awaiting disposal. HMDO's are responsible for enforcing this standard.

c. All personnel routinely handling or responsible for HW management must be properly trained per this Order and references (a) and (b). OIC's are responsible for maintaining training records for personnel within their cognizance. HMDC's are responsible for enforcement of this requirement.

d. All HW containers and storage areas will be inspected weekly using format provided by cognizant HMDC/HMDO. A written record of corrective action will be maintained per HMDO/HMDC guidance. Director, Natural Resources and Environmental Affairs Division, (NREAD), MCB will assist HMDC/HMDO develop guidelines.

e. Spills of HW/HM will be promptly reported to the Base Fire Department at the Emergency Telephone Number 451-3333. OIC's are responsible for maintaining absorbents, safety equipment, and other supplies and equipment required for dealing with minor spills. HWMSOP's will give specific guidance in this area.

f. A Form DD-1348-1 will be completed and submitted to the cognizant HMDO not later than 45 days after the "accumulation start date" on the HW label on the container.

g. HMDC will be notified by telephone, confirmed in writing, of anytime DRMO has not accepted accountability of a HW within 75 days after the "accumulation start date" on any HW container.

3. Hazardous Material (HM) and Hazardous Waste (HW) Turn-in Procedures. The following steps will be taken to initiate final disposal of HM/HW. At any time that a major problem or controversy arises, the organization attempting to turn-in the item will immediately notify the responsible Hazardous Material Disposal Coordinator (HMDC). The HMDC will be responsible for coordinating efforts to resolve the problem/controversy and will utilize the assistance of the Director, Natural Resources and Environmental Affairs Division (NREAD), Facilities Department, Marine Corps Base, telephone extension 2083, 2195. Unresolved problems/controversies will be referred to the Assistant Chief of Staff, Facilities, Marine Corps Base. See Note 1 below.

STEP 1. The Officer in Charge (OIC) of the organization having physical custody of HM/HW is responsible for turn-in of HM/HW unless otherwise specified by HMDC. OIC will properly containerize the HM/HW and submit a Form DD 1348-1 to the cognizant Hazardous Material Disposal Officer (HMDO) per instructions in organization's HWMSOP. Questions not addressed by HWMSOP will be directed to HMDO.

STEP 2. The HMDO will physically inspect the HM/HW and determine if the Form DD 1348-1 is properly completed and the HM/HW is properly packaged. The HMDO will coordinate correction of any problems. Unresolved problems will be referred to cognizant HMDC for resolution. Once problem's resolved, HMDO will forward (preferably hand deliver) the Form DD 1348-1 to the Defense Reutilization and Marketing Office (DRMO) Headquarters, Bldg. 906. See Note 2 below.

STEP 3. The DRMO will inspect the HM/HW if necessary, and will determine if DRMO is accountable (i.e., responsible) for disposal of the HM/HW. If DRMO determines that the local activity, not DRMO, has responsibility for disposal of the HM/HW, the DRMO will so notify the cognizant HMDC in writing with a copy to the NREAD. The HMDC and NREAD will cooperate in developing case specific procedures for disposal of the item. Assistant Chief of Staff, Logistics, MCB, will provide contracting support.

STEP 4. If DRMO determines that DRMO is accountable for HM/HW, DRMO will determine where the HM/HW will be stored awaiting disposal. HW must be stored at the DRMO facility at TP-451 complex, unless otherwise approved by the Assistant Chief of Staff, Facilities, MCB. DRMO will submit a request to the Assistant Chief of Staff, Logistics to arrange transportation of the HM/HW to DRMO designated facility.

STEP 5. Assistant Chief of Staff, Logistics, in cooperation with HMDO, will determine if generating organization can safely, legally transport the item to DRMO designated facility. Assistant Chief of Staff, Logistics will supervise transportation of HW. Whenever practical, Command turning in a HM will provide transportation. Assistant Chief of Staff, Logistics will cooperate with the HMDC for the generating organization in promoting efficient, safe transportation. Spills or other emergencies will be promptly reported to the Base Fire Department at 451-3333. Drivers will be provided written spill prevention and response guidance.

STEP 6. When the HM/HW arrives at storage facility, DRMO will inspect prior to unloading. DRMO is authorized to refuse the HM/HW if any significant discrepancies exist. DRMO will immediately notify cognizant HMDC and NREAD of DRMO's refusal to accept the HM/HW. The transporting vehicle will be secured and will not be moved outside the immediate vicinity of DRMO facility except for emergency situations involving risk to public safety or to property. DRMO, HMDC and NREAD will cooperate in making an immediate decision on corrective action. If problems cannot be promptly resolved the HM/HW will be returned to the generating organizations facilities. When DRMO accepts physical custody of the HM/HW, turn-in is complete.

NOTE 1: Marine Corps Air Station, New River units will follow turn-in procedures set forth in Air Station Order 6280.1 .

NOTE 2: HMDO should maintain a log of documents showing date document accepted by DRMO, accumulation start dates, and the type and quantity of HW.

ENCLOSURE (1)

WASTE IDENTIFICATION DOCUMENT (WID)

DATE _____

WID # _____

1. GENERATING WORK CENTER INFORMATION

_____

Shop Contact Command Building Phone Ext.

2. WASTE IDENTIFICATION

a. WASTE NAME: Common _____ Chemical(s) _____

_____

b. PHYSICAL FORM: (CHECK) ___Liquid ____Solid _____Sludge _____Other (Specify)

_____

c. MANUFACTURER: _____ d. NATIONAL STOCK NUMBER: _____

e. CONTAINER: (TYPE AND SIZE) _____

f. GENERATION RATE: (e.g., gal/day, lbs/day) _____

g. FREQUENCY OF GENERATION _____

h. EXPECTED ANNUAL GENERATION: (GALS, LBS) _____

i. DESCRIBE WASTE GENERATION PROCESS: _____

_____

_____

j. HAS WASTE BEEN MIXED WITH ANY OTHER MATERIAL? _____ Yes _____ No If yes,

specify _____

_____

3. REASON FOR DISPOSAL: (CHECK)

____Exceeded shelf life _____ Served intended purpose ____ Unused ____ Other

(specify) _____

4. REQUEST FOR WASTE CHARACTERIZATION BY NREAD: I am unable to properly classify the above waste. NREAD assistance is requested. Cost of Laboratory Analysis should be charged to the following Cost Account Code. _____

_____

HMDO DATE
Signature

5. CERTIFICATION: I certify that the above named materials are the only compounds in the waste containers listed above and have not been mixed with any other materials.

_____

HMDO DATE
Signature

Appendix A to
ENCLOSURE (1)

TO BE COMPLETED BY THE HMDC AND COPIES SENT TO THE HMDO, DRMO, AND DIRECTOR, NREAD

6. WASTE CHARACTERIZATION: DATE COMPLETED _____ LAB REPORT # _____

7. WASTE CLASSIFICATION: _____ Hazardous _____ Nonhazardous

8. EPA WASTE NUMBER(S): _____

9. REASON FOR HAZARD CLASSIFICATION: _____

_____

10. HANDLING INSTRUCTIONS: _____

_____

_____

_____

11. DTID 1348-1 REQUIRED: _____ Yes _____ No

12. CONTAINER AND LABELING REQUIREMENTS:

a. DOT/DOD CONTAINER TYPE: _____

b. DOT PROPER SHIPPING NAME: _____

c. DOT HAZARD CLASS: _____

d. UN/NA NUMBER: _____

e. ADDITIONAL REQUIREMENTS: (FOR DRMO) _____

_____

_____

_____

13. SPECIAL PRECAUTIONS AND/OR INSTRUCTIONS: _____

_____

_____

_____

_____

_____

14.

_____
HMDC Code Date
Signature

RESPONSIBILITIES FOR HAZARDOUS MATERIAL (HM)/HAZARDOUS WASTE (HW) DISPOSAL

1. Compliance with hazardous waste management and disposal regulations requires the cooperative effort of many functions within the Camp Lejeune complex. The following outlines the responsibilities of various officers and managers relative to hazardous waste management:

a. Hazardous Material Disposal Officer (HMDO) will:

(1) Provide assistance to HW generators and handlers in the preparation and timely submittal of HW turn-in documents per this Order.

(2) Perform quarterly inspections of HW generation and storage sites and notify OIC's of corrective action required. Inspection format developed per paragraph 1b(2) below will be used.

(3) Keep OIC's and key personnel informed of any changes in regulations affecting HW activities within the HMDO's cognizance and ensure that HW standard operating procedures (SOP) are up-to-date and readily available for review by personnel involved in HW management.

(4) Develop a roster of personnel involved in HW management at each work site within the HMDO's cognizance.

(5) Develop and provide HW training requirements to HMDC for personnel within the HMDO's cognizance.

(6) Actively promote the reduction of volume and toxicity of HW produced by organizations within the HMDO's cognizance.

(7) Conduct surveys required to identify HW generation and storage sites within the HMDO's cognizance and provide periodic updates, as requested, to the HMDC.

b. Hazardous Material Disposal Coordinator (HMDC) will:

(1) Provide assistance to HMDO's in handling HW management problems. Serve as HMDO for organizations not having sufficient HW activity to justify appointment of a HMDO.

(2) Perform annual inspection of HW generation and storage sites and notify HMDO's of corrective action required. Inspection format will be developed in cooperation with the Director, Natural Resources and Environmental Affairs Division, (NREAD), Marine Corps Base.

(3) Inform HMDO's of any changes in regulations affecting HW activities under the HMDO's cognizance.

(4) Serve as point of contact on matters pertaining to HW management and implementation of this order within the HMDC's command.

(5) Develop listings of HW generation and storage facilities.

(6) Be responsible for identifying assistance required to provide HW training. Requests for assistance from MCB will be submitted in writing "Attention Director, NREAD."

c. Assistant Chief of Staff, Facilities will:

(1) Have overall responsibility for implementation of the subject program and maintaining compliance with requirements of references (a) and (b) and related local, state and federal regulations.

(2) Have overall responsibility for management of pollution abatement projects per latest revision of MCO P11000.8.

ENCLOSURE (2)

(3) Have overall responsibility for local implementation of Marine Corps programs to correct environmental discrepancies associated with past HM/HW disposal sites.

(4) Ensure that plans and specifications for new facilities provide adequate facilities and collateral equipment for the handling and storage of HM/HW.

d. Director, Natural Resources and Environmental Affairs Division will:

(1) Provide a staff specialist to serve as HMDC for Marine Corps Base.

(2) Provide a command point of contact with state and federal agencies on matters pertaining to the subject program.

(3) Monitor ongoing activities as required to identify, evaluate and provide up-channel reporting of environmental deficiencies related to the subject program.

(4) Coordinate day-to-day implementation of this Order and provide the following types of technical assistance:

(a) Laboratory support, if required, for HW identification.

(b) Training to HMDC's and HMDO's on state and federal environmental laws, regulations and procedures.

(c) Guidance on HM/HW SOP preparation.

(d) Guidance on HM/HW spill prevention, control, cleanup and related HW disposal.

(e) Coordination of HM/HW recycling/minimization program.

(5) Coordinate development and implementation of HW Training Program required for compliance with references (a) and (b).

e. Base Maintenance Officer will:

(1) Collect and dispose of used POL's and oily wastes from collection tanks and other oil pollution abatement facilities in a manner consistent with this Order and references (a) and (b).

(2) Unless otherwise provided, operate and maintain industrial waste collection, pretreatment and disposal facilities within the Camp Lejeune complex in a manner consistent with this order, references (a) and (b) and related State regulations.

(3) Provide HM/HW spill response services in accordance with reference (d).

f. Base Fire Chief will:

(1) Provide HM/HW spill and related emergency services per references (d) and (e) and related HW/HM Spill Contingency Plans.

(2) Provide routine inspections of facilities where HM/HW are stored and handled, and report all discrepancies to cognizant HMDC. Elimination of the following hazards will be stressed:

(a) HM/HW stored in defective containers or containers which are not properly marked with the chemical name, NSN (if appropriate) and hazard label of the contents.

(b) Incompatible HM/HW are stored in a manner with significant potential threat of fire, explosion, or release of toxic fumes or gases due to chemical reaction during spills or leaks.

(c) HM/HW stored in a manner likely to result in a significant discharge to the environment.

g. Assistant Chief of Staff, Logistics will:

(1) Appoint an officer to serve as HMDO for the Logistics Department.

(2) Ensure that suppliers provide hazardous material safety data sheets for all HM procured through open purchase and will provide one copy to unit ordering HM and one copy to the Base Safety Manager.

(3) Ensure local stocking and availability of the following on a reimbursable basis: empty containers; labels; labeling equipment; absorbents; frequently used minor equipment and HM/HW handling supplies required to implement this Order and reference (d).

(4) Provide contracting services required to dispose of HM or HW for which DRMO is not accountable.

(5) Serve as principal agent for the Commanding General on matters pertaining to HM and HW transportation, and will be responsible for:

(a) Monitoring all HW transportation for compliance with requirements of references (a), (b) and (c) and related state and federal regulations.

(b) Providing transportation services and related record keeping required for implementation of this Order and which are not available from the Defense Reutilization and Marketing Officer or the organization generating the HM/HW.

h. Assistant Chief of Staff, Manpower will:

(1) Coordinate for Marine Corps Base the development of a Hazardous Material Information System, per MCO 5100.25. Assist NREAD in providing safety data and related technical support to HMDC's, HMDO's and other cognizant officials as required to implement this Order.

(2) Provide HM related safety training required to implement HW training plans developed in accordance with paragraph 1d(5) of this enclosure.

i. Officer in Charge, Preservation, Packaging (PP&P) Section, 2dFSSG will provide PP&P support (in accordance with established regulations and procedures) to HMDO's, HMDC's, and other HW managers required to accomplish the following:

(1) Identification of type of containers and labeling required for compliance with reference (c) and this Order.

(2) Packaging of HM/HW required for safe storage and transportation during disposal per this Order.

(3) HM transportation certification required for compliance with reference (c).

j. Defense Reutilization and Marketing Officer (DRMO) will:

(1) Operate the base Long-Term Hazardous Waste Storage Facility at the TP-451 complex in accordance with state permit issued under regulations promulgated under references (a) and (b).

(2) Provide HM and HW disposal services to organizations within the Camp Lejeune/MCAS, New River complex in accordance with DOD regulations, references (a) and (b), and related state and federal regulations.

(3) Receive and process HM/HW turn-in documents in a timely manner and provide prompt notification to HMDO's of any document not satisfying applicable turn in criteria or which contain HM/HW for which DRMO is not accountable.

(4) Maintain records of DRMO HM/HW storage and disposal activity in a manner which provides information required for preparation and timely submittal of required reports to state and federal regulatory agencies.

(5) Keeps HMDC's, HMDO's and other cognizant officers informed of changes in DRMO policies and procedures which affect local implementation of the subject program.

k. Commanding Officers of the following Base Commands/Organizations will designate a Primary and Alternate HMDO to carry out duties outlined in 1a and 1b above: Marine Corps Engineer School; Rifle Range Detachment; Field Medical Service Support School; Marine Corps Service Support School; Reserve Support Unit; Infantry Training School; Support Battalion; Headquarters Battalion; Assistant Chief of Staff, Morale, Welfare and Recreation; Assistant Chief of Staff, Logistics, and Base Maintenance Officer within their respective commands/organizations.

HAZARDOUS WASTE TRAINING REQUIREMENTS AND GUIDELINES

1. Hazardous waste (HW) training is a specific requirement of state and federal regulations promulgated under the Resource Conservation and Recovery Act (RCRA). A review of RCRA requirements and the actual HW activity aboard the Camp Lejeune/Marine Corps Air Station, New River complex indicates that a relatively small percentage of personnel require highly specialized HW training. Generally, the requirements for the remaining personnel involved in HW management are satisfied by routine on-the-job training and related safety and fire-prevention training readily available locally. Providing this training will have minor impact on organizational commanders, in that training required is directly job related. Appendix (A) Part II identifies the minimum HW training required, for personnel identified in Section 2d below.

2. Initial and annual refresher HW training is required for all personnel in this Section. For the purpose of these guidelines, only those personnel directly involved in HW handling, storage and disposal will be subject to the HW training documentation requirements of RCRA. A special HW training record, i.e., Appendix (A) Part I will be developed for the following personnel:

a. All Hazardous Material Disposal Officers (HMDO), Hazardous Material Disposal Coordinators (HMDC), and alternate HMDO's and HMDC's.

b. Defense Reutilization and Marketing Officer (DRMO) and subordinate personnel routinely involved in HW handling, storage, turn-in and disposal.

c. Activity personnel involved in transportation of HW required for the implementation of this Order.

d. Personnel assigned to work places meeting the definition of HW generators, HW accumulation areas or satellite HW accumulation areas and involved in one or more of the following:

(1) Collection, handling, storage and transportation of HW.

(2) Inspection, and related follow-up, of HW handling/storage areas.

(3) Response to HW spills and related emergencies.

(4) Preparation and submittal of HW turn-in documents.

3. Other activity personnel providing professional and technical support to HW management include the following:

a. Fire Protection personnel

b. Safety specialists

c. Environmental staff

d. Industrial hygienists

Preparation of Appendix A for these staff specialists and emergency personnel is not required. Duties and training provided to these individuals will consist of standard position descriptions and civilian personnel records.

4. Responsibility for providing specialized HW training required for compliance with RCRA is assigned to Assistant Chief of Staff, Facilities. The following officials are responsible for notifying Assistant Chief of Staff, Facilities of specialized training requirements of their subordinates and other personnel as shown.

a. The DRMO for self and subordinates

b. The Assistant Chief of Staff, Logistics for subordinates.

c. HMDC's for personnel shown in 2d above within HMDC's cognizance

d. Director, Natural Resources and Environmental Affairs Division (NREAD) for subordinates and primary and alternate HMDC's and HMDO's.

5. Organizational commanders are responsible for developing and implementing plans and procedures to provide RCRA required training and maintain records outlined in Appendix A. Organizational commanders will ensure that all new/newly assigned personnel are provided appropriate HW training and close supervision required to comply with RCRA and applicable personnel safety fire prevention and occupational health standards. Organizational commanders will notify HMDC's of HW training requirements. Notification will include names and addresses of persons to be trained and an accurate description of the training required. HMDC and Assistant Chief of Staff, Facilities representative will coordinate the scheduling and funding of specialized HW training.

6. Records of HW training must be maintained for each employee for three years after employee transferred or terminated, except as follows: if an employee is transferred to a HW related position within the Camp Lejeune/Marine Corps Air Station, New River complex, the HW training records will be transferred to the new organization. Responsibility for maintaining official files of HW training records are as follows:

a. HMDC's will maintain records of HW training for HMDC's, HMDO's and alternate HMDC's and HMDO's within their cognizance.

b. DRMO will maintain HW training records for all employees identified in paragraph 2b above.

c. Assistant Chief of Staff, Logistics will maintain HW training records for all subordinates involved in activities identified in paragraph 2c above.

d. HW training records for all employees identified in paragraphs 2(a) - 2(d) will be maintained on Appendix A, Part I. HMDO will maintain HW training records for personnel identified in paragraph 2(d) above. A copy of training records for personnel identified in paragraph 2(d) above will be maintained in HWMSOP.

UNITED STATES MARINE CORPS
MARINE CORPS BASE
PSC BOX 20004
CAMP LEJEUNE, NORTH CAROLINA 28542-0004

BO 6240.5B
BEMD

26 APR 1999

BASE ORDER 6240.5B

From: Commanding General
To: Distribution List

Subj: HAZARDOUS WASTE AND HAZARDOUS MATERIAL MANAGEMENT PROGRAM

Ref: (a) Resource Conservation and Recovery Act (42 USC 6901-6987)
(b) North Carolina Administrative Code Title 15, Chapter 13, Subchapter 13A
(c) MCO P5090.2 (NOTAL)

Encl: (1) Common Terms and Definitions
(2) Record of Training

1. Purpose

a. To establish procedures and general responsibilities for the disposal of hazardous material (HM) and hazardous waste (HW) under environmental permits and authorizations held by the Commanding General, Marine Corps Base (CG, MCB), Camp Lejeune.

b. These requirements are applicable to all organizations aboard MCB, Camp Lejeune to include: any command, active, or reserve component; staff organization; or supporting agency which is affiliated with the United States Marine Corps (USMC), Department of the Navy (DoN), or Department of Defense (DoD). This section also applies to organizations organic to or tenanted aboard MCB, Camp Lejeune and those in transit or otherwise temporarily resident because of training or mobilization commitments.

2. Cancellation. BO 6240.5A.

3. Background

a. Environmental management entails the administration and supervision of the interrelated programs enumerated in references (a) and (b). Reference (c) provides comprehensive guidance on a broad range of environmental laws and regulations applicable to the management of hazardous materials within the DoD. The United States Environmental Protection Agency (EPA) and the State of North Carolina administer specific environmental regulatory programs related to the treatment, storage, and disposal of HW. These agencies are empowered to take civil and criminal actions to enforce these requirements. Compliance with these requirements is critical to ensuring protection of MCB, Camp Lejeune personnel and property.

b. Through logistics support agreements and HW disposal contracts the Defense Reutilization and Marketing Office (DRMO), Camp Lejeune is tasked with providing long-term storage of HW awaiting final disposal and transporting waste off-site. Enclosure (1) contains the terms and definitions applicable to this Order.

c. Hazardous waste is a sub-category of both solid waste and hazardous material as is regulated under the Resource Conservation and Recovery Act (RCRA) and the Hazardous Material Transportation Uniform Safety Act (HMTUSA). The Commanding General, MCB, Camp Lejeune, is permitted by the EPA and the State to generate, store, and transport HW. The Commanding Officer, Marine Corps Air Station (CO, MCAS), New River, is also registered with the EPA and the State as a generator and transporter of HW. The DRMO, Camp Lejeune operates a long-term HW storage facility which supports HW disposal generated by both commands.

d. As EPA/State permit holders, the CG, MCB, Camp Lejeune, and the CO, MCAS, New River have the responsibility and authority to establish regulations for the management of several HW management programs. Commands tenant to MCB, Camp Lejeune must comply with this Order and all federal and state regulations pertaining to HW management. Commands tenant to the MCAS, New River must comply with the Air Station Order. Violation of federal and state HW laws is punishable by severe civil and criminal penalties. This Order deals with that aspect of environmental management related to the management, storage, and disposal of hazardous materials and associated waste at MCB, Camp Lejeune.

4. Hazardous Waste Personnel Training Requirements

a. Federal and state regulations promulgated under the RCRA require military and civilian personnel involved in any aspect of HW management to be provided HW training enabling them to carry out assigned HW duties safely and in compliance with HW regulations.

b. All personnel filling HW positions will be assigned in writing by the organizational commanding officer within one week of assignment.

5. Training Records and Certification Requirements

a. Training records will be maintained for each individual and shall be retained for a period of at least three years upon closure of a HW generation or storage facility or at least three years following reassignment from HW duties or end of active service.

b. Environmental Compliance Officers (ECOs) and supervisors will conduct an annual review with each individual in HW positions to identify required refresher training.

c. The certification statements of the training record are a critical component and indicate that an RCRA required review has been satisfactorily completed. Initial certifications will be signed by both the ECO and the subject named individual.

d. Enclosure (2) is the training record format for use at MCB, Camp Lejeune.

6. Installation Hazardous Waste Management Program. Listed below are the required elements of the Installation Hazardous Waste Management Program (IHWMP).

a. Standard Operating Procedures (SOP). Each major subordinate command and organizational element routinely generating or handling HW or disposing of HM will develop an SOP for HW management. At a minimum, the SOP will provide the following:

(1) Names and telephone numbers of the cognizant Environmental Compliance Coordinator (ECC) and ECO.

(2) Training records (Current). Name, rank/grade, title, duties, and HW training records for each current employee.

(3) Training records (Archived). Name, rank, title, duties, and HW training records for each employee in a HW billet for the past three years.

(4) Inspections. Copies of all weekly inspections of HW storage areas and containers performed during the preceding 36 months.

(5) Guidance. Guidance provided by the ECC and/or ECO to implement HW/HM disposal program.

(6) Location Map. Location map for each HW generation, accumulation, and storage area.

(7) Material Safety Data Sheets (MSDS), or allow immediate access to the Hazardous Material Information System Data developed per MCO 5100.25 for all HW generated.

(8) HWPS DD-1930. Copies of the HWPS DD-1930 for those wastes generated.

(9) Copies of Completed Hazardous Waste/Material Disposal Worksheets. Copies of Completed Hazardous Waste/Material Disposal Worksheet for each HW generated and disposed of during the preceding 12 months.

(10) Unit Spill Contingency Plan (USCP). Copies of up-to-date USCP for each site. At a minimum the USCP will contain the following:

(a) List of points of contact, and phone numbers of the ECC, ECO, and those local unit personnel authorized to partake in the response.

(b) Arrangements with local authorities. For USCP purposes contacting the Fire Protection Division (FPD) at 911 satisfies this requirement at the unit level.

(c) Actions trained unit personnel will take. These actions will be strictly defensive (1st Responder Operations) in nature and commensurate with the personal protective equipment available at the time of the incident.

(d) Equipment required to conduct defensive actions. This information is found in the personal protection information section of the chemical specific material safety data sheet.

(e) Evacuation and Staging. Evacuation routes may be the same used in the fire escape plan as long as access is not impinged by the hazardous waste/materials release. A staging area is defined as a predesignated area out of the potential area of danger where personnel will assemble in the event of an emergency. The USCP must state a minimum of two staging areas in the event of an emergency.

(11) Hazardous Waste Accumulation/Storage Areas List. A current list of all Hazardous Waste Accumulation/Storage Areas within each command.

(12) Rosters. Current rosters of all command HW personnel.

b. Unknown Chemicals. In addition to the liability associated with improperly identified HW, DRMO, Camp Lejeune is prohibited from accepting any HM or HW that cannot be identified by NSN or chemical name. If HW/HM is unidentifiable, a sample must be collected and sent to a laboratory for analysis.

(1) Units with containers of unidentified, potentially hazardous chemicals should immediately contact Assistant Chief of Staff, Environment Management Department (AC/S, EMD), the

cognizant safety office, and the Base Fire Protection Department (Base FPD) for guidance in proper storage and handling of the materials until identification is accomplished.

(2) If a need exists to have a material sampled and analyzed, a written request should be sent to the Commanding General, MCB, Camp Lejeune (Attn: AC/S, EMD) via the chain of command. The request for analysis will cite everything that is known about the material, to include where and when it was found, possible contents, and the results of any investigations conducted. Unidentified wastes are an indicator of improper HW management. Because of the severe civil and criminal implications of improper management of HM/HW the highest level of command attention must be given to ensure that such incidents do not occur.

7. Hazardous Waste, Universal Waste (UW), and Silver Storage Recovery, Accumulation, and Storage Areas

a. Types of Accumulation/Storage Areas. The MCB, Camp Lejeune Long-term HW Storage Facility is permitted by the State of North Carolina. It is the intent of this Order that there shall be one such long-term storage facility and that such facility will be operated by the DRMO-Lejeune under the oversight of the Assistant Chief of Staff (AC/S), Environmental Management Department (EMD). The Long-term HW Storage Facility shall be utilized to store HW/HM awaiting disposal generated by MCB, Camp Lejeune and tenant commands. AC/S, EMD validates the need for accumulation or storage areas prior to authorization issuance as well as reauthorizes/validates the need on a yearly basis. Listed below are the types of temporary accumulation and storage sites:

(1) 90-Day Site. An AC/S, EMD authorized area used to temporarily store HW. HW must be removed from the 90-day HW accumulation areas within 90 days of the accumulation start date (ASD) marked on the container.

(2) Satellite Accumulation Area (SAA), is a term developed by the EPA to designate a work site which may generate and accumulate HW without regard to the 90-day storage limit normally applicable to non-permitted HW storage facilities. The purpose of establishing this special category of HW storage is to assist those generating HW at a slower rate. Previously, generators were required to dispose of partially filled containers, thereby increasing the volume of HW generated. Any work site routinely generating a HW at a rate of less than one full container per 60 day interval may benefit from being designated as an SAA.

(3) UW Site (UWS). The purpose of establishing a special sub-category of HW storage is to assist the generators of UW to track and manage UW. Since UW is a sub-category of HW and remains regulated by Federal and State regulations, UW will be collected and managed in the same manner as HW with the exception of the terminology used for identification. UWS's are subject to the same HW inspection and personnel training requirements as standard HW Sites.

(4) Silver Recovery Site (SRS). The purpose of an SRS is to centrally collect and manage silver particles from silver generating processes. Although silver is a regulated HW in excess of 5.0 mg/l, by virtue of a compliant Silver Recovery Program, silver residues and solutions are exempted from Federal and State regulations. SRS's are subject to the same HW inspection and personnel training requirements as standard HW Sites.

b. Accumulation and Storage Areas Authorization and Operation. Each 90-Day Site, SAA, UWS, and SRS existing aboard MCB, Camp Lejeune, must be authorized by and registered with the Commanding General, MCB, Camp Lejeune. Establishment of new sites requires prior approval of the Commanding General, MCB, Camp Lejeune.

(1) Lists of currently authorized sites are available from the AC/S, EMD, MCB, Camp Lejeune.

(2) Establishment of new or temporary accumulation area or storage areas will require prior approval as follows:

(a) The initial recommendation for designating a new accumulation area or storage area will be made by the ECO in consultation with the cognizant ECC.

(b) Proposals for temporary accumulation area or storage area aboard MCB, Camp Lejeune, shall be submitted in writing via the chain of command to the Commanding General, MCB, Camp Lejeune (Attn: AC/S, EMD).

(3) The number of accumulation areas or storage areas should be limited to the minimum number practical within mission constraints.

(4) Access to sites/areas will be limited to properly trained personnel to the maximum extent practicable.

c. Container Selection

(1) Only Department of Transportation (DOT) or military specified approved containers will be used for accumulation and storage of HW. DOT approved containers are those that have successfully passed rigorous testing requirements established by DOT. Subject containers are identified as such by the container manufacturing markings.

(2) HW generators are responsible for providing the proper DOT approved container for the accumulation of HW.

d. Container Management for HW or UW

(1) Ensure containers are not damaged, dented, bulged or have deep pitted rust. Contents of damaged containers holding HW or UW must be transferred to serviceable DOT or mil-spec approved containers.

(2) Bungs and caps must be serviceable and include serviceable gaskets, rings, nuts, and bolts.

(3) Containers must always be closed (wrench tight) during storage, except when it is necessary to add or remove waste.

(4) Containers filled with aqueous solutions, liquids, or sludges will have proper outage to allow for expansion.

(5) Containers will be stored in a manner precluding damage by rainwater or flooding, excessive heat, etc.

(6) Containers will be stored in a manner restricting access except to properly trained personnel.

(7) Containers in EMD authorized accumulation areas or storage areas will be checked weekly for proper closure, container condition, and evidence of leaks or spills. Discrepancies will be corrected and promptly reported and noted to the command ECO.

e. Required Markings on HW or UW Containers. Every container of HW or UW will have the following markings affixed to the container in a permanent manner in contrasting color to the original container utilizing paint markers, medium or large points, or stencils using permanent paint/ink:

(1) Generating Unit HW/UW Container Marking Requirements

(a) Words: HAZARDOUS WASTE or UNIVERSAL WASTE.

(b) Content: Noun name found on the specific Hazardous Waste Profile Sheet (DRMS Form 1930) provided by EMD.

(c) Accumulation Start Date (ASD). If the HW is accumulated in an SAA, the ASD will only be affixed once the container is filled. If the HW is collected in an area other than an EMD authorized SAA, the ASD must be marked on subject container the moment a HW is placed into the HW container (e.g., 90 Day Site, HW Sites established during operations in tactical situations).

(d) Number of Containers. The number of containers marked reflect the total number of containers disposed of within the current document (e.g., 1 of 1, 2 of 3, etc.).

(2) EMD HW or UW Container Identification Requirements

(a) Packing Envelope with DD-1348. This information is derived from an accurately completed HW/HM Disposal Worksheet.

(b) DOT Label. A diamond shaped DOT identification tool used to identify the hazard class of the contents by means of a specific color, class number, and pictorial representative symbol of the HM. The DOT label will be affixed on the same surface of the package and near the proper shipping name marking. DOT Labels are at least 3.9 inches (100 mm) on each side.

(c) EPA Waste Number. The EPA identification designator of the type of HW contained.

f. Mandatory Inspections. Federal and state HW regulations require containers of HW storage containers/areas to be inspected weekly. Written records noting discrepancies as well as corrective actions will be maintained for a period of three years. Inspections should be accomplished by the cognizant HW Site Manager or properly trained alternate if the Site Manager is unavailable.

g. Spill Reporting and Response

(1) All spills of HW/HM will be immediately reported to the FPD at the emergency telephone number 911.

(a) Emergency spill reporting phone numbers will be prominently posted at each site along with "No Smoking," and "Authorized Personnel Only" signs.

(b) Signs will be posted at each entrance to the site and will be legible from a distance of 25 feet.

(2) Spill reporting and response actions required of Site Managers, Handlers, and other personnel should be documented in the USCP for each site where HW/HM/UW are handled and stored.

(a) The generating unit is responsible for developing and posting a site specific USCP which ties into the Installation response plan.

(b) Plans will be made readily available to personnel at each accumulation area or storage area.

(3) USCP's must also specifically address provisions for petroleum, oil, and lubricants (POL) storage sites, underground storage tanks (UST), and above ground storage tanks (AST).

h. HW/HM/UW Turn-In Procedures. Organizational ECO's are responsible for coordinating efforts to ensure proper identification, handling, storage, and turn-in of HW/HM/UW. The ECO of an organization having physical custody of HW/HM/UW is responsible for ensuring turn-in for disposal is accomplished in compliance with the following:

(1) Preparation. The HW/HM/UW will be properly containerized, marked, and placed on a standard size (40" x 48") pallet. Incompatible HW/HM/UW will not be co-located on the same pallet.

(2) HW/HM/UW Disposal Worksheet. Each ECO shall ensure all turn-ins of HW, HM, and UW are accomplished utilizing the current Hazardous Waste Disposal Worksheet and applicable instructions for its preparation.

(3) Organizational Turn-In Requirements. A HW Disposal Worksheet shall be prepared for each container or batch of containers of the same waste, and delivered to AC/S, EMD, MCB, Camp Lejeune not later than 45 days after the ASD for all HW/HM/UW generated by MCB, Camp Lejeune and tenant commands requiring storage at MCB, CampLejeune Long-term HW Storage Facility. The following procedures will be strictly followed for turn-in of all Installation HW/HM/UW requiring disposal:

(a) Properly trained unit personnel will prepare and submit the Hazardous Waste Disposal Worksheet to the cognizant ECO. The signature will certify the accuracy of the identification and estimated weight of the HW/HM/UW being turned-in.

(b) The cognizant ECO (or his/her properly trained authorized representative) will physically inspect the HW/HM/UW and take appropriate action per these guidelines to ensure the accuracy of the identification and the adequacy of containers and associated markings and/or labels.

(4) HW/HM/UW Disposal Worksheet Delivery. After physical inspection and correction of any discrepancies, the ECO or ECC authorized representative will ensure the ECC receives the worksheet, electronic mail delivery of the worksheet is acceptable.

(5) EMD Responsibility. Upon receipt of the worksheet, AC/S, EMD, MCB, Camp Lejeune will prepare the DD-1348 and coordinate delivery of the HW/HM/UW to DRMO, Camp Lejeune or other appropriate disposal authority.

(a) Normally, all discrepancies in marking and packaging must be corrected by the generator prior to DRMO-Lejeune acceptance.

(b) The generating unit will properly store and perform weekly inspections of all containers until deficiencies are corrected and the wastes are transported to the Installation Long-term HW Storage Facility or pickup by a DRMO, Camp Lejuene contractor or other disposal authority.

(c) EMD will arrange for the transportation of the HW/HM/UW to the Installation Long-term HW Storage Facility if required.

(d) Under no circumstances will HW be transported on public highways by Installation units.

(6) DRMO, Camp Lejeune Refusal Authority. If HW/HM/UW is to be picked up by the DRMO, Camp Lejeune contractor or other HW/HM/UW disposal authority directly from the generator facility, DRMO, Camp Lejeune or other appropriate disposal authority representative will inspect prior to loading and is authorized to refuse any container if discrepancies exist.

(a) The DRMO, Camp Lejeune will immediately notify AC/s, EMD, MCB, Camp Lejeune of the nature of the discrepancy and corrective action required.

(b) If the problems cannot be promptly resolved, the generator will be provided a written rejection notification.

(c) The generator will implement required corrective action and request the cognizant ECC to arrange reinspection and pick-up of the HW/HM.

(7) DRMO Refusal Requirements. If an HW/HM/UW is transferred to the MCB, Camp Lejeune Long-term HW Storage Facility, DRMO, Camp Lejeune will inspect prior to unloading and is authorized to refuse any container if discrepancies exist.

(a) DRMO, Camp Lejeune will immediately notify AC/S, EMD, MCB, Camp Lejeune and the HW generator of their refusal to accept the HW.

(b) The transporting vehicle will be secured and will not be moved outside the immediate vicinity of the DRMO, Camp Lejeune facility except for an emergency situation involving risk to public safety or to property.

(c) DRMO, Camp Lejeune and AC/S, EMD, MCB, Camp Lejeune will cooperate in making an immediate decision on corrective action.

(d) Normally, if the deficiencies are the result of generator negligence, errors, or omissions, the cognizant ECC will be notified. The ECC will ensure generating units take appropriate corrective action.

(8) HW/HM/UW Acceptance. The acceptance and physical custody of an HW/HM/UW by DRMO, Camp Lejeune or other proper authority signifies the generating unit has completed its HW/HM/UW disposal responsibilities in compliance with this Order.

8. RESPONSIBILITIES

a. The purpose of this section is to identify the command and staff requirements, and responsibilities for the implementation and management of the HW and HM Management Program aboard MCB, Camp Lejeune. All organizations shall:

(1) Conduct all operations and training aboard MCB, Camp Lejeune in compliance with the mandates of environmental law applicable to the prevention of pollution of the environment by HW/HM.

(2) Ensure commanders, officers-in-charge (OICs), and managers place priority on proper disposal of HW/HM/UW, minimize the volume of HW generated, and prevent and report HW/HM/UW spills.

(3) Appoint all personnel with environmental responsibilities in writing no later than one week after assignment. Positions of environmental responsibility include,

but are not limited to the following: ECC, Assistant ECC (AECC), ECO, Assistant ECO (AECO), Hazardous Waste Site Manager (HWSM), and Hazardous Waste Handler (HWH).

(4) Ensure cognizant ECC's and ECO's have sufficient rank (determined by CO/OIC), authority, and resources to properly manage the organization's HW/HM/UW management program.

(5) Ensure all HW personnel (primary and assistant ECC's, ECO's, HW Site Managers and Handlers) are appointed in writing by the organizational commanding officer. An appointment letter must be kept on file and a copy forwarded to the AC/S, EMD, MCB, Camp Lejeune within one week of assignment.

(6) Ensure training of HW personnel is accomplished within six months of assignment.

(7) Implement an environmental awareness training program in accordance with this Order.

(8) Maintain a current listing/directory of facilities where HW is generated, handled, and stored and ensure each facility is operated in compliance with this Order.

(9) Require ECO's to develop and implement a written SOP for each accumulation and storage facility.

(10) Ensure the HW SOP is readily available to all HW personnel and personnel participating in emergency response.

b. Commanding General, MCB, Camp Lejeune. Provide guidance for the Installation to comply with federal, state, and Marine Corps HW regulations through the MCB, Camp Lejeune HW/HM management program.

c. Assistant Chief Of Staff, Environmental Management

(1) Serves as the principal staff assistant to the CG, MCB, Camp Lejeune, on HW/HM management issues.

(2) Ensures proper Installation registration with and/or permitting by the EPA and the State for generation, transportation, and storage of HW/HM at MCB, Camp Lejeune.

(3) Coordinates the approval of HW generation sites and temporary storage areas within the cognizance of the Commanding General, MCB, Camp Lejeune. Provides technical assistance to ensure that the operation of these sites/areas are in compliance with applicable regulations.

(4) Publishes Base bulletins and other directives and provides technical assistance to organizations aboard MCB, Camp Lejeune as required, to ensure safe, efficient HW/HM disposal in compliance with MCO P5090.2A and related Federal, State and local environmental regulations.

(5) Provides the principal point of contact with Headquarters Marine Corps and other federal, state, and local agencies on all matters pertaining to HW management.

(6) Exercises staff cognizance over the review and environmental approval of proposed and ongoing actions and projects. Projects and actions are normally reviewed to identify and prevent potential HW violations and to promote hazardous material pollution prevention.

(7) Oversees the development and implementation of a plan for the establishment, training, and operation of a hazardous substance spill response team and will ensure the following:

(a) The plan addresses HW operations of MCB, Camp Lejeune, and all tenant organizations.

(b) On-Scene Commanders are kept informed of the HW management and compliance implications of spill containment and clean-up activities.

(c) The plan provides a system for collection and disposal of non-RCRA waste petroleum products and monitoring for water and air pollution.

(d) Timely submittal of required reports to the Joint Public Affairs Office, outside regulatory agencies and higher headquarters.

(8) Participates in the implementation of a hazardous substance spill contingency plan by serving as On-Scene Commander in the event of the absence of the AC/S, Installation Security and Safety (or representative) or by providing or directing others who provide professional and technical advice to other senior command officials serving in the capacity of the designated On-Scene Commander.

(9) Maintains necessary agreements with DRMO-Lejeune for the disposal of HW/HM and initiates action to obtain contract services for the recycling, treatment, and disposal of HW/HM not otherwise available from the DRMO-Lejeune.

(10) Ensures the availability of the MCB, Camp Lejeune Long-term storage facilities for storage of HW generated by MCAS, New River, consistent with the applicable support agreements and RCRA permits and provides technical assistance in all phases of HW management (to include sampling and analysis) on the same basis and terms as is provided to MCB, Camp Lejeune tenant commands.

(11) Reviews and updates this Order periodically to ensure compliance with new regulations.

(12) Provides management support required to ensure the effectiveness and timeliness of HW disposal support services to installation HW generators, including, but not limited to:

(a) Provide a primary and assistant Base HW Program Manager.

(b) Ensure Base HW Program Manager maintains records of HW/HM turn-in transactions and prepares HW reports to regulatory agencies.

(c) Ensuring that the MCB, Camp Lejeune Comprehensive Environmental Training and Education Program (CETEP) training is available.

(d) Coordination with the DRMO, Camp Lejeune and its higher headquarters on routine matters related to new or required changes/improvements to existing DRMO HW/HM disposal services.

(e) Ensures the transportation of HW is in compliance with all regulatory requirements applicable to a licensed HW transporter in the state of North Carolina.

(f) Performs environmental compliance evaluations of the HW activities aboard MCB, Camp Lejeune to determine and improve the status of compliance with federal, state, and Marine Corps environmental laws.

1 Evaluations will be scheduled, conducted, and reported per BO 5041.2R, and related Headquarters Marine Corps environmental compliance evaluation guidance contained in MCO P5090.2A.

2 Compliance deficiencies and appropriate corrective action will be incorporated into formal written reports and provided per BO 5041.2R to the Base Inspector, MCB. Camp Lejeune and the inspected organization.

(g) Oversees participation in the review and environmental approval of proposed actions and other requests for assistance and National Environmental Policy Act (NEPA) procedures.

(h) Implements an environmental awareness training program for the Installation and assists tenant commands with the conduct of their respective awareness programs.

d. Assistant Chief Of Staff, Facilities

(1) Designs and constructs new facilities with adequate provisions for HM and HW management and maintains and repairs existing HW/HM storage facilities to ensure compliance with appropriate HW/HM storage and handling regulatory requirements.

(2) Provides contractual support for HW management and disposal when required.

(3) Provides engineering equipment and operators for oil and hazardous substance spill response and clean up, as required by Base FPD.

e. Assistant Chief Of Staff, Installation Security And Safety

(1) Participates in response and cleanup of spills of HW through implementation of the oil and hazardous substance spill contingency plan and related spill prevention.

(a) Serves as On-Scene Commander and directs others who serve as On-Scene Coordinator.

(b) Provides traffic and crowd control support for oil and hazardous substance (OHS) spill response.

(c) Provides adequate security for restricted area access, if necessary for the protection of human health and the environment during an OHS spill response.

(2) Responds to reported incidents of unauthorized disposal or abandonment of solid waste, HW, and HM aboard the Installation and conducts preliminary investigations. Makes notification of findings to the CG, MCB, Camp Lejeune. When directed, refers such incidents to the Naval Criminal Investigative Service or other appropriate law enforcement agencies.

(3) Oversees the operation of the Base Safety Division and ensures safety support is provided relative to implementation of the Installation HW and HM disposal program and related emergency response. Provides support to the HW training programs of respective commands relative to the Occupational Safety and Health Agency (OSHA) and Marine Corps safety standards for HM handling and storage and related emergency response. Conducts annual safety inspections of command HW/HM long term storage facilities and notifies cognizant officials of unsafe HW/HM storage and handling incidents that are in violation of applicable OSHA or other safety standards.

(4) Provides safety specialists to serve on the Installation OHS spill response team as provided in this Order, applicable logistics support agreements with MCAS, New River, and other pertinent regulations.

(5) Oversees the FPD, provides personnel to serve as On-scene Commander for OHS spill response aboard MCB, Camp Lejeune and outside flight line areas aboard MCAS, New River.

(6) Coordinates the training of the OHS spill response team and maintains associated training records.

(7) Assists in the prevention of HW/HM spills and related emergencies by inspecting work sites and notifying cognizant officials of incidents of improper storage and handling of HW/HM likely to result in a spill, explosion, fire, or similar imminent threat to human health, environment, safety, or property.

f. Assistant Chief of Staff, Logistics. Serves as the principal agent on matters pertaining to the transportation of HM regulated by DOT.

g. Assistant Chief of Staff, Reserve Affairs/Reserve Support Unit. Ensures that reserve units conform to the requirements of this Order.

h. Assistant Chief of Staff, Training, Education, and Operations

(1) Informs the AC/S, EMD, Camp Lejeune a minimum of 180 days prior to the arrival of any unit scheduled to conduct training or participate in exercises, which is not organic to or tenanted aboard the Installation.

(2) Programs environmental awareness training as an annual subject in Professional Military Education (PME) sessions scheduled for the senior military and civilian leadership of the Installation.

(3) Provides audiovisual training support for HW training.

(4) Coordinates emergency planning and response programs with AC/S, EMD, Camp Lejeune OHS plan.

i. Commanding Officer, Naval Hospital, Camp Lejeune

(1) Provides ambulances and related emergency health care support to OHS spill response actions and industrial hygienists to serve on the OHS spill response team.

(2) Provides technical assistance in conjunction with AC/S, EMD, Camp Lejeune to HW generators on occupational health matters related to the collection and disposal of HW/HM and medical waste.

j. Defense Reutilization and Marketing Office, Camp Lejeune

(1) Ensures compliance with Treatment Storage Disposal Facility (TSDF) RCRA Part B permit. Furnishes all information required for EPA/State reporting requested.

(2) Provides MCB, Camp Lejeune safety representatives access to the TSDF upon request.

(3) Maintains records of HW lab analysis results applicable to the turn-in of HW and the operation of the TSDF.

(4) Inspects HW and accepts physical custody as per the Defense Reutilization and Marketing Service instructions.

(5) Operates the TSDF aboard MCB, Camp Lejeune as per the applicable Federal and State RCRA part B permit conditions and Marine Corps Hazardous Waste management requirements.

(6) Immediately reports all HW spills to the Base FPD by calling 911.

(7) Tests and maintains emergency preparedness and prevention equipment.

(8) Ensures training of personnel in the handling, packaging, and storing of HW. Notifies AC/S, EMD, MCB, Camp Lejeune staff in advance of any changes in personnel working at the TSDF.

(9) In the absence of authorized Base personnel, prepares and signs as generator, all federal and state manifests for shipping hazardous property and tracking waste from MCB, Camp Lejeune to the disposal site. Ensures copies of all manifest transactions for shipment from the TSDF to the disposal site are provided to AC/S, EMD, including final certificates of disposition or destruction.

k. Commanding Generals or Commanding Officers of Tenant Commands. Ensure all organizational elements within each command complies with all requirements of this Order.

l. MCB, Camp Lejeune Hazardous Waste (HW) Program Manager

(1) Serves as Command point of contact with Federal and State agencies, and other Marine Corps Installations on routine matters pertaining to HW collection, treatment, and disposal.

(2) Keeps abreast of emerging Marine Corps, Federal, and State HW regulations and HW management technology and initiates action required for the efficient and orderly conduct of HW collection and disposal operations.

(3) Monitors ongoing HW collection, treatment, and disposal activities as required to identify, evaluate and provide environmentally sound, efficient program operation and timely support to Installation HW generators.

(4) Assists Director, Environmental Compliance Division, in the preparation and submittal of periodic budget projections for HW disposal costs and associated handling equipment and facilities improvements to the AC/S, EMD for inclusion in the Annual Operations Plan and/or other appropriate budgetary submittals.

(5) Oversees the day-to-day collection, treatment, and disposal of HW in compliance with all relevant regulations and this Order and provides the following technical assistance and management support:

(a) Provides MCB, Camp Lejeune HW management policies and procedures to the Head, Environmental Quality Compliance Branch, Environmental Compliance Division.

(b) Carries out those ECC HW duties outlined in this Order relating to HW operations of the commands and organizations of MCB, Camp Lejeune.

(c) Receives, processes, and maintains records of HW/HM Disposal Worksheets delivered by Base ECO's, and tenant command ECC's as per this Order.

(d) Coordinates HW transportation services required to transfer Base tenant commands' HW to the Base Long-term HW Storage Facility and HW management and disposal service contracts administered by MCB, Camp Lejeune.

1 Performs quality assurance inspections for generating activities at MCB, Camp Lejeune to ensure compliance with regulatory packaging and documentation requirements prior to transporting to DRMO.

2 Complies with federal and state HW manifesting and/or associated recordkeeping requirements.

3 Provides, or otherwise ensures, a properly trained and authorized individual signs manifests as the HW generator and HW transporter for shipments to off-site contractor facilities.

(e) Coordinates the acceptance of all HW by DRMO and, for MCAS, New River, subsequent Transportation to the Installation's Long-term HW Storage Facility.

(f) Participates in the development of HW/HM site specific HW spill contingency plans and associated HW spill prevention, control, clean-up, and disposal activities.

(6) As required, assists in the conduct of environmental compliance evaluations and other inspections of HW generation and storage sites.

(a) Assists in the development and implementation of corrective actions.

(b) Provides technical assistance to HW generators and to HW management support organizations required to implement recommended corrective actions.

(c) Participates with HW generators in correcting HW management and related environmental compliance deficiencies.

(7) Maintains accurate records of HW management activities and prepares annual HW reports and related routine HW generation and disposal submittals as required for compliance with MCO P5090.2A, this Order, and other pertinent regulations.

m. HW Generator

(1) Develops and maintains command SOP as per this Order to implement the HW management program and command specific requirements. HW management efforts should promote HW minimization and other pollution prevention objectives to the maximum extent practicable within mission and resource constraints.

(2) Ensures HW generation and storage are limited to those types of HW for which MCB, Camp Lejeune is authorized to generate and store, and for which hazardous waste profile sheet (HWPS) has been issued by EMD.

(a) ECO's and HW Site Managers should continuously review HW generation and update changes in waste stream composition.

(b) Any new HW stream generated for which no HWPS should be reported immediately to the Base HW Program Manager.

(3) Ensures that ECO's, HW Site Managers, HW Handlers, and other environmental staff required are appointed in writing and trained.

(a) All HW personnel will be furnished a written description of their HW duties.

(b) Enclosure (2) will be utilized to document HW training.

(4) Ensures HW generation sites, (e.g., 90-day, UW and SAA's) are registered with the AC/S, EMD.

(5) Base tenant HW generators should send appointment letters to the AC/S, EMD.

n. Environmental Compliance Coordinators

(1) Serves as command point of contact for matters involving environmental issues to include management of HM, HW, UW, or Silver Recovery operations and compliance with this Order.

(2) Schedules and participates in the conduct and follow-up of environmental compliance evaluations of HW operations as per this Order, MCO P5090.2A, and Federal and State regulations.

(3) Ensures discrepancies identified through environmental compliance evaluation(s) are corrected.

(4) Develops and maintains command SOP as per this Order to implement the HW management program and command specific requirements. HW management efforts should promote HW minimization and other pollution prevention objectives to the maximum extent practicable within mission and resource constraints.

(5) Oversees and participates in the implementation of command HW collection, handling, and disposal and ensures all HW operations are carried out in strict compliance with the requirements of this Order, MCO P5090.2A, and Federal and State regulations.

(a) Coordinates the review and authorization of new HW generation and accumulation areas by EMD.

(b) Consolidates HW Turn-In Disposal Worksheets from generating units.

(c) Ensures HW Turn-In Disposal Worksheets are complete and accurate.

(d) Inspects contents against HW Turn-In Disposal Worksheets.

(e) Ensures submission of HW Turn-In Disposal Worksheets to EMD.

(f) Maintains appropriate records of HW/HM Disposal Document submissions.

(g) Monitors progress of removal of HW/HM and notifies EMD when HW remains on-site in excess of 75 days of ASD on any container.

(h) Provides assistance to ECO's and Site Managers in resolving HW management problems affecting disposal.

(i) Ensures all required HW inspections are conducted. Completes quarterly inspection of all HW, UW, SRS accumulation areas. In the absence of unit ECO conducts required inspection.

(6) Monitors the respective environmental training program to ensure personnel in positions of environmental responsibility are trained as per the Base CETEP.

(a) Participates and ensures those personnel in positions of environmental responsibility attend HW training sessions and workshops conducted by the command ECC and the AC/S, EMD.

(b) Reviews annually ECO HW duties and training, and submits requests for additional HW training to AC/S, EMD.

(c) Assists command ECO's review of HW Site Managers' HW duties and HW training at intervals of not more than 12 months, and submits requests for additional HW training to AC/S, EMD.

(d) Submits training requests as per the CETEP enrollment procedures for subordinate organizations within their respective commands.

(e) Maintains current HW training records for themselves, ECO's, and AECO's within their command.

(f) Retains former command HW personnel HW training records as per Federal and State regulations and Marine Corps Orders.

(7) Identifies facilities' deficiencies to the appropriate Installation authorities.

o. Environmental Compliance Officers

(1) Serves as command point of contact for matters involving environmental issues to include management of HM, HW, UW, or Silver Recovery operations and compliance with this Order.

(2) Develops and maintains command SOP as per this Order to implement the HW management program outlined in this Order and command specific requirements. HW management efforts should promote HW minimization and other pollution prevention objectives to the maximum extent practicable within mission and resource constraints.

(3) Keeps HW Site Managers and key personnel informed of any changes in regulations affecting HW activities within the ECO's cognizance and ensures that HW SOP's and USCP's are up-to-date and readily available for review by personnel involved in the HW management.

(4) Maintains a list of the location of all HW generation sites, SAA's, UW Sites, 90-day Sites, and Silver Recovery Sites within the command. Provides a current copy of this list to the cognizant organizational ECC, Base HW Program Manager on a monthly basis.

(5) Conducts monthly inspections of HW and UW inventories in command 90-day sites and performs and documents follow-up actions required to ensure correction of container management deficiencies and timely removal of HW.

(6) Informs ECC when unavailable to conduct required inspections.

(7) Ensures all required inspections are conducted when Site Managers or Handlers are unavailable.

(8) Oversees and participates in the implementation of command HW collection, handling, and disposal and ensures all HW operations are carried out in compliance with the requirements of this Order.

(9) Notifies cognizant ECC's by telephone with written follow-up anytime HW or UW remains in the 90-day Site in excess of 75 days of ASD on any container.

(10) Actively promotes the reduction of volume and toxicity of HW/UW/HM produced within the ECO's organization.

(11) Promotes the proper management and segregation of used POL to minimize contamination with water, antifreeze, and other contaminants.

(12) Oversees the management of organization HW training programs including, but not limited to the following:

(a) Maintains a current roster and HW training records of all HW Site Managers and HW Handlers within the command.

1 Ensures that HW training records for HW personnel transferring to another installation or being released from active duty are transferred to the appropriate official for retention per RCRA regulations. Tenants of MCB, Camp Lejeune, will forward the HW training records to the cognizant Command ECC.

2 Ensures HW training for MCB, Camp Lejeune civilian employees is reported to the cognizant Civilian Personnel Office for entry into the Navy Civilian Personnel Data System (NCPDS).

(b) Participates in and ensures HW Site Managers and HW Handlers participate in regular HW training sessions and workshops conducted by the command ECC and EMD.

1 Reviews annually HW Site Managers' HW duties, and submits requests for additional HW training via the cognizant command ECC to EMD.

2 Assists HW Site Managers' annual review of HW Handlers duties, and submits requests for additional HW training per guidance contained in this Order via the cognizant command ECC to EMD.

p. HW Site Managers. For the purposes of this Order, OIC's, Noncommissioned Officers-in-Charge (NCOIC), and civilian supervisors of work sites where HW, UW, or precious metals (Silver Recovery) is generated, handled, or stored shall be considered "HW Site Managers." Additionally, the HW Site Manager must be assigned in writing by their respective commanding officer or supervisor within one week of assignment.

(1) Ensures MCB, Camp Lejeune and command management requirements are implemented for each type of HW, UW, or HM routinely collected and managed for disposal.

(2) Ensures that only authorized, properly trained, and supervised HW personnel are allowed to handle HW or perform associated inspections and record keeping:

(a) Schedules initial HW training for each newly assigned assistant HW Site Manager or HW Handler.

(b) Provides, or ensures other qualified, trained HW personnel provide direct supervision of each assistant HW Site Manager or HW Handler until adequate initial HW management training is provided and documented.

(3) Conducts annual reviews of HW training records for unit HW personnel.

(4) Conducts and properly documents weekly inspections of 90-day Sites, UW, and SAA's per Federal and State HW regulations and performs and documents follow-up actions required to ensure the following are accomplished:

(a) Ensures all containers are clearly marked with appropriate marking requirements.

(b) Ensures HW containers comply with requirements of this Order. In the event a HW container does not meet the noted requirements corrective action will be taken.

(c) Ensures all leaks, releases, or spills are managed according to this Order.

(5) Notifies immediate superior and ECO immediately upon becoming aware of one of the following:

(a) The generation or the proposed generation of a new type of HW or UW.

(b) Existing or potential violations of this Order or deficiencies suspected of posing a threat of a HW spill, fire, explosion, or other danger to human health and safety or to property.

(c) Visits or proposed visits to the work place by a representative of Federal or State environmental agency.

(d) The presence of HW in the 90 Day Site with an ASD over 75 days old which has not been processed for removal.

(6) Ensures the day-to-day collection and storage of HW and excess HM awaiting disposal. Initiates action to dispose of accumulated HW or excess HM.

(7) Provides instructions and supervision required to ensure all HW and HM disposal activities shall be carried out in compliance with this Order.

(8) Ensures that all HW and special wastes are managed in a manner which prevents contamination by unknown items, damage, vandalism, fires, spills, explosions, or other situations likely to pose a hazard to human health or the environment.

(9) Checks HW generation sites and HW storage containers weekly for deficiencies and performs follow-up when required to ensure that problems are corrected.

(10) Ensures containers of HW are confined to authorized and approved SAA's and 90-day accumulation areas.

(11) Ensures mandatory weekly inspections are completed and that inspection follow up action is taken and documented.

(12) Initiates disposal of HW/HM as per guidelines provided in this Order.

(a) HW/HM/UW Disposal Worksheet will be properly prepared and submitted to the cognizant ECO within five working days after a container of HW/HM becomes full.

(b) HW/HM/UW Disposal Worksheet will be delivered to the command ECO.

(c) Provides personnel, equipment, and supplies required to repackage the contents of unserviceable containers of HW/HM/UW.

q. HW Handlers. Are all personnel handling HW for the purposes of storage, transportation, or treatment, not assigned as a HW Site Manager, ECO, or ECC. Additionally, all Handlers must be assigned in writing by their organizational commanding officer or supervisor within one week of assignment. Duties of the HW Handler include:

(1) Properly preparing HW for containerization, storage, and transportation.

(2) Marks all containers with appropriate markings.

(3) Transfers or overpacks contents of unserviceable HW containers to serviceable DOT or approved mil-spec containers.

(4) Reports all leaks or spills as perthis Order.

(5) Collects and stores HW and excess HM awaiting disposal as per the direction provided by the Site Manager.

(6) Handles, stores, or otherwise prevents HW and special wastes from becoming contaminated by unknown items, damage, vandalism, fires, spills, explosions, or other situations likely to pose a hazard to human health, or the environment.

(7) Inspects HW generation sites and HW storage containers weekly for deficiencies and reports all discrepancies to the HW Site Manager.

(8) Informs HW Site Manager or ECO if unable to conduct mandatory weekly inspections.

(9) Stores containers of HW in authorized and approved SAA's and 90-day accumulation areas.

(10) Informs HW Site Manager when a container of HW becomes full and requires disposal.

9. Reserve Applicability. This Order is applicable to the Marine Corps and Naval Reserves.

10. Concurrence. This Order has been coordinated with and concurred in by the Commanding Generals, II Marine Expeditionary Force; 2d Marine Division; 2d Force Service Support Group; and the Commanding Officers, Marine Corps Air Station, New River and Naval Hospital.

B. A. GOMBAR
Chief of Staff

DISTRIBUTION: A plus BEMD 5

COMMON TERMS AND DEFINITIONS

The following terms and definitions are applicable to this Order:

1. Accumulation Start Date (ASD). The date any amount of HW is first placed into a container at any location other than a Satellite Accumulation Area. The ASD must be affixed at the point in time when a container is filled with a Universal Waste in a Satellite Accumulation Area. The ASD is also the date any amount of UW is placed into a container at a Universal Waste site. The ASD will be marked in the day/month/year format.

2. Battery. A device consisting of one or more electrically connected electrochemical cells which is designed to receive, store, and deliver electric energy. An electrochemical cell is a system consisting of an anode, cathode, and an electrolyte, plus such connections (electrical and mechanical) as may be needed to allow the cell to deliver or receive electrical energy. The term battery also includes an intact, unbroken battery from which the electrolyte has been removed.

3. Disposal. The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste into or on any land or water so that the solid waste or any constituent part of the solid waste may enter the environment or be emitted into the air or discharged into any water, including groundwaters.

4. Environmental Compliance Coordinator (ECC). An individual with sufficient rank, assigned by the respective Commanding General, Head of a Base tenant command/organization, or by the Commanding Officer, MCAS, New River responsible for the management and implementation of the command environmental program.

5. Environmental Compliance Officer (ECO). An individual with sufficient rank, assigned at the regimental, battalion, separate company level and base agency (or equivalent) responsible for the management and implementation of the command environmental program.

6. Environmental Management Department (EMD) Authorization. A site authorization document issued by EMD identifying specific areas to include: Satellite Accumulation Area (SAA), 90 Day Site, Universal Waste Site, and Silver Recovery Site.

7. Excess HM. Unused HM for which its custodian has no requirement. This type of material can frequently be returned to the supplying organization, redistributed, or recycled.

8. Generator. Generator means any person, whose act or process produces HW or Universal Waste identified or listed in 40 CFR parts 261 and 273, or whose act first causes a UW to become subject to regulation. The Commanding General, MCB, Camp Lejeune and the Commanding Officer, MCAS, New River are registered with the EPA as the generators of HW produced aboard their respective installations. For purposes of implementation of this Order

aboard MCB, Camp Lejeune and MCAS, New River complex (hereafter referred to as the Installation), and for administrative purposes to facilitate the understanding of responsibilities of Commanders, Department Heads, Officers-in-Charge, and Supervisors, Generators are identified as follows:

a. Commanding Generals of II Marine Expeditionary Force, 2d Marine Division, and 2d Force Service Support Group.

b. Commanding Officers of the Naval Hospital; Naval Dental Center; Marine Corps Engineer School; Weapons Training Battalion; Field Medical Service School; Marine Corps Service Support Schools; Reserve Support Unit; School of Infantry; Headquarters and Support Battalion, MCB, Camp Lejeune and any subordinate organization requiring an ECO.

c. Heads of the following MCB Camp Lejeune organizations: Facilities Department, Base Maintenance Division; Logistics Department; Marine Corps Community Services; Training, Education and Operations Department; Manpower Department; EMD; Management Support Department; and any subordinate organization requiring an ECO.

d. Group and Squadron Commanding Officers at MCAS, New River.

e. The Resident Officer in Charge of Construction, Jacksonville; Officer in Charge of Facilities Support Contracts, Jacksonville; and other Installation contracting officers are considered the HW generator for any waste generated by contractors operating under their cognizance.

f. Commanders or chief supervisors of any organization aboard the Installation, not otherwise listed, who generate, handle, or store HW.

9. Hazardous Material (HM). A chemical compound or combination of compounds posing or capable of posing a significant risk to public health, safety, or the environment due to its quantity, concentration, or physical/chemical, and/or infectious properties, and/or characteristics.

10. Hazardous Waste (HW)

a. A solid waste, or combination of solid wastes, which because of quantity, concentration, or physical, chemical, or infectious characteristics may:

(1) Cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness, or

(2) Pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

b. The two methods used by Federal and State agencies to determine if a solid waste is hazardous are:

(1) Listed HW. A discarded HM no longer usable for its intended purpose and which is named on one of the three HW lists in the HW regulations of the Environmental Protection Agency (EPA) and/or the State Universal Waste regulations. The three HW lists are: non-specific source wastes (F), specific source wastes (K), and commercial chemical products (P & U).

(2) Characteristic HW. A discarded HM no longer usable for its intended purpose and which exceeds one or more EPA standards for the characteristics of ignitability, corrosivity, reactivity, or toxicity and which is not otherwise excluded by EPA and State regulations.

11. HW Determination. The process used to evaluate whether a material being discarded is a solid waste meeting the regulatory definition of a RCRA regulated HW. The decision is based on user knowledge and/or scientifically controlled testing of the material to be discarded.

12. HW Generation Site. A specific location where a HW is stored, handled, or determined to be no longer usable for its intended purpose. Normally that area of real property in the immediate vicinity of the process which produced the waste.

a. 90-Day Site. Under Federal and State HW regulations, HW generators may accumulate HW for up to 90 days or less without having to obtain a HW storage permit. Failure to transfer a HW container from a 90-day Site to the Base Long-Term Universal Waste Storage Facility operated by DRMO or an off-site permitted treatment, storage, or disposal facility within 90 days of the ASD on the container is a violation of EPA and State regulations.

b. Satellite Accumulation Area (SAA). A HW generation point at which waste may be accumulated until the HW storage container is full. A filled container must be transferred within 72 hours to an approved 90-day Site or long-term HW storage facility. Failure to comply is a violation of EPA and State regulations. An EMD Authorization for a SAA must be obtained and posted at the site to preclude a 90-day storage violation. EMD authorization will establish individual limits for each SAA. No SAA authorizations will exceed 55 gallons of HW or 1 quart of acutely HW.

13. HW Handler. An individual assigned in writing by their respective commanding officer that specifically prepares HW for transportation, storage, treatment, or disposal.

14. Hazardous Waste Management. The systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery and disposal of hazardous wastes.

15. HW Container Marking Requirements. EPA and State regulations require specific markings for containers used for the storage of HW. Every container of HW must be marked with the information listed in 10304. 7.

16. HW Profile Sheet (HWPS) - DRMS 1930. A form requested by the Defense Reutilization and Marketing Service (DRMS) which lists the physical and chemical characteristics of a waste as well as generator information. This form is required and used by the Defense Reutilization and Marketing Office (DRMO) to assure proper identification of HW. The HWPS is prepared by EMD. Units generating HW must obtain the specific HWPS from EMD prior to generating a HW. Updated HWPS will be maintained by the HW Site Manager, ECO, and ECC.

17. HW Site Manager. The HW Site Manager is the OIC, NCOIC, or civilian supervisor in immediate charge of the work site or shop where the HW is being generated or stored.

18. HW Transportation. The differences between two categories of HW transportation must be understood to assure efficient movement of wastes in compliance with Federal and State HW regulations:

a. Off-Base Transportation. Transportation of HW on public highways is strictly controlled by Federal and State HW regulations. The Commanding General, MCB, Camp Lejeune, is registered with EPA and the State as a HW transporter. As a result, MCB, Camp Lejeune can legally transport HW on public highways. Examples of public highways are: US-17, NC-24, NC-210, and sections of NC-172 off-base. Transportation of HW on public highways will be performed by the Transportation Section, EMD, or by a properly licensed commercial HW transporter.

b. On-Base Transportation. Transportation of HW on Base highways, which includes NC-172 from Triangle Outpost to the Sneads Ferry Gate, is not considered HW transportation as defined in the RCRA. HW generators are authorized to transport HW on highways within MCB, Camp Lejeune, provided public highways are not used or crossed. All HW moved by the generator will be carried out under the direction of the cognizant ECC. Vehicle operators will have proper HM safety, health, and HW management training; and an appropriate vehicle operator's license.

19. Installation Hazardous Waste Program Manager (Base HW Program Manager). The Head of the Resource Conservation and Recovery Branch, Environmental Compliance Division, Environmental Management Department, MCB, Camp Lejeune or his/her authorized representative.

20. Long-Term HW Storage. The containment of HW for an indefinite period of time in a permitted facility designed to maintain HW in compliance with Federal and State HW regulations. Storage of RCRA regulated HW, unless in an EMD authorized Satellite Accumulation Area, for longer than 90 days is considered long-term HW storage. DRMO is the only State permitted facility for long-term storage of HW aboard MCB, Camp Lejeune.

21. Outage. The amount of free space left in a container. The purpose of outage is to allow for expansion.

22. Person. An individual, corporation, company, association, partnership, unit of local government, State agency, Federal agency or other legal entity.

23. Pesticide. Any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, or intended for use as a plant regulator, defoliant, or desiccant, other than any article that:

a. Is a new animal drug under FFDCA section 201(w), or

b. Is an animal drug that has been determined by regulation of the Secretary of Health and Human Services not to be a new animal drug, or

c. Is an animal feed under FFDCA section 201(x) that bears or contains any substances described by paragraph (a) or (b) of this section.

24. Shelf-Life Expired HM. Unused HM which has exceeded the useful life specified by the manufacturer or other authority and is no longer suitable for its original purpose. Under normal circumstances expired, non-extendable shelf-life materials become HW. Refer to the shelf-life management section CETEP course manuals for detailed shelf-life management operating parameters.

25. Sludge. Sludge means any solid, semi-solid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility exclusive of the treated effluent from a wastewater treatment plant.

26. Special Waste. A discarded used or unused HM (to include residues from the cleanup of HM spills) which is no longer suitable for one or more of the purposes for which the item was manufactured and which is not a regulated HW.

27. Storage. Storage means the holding of HW for a temporary period, at the end of which the Universal Waste is treated, disposed of, or stored elsewhere.

28. Thermostat. A temperature control device that contains metallic mercury in an ampule attached to a bimetal sensing element, and mercury-containing ampules that have been removed from these temperature control devices in compliance with the requirements of 40 CFR 273.13(c)(2) or 273.33(c)(2).

29. Treatment. Treatment includes any activity or process designed to change the physical form or chemical composition of HW so as to render it less hazardous or nonhazardous.

30. Unit Spill Contingency Plan (USCP). The purpose of the USCP is to minimize the potential hazards to human health, the environment, and property associated with hazardous releases. USCP's are the first line of defense against possible releases and tie into higher level plans such as those required for HW facilities, emergency response plans, facility response plans, spill prevention, control and countermeasure plans, regional and national contingency plans.

31. Universal Waste. Any of the following hazardous wastes that are subject to the Universal Waste requirements of 40 CFR part 273:

a. Batteries as described in 40 CFR 273.2; (does not include automotive wet cell batteries)

b. Pesticides as described in 40 CFR 273.3; and

c. Thermostats as described in 40 CFR 273.4.

32. Universal Waste Handler. A generator, as defined in this Order, of Universal Waste; or the owner or operator of a facility, including all contiguous property, that receives UW from other UW handlers, accumulates UW, and sends UW to another UW handler, to a destination facility, or to a foreign destination.

33. Universal Waste Transfer Facility. Any transportation-related facility including loading docks, parking areas, storage areas and other similar areas where shipments of Universal Waste are held during the normal course of transportation for 10 days or less.

34. Universal Waste Transporter. A person engaged in the off-site transportation of Universal Waste by air, rail, highway, or water.

35. Used Oil. Any oil which has been refined from crude oil or synthetic oil and, as a result of use, storage, or handling, has become unsuitable for its original purpose due to the presence of impurities or loss of original properties. Used oil may be suitable for further use and is economically recyclable, therefore is managed as a separate category of material.

RECORD OF TRAINING

EMPLOYEE NAME/UNIT: _____

JOB TITLE/DESCRIPTION: _____

DATE ASSIGNED: _____

DATE RECORD CLOSED: _____

DATE	DESCRIPTION OF TRAINING	NAME OR COMPANY OF TRAINER	Training Hours

Signature:_____ Date:_____
(Employee's)

Signature:_____ Date:_____
(ECO's or Supervisor's)

ENCLOSURE (2)

DEPARTMENT OF THE NAVY
HEADQUARTERS UNITED STATES MARINE CORPS
WASHINGTON, D.C. 20380-0001

MCO 6280.8
LFL-dt
23 Jul 1987

MARINE CORPS ORDER 6280.8

From: Commandant of the Marine Corps
To: Distribution List

Subj: Hazardous Waste Minimization

Ref: (a) MCO P11000.8B

Encl: (1) Hazardous Waste Minimization Techniques

Report Required: Hazardous Waste Report (Report Symbol MC-6280-02), par. 4c(4)

1. Purpose. To identify the background and concepts for the minimization of hazardous waste (HW) generation through various methods and techniques.

2. Background

a. The Marine Corps hazardous waste minimization (HAZMIN) policy is to minimize the volume and toxicity of the HW it generates in a practical and economical manner. HAZMIN consists of two parts:

(1) Avoiding HW generation through the application of best management, engineering, and equipment to Marine Corps processes and procedures.

(2) Reuse and/or treatment of HW that is generated by a Marine Corps process or procedure reducing it to a nonhazardous state.

Emphasis is on HW generation reduction and elimination. This program uses HAZMIN technologies, such as plastic media paint stripping and zero discharge hard chrome plating, as well as changed management procedures to reduce/eliminate HW generation.

b. Due to the national concern that buried waste has the potential to enter the groundwater or otherwise pollute the environment, two strict environmental laws have been implemented. These laws are: the Resource Conservation and Recovery Act (RCRA) which sets up a system to track and control the handling and disposal of HW produced today; and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the "Superfund Law" which holds the generator of a HW responsible for that waste as long as it exists, regardless of who has assumed management custody.

PCN 102 094938 00

If the Marine Corps generates a HW today, and it causes an environmental or health problem at anytime in the future, the Marine Corps is legally responsible for that problem and appropriate corrective action despite "proper" disposal in accordance with all requirements. In summary, this responsibility cannot be delegated to another party.

c. The RCRA recognizes the long-term problems of HW landfills. A 20-year guaranteed landfill "liner" is obviously of little comfort if a HW does not degrade with time; in fact, no one can really "guarantee" a HW landfill. Consequently, the RCRA prohibits placement of bulk or noncontainerized liquid HW in any landfill. The Office of the Secretary of Defense, noting the long-term liabilities of HW, and solvents in particular, has banned the disposal of waste solvents by landfill (whether through contract or otherwise) and required solvent users to start recycling nearly all solvents by October 1986.

d. The RCRA also requires every generator of HW to: (1) certify on the HW manifest which accompanies all HW that the generator has a program to minimize the amount and toxicity of wastes generated to the degree the generator determines to be economically practicable, and that the generator's proposed treatment, storage, or disposal method minimizes the present and future threat to human health and the environment, and; (2) inclu in the biennial report to the Environmental Protection Agency (EPA) Regional Administrator (40 CFR 262.41), the activity's efforts to reduce the waste volumes and toxicity, as well as describe the changes already accomplished. Also, any installation that holds a RCRA permit to operate a HW treatment, storage, or disposal facility must make similar certifications at least annually per 40 CFR 264.73. This certification is maintained at the facility as part of the operating record until closure of the facility.

3. Discussion

a. HAZMIN is required by law. As stated in paragraph 2d, preceding, Marine Corps installation commanders (or their designated representatives) must certify they have HAZMIN programs. There are also legal timetables in the RCRA that will shutdown future landfill disposal of many HWs, whether or not there are adequate alternate means of disposal.

b. Basic HAZMIN techniques are outlined in the enclosure. The three consecutive steps in the HAZMIN program are as follows:

(1) Avoid generation of HW through:

(a) Considering of HAZMIN in the weapons and support equipment acquisition process.

(b) Tighting control of hazardous materials at Marine Corps installations.

(c) "Delisting" of specific Marine Corps wastes from generic HW streams listed by regulatory agencies.

(d) Substituting of a material in a process so that HW generation is reduced or eliminated.

(e) Changing the process to reduce or eliminate HW generation.

(f) Extending of shelf-life and other factors which cause hazardous materials to become excess and enter the Defense Logistics Agency (DLA) reuse, transfer, donation, and sale screening process.

(2) Recycle the HW by:

(a) Using it as the input for a process which does not require the degree of purity of the original process (called cascade use).

(b) Cleansing (e.g., filtering or distilling), or otherwise upgrading the HW so that it can be used for the original or another process.

(3) Treat the HW to a nonhazardous state by neutralization, solidification, volume reduction, detoxification, or thermal destruction. (Note, there may be hazardous residues; i.e., waste, from these treatment processes.)

c. The HAZMIN program is not exclusively an environmental program; it must be a cooperative effort between acquisition, supply, production, facilities, and environmental personnel at every level of command.

d. The Department of the Navy HAZMIN program is a 5-year program to put into place equipment and procedures which will reduce the quantity of the HW now treated and disposed of off-station by contract (DLA or Navy/Marine Corps contract), or disposed of on the installation. The goals are a 50 percent reduction (by weight) in HW generated and the elimination of the disposal of all untreated HW by 1992 Marine Corps-wide. These are based on reductions considered to be achievable in each process which generates HW.

c. Biennial Report and Exception Reports.

Retention period: At least 3 years from due date of report unless unresolved enforcement actions regarding the regulated activity exist, in which case reports may not be destroyed until actions are resolved.

d. Records of test results, waste analyses, or other determinations.

Retention period: At least 3 years from date waste was sent to on-site or off-site treatment, storage, or disposal.

NOTE: Though these timeframes comply with the regulatory minimum retention periods, the long term environmental and personal liabilities associated with HW management dictate retention of these records longer if space permits.

J. J. WENT
Deputy Chief of Staff
for Installations and Logistics

DISTRIBUTION: 2020001, 002, 004, 005, 006, 008, 009/3700001, 002, 004/6025002, 003/7230001/7315001, 002

Copy to: 7000144/8145001

HAZARDOUS WASTE MINIMIZATION TECHNIQUES

Industrial Operation or Process	Hazardous Waste Generated	Hazardous Waste Reduction Techniques
Metal working/ heat treating	coolants; quenching oils; salt baths	filtration, centrifuge for reuse; fuel supplements; neutralization
Painting	thinners; heavy metals; polyurethanes	process change: airless sprays, powders, water base primers; recycle; segregation; incineration; replace water curtain with dry filters in spray booth
Transport vehicle maintenance	oils; lubricants; coolants; petroleum; alcohols	fuel supplements; waste segregation; recycle
Cleaning, degreasing	solvents; detergents; ketones; freon	fuel supplements; recovery; substitution
Electrical/electronic maintenance	heavy metals; Polychlorinated biphenyls; solvents; freon	material control; substitution; incineration
Stripping	solvents; caustics	process change: dry media blasting; laser stripping; water jet
Metal plating/ finishing	acids; bases; metal rinses	process change: zero discharge hard chrome plating; industrial waste treatment: neutralization, ion exchange, electrolytic precipitation; non-cyanide baths

ENCLOSURE (1)

Industrial Operation or Process	Hazardous Waste Generated	Hazardous Waste Reduction Techniques
Battery shop operations	acids; bases, cyanides	neutralization; industrial waste treatment; domestic waste treatment (with dilution)
Laboratory operations	spent/used/expired chemicals; silver (photography)	material control; recovery; industrial or domestic waste treatment
Test and evaluation	contaminated soils; calibration fluids	test/burning pad; recovery/reuse; static testing
Propellant, explosive manufacture	pink, red acid wastes	industrial waste treatment
Industrial waste treatment	sludges; spent carbon; ion exchangers; filters	dewatering; delisting; regeneration; incineration
Fuel storage	tank bottoms; contaminated or excess POL	biological treatment; fuel supplement; reblend; recycle
Munitions demil	OB/OD residues; contaminated soil	burning pads; containment facilities; delisting; downgrade; reuse; incineration

UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542

BO 11090.3
MAIN/DOS/th
18 May 1982

BASE ORDER 11090.3

From: Commanding General
To: Distribution List

Subj: Operation and Maintenance of Oil Pollution Abatement Facilities

Ref: (a) NPDES Permit No. NC0003239, Marine Corps Base, Camp Lejeune (NOTAL)
(b) CLean Water Act (NOTAL)
(c) BO 11090.1B

1. Purpose. To publish responsibilities for the operation and maintenance of pollution abatement facilities required to be in compliance with federal and state water quality standards established under references (a) and (b).

2. Background

a. Reference (c) established policy and procedures regarding the prevention and abatement of pollution resulting from accidental spills or unauthorized discharge of petroleum oil and lubricants (POLs) (e.g., diesel fuel, kerosene, lube oil, etc.) and other hazardous material or waste (e.g., mogas, paint; solvents, acid, etc.). Addressees should be aware that a major part of the oil related pollutants being discharged into storm drains and streams comes from washrack runoff and from maintenance shops where leaks and spills of POLs during routine maintenance operations are not adequately controlled and cleaned up.

b. Facilities are being constructed at Camp Lejeune and Marine Corps Air Station (Helicopter), New River to provide compliance with references (a) and (b). These facilities connect oil contaminated wastewater drainage lines to the sanitary sewer. Oil/water separators, grit chambers, storm-water storage tanks and related devices are provided to reduce the amount of POLs in the wastewater and to prevent relatively small oil spills from entering and damaging the sanitary sewer and sewage treatment plants. Maintenance shops and other facilities constructed in the future must be equipped with pollution abatement devices in order to comply with reference (a).

c. Explosions, gases, fumes, etc. resulting from discharge of gasoline and other flammable or hazardous material into the sanitary sewer present a serious threat to personnel safety and may result in severe damage to facilities and equipment. Further, excessive quantity of POLs entering the sanitary sewer will have a significant impact on effective sewage treatment thus causing a violation of environmental standards. Such discharges (spills) are regulated by reference (c) and must be reported to the Base Fire Department (451-3333), immediately.

d. Washracks and related pollution abatement structures for tactical and tracked vehicles present ongoing maintenance problems due to the amount of soil washed from vehicles. Drainlines on all devices are relatively small in order to control rate of storm-water entering sewer. Keeping these drains open and flowing will require proper operation and routine maintenance.

3. Responsibilities. Operation, maintenance and repair of pollution abatement facilities:

a. Using organization will:

(1) Train personnel to operate pollution abatement facilities located at the work site.

(2) Ensure that cans, oil filters, rags, brushes, litter or other foreign objects are not discarded on washracks or into oil/water separators, grit chambers, storm-water bypass chambers, storm-water storage tanks, etc.

(3) Ensure that used oil is disposed of into properly marked waste oil containers and not on the ground or into oil/water separators, grit chambers, storm-water bypass chambers, etc.

(4) Ensure that neither gasoline nor hazardous waste (e.g., solvents, degreasers, paint, etc.) are disposed of into waste oil tanks/collection systems.

(5) Clean up oil contaminated soil at the work site (contact Base Maintenance Division 451-2083/1690 for disposal instructions).

(6) Notify Base Maintenance Division (451-3001) of required maintenance and repair. Marine Corps Air Station (Helicopter), New River commands will notify the Station S-4 Officer of any required maintenance and repair.

(7) Notify Base Maintenance Division (451-5909) of waste oil containers that require emptying.

b. Base Maintenance Officer will:

(1) Provide periodic inspection of maintenance and operation of pollution abatement facilities and initiate action to correct maintenance discrepancies. Report operational deficiencies to the using organizational commanding officer. Close the facility when it is apparent that continued operation will immediately jeopardize the capability of the sewage treatment facility.

(2) Service used (waste) oil collection facilities to include pumping out oil storage tanks at regular intervals and initiating action required to maintain and repair tanks and related signs, funnels, gauges and drainlines.

(3) Service oil/water separators, grit chambers, storm-water bypass chambers and storm-water storage tanks to include removing oily waste and solids, unclogging drainlines and initiating action to make needed repairs.

(4) Operate, maintain and repair wastewater lift stations and related mechanical equipment.

(5) Operate, maintain and repair pollution abatement facilities associated with swimming pools, heating plants and water treatment plants.

c. Public Works Officer will:

(1) Incorporate appropriate pollution abatement devices and structures in facilities constructed aboard Camp Lejeune, as required to provide compliance with the requirements of references (a), (b) and (c).

(2) Review planned pollution abatement devices and structures with appropriate representatives of the Base Maintenance Officer in order to ensure compatibility with existing sewage collection and treatment facilities and maintenance programs.

4. Action. Commanding Officers/area commanders will take action required to assure that organizations and personnel assigned to shops and other facilities equipped with washracks, waste oil collection systems, oil/water separators and related pollution abatement structures are aware of the requirements of this Order. Commanding officers will investigate cases of unauthorized discharge (spills) of POLs or other hazardous material/waste by individuals or organizations within their cognizance and take action required to avoid recurrence of the discharge.

5. Applicability. Having received the concurrence of the Commanding Generals, 2d Marine Division, FMF; 2d Force Service Support Group, (Rein), FMFLANT; and the Commanding Officers of the Marine Corps Air Station (Helicopter), New River and tenant units; Naval Regional Medical Center; and Naval Regional Dental Center, this Order is applicable to those Commands.

J. R. FRIDELL
Chief of Staff

DISTRIBUTION: A
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UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA 28542-5001

BASE ORDER 5100.20

From: Commanding General
To: Distribution List

Subj: HAZARD COMMUNICATION PROGRAM

Ref: (a) 29 Code of Federal Regulations, Part 1910.1200
(b) MCO 5100.25

1. Purpose. The Hazard Communication Program is designed to ensure pertinent data concerning the safe usage of hazardous materials is made available to the users of those materials. The purpose of this Order is to establish a Hazard Communication Program at Marine Corps Base, Camp Lejeune and to set forth responsibility for administration of the program.

2. Background. The growing list of hazardous materials within the government supply system requires constant vigilance against unsafe handling, mixing, storing and disposal. Exposures to hazardous materials may cause or contribute to many serious health problems such as heart and lung disorders, kidney and liver damage, cancer, sterility, mutation and skin diseases. Some materials may also have the potential to cause fires, explosions, or other serious mishaps. It becomes imperative to protect the user, the general public, and the environment by regulating the identification, transportation, storage, handling and use of hazardous material by providing a communication program.

3. Definition. For the purpose of this Order, a hazardous material is any material which because of its quantity, concentration, physical, chemical or infectious characteristics may pose a substantial hazard to human health or the environment when used, released or spilled into the environment. This Order does not apply to any consumer products. A consumer product is any product with which department heads/organizational commanders/directors can demonstrate is used in the workplace in the same manner as normal consumer usage. Workers such as office workers, bank tellers, etc., who encounter hazardous materials only in non-routine, isolated instances are not covered by the provisions of this Order. This Order includes but is not limited to:

a. Labeling of hazardous materials.

b. Material Safety Data Sheets (MSDS) requirements.

c. Personnel information and training, including training for non-routine tasks.

d. Hazardous material inventory.

e. Hazardous material information for contractors working aboard Marine Corps Base, Camp Lejeune.

4. Labeling

a. Hazardous material must be clearly identified throughout its history with particular emphasis on identification for the end user. The affixing of appropriate warning labels to containers is the most practical means of accomplishing this objective.

b. Manufacturers, importers, and distributors are required by reference (a) to ensure that each container of hazardous material shipped to the user is labeled with the identity of the hazardous chemical, appropriate hazard warning, and the name and address of the chemical manufacturer or importer.

c. Existing manufacturers labels on containers of hazardous materials shall not be removed or defaced unless the containers are immediately marked with the required label information as included in paragraph 4.b.

d. Upon removal from original shipping containers, the individual unit of packages of all hazardous materials must be immediately labeled as required in paragraph 4.b. Hazard labels shall be provided on each container prior to issue.

5. Material Safety Data Sheets (MSDS)

a. The MSDS is written or printed material which is designed to be a source of detailed information on chemical and physical hazards of material used in the workplace. The MSDS includes information on the specific identity of the hazardous product, its physical and chemical characteristics, known acute and chronic health effects and related health information, exposure limits, whether the material is considered to be a carcinogen, precautionary measures for handling, emergency first aid procedures, and the identification of the organization responsible for preparing information. Manufacturers are required to develop a MSDS for each hazardous material they produce and to furnish the appropriate MSDS to purchasers of the hazardous material.

b. Material Safety Data Sheets for all hazardous materials used must be readily available to personnel during each work shift.

c. Shop supervisors shall maintain copies of MSDS's covering hazardous materials used in their shops in a file or manual available to shop workers on all shifts. In addition to manufacturers MSDS's, the Assistant Chief of Staff, Logistics will have available the Hazardous Material Information System (HMIS) microfiche for hard print information on hazardous materials that are procured by national stock number.

6. Training

a. References (a) and (b) outline the basic operation and requirements for the Occupational Safety and Health Training Program. The objective of the training program is to reduce the incidence of job-related hazardous material exposure and delineate necessary protective measures. Reference (a) more specifically requires that personnel be provided with information and training on hazardous material in their work areas at the time of initial assignment and whenever a new hazard is introduced into the work area.

b. Hazardous material training must cover, at a minimum, information on the requirements of reference (a); the availability and details of this Order, including an explanation of the labeling requirements; an explanation of the MSDS, and how personnel may obtain and use the hazard information; the physical and health hazards of specific materials used in the work area; measures personnel can take to protect themselves, including personal protective equipment (PPE), engineering controls of the process, appropriate work practices, and emergency procedures; and methods that may be used to detect the presence or release of a hazardous material in the work area. Personnel must also be informed of the hazards of non-routine tasks that may take place in their work area.

c. Supervisory personnel will receive a minimum of two hours of documented formal training annually as required by reference (b) and as established by this Order. The training will be designed to prepare supervisors in complying with the labeling, MSDS, and inventory requirements of reference (a), as well as to assist them in ongoing subordinate personnel training.

d. All personnel involved in the handling or use of hazardous material must receive at a minimum one hour initial documented formal hazardous material training. Training must be updated when personnel are assigned to new areas or when shop processes change to introduce new chemical hazards to the work area. Shop supervisors will ensure that initial training is provided to personnel newly assigned to their areas. Updates of training due to process changes will be accomplished as necessary by shop supervisors during weekly standup safety meetings. Informal training and updating proviced by the supervisor must be documented quarterly on a cumulative basis

and reported to the Civilian Personnel Division and Nonappropriated Fund Personnel Division quarterly for inclusion in the Official Personnel Folder. Training records for military personnel will be retained at the unit level.

7. Hazardous Material Inventory

a. A complete inventory of all hazardous materials used must be developed and maintained for each shop. This inventory will serve as a tool in the process of providing hazardous material information to personnel. The updated inventory listing will be printed at least quarterly and will include location and chemical or common name for each hazardous material, matching that found on appropriate corresponding MSDS's.

b. Maintenance personnel are frequently called upon to perform repair operations in areas where hazardous materials are present. They must have information about such materials and the potential dangers before they enter these areas in order to take the necessary precautions to protect themselves. Before assigning jobs in high hazard areas, maintenance supervisors should contact the Industrial Hygienist, extensions 5707/2707, and Base Safety, extensions 3891/5725, for an evaluation of the hazards and requirements for work precautions. Supervisors of the Base Maintenance Division should contact the Base Maintenance Industrial Hygienist, extension 3046, for an evaluation and recommendations prior to job assignment in high hazard areas. High hazard areas include but are not limited to, areas in and around process and storage tanks, confined spaces, ventilation duct work and piping for chemical tanks, and storage compounds for hazardous materials.

8. Action

a. Department Heads/Commanders and Directors

(1) Appoint in writing a Hazardous Material Safety Officer (HMSO) for those units engaged in industrial operations, i.e., Facilities, Logistics, Special Services, the Dependent Schools Maintenance Section, etc. The HMSO may appoint in writing a Hazardous Material Safety Coordinator(s) (HMSC) to serve in the absence of and to assist the HMSO in order to provide continuity at the using unit level for hazardous material information, training, inventory, and MSDS control.

(2) Provide the Base Safety Manager, Industrial Hygienist and Base Fire Protection Division with updated list of HMSO's and HMSC's.

(3) Ensure that supervisors and HMSO's are trained in the use and interpretation of MSDS's to enable them to effectively provide the required training for subordinate personnel. MSDS training for HMSO's/HMSC's and supervisors is available through the Base Safety Office.

b. Assistant Chief of Staff, Logistics

(1) Implement procedures to ensure acquisition and distribution of MSDS's for all hazardous materials purchased, to include open purchase, BPA, etc.

(2) Maintain the HMIS and provide hard print copies of MSDS's to all Marine Corps Base and HMSO's and the Base Safety Manager upon request.

(3) Implement procedures to ensure that all containers of hazardous materials are labeled in accordance with reference (a) prior to issue.

c. Assistant Chief of Staff, Morale, Welfare and Recreation

(1) Implement procedures to ensure acquisition and distribution of MSDS's for all hazardous materials purchased by Morale, Welfare and Recreation Department.

(2) Coordinate with Assistant Chief of Staff, Logistics to obtain MSDS information from the Marine Corps HMIS.

(3) Forward copies of MSDS's received to Assistant Chief of Staff, Logistics to ensure inclusion of MSDS's in MSDS file.

d. Base Safety Manager

(1) Maintain on file MSDS's for all locally purchased, non-standard stock hazardous items, i.e., those procured in small quantities for local use, Blanket Purchase Agreements (BPA's), open purchase, etc., in support of the Hazardous Material Safety Training Program.

(2) Monitor the overall Hazard Communication Program by adequate inspections and surveys.

(3) Upon request, provide technical assistance to Marine Corps Base units in developing Hazardous Communication Program procedures.

(4) Provide support to the Civilian Personnel Division, Training Branch and Non-Appropriated Fund Personnel Division (NAFPD) by making available specific information and instructions on hazardous materials.

(5) Provide assistance to Department Heads/Commanders and Directors for training shop supervisors, and HMSO's.

e. Hazardous Material Safety Officer (HMSO)

(1) Hazardous Material Safety Officers will serve as the unit point of contact for all matters relating to hazardous materials.

(2) Compile and maintain a comprehensive inventory of hazardous materials utilized in each respective workplace.

(3) Ensure MSDS's are on file and current for each hazardous item identified on the unit inventory. Ensure acquisition of MSDS's on all nonstandard, nonstocked hazardous materials which are procured by open purchase. Copies of such MSDS's shall be forwarded to the Base Safety Manager.

(4) Ensure that safety and health education training is presented to all personnel working with hazardous materials to include awareness of the potential hazards involved, relevant systems of exposure, emergency treatment, precautions for safe use and disposal as well as PPE and controls appropriate to the situation. Information contained in MSDS's form the basis for this training.

(5) Maintain an adequate supply of "GENERIC" (fill in the blank) hazard labels to be affixed to any container into which a hazardous chemical is transferred from its original container. The label must contain the chemical name, hazard warning, and protection required.

f. Civilian Personnel Division/Director, Non-Appropriated Fund Personnel Division

(1) Provide training support in the development and implementation of a training program for all personnel who handle and use hazardous materials.

(2) Will maintain the training records for personnel as required by current directives.

g. Supervisors

(1) Will familiarize themselves with the hazards presented by each hazardous material used or stored in their cognizant area. This will be accomplished by frequent review and study of relevant MSDS's. The supervisor will be aware of material hazards, adverse effects, characteristics and protective measures required for each hazardous material encountered in their work area.

(2) Ensure that subordinate personnel are trained in accordance with references (a) and (b) as well as paragraph 6 of this Order.

(3) Provide and enforce the use of PPE needed to protect personnel from known or potentially adverse effects of hazardous materials.

(4) Ensure that all containers of hazardous material issued to and used in the shop are clearly marked with the identity of the contents and appropriate hazard warnings.

(5) Ensure that all process tanks, equipment and portable containers are clearly labeled with the name of the contents and appropriate hazard information.

(6) Ensure that all personnel read and understand all hazardous material labels, MSDS's, and other hazard information appropriate to the work area.

(7) Ensure that a copy of this Order is readily available to personnel upon request.

h. Resident Officer-in-Charge of Construction. Ensure all service and construction contracts under ROICC cognizance require a meeting between the contractor, a Base Safety representative and the affected shop supervisor prior to the contractor initiating work within the facility. The meeting will be scheduled for the purpose of informing the contractor of hazardous materials which their personnel may encounter and of appropriate work precautions and protective equipment. Ensure contracts also specify the contractor furnish the Base Safety Office, Industrial Hygienist and Base Fire Protection Division with a MSDS for each hazardous material the contractor will introduce into facility workplaces occupied by Marine Corps Base personnel and, further, ensure the contractor complies with the requirements of reference (a) for such materials.

10. Concurrence. This Order has been coordinated and concurred in by the Director, East Coast Commissary Complex.

G. W. KEISER
Chief of Staff

DISTRIBUTION: A

Occupational Safety and Health Standards for General Industry

(29 CFR PART 1910)

With Amendments as of December 6, 1991
Promulgated by the
Occupational Safety and Health Administration
United States Department of Labor

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New Bern, NC
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9/08

HWSM
LIST
OF
RESPONSIBILITIES

Hazardous Waste Site Manager (HWSM) List of Responsibilities

1. Ensures Installation and command management requirements are implemented for each type of HW or HM routinely collected and managed for disposal.

2. Ensures that only authorized, properly trained, and supervised HW personnel are allowed to handle HW or perform associated inspections and record keeping.

3. Requests initial HW training for each newly assigned assistant HW Site Manager or HW Handler.

4. Provides, or ensures other qualified, trained HW personnel provide direct supervision of each assistant HW Site Manager or HW Handler until adequate initial HW management training is provided and documented.

5. Conducts annual reviews of HW training records for unit HW personnel.

6. Conducts and properly documents weekly inspections of HW accumulation areas per Federal and State HW regulations and performs and documents follow-up actions required to ensure compliance with EMD direction.

7. Ensures all HW containers are clearly marked in accordance with EMD directives.

8. Ensures all leaks, releases or spills are managed in accordance with EMD guidance.

9. Notifies immediate superior and ECO immediately upon becoming aware of the generation or the proposed generation of a new type of HW.

10. Notifies immediate superior and ECO immediately upon discovering existing or potential violations or deficiencies suspected of posing a threat of a HW spill, fire, explosion, or other danger to human health and safety or to property.

11. Notifies immediate superior and ECO immediately upon discovering the presence of HW in the 90 Day Site with an ASD over 75 days old which has not been processed for removal.

12. Ensures the day-to-day collection and storage of HW or UW and excess HM awaiting disposal. Initiates action to dispose of accumulated HW, UW, or excess HM.

13. Provides instructions and supervision required to ensure all HW, UW, and HM disposal activities shall be carried out in compliance with EMD directives.

14. Ensures that all HW, UW, and other designated wastes by EMD are managed in a manner which prevents contamination by unknown items, damage, vandalism, fires, spills, explosions, or other situations likely to pose a hazard to human health, or the environment.

Hazardous Waste Site Manager (HWSM) List of Responsibilities (continued)

15. Ensures containers of HW are confined to authorized and approved SAA's and 90-day accumulation areas which are managed in compliance with EMD direction.

16. Initiates disposal of HW, UW, and excess HM by:

a. Preparing and submitting HW/HM Disposal Worksheet to the cognizant ECO within five working days after a container of HW, UW, or HM becomes full.

b. Providing personnel, equipment, and supplies required to consolidate, repackage, or repack HW, UW, and HM as directed by EMD.

17. Performs and ensures unit UST monitoring requirements are accomplished according to EMD directives.

18. Informs the unit ECO of the need for any new projects or modifications to current structures which may have a potential effect on the environment.

Hazardous Waste Handler (HWH) List of Responsibilities

1. Prepares HW and UW for containerization, storage, and transportation.

2. Marks all containers with appropriate marking requirements in accordance with EMD direction.

3. Transfers or overpacks contents of unserviceable HW containers to serviceable DOT or approved mil-spec containers in compliance with EMD direction.

4. Reports all leaks or spills immediately to 911.

5. Collects and stores HW, UW, and excess HM awaiting disposal in accordance with EMD direction provided by Site Manager.

6. Handles, stores, or otherwise prevents HW, UW, or HM from becoming contaminated by unknown items, damage, vandalism, fires, spills, explosions, or other situations likely to pose a hazard to human health, or the environment.

7. Inspects HW generation sites and HW storage containers weekly for deficiencies and reports all discrepancies to the HW Site Manager.

8. Stores containers of HW in authorized and approved SAA's and 90-day accumulation areas.

9. Informs HW Site Manager when a container of HW becomes full and requires disposal.

10. Performs unit UST monitoring requirements according to EMD directives.

11. Informs the unit Hazardous Waste Site Manager of the need for any new projects or modifications to current structures which may have a potential effect on the environment.

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POINTS OF CONTACT

UNITED STATES MARINE CORPS
2D MARINE DIVISION
PSC BOX 20003
CAMP LEJEUNE NC 28542-003

From: Commanding General, 2d Marine Division
To: Distribution List

Subj: ECO AND AECO UPDATES

1. The following is an update of the ECO and AECO for 2D Marine Division.

UNIT	ECO	AECO	EXT
HQBN	Lt Uwin	Lt Dykeman/Cpl Krzyzak	305/5294
RECON	SSgt Sampson	LCpl Williams	1664/2711/3748
LAR	SSgt Sampson	Sgt Evans	2250/1992
TANKS	SSgt Guzman	Cpl Maxwell	3749
AAV	GySgt Brady	Sgt [redacted] PALMER	7616
CEB	SSgt Wertman	Cpl Evans	3711/3993
2nd MAR	Capt Bazylewic	SSgt Moore	3400/3737/3476
6th MAR	MSgt Herndon	Cpl Thompson	3054/2897
8th MAR	SSgt Taylor	Lcpl Shepka	3404/3460
10th MAR	SSgt Perry		2855
1/10	CWO Disemon	MSgt Woolford	3143/4487
2/10	CWO Ivy	SSgt Haywood	2680/3455
3/10	CWO Dupier	MgySgt Morris	1865
5/10	CWO Jones	SSgt Mitchell	1032
2D Mar Div	Capt Perez	GySgt Eckendorf/Cpl Barthold	0764/0765

EMD, Gene Jones	1482	Base ECCA GySgt Hamilton	1482
Industrial Hygenist	2707	Recycle	5468
PC&AO	3057	Division Excess	2046
Hospital	4900	HMDO SRIG	2698
Sanitary Landfill	2636	Bldg 67. EMD	5063
HMDO 2d FSSG	5534	UST's Greg Fitzpatrick	5063
Battery Consignment	3663	Cherry Point Pharm.DSN	582-4749
John Riggs	Environmental Control (Ops Officer)		
Thierry Chiapello	Environmental Quality Compliance		
Bruce Markwick	BIO SCIENCE TECH (Inspector)		

Last Updated: 030801

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REQUIRED REPORTS

REPORTS REQUIERED

HW/HM INSPECTIONS CHECKLIST..... twice A Month

FLAMM. LOCKERS INVENTORY..... WEEKLY

P.O.L. INVENTORY..... WEEKLY

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DISPOSAL OF HAZARDOUS WASTE AND MATERIALS

Disposal of Used Oil and Antifreeze:

1. Wait till ~~tank~~ 55 gal DRUM is ¾ full, check daily.
2. Call ~~EMD~~ BN HAZMAT, phone #~~451-1482/5468/3496~~ 450 7116.
3. ~~Give Bldg. #, phone #~~ INFORM THEM, what kind of waste you have, and how much you have.
4. ~~In 2-5 days the waste will be picked up~~ THEY WILL ~~COME~~ PICKED UP THE WASTE AND TAKE OVER. BN HAZMAT

Disposal of Used Batteries:

1. Used batteries are taken to the Bn battery shop, as needed.
2. Make sure that you are wearing the appropriate gear (rubber gloves, and apron) when handling these hazardous materials.
3. Storage of used batteries is not authorized at M.T. bldg. A2.

Disposal of Used Dry Sweep:

1. When drum is full, call for a forklift at Bn supply, or just take it over the POL area.
2. Make sure to apply the TWO MEN RULE when handling the drum.
3. Make sure to bring back the empty barrel to the motor pool.

Disposal of Scrap Metal and Wood:

1. Take all scrap metal and wood to Bn POL lot.
2. Notify the HWSM in the POL area, and he will let you know where to place the scrap metal or the wood.
3. Make sure to use the appropriate gear (leather gloves and safety boots) when handling these materials.

Disposal of [redacted], Empty Aerosol Cans, Soaked Mats, and Empty Fire Extinguishers:

1. All these hazardous materials have to go to Bn POL area at the ramp.

2. DO NOT punch holes in any of these hazardous materials.

4. Identify to the POL site manager what kind of hazardous materials you have and he will let you know what to do with every single one of them, and where to storage them.

Disposal of Expired Aerosol Cans:

1. Call phone # 450-7436/7586, Bn HAZ-MAT.

2. Tell Cpl Jackson or Sgt carpenter that you have aerosol cans that need to be re-inspected, and you need one of them to come down to the motor pool.

3. After the aerosol cans have been re-inspected the BN HAZ-MAT site manager will decide if:
   a) Tag each aerosol can with a new expiration date and allow you to use them.
   b) Decides that the aerosol cans can't be use no more.

4. If the aerosol cans can not be use no more you have to take them over the POL area at the ramp. And remember DO NOT punch holes in any of them.

DISPOSAL OF USED FILTERS:

1. LET THE USED FILTERS DRAIN FOR 24 HRS ON THE USED FILTERS 55 gal DRUM.

2. AFTER 24 HRS, WHEN THE USED FILTERS ARE COMPLETE DRAIN, TROW THEM IN THE TRASH.

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HOW TO HANDLE A SPILL

FIRE PROTECTION DIVISION
MARINE CORPS BASE
CAMP LEJEUNE, N. C. 28542-5000

BO11090.1B MAY 1981
HANDOUT # 12

I. HOW AND WHEN TO REPORT A SPILL

A. Following substance are examples of substances which must be reported if spilled on the ground or in the water in any amounts.

1. Lube oils
2. Gasoline(Mogas)
3. Kerosene
4. Lube Grease
5. JP4
6. JP5
7. Hydraulic Fluid
8. Acids
9. # 2 fuel oil
10. Paint thinner
11. Organic solvents
12. Cleaning soloutions
13. Poisonous Chemicals
14. # 6 Fuel oil

B. To report a spill call 911

1. Report to Base Fire Department
2. Give Location
3. Substance spilled(name, any identification)
4. Approximate amount(ex: Container Size)
5. Your Name and Phone #
6. Any dangerous properties of the material
7. Any exposures that are in danger
8. For unknown materials don't experiment but try to describe by looks

II. Initial Action When a Spill Occurs

A. Remain on Scene-DON'T LEAVE!

1. If safe keep personnel out of spill area
2. Call Fire Department
3. Collect any information possible on substance spilled(ex: material safety data sheets, empty containers)
4. Do not wash down with water
5. If safe block material runoff with dirt, sand, or absorbent material
6. Keep material from entering drains or ground water
7. Be perpared to assist the fire department with manpower or cleanup materials

8. Always remember to be safe don't take any action that would endanger the safety of you or others
9. Minimize the size of spill by cutting off or plugging the source

III. When the Fire Department Arrives

A. Senior Fire Offical Assumes Command

1. HMDU, or GSO should report to the fire department official
2. Furnish any information possible about the material
3. Stay with the fire department official until he securres you
4. Fire Department will contact EMD, Base safety and any other agencies needed

B. Fire Departments Role

1. Life safety and fire hazards
2. Coordinating all on scene activities
3. Containment of material

IV. Spill Cleanup

A. According to the Commanding Generals Memo of March 1989:

1. Personnel assigned to the worksite can cleanup the majority of small spills
2. This includes providing manpower, equipment and supplies
3. The organization shall be able to store the Hazardous Waste until disposal
4. Disposal is according to Natural Resources Guidelines

B. In the event the spill is to large or unsaft for the responsible organization to clean up the fire department will request the equipment, supplies, and personnel support from Base Maintenance, EMD and appropriate other resources

C. On All Spills

1. Notify Fire Department
2. Do not flush with water
3. Prevent Runoff with sand, dirt, absorbant materials
4. Prevent spill from entering a drain, basin, manhole, or ground water
5. Notify fire department if spill has entered any drains

D. Spills on Surface Waters

1. Call Fire Department
2. Emphasize that the spill is on the water
3. Check discharge site and cut off any further leakage
4. Do not allow boats or people into the spill area

2nd AABN SPILL EMERGENCY ACTION PLAN

1. CLEAR THE ARE TO A SAFE DISTANCE FROM THE SPILL (100 FT)

2. IN CASE OF FIRE OR INJURY, USE THE NEREST TELEPHONE, X-911. PERSONNEL MUST BE FAMILIAR WITH THE LOCATION OF THE NEREST TELEPHONE IN THERE ARE.

3. IMMEDIATELY REPORT SPILLS BY CONTACTING:

a.	CWO3 PERSELY	BN MAINT	OIC	AABN	X-7586/7616
b.	GYSGT BRADY	HAZMAT	ECO	AABN	X-7586/7616
c.	SGT PALMER	HAZMAT	AECO	AABN	X-7586/7616
d.	SGT PALMER	HAZMAT	POL	AABN	X-7586/7616

****ABOVE MARINES CAN BE REACHED BY X- OR BY BN RECALL ROSTER****

4. GET A COUNT OF PERSONNEL, AND PASS THE WORD IN ADJACENT WORK SPACES.

5. COMMENCE RESCUE OF ANY INJURED PERSONNEL WHEN POSSIBLE WITHOUT UNNECESSARILY RISKING YOUR OWN SAFETY.

6. CONTAIN THE SPILL IF IT IS SAFE TO DO SO, KEEPING SAFETY A PRIMARY CONSERN. **(MOST HAZARDOUS SUBSTANCES CREATE VAPORS, WHICH HAVE CHARACTERISTICS THAT MAY CAUSE A FIRE, EXPLOSION OR TOXIC EXPOSURE HAZARD.**

7. CONTROL ENTRY INTO THE AREA AND BEGIN CLEAN-UP MEASURES CONSISTANT WITH SAFETY PROCEDURES.

8. INTIATE SPILL REPORT FORM. (LOCATED IN ECO OFFICE)

9. NOTE: NO PHONE CALLS WILL BE MADE TO ANYONE PRIOR TO DISCUSSING THE PROBLEM WITH ABOVE NAMED INDIVIDUALS.

*****ITEMS CONSIDERED TO BE HAZARDOUS ARE*****

1. CONTAMINATED RAGS
2. CONTAMINATED DRY SWEEP
3. OIL
4. FUEL
5. ANTIFREEZE
6. BATTERIES
7. GREASE
8. SOLVENTS
9. FILTERS
10. HYDROLIC FLUID

**ANY ITEM FOUND IMPROPRLY DISPOSED OF OR STORED, WILL BE REPORTED IMMEDIATELY TO GYSGT BRADY OR SGT PALMER AT THE 2AA BN HAZMAT OFFICE, 450-7586/7616.

GYSGT BRADY
BN ECO

MAJ. RIVINIUS
BN S-4

HAZARD COMMUNICATION
WRITTEN PROGRAM

STARTED: 09-11-97
UP DATED: 08-30-01

I. GENERAL

The purpose of this instruction is to ensure that 2nd AABn is in compliance with the OSHA Hazard Communication Standard – (HCS) 29 CFR.1910.1200

The Occupational Safety and Health Manager (OS&H Manager) **GySgt Munoz** (Battalion Safety Chief) or other technically qualified designee is the overall coordinator of the facility program acting as the representative of **Maj Rivinius** (S-4 Officer) who has overall responsibility.

In general, each employee in the facility will be appraised of the substance on the HCS, the hazardous properties of the chemical they work with, and measures necessary to protect themselves from these chemicals.

II. List of hazardous chemicals

GySgt Brady or designee will maintain an MSDS library on every substance on the list of hazardous chemicals used in the facility, and update the list as necessary. The hazardous chemical list will be updated upon receipt of the hazardous chemical at the facility. The list of hazardous chemicals is maintained at the ramp (Bldg A-47)

III. Material-Safety Data Sheets (MSDS's)

GySgt Brady or designee will maintain an MSDS library on every substance on the list of hazardous chemicals on the ramp. The MSDS will consist of a fully completed OSHA form 174 or equivalent. The ramp manager or supervisor will ensure that each work area or shop will maintain MSDS for the hazardous material used in that area. MSDS's will be readily available to all employees.

GySgt Brady or designee is responsible for acquiring and updating MSDS's. **GySgt Brady** or designee will review each MSDS for accuracy and completeness and will consult with area / region / headquarters OS&H manager if additional research is necessary.

GySgt Brady or designee will clear all new procurements for the facility. Whenever possible, the least hazardous will be procured.

MSDS's that meet the requirements of HCS must be fully completed and received at the facility either prior to, or at the time of receipt for the first shipment of any potentially hazardous chemical purchased from a vendor. It may be necessary to discontinue procurement failing to provide approved MSDS's in a timely manner.

IV. Labels and other forms of Warnings

Sgt Palmer is designated to ensure that all hazardous chemicals in the facility are properly labeled. Labels should list at least the chemicals identified, appropriate hazard warnings, and the name and address of the manufacturer, importer or other responsible party. **Sgt Palmer** will refer to the corresponding MSDS's to verify labels information. Immediate use of containers such as small containers into which material drained for use on that shift by employee drawing the material do not require labeling. To meet labeling requirements of HCS for other in-house containers, refer to label supplied by the manufacturer. **Sgt Palmer** will approve all labels for in-house use containers prior to their use. **GySgt Brady** will check on a monthly basis to ensure that all containers in the facility are labeled and that the labels are up to date.

V. Initial Training

Each employee who works with or is potentially exposed to chemicals will receive initial training on the HCS and the safe use of those hazardous chemicals. Additional training will be provided for employees whenever a new hazard is introduced to their work areas. **GySgt Brady** or **Sgt Palmer** conducts hazardous chemical training. (Attach a copy of course outline, training schedules, and a description of the course materials).

The Training will emphasize on these elements:

1. A summery of the standard and this written program.
2. Hazardous chemical properties including visual appearances, odor and methods that can be used to detect the presence or release of hazardous chemicals.
3. Physical and health hazards associated with potential exposure to work place chemicals.
4. Procedure to protect against hazards example; personnel protective equipment, work practices and emergency procedures.
5. Hazardous chemical spills and leak procedures, where MSDS's are located, how to understand there content and how they can use and obtain appropriate hazard information.

GySgt Brady or designee will monitor and maintain records of employee training and advise the facility manager on training needs.

VI. Contractor Employers

GySgt Brady or designee upon notification from **Maj Rivinius** will advise outside contractors of any chemical hazards, which may be encountered in there normal course of their work on the premises.

VII. Non-Routine Task

Maintenance or others contemplating a non-routine task, example; boiler repair will consult with **GySgt Brady** or designee, and will ensure that the employees are informed of chemical hazards associated with the performance of these task and appropriate protective measures. This will be accomplished by a meeting of supervisors and the OS&H manager with affected employees before such work begins.

VIII. Additional Information

Further information on this written program, the Hazard Communication Standard and applicable MSDS's is available at the ramp (Bldg a-47 EXT 450-7616).

GySgt Brady
Bn ECO

Maj Rivinius
S-4

SPILL CONTINGENCY PLAN

FLAMMABLE LOCKER (MOTOR T) **A-2**
NAME OF FACILITY BLDG.#

1. In the event that a hazardous material/hazardous waste spill, fire, release of toxic fumes or similar emergency occurs, the following action is to be taken

    a. **Immediately alert employees/persons** in the immediate area of the emergency and begin evacuation of any persons subjected to injury by emergency. The communication method to be used to alert persons will be by **Voice**. Evacuees shall assemble at **THE FRONT OF THE BLDG.**
    b. Immediately, **notify the Base Fire Department, extension 911**. Provide the fire department dispatcher with the following information:
        (1) Best estimate/available knowledge of the amount and the type of hazardous substance spilled.
        (2) Location of emergency.
        (3) Whether or not persons have been or are likely to be injured.
        (4) Any other information helpful to emergency response personnel. Stay on the line with the dispatcher and follow the dispatcher's instructions if you can safely do so. Continue to advise the dispatcher of changing circumstances.
    c. Assign one person to meet the emergency vehicle and guide the fir department personnel to the spill/emergency site.
    d. Begin assembling emergency supplies and equipment available at the work site. A list of these items, there location, and personnel responsible for providing the are contained in attachment (A)
    e. If circumstances of the emergency permits, and with the fire departments instructions, begin containment of the spill by shutting off the valves, constructing an earthen dike, and application of absorbent. Only personnel trained and authorized by the ECO shall be allowed to enter the immediate area of the spill. Paragraph 4 provides a list of personnel authorized to enter the area and action they are expected to take. Upon arrival at the scene, the fire department will control access to the site.
    f. Under no circumstances shall personnel undertake any action, which would expose them to toxic chemicals, fumes, and or gases unless the proper type(s) of well-maintained personnel protective equipment is used and the fire department has authorized its use.

2. The senior fire department official on the scene is the On Scene Commander. All Marine Corps, Navy and Civilian personnel on the scene are expected to provide available resources, as the On Scene Commander deems necessary to abate the emergency and protect life and environment.

3. Other officials to be notified:
    a. Base Environmental Management Department, ext: 451-1482
    b. OIC Representative: **1st Lt Sims**, ext: 451-8047
    c. Unit ECO: **GySgt Brady**, ext: 450-7616

4. Below is a roster of personnel authorized and trained to respond to hazardous material and waste spills/emergencies.

Rank/Name/Title		**Emergency Responsibilities**
GySgt Brady P.M	ECO	Ensure the below personnel are properly Trained in the event of a pollutant spill.
Sgt Palmer G.C.	AECO	Follow instructions contained in part 1.
Sgt Palmer G.C.	Site Manager	Notify OIC, ECO, AECO and Site Manager. In the absence of the Site Manager, follow The instructions contained in part 1.

I hereby certify the above personnel are properly trained and authorized to carry out The specific responsibilities shown above. These individuals shall assist in the handling of Hazardous material/waste spills and related emergencies to the extent that they so safely.

ECO Signature

11 APRIL 02
Date

ATTACHMENT A

Inventory of available Spill Response Equipment

Item description/location/ Name and phone # of person Responsible for maintaining And providing item	Types of Hazardous Material and Waste to be used on
1. 1 Bag of absorbent material/Pol Lot, /Site manager	Paints all types Silicones, Grease, Petroleum's
2. 1 Roll of absorbent material/Pol Lot, /site Manager	
3. 4 Floor brooms/ in A-47/Site Manager	
4. 2 pair of Protective gloves/Pol lot, Tool Rooms /Site Manager	
5. 2 Full Face shields/Tool Rooms /Site Manager	
6.1 55 gallon drum/Pol lot /Site Manager	

Respiratory Protection: Avoid breathing of vapors or sprat mist. If needed use NISOSH/mshatc-23c or equivalent.
Ventilation: Local exhaust ventilation.
Protective Gloves: Recommended
Eye Protection: Safety glasses with imperforated side shields.
Other Protective Equipment: Explosive proof lighting and ventilation equipment.
Work Hygienic Practices: NK
Neutralizing Agent: Baking soda

Date: 30 August 01
01

Approved: ECO/01 July

HAZARDOUS MATERIAL BUISNESS PLAN

II. EMERGENCY RESPONSE PLAN

1. Business Name: 2ND ASSAULT AMPHIBIAN BATTALION

2. Business Site Address: BUILDING A-47 COURT HOUSE BAY, CAMP LEJUNE NORTH CAROLINA 28542

3. Business Phone: (910)-450-7586/7436 24 Hour: (910)-450-7509 (OOD)

4. Brief description of activity and/or services provided: To ensure continuous environmental compliance throughout the BN with current applicable laws, regulations, and orders pertaining to the acquisition, distribution, use, handling, and disposal of hazardous materials and waste.

5. Evacuation Procedures: Any employee that identifies a life-threating situation that warrants an evacuation, shall initiate the evacuation of the facility. The evacuation shall be initiated by verbal commands & intercom. Evacuate quickly and without haste. The evacuation routes and staging areas are noted on the site map. Upon reaching the staging area, conduct a head count and initiate notifications.

6. Notification Procedures: In the event of a release or threatened release of hazardous materials, the following agencies are to be notified:

	AGENCY	PHONE#
a.	Fire Department (C.H.B. # 7 CLNC)	911 or 450-7221
b.	Provost Marshall's Office	911 or 451-2455
c.	Naval Hospital (BAS C.H.B. CLNC)	911 or 450-7365 450-7338
d.	AC/S Environmental Security	451-2083
e.	*State Office of Emergency Services	(800) 852-7550

*AC/S, Environmental Security will complete off base notifications.

Name of person (s) responsible for completing notifications: ECO GySgt Brady, AECO Sgt Palmer

7. Emergency Procedures:

Fires and Explosions:

1. Keep calm, don't panic, and don't take unnecessary risk!
2. Do not attempt to extinguish flames unless safe.
3. If situation warrants, initiate Evacuation Procedures (see item 5)
4. Initiate Notification Procedures (see item 6) and report the following:
    a. Description of incident
    b. Assistance requested
    c. Location of the incident
    d. Number and extent of injuries (if applicable)
    e. Name and quantity of hazardous material involved (if applicable or known)
    f. Name and number of reporter
5. Provide follow up information to responders upon arrival.

HAZARDOUS MATERIALS BUSINESS PLAN

II. EMERGECY RESPONSE PLA (CONT'D)

Releases and Spills:
NOTE: Your focus is to protect human health first, and then the environment.

1. Keep calm, don't panic, and don't take unnecessary risk!
2. Small spill (safe conditions and under 55 gallons)
    a. If absolutely safe and with the proper PPE, stop release and contain it.
    b. Report spill to Hazmat.
    c. Using absorbent, clean up the spilled material.
    d. Package and mark the waste
3. Small or large spills (unsafe conditions)
    a. If conditions are not safe or if you are in doubt, evacuate to a safe distance. Also, if the situation warrants it, initiate the Evacuation Procedures (see item 5)
    b. If safe, restrict sources of ignition.
    c. The situation, the Emergency Coordinator, or Alternate Emergency Coordinator will make the determination if the spill will be handled by the facility personnel.
        i. If it is decided that the release will be handled by the facility personnel, the Emergency Coordinator or Alternate will develop a plan of action.

    d. If the situation warrants it, initiate the Notification Procedures (see item 6). Report the following:
        i. Description of the incident
        ii. Assistance requested
        iii. Location of the incident
        iv. Number and quantity of hazardous materials involved
        v. Name and number of the reporter

    e. Provide follow up information to responders upon arrival.

8. Primary Emergency Coordinator: GySgt Brady

Title: Environmental Compliance Officer

Work Phone: (910) – 450-7616 Home Phone: (910) – 577-8395

Address: 5561 Indiana St Camp Lejeune NC. 28547

9. Alternate Emergency Coordinator: Sgt Palmer

Title: Assistant Environmental Compliance Officer

Work Phone: (910) – 450-7616 Home Phone: (910) –

Address:

10. Describe arrangements with local fire department:

The Camp Lejeune Fire Department (CLFD) is designated and will be contacted to be the first responders for any base emergency dealing with fires, explosions, and unsafe releases of hazardous materials or emergency rescue operations. Upon arriving on scene, the CLFD will initiate the Incident

Command System and take appropriate actions as the emergency dictates. The CLFD has been approved a copy of this Emergency Response Plan.

HAZARDOUS MATERIALS BUSINESS PLAN

II. EMERGENCY RESPONSE PLAN (CONT'D)

11. Describe arrangements with the Provost Marshall's office:

The Camp Lejeune Provost Marshall's office (Military Police) will be contacted in emergency situations to provide crowd and traffic control. Upon arrival, the military police will receive instructions from the on scene commander. The military police have been provided a copy of this Emergency Response Plan.

12. Describe arrangements with the local hospital:

The Camp Lejeune Naval Hospital (CLNH) will be contacted in emergency situations to provide ambulatory and medical services. If any individual becomes a casualty from exposure to a hazardous material, all efforts will be made to have the applicable Material Safety Data Sheets (MSDS) transported with the victim. If a MSDS is not immediately available, one will be provided to the Naval Hospital as soon as possible. The Naval Hospital has been provided a copy of this Emergency Response Plan.

13. Describe signals to begin evacuation, evacuation routes, and alternate evacuation routes (in cases where the primary routes could be blocked by releases of hazardous waste or fires):

The signals to be used to initiate an evacuation will be verbal commands & intercom. The primary and alternate evacuation routes are noted on the enclosed site map.

14. This Emergency Response Plan will be reviewed annually. Additionally, the plan will be immediately updated when any of the following instances occur:

    1. The Emergency Coordinator change
    2. The facility changes
    3. The Emergency Equipment changes
    4. The plan fails in an emergency
    5. The regulations change

TAB PLACEMENT HERE

DESCRIPTION:

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9/08

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

M S D S

What Must Be On Them

- IDENTITY AS USED ON THE LABEL
- PHYSICAL & CHEMICAL CHARACTERISTICS
  (bp vp fp etc.)
- PHYSICAL HAZARDS OF HAZARDOUS CHEMICAL
  potential for fire explosion & reactivity
- HEALTH HAZARDS OF HAZARDOUS CHEMICAL(S)
  signs,symptoms of exposure + medical condition
  that could be aggravated by exposure
- PRIMARY ROUTE(S) OF ENTRY
- OSHA PERMISSIBLE EXPOSURE(PEL),T L V OR THE MANUFACTURE'S
- WHETHER CHEMICAL IS LISTED BY:
  NTP-ANNUAL REPORT ON CARCINOGENS
  APC-MONOGRAPHS (potential carcinogen)
  OSHA
- GENERAL PRECAUTIONS FOR SAFE HANDING & USE
  hygienic practices,protective measures-repair or
  maintenance of contaminated equipment.,clean up - spill leaks
- GENERAL APPLICABLE CONTROL MEASURE
  engineering controls,work practices,ppe
- EMERGENCY & FIRST AID PROCEDURES
- DATE OF PREPARATION OR LAST CHANGE
- NAME,ADDRESS,TELEPHONE NUMBER
  of responsible party -provide additional information
  and appropriate emergency procedures

Material Safety Data Sheet

Genium Publishing Corporation
1145 Catalyn Street
Schenectady, NY 12303-1836 USA
(518) 377-8855

GENIUM PUBLISHING CORP.

No. 9
SULFURIC ACID, CONCENTRATED
Revision C
Issued: October 1980
Revised: February 1986

SECTION 1. MATERIAL IDENTIFICATION

MATERIAL NAME: SULFURIC ACID, CONCENTRATED 39

OTHER DESIGNATIONS: Oil of Vitriol, Hydrogen Sulfate; H_2SO_4; CAS #7664-93-9

MANUFACTURER/SUPPLIER: Available from many suppliers, including:
Allied Corporation, PO Box 2064R, Morristown, NJ 07960; Telephone: 800 631-8050

HMIS
H:3
F: 0
R: 2
PPE: *
* See Sect. 8

R 1
I 3
S 4
K 0

SECTION 2. INGREDIENTS AND HAZARDS

	%	HAZARD DATA
Hydrogen Sulfate (H_2SO_4) Water	93-98 Balance*	8-hr TWA: 1 mg/m^3 Human, Mist Inhalation, TCLo: 3 mg/m^3, 24 wk. (Toxic Mouth Effects) Rat, Oral, LD_{50}: 2140 mg/kg

* Material is obtained by the reaction of SO_3 and water. Can contain low impurity levels, such as 0.02% max of iron as Fe. Properties vary with H_2SO_4 content.

Current OSHA standard and ACGIH (1985-86) TLV. NIOSH has a 10-hr TWA, 40-hr. work week, of 1 mg/m^3.

SECTION 3. PHYSICAL DATA

	93.19% H_2SO_4	98.33% H_2SO_4	100% H_2SO_4
Boiling Point, 1 atm, deg C	ca 281	ca 338	ca 330 (dc)
Specific Gravity (60/60°F)	1.8354	1.84	1.84
Volatiles, % @ 340°C	ca 100	ca 100	ca 100
Melting Point, deg C	ca -34	ca 3	10.4

Water Solubility -- Complete Miscible

Vapor Pressure, mm Hg @ 100°F -- <1 (93.19% H_2SO_4); Deg. Baume -- 66 (93.19% H_2SO_4) - Density of H_2SO_4 is often reported in degrees Baume Be). Formula is Be=145 [145/sp gr for liquids heavier than water].

Appearance and odor: Clear, colorless, hygroscopic, oily liquid with no odor. Mists greater than 1 mg/m^3 are easily recognizable. Those at 5 mg/m^3 are distinctly objectionable.

SECTION 4. FIRE AND EXPLOSION DATA

Flash Point and Method	Autoignition Temp.	Flammability Limits In Air	LOWER	UPPER
None - Nonflammable	NA	NA	NA	NA

Sulfuric acid is nonflammable; however, it is a strong oxidizing agent and may cause ignition by contact with combustible materials. Small fires may be smothered with suitable dry chemical. Cool exterior of storage tanks of H_2SO_4 with water to avoid rupture if exposed to fire. Do not add water or other liquid to the acid! The acid, especially when diluted with water, can react with metals to liberate flammable hydrogen gas.

Sulfuric acid mists and vapors from a fire area are corrosive (see sect. 5).

Fire fighters must wear self-contained breathing equipment and fully protective clothing.

SECTION 5. REACTIVITY DATA

Sulfuric acid is stable under normal conditions of use and storage. It does not undergo hazardous polymerization. It is a strong mineral acid reacting with bases and metals. The concentrated acid is also a dehydrating agent, picking up moisture readily from the air or other materials. Hydrogen gas may be generated within a H_2SO_4 container. Vent drums cautiously.

This material reacts exothermically with water. (Acid should always be added slowly to water. Water added to acid can cause boiling and uncontrolled splashing of the acid.) Sulfur oxides can result from decomposition and from oxidizing reactions of sulfuric acid.

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6204. UNDERSTANDING THE MATERIAL SAFETY DATA SHEET. Although 29 CFR 1910.1200 mandates the information in Section C. above be included in every Material Safety Data Sheet. The regulation does not require the information to be presented in any specific order or format. Generally, the legally mandated information is divided into nine (9) sections and presented in the following manner.

Table 6.2 MATERIAL SAFETY DATA SHEET REQUIREMENTS

SECTION	DESCRIPTION
1	Product Identification
2	Hazardous Ingredients
3	Physical Data
4	Fire and Explosion Data
5	Health Hazard Data
6	Reactivity Data
7	Spill or Leak Procedures
8	Special Protection Information
9	Special Precautions
10	Transportation Information

[redacted]

Hazardous Materials Warning Placards

CLASS 1

EXPLOSIVES
*Enter Division Number 1.1, 1.2, or 1.3 and compatibility group letter, when required. Placard any quantity.

CLASS 1

EXPLOSIVES 1.4
*Enter compatibility group letter, when required. Placard 454 kg (1,001 lbs) or more.

CLASS 1

EXPLOSIVES 1.5
*Enter compatibility group letter, when required. Placard 454 kg (1,001 lbs) or more.

CLASS 1

EXPLOSIVES 1.6
*Enter compatibility group letter, when required. Placard 454 kg (1,001 lbs) or more.

CLASS 2

OXYGEN
Placard 454 kg (1,001 lbs) or more gross weight of either compressed gas or refrigerated liquid.

CLASS 2

FLAMMABLE GAS
Placard 454 kg (1,001 lbs) or more.

CLASS 2

NON-FLAMMABLE GAS
Placard 454 kg (1,001 lbs) or more gross weight.

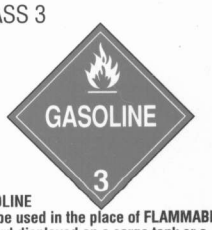
CLASS 2 Division 2.3

POISON GAS
Placard any quantity.

CLASS 3

FLAMMABLE
Placard 454 kg (1,001 lbs) or more.

CLASS 3



GASOLINE
May be used in the place of FLAMMABLE placard displayed on a cargo tank or a portable tank being used to transport gasoline by highway.

CLASS 3

COMBUSTIBLE
Placard a combustible liquid when transported in bulk. See §172.504(f)(2)for use of FLAMMABLE placard in place of COMBUSTIBLE placard.

CLASS 3

FUEL OIL
May be used in place of COMBUSTIBLE on a placard displayed on a cargo tank or portable tank being used to transport by highway fuel oil not classed as a flammable liquid.

CLASS 4

FLAMMABLE SOLID
Placard 454 kg (1,001 lbs) or more.

CLASS 4

SPONTANEOUSLY COMBUSTIBLE
Placard 454 kg (1,001 lbs) or more.

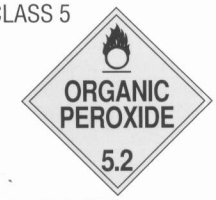
CLASS 4

DANGEROUS WHEN WET
Placard any quantity of Division 4.3 material.

CLASS 5

OXIDIZER
Placard 454 kg (1,001 lbs) or more.

CLASS 5



ORGANIC PEROXIDE
Placard any quantity, TYPE B, temperature controlled. Placard 454 kg (1,001 lbs) or more other than TYPE B, temperature controlled.

CLASS 6

POISON-INHALATION HAZARD
Placard any quantity of 6.1, Zone A or B inhalation hazard only.

POISON
Placard 454 kg (1,001 lbs) or more of PGI or II, other than Zone A or B inhalation hazard.

KEEP AWAY FROM FOOD
Placard 454 kg (1,001 lbs) or more of PG III.

CLASS 7

RADIOACTIVE
Placard any quantity - packages bearing RADIOACTIVE YELLOW-III labels only. Certain low specific activity radioactive materials in "exclusive use" will not bear the label, but the Radioactive placard is required for exclusive use shipments of low specific activity material and surface contaminated objects transported in accordance with §173.427 (b)(3) or (c).

CLASS 8

CORROSIVE
Placard 454 kg (1,001 lbs) or more.

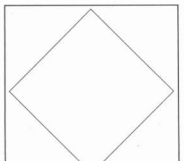
CLASS 9

MISCELLANEOUS
Not required for domestic transportation. A bulk packaging containing a Class 9 material must be marked with the appropriate ID number displayed on a Class 9 placard, an orange panel or a white square-on-point display.

DANGEROUS
A freight container, unit load device, transport vehicle, or rail car which contains non-bulk packagings with two or more categories of hazardous materials that require different placards specified in Table 2 may be placarded with DANGEROUS placards instead of the specific placards required for each of the materials in Table 2. However, when 1,000 kg (2,205 lbs) or more of one category of material is loaded at one loading facility, the placard specified in Table 2 must be applied.

SUBSIDIARY RISK PLACARD

Class numbers do not appear on a subsidiary risk placard.



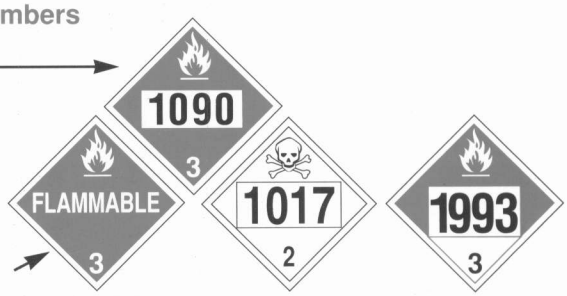
White square background required for placard for highway route controlled quantity radioactive material and for rail shipment of certain explosives and poisons, and for flammable gas in a DOT 113 tank car (see §§172.507 and 172.510).

UN or NA Identification Numbers

PLACARDS OR ORANGE PANELS

and

Appropriate Placard must be used.



MUST BE DISPLAYED ON: (1) Tank Cars, Cargo Tanks, Portable Tanks, other Bulk Packaging, and (2) On vehicle or containers containing large quantities (8,820) lbs.) In non-bulk packages of only a single hazardous material, and certain quantities (2,205) of a material poisonous by inhalation in Hazard Zone A or B, having the same proper shipping name and Identification number.

Guidebook handy! **Response begins with identification!**

General Guidelines on Use of Warning Labels and Placards

LABELS

See 49 CFR, Part 172, Subpart E for complete labeling regulations.

- Until October 1, 1999, labels for materials poisonous by inhalation that conform to the requirements of the HMR in effect on September 30, 1997, may be used to satisfy the requirements of Subpart E.
- Those labels in boxes marked "TRANSITION-2001" on the chart are not authorized for use under Subpart E. (NOTE: these labels may be used IF they were affixed to a package offered for transportation and transported prior to October 1, 2001, and the package was filled with hazardous materials prior to October 1, 1991.)
- For classes 1,2,3,4,5,6 and 8, text indicating a hazard (e.g., "CORROSIVE") IS NOT required on a label. The label must otherwise conform to Subpart E [Section 172.405].
- Any person who offers a hazardous material for transportation MUST label the package, if required [Section 172.400(a)].
- The Hazardous Materials Table [Section 172.101] identifies the proper label(s) for the hazardous material listed.
- When required, labels must be printed on or affixed to the surface of the package near the proper shipping name [Section 172.406(a)].
- When two or more labels are required, they must be displayed next to each other [Section 172.406(c)].
- Labels may be affixed to packages when not required by regulations, provided each label represents a hazard of the material contained in the package [Section 172.401].

PLACARDS

See 49 CFR, Part 172, Subpart F for complete placarding regulations.

- Until October 1, 2001, placards for materials poisonous by inhalation, by all modes of transportation, may be used that conform to specifications for placards (1) in effect on September 30, 1991, (2) specified in the December 21, 1990 final rule, (HM-181) or (3) specified in the July 22, 1997 final rule (HM-206).
- All of the placards appearing on the Hazardous Materials Warning Placards chart may be used to satisfy the placarding requirements contained in Subpart F.
- Each person who offers for transportation or transports any hazardous material subject to the Hazardous Materials Regulations shall comply with all applicable requirements of Subpart F.
- Placards may be displayed for a hazardous material even when not required, if the placarding otherwise conforms to the requirements of Subpart F.
- For other than Class 7 or the OXYGEN placard, text indicating a hazard (e.g., "CORROSIVE") is not required on a placard [Section 172.519(b)].
- Any transport vehicle, freight container, or rail car containing any quantity of material listed in Table 1 must be placarded [Section 172.504].
- When the gross weight of all hazardous materials in non-bulk pkgs. covered in Table 2 is less than 454 kg (1,001 lbs), no placard is required on a transport vehicle or freight container [Section 172.504].

Effective October 1, 1994, and extending through October 1, 2001, these placards may be used for HIGHWAY TRANSPORTATION ONLY.

Illustration numbers in each square refer to Tables 1 and 2 below.

Inhalation Hazard Materials

§172.540

§172.555

§172.313

Materials which meet the inhalation toxicity criteria have additional "communication standards" prescribed by the HMR. First, the words "Poison-Inhalation Hazard" must be entered on the shipping paper, as required by Section 172.203(m)(3). Second, packagings must be marked "Inhalation Hazard" or, alternatively, when the words "Inhalation Hazard" appear on the label or placard, the "Inhalation Hazard" marking is not required on the package. Transport vehicles, freight containers, portable tanks and unit load devices that contain a poisonous material subject to the "Poison-Inhalation Hazard" shipping description, must be placarded with a POISON INHALATION HAZARD or POISON GAS placard, as appropriate. This shall be in addition to any other placard required for that material in Section 172.504.

Table 1 (Placard any quantity)

Hazard class or division	Placard name
1.1	EXPLOSIVES 1.1
1.2	EXPLOSIVES 1.2
1.3	EXPLOSIVES 1.3
2.3	POISON GAS
4.3	DANGEROUS WHEN WET
5.2 (Organic peroxide, Type B, liquid or solid, temperature controlled)	ORGANIC PEROXIDE
6.1 (Inhalation Hazard, Zone A or B)	POISON INHALATION HAZARD
7 (Radioactive Yellow III label only)	RADIOACTIVE

Table 2 (Placard 1,001 pounds or more)

1.4	EXPLOSIVES 1.4
1.5	EXPLOSIVES 1.5
1.6	EXPLOSIVES 1.6
2.1	FLAMMABLE GAS
2.2	NON-FLAMMABLE GAS
3	FLAMMABLE
Combustible Liquid	COMBUSTIBLE
4.1	FLAMMABLE SOLID
4.2	SPONTANEOUSLY COMBUSTIBLE
5.1	OXIDIZER
5.2 (Other than organic peroxide, Type B, liquid or solid, temperature controlled)	ORGANIC PEROXIDE
6.1 (PG I or II, other than Zone A or B inhalation hazard)	POISON
6.1 (PG III)	KEEP AWAY FROM FOOD
6.2	NONE
8	CORROSIVE
9	CLASS 9
ORM-D	NONE

For complete details, refer to one or more of the following:

- Code of Federal Regulations, Title 49, Transportation, Parts 100-185. [All modes]
- International Civil Aviation Organization (ICAO) Technical Instructions for Safe Transport of Dangerous Goods by Air [Air]
- International Maritime Organization (IMO) Dangerous Goods Code [Water]
- Transportation of Dangerous Goods Regulations of Transport Canada. [All Modes]

U.S. Department of Transportation

Research and Special Programs Administration

Copies of this Chart can be obtained by writing

OHMIT/DHM-51, Washington, D.C. 20590

or

Phone: **202-366-4900**

E-mail: **training@rspa.dot.gov**

Web site: **http//hazmat.dot.gov**

CHART 11
REV. JULY 1998

Hazardous Materials Warning Labels

CLASS 1 Explosive 1.1 1.2 1.3

*Include appropriate division number and compatibility group letter.

CLASS 1 Explosive 1.4

*Include appropriate compatibility group letter.

CLASS 1 Explosive 1.5

*Include appropriate compatibility group letter.

CLASS 1 Explosive 1.6

*Include appropriate compatibility group letter.

CLASS 2 Division 2.1

Flammable gas

CLASS 2 Division 2.2

Non-flammable gas

CLASS 2 Division 2.2

Oxygen

CLASS 2 Division 2.3

Poison gas

CLASS 3

Flammable liquid

CLASS 4 Division 4.1

Flammable solid

CLASS 4 Division 4.2

Spontaneously Combustible

CLASS 4 Division 4.3

Dangerous when wet

CLASS 5 Division 5.1

Oxidizer

CLASS 5 Division 5.2

Organic peroxide

CLASS 6 Division 6.1

Poison-Inhalation Hazard only, Zone A or B.

CLASS 6 Division 6.1

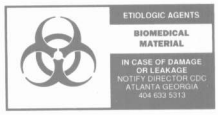
POISON
Placard 454 kg (1,001 lbs) or more of PG I or II, other than Zone A or B, inhalation hazard.

CLASS 6 Division 6.1

Poison-PG III

CLASS 6 Division 6.2

Infectious substance



29 CFR 1910.1030 BIOHAZARD marking may be used for Regulated Medical Waste (RMW).

CLASS 7

Radioactive WHITE-I

CLASS 7

Radioactive YELLOW-II

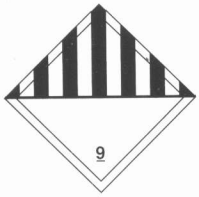
CLASS 7

Radioactive YELLOW-III

CLASS 8

Corrosive

CLASS 9



Miscellaneous

SUBSIDIARY RISK LABELS

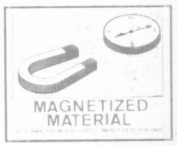
Explosive
Flammable gas
Flammable liquid
Flammable solid
Corrosive
Oxidizer
Poison
Spontaneously Combustible
Dangerous when wet

The class number may not be displayed on a subsidiary label (see Section 172.402).

EMPTY

Empty-Radioactive

FOR AIRCRAFT



Cargo Aircraft Only

TRANSITION-2001

TRANSITION-2001

TRANSITION-2001

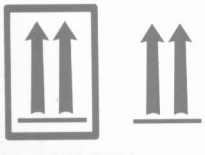
TRANSITION-2001

TRANSITION-2001

TRANSITION-2001

HAZARDOUS MATERIALS MARKINGS

§173.25(a)(4)



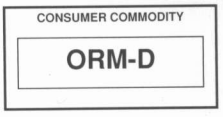
§172.312(a)

§172.322

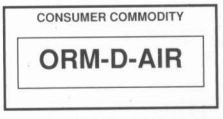
§172.325

§172.302(g) and §173.9

§172.313(a)



§172.316(a)



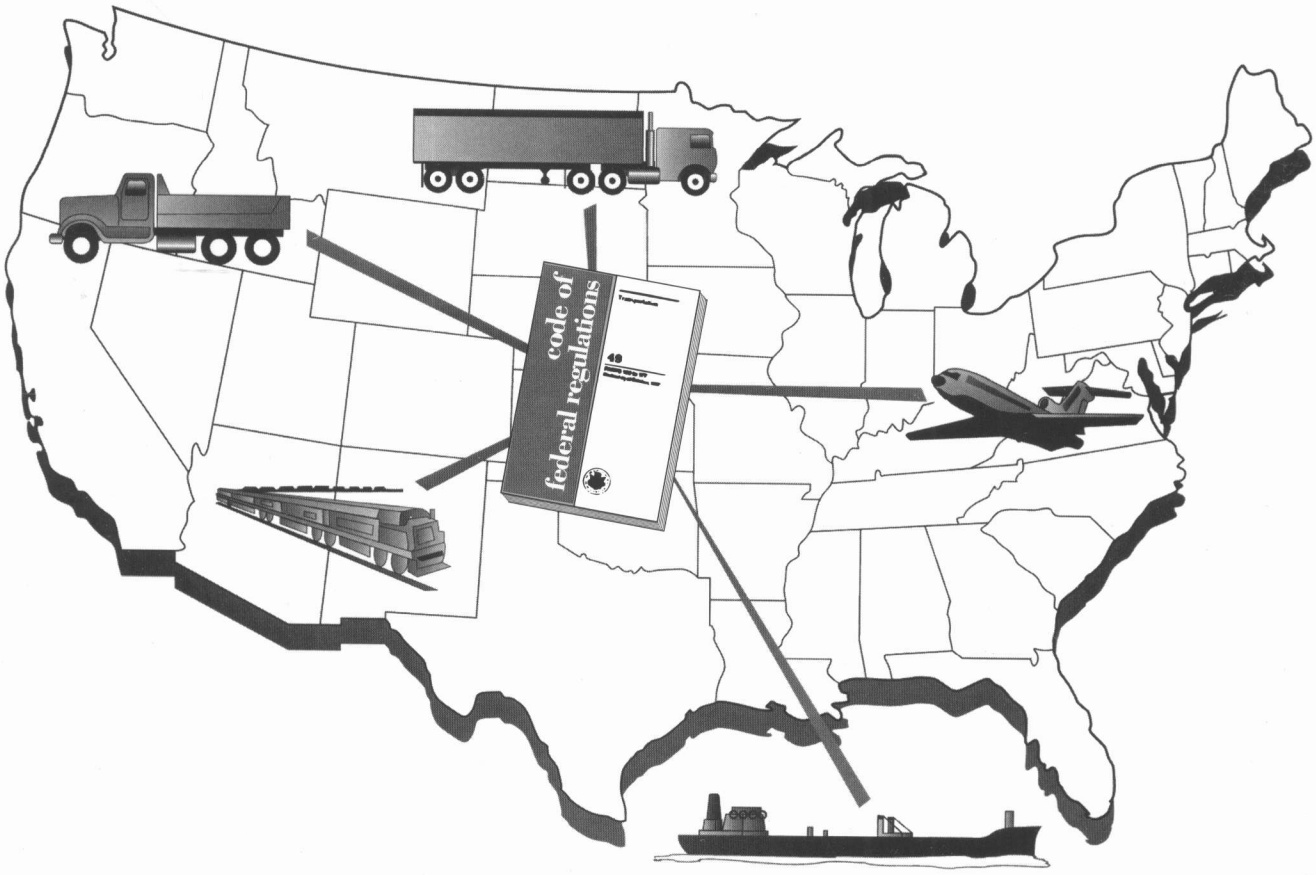
§172.316(a)(1)

Keep a copy of the North American Emergency Response

U.S. Department of Transportation
Research and Special Programs Administration

DOT CHART 11

Hazardous Materials Marking, Labeling & Placarding Guide



Refer to 49 CFR, Part 172:

Marking - Subpart D

Labeling - Subpart E

Placarding - Subpart F

Emergency Response - Subpart G

NOTE: **This document is for general guidance only and must not be used to determine compliance with 49 CFR, Parts 100-185.**

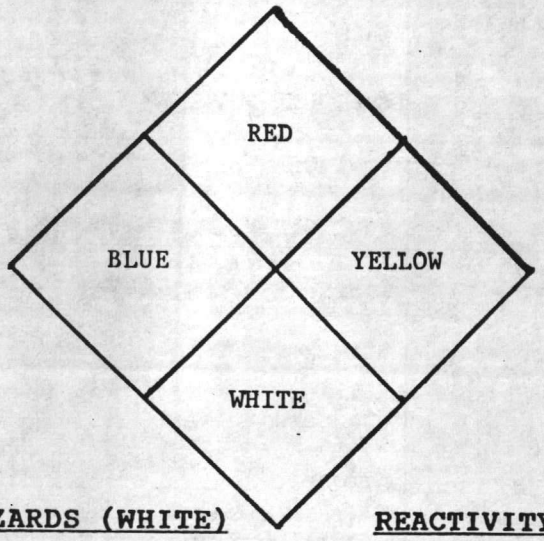
NFPA FIRE DIAMOND
FIRE HAZARD CODE 325-M
NATIONAL FIRE PROTECTION AGENCY

HEALTH HAZARD (BLUE)

4. **DEADLY** (DEATH)
3. **EXTREME DANGER** (BLINDNESS) PERMANENT DISABILITY
2. **HAZARDOUS** (TEMPORARY ILLNESS)
1. **SLIGHTLY HAZARDOUS** (IRRIATANT)
0. **NORMAL MATERIALS**

FIRE HAZARD (RED)

4. **VERY FLAMMABLE - GASES, DUSTS OR MISTS (ETHER)**
3. **READILY IGNITED LIQUIDS - NORMAL TEMPERATURES (GASOLINE)**
2. **LIQUIDS/SOLIDS - MUST BE HEATED (KEROSENE)**
1. **MOST COMBUSTIBLE SOLIDS - PRE-HEATED TO BURN (PAPER/WOOD)**
0. **WILL NOT BURN**



SPECIFIC HAZARDS (WHITE)

OXY	= OXIDIZER
ACID	= ACID
ALKALI	= ALKALI
COR	= CORROSIVE
~~W~~	= USE NO WATER
☢	= RADIATION HAZARD

REACTIVITY (YELLOW)

4. **MAY DETONATE**
3. **SHOCK OR HEAT MAY DETONATE**
2. **VIOLENT CHEMICAL CHANGE**
1. **UNSTABLE IF HEATED**
0. **STABLE**

FLASH POINTS

FLASHPOINTS OF VARIOUS FLAMMABLE AND COMBUSTIBLE LIQUIDS

PETROLEUM FUELS:	FLASH POINT °F.
Gasoline	– 45
Crude Petroleum	20–90
JP # 3 Jet Fuel	–40
JP # 4 Jet Fuel	–10
JP # 5 Jet Fuel	95–145
SOLVENTS:	
Ethyl Ether	–49
Carbon Disulfide	–22
Acetone	0
Gasoline	–45
Methyl Ethyl Ketone	21
Benzene	12
Toluene	40
Wood Alcohol (Methyl)	52
Methyl Isobutyl Ketone	73
Grain Alcohol	55
V.M. & P. Naphtha	28
Allyl Alcohol	70
Xylene	63
Styrene	90
Butyl Alcohol – N	84

PETROLEUM FUELS:	FLASH POINT °F.
Diesel Fuel Oil (1-D)	100
Diesel Fuel Oil (2-D)	125
Diesel Fuel Oil (4-D)	130
Fuel Oil No. 1 (Kerosene)	110 – 162
Fuel Oil No. 2	126 – 204
Fuel Oil No. 4	142 – 240
Fuel Oil No. 5	156 – 336
Fuel Oil No. 6	150 – 270
Lubricating Oil	300 – 450
SOLVENTS:	
Stoddard Solvent	138
Kerosene	100
Mineral Spirits	104

FLASH POINTS could mean an explosion when sparks or flame are near.

KNOW YOUR LIQUIDS!

NOTE: FLASH POINT IS THE BASIC CHARACTERISTIC USED BY NFPA TO CLASSIFY THE RELATIVE HAZARDS OF LIQUIDS.

Summary of HMIS Ratings

I. HEALTH HAZARD RATING

0 MINIMAL HAZARD	No significant risk to health
1 SLIGHT HAZARD	Irritation or minor reversible injury possible
2 MODERATE HAZARD	Temporary or minor injury may occur
3 SERIOUS HAZARD	Major injury likely unless prompt action is taken and medical treatment is given
4 SEVERE HAZARD	Life-threatening, major or permanent damage may result from single or repeated exposures

Note: Use of an asterisk (*) or other designation indicates that there may be chronic health effects present. See safety file on the product.

II. FLAMMABILITY HAZARD RATING

0 MINIMAL HAZARD	Materials that are normally stable and will not burn unless heated
1 SLIGHT HAZARD	Materials that must be preheated before ignition will occur. Flammable liquids in this category will have flash points (the lowest temperature at which ignition will occur) at or above 200°F (NFPA Class IIIB)
2 MODERATE HAZARD	Material that must be moderately heated before ignition will occur, including flammable liquids with flash points at or above 100°F and below 200°F (NFPA Class II & Class IIIA)
3 SERIOUS HAZARD	Materials capable of ignition under almost all normal temperature conditions, including flammable liquids with flash points below 73°F and boiling points above 100°F as well as liquids with flash points between 73°F and 100°F (NFPA Class 1B and 1C)
4 SEVERE HAZARD	Very flammable gases or very volatile flammable liquids with flash points below 73°F and boiling points below 100°F (NFPA Class 1A)

III. REACTIVITY HAZARD RATING

0 MINIMAL HAZARD	Materials that are normally stable, even under fire conditions, and will not react with water
1 SLIGHT HAZARD	Materials that are normally stable but can become unstable at high temperatures and pressures. These materials may react with water but they will not release energy violently
2 MODERATE HAZARD	Materials that, in themselves, are normally unstable and will readily undergo violent chemical change but will not detonate. These materials may also react violently with water
3 SERIOUS HAZARD	Materials that are capable of detonation or explosive reaction but require a strong initiating source or must be heated under confinement before initiation; or materials that react explosively with water
4 SEVERE HAZARD	Materials that are readily capable of detonation or explosive decomposition at normal temperatures and pressures

IV. CHRONIC EFFECTS INFORMATION

Chronic health effects are not rated because of the complex issues involved and the lack of standardized classifications and tests. However, based on information provided by the supplier, the presence of chronic effects may be indicated by (1) use of an asterisk (*) or other designation after the health hazard rating corresponding to other information that may be available; or (2) use of written warnings in the upper white section of the NPCA HMIS label.

V. PERSONAL PROTECTIVE EQUIPMENT

Information provided by the supplier will be used by the paint manufacturers to determine the proper personal protective equipment.

Hazardous Materials Identification System

HAZARD INDEX

4 Severe Hazard
3 Serious Hazard
2 Moderate Hazard
1 Slight Hazard
0 Minimal Hazard

- An asterisk (*) or other designation corresponds to additional information on a data sheet or separate chronic effects notification.

PERSONAL PROTECTION INDEX

A

B

C

D

E

F

G

H

I

J

K

X Ask your supervisor for specialized handling directions

Safety Glasses
Splash Goggles
Face Shield
Airline Hood or Mask
Gloves
Synthetic Apron
Dust Respirator
Vapor Respirator
Combination Dust & Vapor Respirator
Full Protective Suit
Boots

AMERICAN LABELMARK, Chicago, IL 60646 NC-EC

1981 National Paint & Coatings Association

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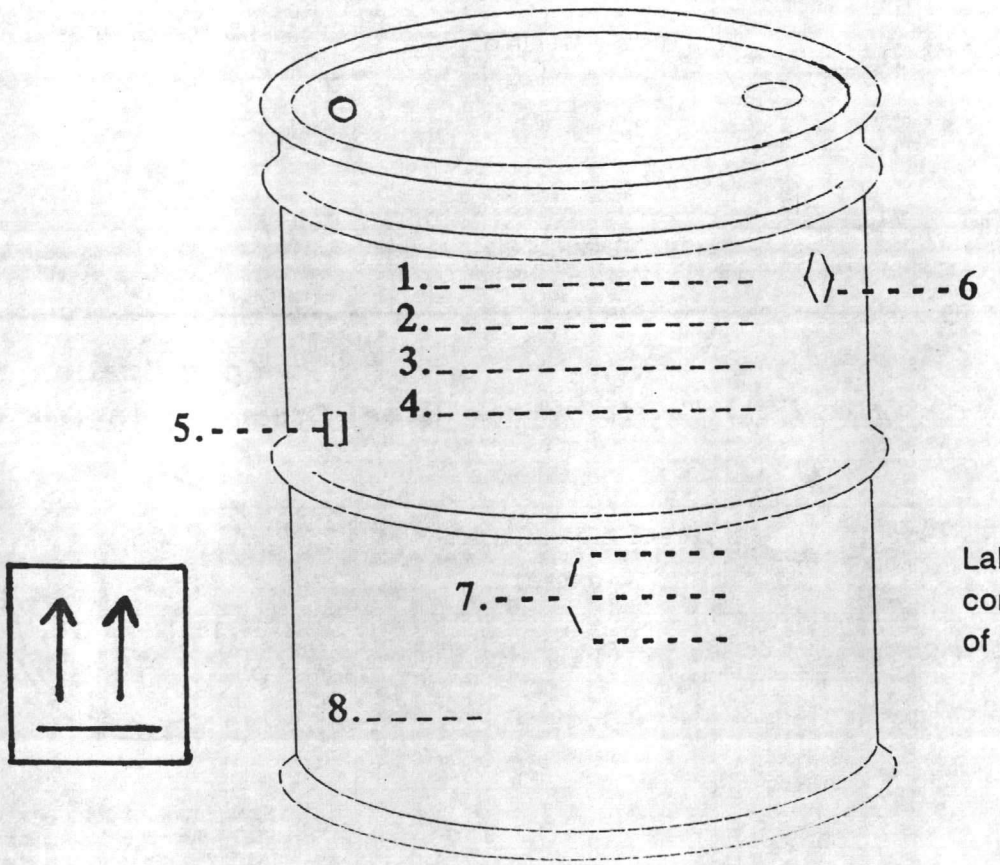
PROCEDURES FOR MARKING OF DRUMS OF HW/HM FOR DISPOSAL

PROCEDURES FOR MARKING DRUMS OF HAZARDOUS WASTE AND HAZARDOUS MATERIALS FOR DISPOSAL



Labeling must be in contrast to the color of the container.

(This symbol is used in only specific cases to indicate container orientation.)

1. DTID = EMD
2. WORDS "HAZARDOUS WASTE" = UNIT
3. CONTENTS (NOUN NAME,MIXTURE) = UNIT
4. ACCUMULATION START DATE = UNIT
5. PACKING ENVELOPE W/#4 COPY 1348 = EMD
6. HAZARD CLASS = EMD
7. EPA WASTE NUMBER = EMD
8. NUMBER OF CONTAINERS = UNIT

EXAMPLE

M67001 3333 011

HAZARDOUS WASTE

ENAMEL PAINT WITH 5% DRY CLEANING SOLVENT

4 OCT 1993

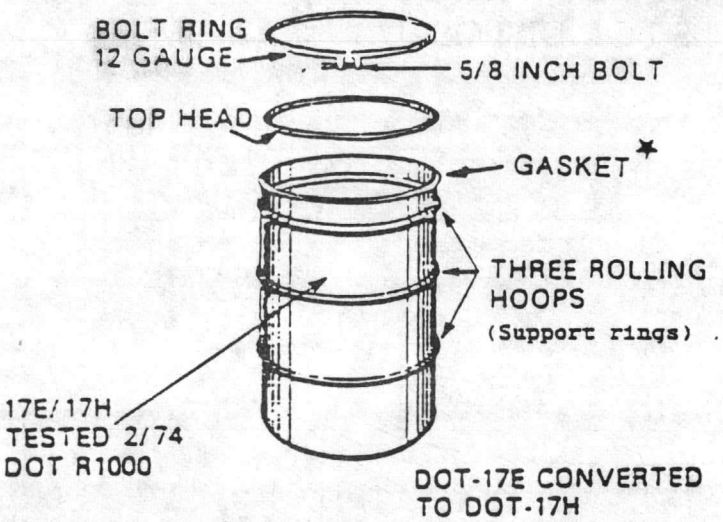
FLAMMABLE

D001, D002

1-3 OR 1 OF 3

SELECTION/PARTS OF DOT CONTAINERS

NOTE: OTHER TERMINOLOGY MAY APPLY FOR DRUM TYPES

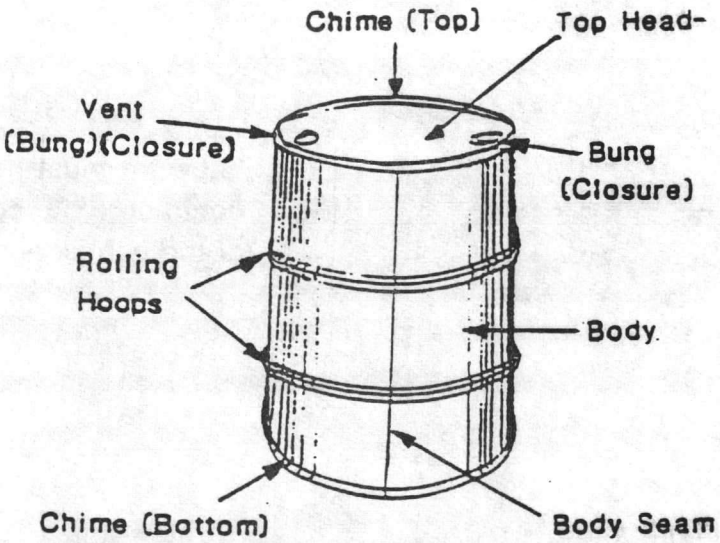


DOT-17E CONVERTED TO DOT-17H

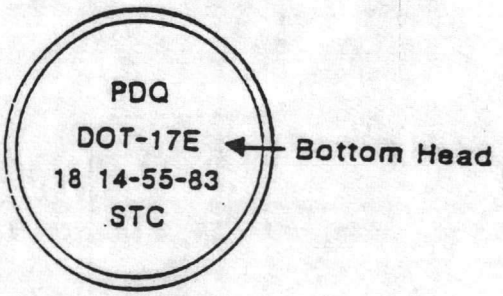
DOT 17H:

- **Solids and Lab Packs**
  (Overpack)
- **Capacity - 57 gallons**
  90% full

* Not required by DOT

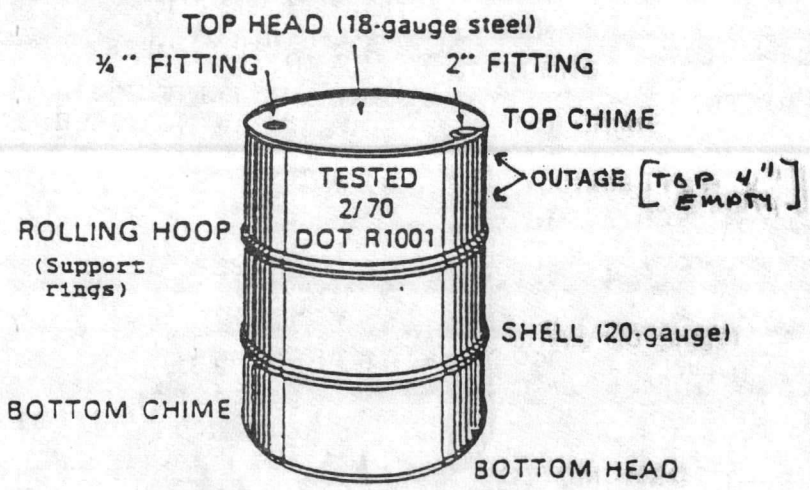


Specification 17E:
Steel Drum, Single Trip Container



Explanation of Markings
PDQ—Symbol of Manufacturer
DOT 17E—Specification Number
18—Gauge Body and Bottom Head
14—Gauge Removable Head
55—Capacity in Gallons
83—Year of Manufacture
STC—Single Trip Container

Tight-head 20/18-gauge 55-gal. drum



DOT 17E:

- **Liquids**
- **Capacity - 57 gallons**
  2" for outage

(Note: Working capacity of 57 gallon drum is 55 gallons.)

OUTAGE = SPACE LEFT BETWEEN THE TOP OF THE CONTAINER AND THE LIQUID

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CHARACTERISTICS OF HAZARDOUS WASTE

WASTE LIST(S)

SUBPART D - 261.30

DEFINITIONS

"D" WASTE	-	**CHARACTERISTIC HAZARDOUS WASTE, PART 261.30**
"F" WASTE	-	**HAZARDOUS WASTE FROM NON-SPECIFIC SOURCES, PART 261.31.**
"K" WASTE	-	**HAZARDOUS WASTE FROM SPECIFIC SOURCES, PART 261.32.**
"P" WASTE	-	**ACUTE HAZARDOUS WASTE, COMMERCIAL CHEMICAL PRODUCTS. PART 261.32.**
"U" WASTE	-	**TOXIC HAZARDOUS WASTE, COMMERCIAL CHEMICAL PRODUCTS. PART 261.32.**

HAZARD CODES USED:

IGNITABLE	**(I)**
CORROSIVE	**(C)**
REACTIVE	**(R)**
EP TOXIC WASTE	**(E)**
ACUTE HAZARDOUS WASTE	**(H)**
TOXIC WASTE	**(T)**

} ADDITIONAL CODES

CHARACTERISTIC HAZARDOUS WASTE

CHARACTERISTIC OF IGNITABILITY (D001)
(40 CFR PART 261.21)

(1) IT IS A LIQUID, OTHER THAN AN AQUEOUS SOLUTION CONTAINING LESS THAN 24% ALCOHOL BY VOLUME AND HAS A FLASH POINT LESS THAN 60 DEGREES "C" (140 ^{O}F) .

(2) IT IS NOT A LIQUID AND IS CAPABLE, UNDER STANDARD TEMPERATURE AND PRESSURE, OF CAUSING FIRE THROUGH FRICTION, ABSORPTION OF MOISTURE OR SPONTANEOUS CHEMICAL CHANGES AND WHEN IGNITED, BURNS SO VIGOROUSLY AND PERSISTENTLY THAT IT CREATES A HAZARD.

(3) IT IS IGNITABLE COMPRESSED GAS AS DEFINED IN 49CFR PART 173.300 OR DETERMINED TO BE SO BY SUITABLE TESTS.

(4) IT IS AN OXIDIZER AS DEFINED IN 49CFR PART 173.151.

CHARACTERISTIC OF CORROSIVITY (D002)
(40CFR PART 261.22)

(1) IT IS AQUEOUS AND HAS A pH LESS THAN OR = 2 OR GREATER THAN OR = 12.5.

(2) IT IS A LIQUID AND CORRODES STEEL (SAE 1020) AT A RATE GREATER THAN 6.35mm (0.250 INCH) PER YEAR.

CHARACTERISTIC OF REACTIVITY (D003)
(40CFR PART 261.23)

(1) IT IS NORMALLY UNSTABLE AND READILY UNDERGOES VIOLENT CHANGE W/O DETONATING.

(2) IT REACTS VIOLENTLY WITH WATER.

(3) IT FORMS POTENTIALLY EXPLOSIVES MIXTURES WITH WATER.

(4) WHEN MIXED WITH WATER,IT GENERATES TOXIC GASES, VAPORS OR FUMES IN A QUANTITY SUFFICIENT TO PRESENT A DANGER TO HUMAN HEALTH OR THE ENVIRONMENT.

CHARACTERISTIC HAZARDOUS WASTE

(5) IT IS A CYANIDE OR SULFIDE BEARING WASTE WHICH, WHEN EXPOSED TO pH CONDITIONS BETWEEN 2.0 AND 12.5, CAN GENERATE TOXIC GASES, VAPORS OR FUMES IN A QUANTITY SUFFICIENT TO PRESENT A DANGER TO HUMAN HEALTH OR THE ENVIRONMENT.

(6) IT IS CAPABLE OF DETONATION OR EXPLOSIVE REACTION IF IT IS SUBJECTED TO A STRONG INITIATING SOURCE OR IF HEATED UNDER CONFINEMENT.

(7) IT IS READILY CAPABLE OF DETONATION OR EXPLOSIVE DECOMPOSITION OR REACTION AT STANDARD TEMPERATURE AND PRESSURE.

(8) IT IS A FORBIDDEN EXPLOSIVE FOUND IN 49CFR PART 173.54 OR EXPLOSIVES IN CLASS 1.1, 1.2, 1.3, & 1.4 FOUND IN PART 173.50.

CHARACTERISTIC OF TOXICITY (D004 THRU 043)
(40CFR PART 261.24)

(1) A SOLID WASTE EXHIBITS THE CHARACTERISTICS OF TOXICITY IF, USING THE TOXICITY CHARACTERISTIC LEACHATE PROCEDURE (TCLP)THE PRODUCTS BEING TESTED LEACH OUT WITH CONTAMINANTS AT OR ABOVE THEIR REGULATORY LIMITS AS LISTED IN TABLE 1.

APPENDIX B

EPA Characteristic Wastes = D004 - D043
Toxicity Characteristic Leachate Potential

* denotes new parameter

EPA HW Number		Contaminant	Regulatory Level (mg/L)
D004		Arsenic	5.0
D005		Barium	100.0
D018	*	Benzene	0.5
D006		Cadmium	1.0
D019	*	Carbon tetrachloride	0.5
D020	*	Chlordane	0.03
D021	*	Chlorobenzene	100.0
D022	*	Chloroform	6.0
D007		Chromium	5.0
D023	*	o-Cresol	200.0
D024	*	m-Cresol	200.0
D025	*	p-Cresol	200.0
D026		Cresol	200.0
D016		2,4-D	10.0
D027	*	1,4-Dichlorobenzene	7.5
D028	*	1,2-Dichloroethane	0.5
D029	*	1,1-Dichloroethylene	0.7
D030	*	2,4-Dinitrotoluene	0.13
D012		Endrin	0.02
D031	*	Heptachlor (and its hydroxide)	0.008
D032	*	Hexachlorobenzene	0.13
D033	*	Hexachloro-1,3-butadiene	0.5
D034	*	Hexachloroethane	3.0
D008		Lead	5.0
D013		Lindane	0.4
D009		Mercury	0.2
D014		Methoxychlor	10.0
D035	*	Methyl ethyl ketone	200.0
D036	*	Nitrobenzene	200.0
D037	*	Pentachlorophenol	100.0
D038	*	Pyridine	5.0
D010		Selenium	1.0
D011		Silver	5.0
D039	*	Tetrachloroethylene	0.7
D015		Toxaphene	0.5
D040	*	Trichloroethylene	0.5
D041	*	2,4,5-Trichlorophenol	400.0
D042	*	2,4,6-Trichlorophenol	2.0
D017		2,4,5-TP (Silvex)	1.0
D043	*	Vinyl chloride	0.2

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WASTE MINIMIZATION

WASTE MINIMIZATION

WHAT IS WASTE MINIMIZATION?

* THE REDUCTION, TO THE EXTENT FEASIBLE, IN THE QUANTITY OF WASTE GENERATED THROUGH MANUFACTURING OR INDUSTRIAL PROCESSES.

* TECHNIQUES FOCUS ON SOURCE REDUCTION AND RECYCLING ACTIVITIES THAT REDUCE AMOUNTS OR TOXICITY OF WASTE GENERATED.

WHY SHOULD YOU BE INTERESTED IN SOURCE REDUCTION?

* REGULATIONS ON TRANSPORTERS AND DISPOSERS
* TRANSPORT DISTANCES
* INCREASED PERSONNEL TO COMPLY WITH REGULATIONS
* INCREASED COSTS FOR DISPOSAL
* LANDFILL BANS
* NEW REPORTING REGULATIONS (SARA)
* LACK OF NEW LOCAL TSD'S.

WASTE MINIMIZATION

AUTOMOTIVE REPAIR SHOPS WASTE;

* SOLVENTS (PAINTS AND PAINT THINNERS)
* ANTIFREEZE
* SCRAP METAL
* BATTERIES AND OTHER AUTO PARTS
* OILS AND OIL FILTERS
* FUELS OF VARIOUS TYPES
* ACIDS AND ALKALIS (CONTAMINATED RAGS AND TOWELS)

ESTABLISHING GOOD HOUSEKEEPING PRACTICES

* KEEP STORAGE AND WORK AREAS CLEAN, WELL ORGANIZED AND ALL CONTAINERS PROPERLY LABELED;

* INSPECT MATERIALS UPON DELIVERY, AND IMMEDIATELY RETURN UNACCEPTABLE MATERIALS TO THE SUPPLIER;

* LOCATE AND REPAIR ALL LEAKS, TO PREVENT LOSS OF RAW MATERIALS;

* KEEP ALL CONTAINERS COVERED, TO PREVENT EVAPORATION AND/OR SPILLAGE;

* KEEP WASTE STREAMS SEPARATE, TO INCREASE THEIR POTENTIAL REUSE, RECYCLING, OR TREATMENT;

* INSTALL FLOW METERS, FLOW CONTROL DEVICES, AND SHUT-OFF NOZZLES TO CUT DOWN ON WATER USAGE.

WASTE MINIMIZATION

FIVE CLASSES OF WASTE REDUCTION

1. RECYCLING OF A (POTENTIAL) WASTE OR PART OF IT, AT THE SITE OF ITS GENERATION;

2. IMPROVEMENTS IN PROCESS TECHNOLOGY AND EQUIPMENT THAT ALTER THE PRIMARY SOURCE OF WASTE GENERATION;

3. IMPROVEMENTS IN PLANT OPERATIONS (e.g., BETTER HOUSEKEEPING, IMPROVED MATERIALS HANDLING, AND EQUIPMENT MAINTENANCE, BETTER MONITORING OF PLANT PROCESS EQUIPMENT, AND IMPROVED WASTE TRACKING OR MASS BALANCE).

4. SUBSTITUTING RAW MATERIALS THAT INTRODUCE FEWER HAZARDOUS SUBSTANCES OR SMALLER QUANTITIES OF SUCH SUBSTANCES INTO THE PRODUCTION PROCESS; AND

5. REDESIGN OR REFORMULATION OF END PRODUCTS.

WASTE MINIMIZATION

SOLVENTS - REDUCING, REUSING, AND RECYCLING

* TRY TO FIND AND USE ONE MULTI-PURPOSE SOLVENT;

* USE LESS HAZARDOUS SOLVENT CLEANERS, SUCH AS WATER BASED CLEANERS, WATER SOLUBLE CUTTING FLUIDS, OR INSTALL A PRESSURE WASH SYSTEM;

* EXTEND THE LIFE OF SOLVENT BATHS, BY PRE-CLEANING PARTS W/RAGS (THEN HAVE RAGS CLEANED FOR REUSE), OR USE OLD SOLVENT AS A PRE-SOAK TO REMOVE MOST OF THE DIRT OR GREASE;

* MINIMIZE THE LOSE OF CLEANING SOLVENT, THRU THE USE OF A DRIP TRAY;

* USE ON-SITE RECOVERY TECHNIQUES, TO MAKE SOLVENT REUSABLE THRU;
  - DECANTING, FILTRATION, OR DISTILLATION.

WASTE MINIMIZATION

OFFICE WASTE;

* ACCOUNTS FOR A LARGE PORTION OF OVERALL SOLID WASTE GENERATED, AND INCLUDES;

* VARIOUS FORMS OF PAPER, BOND, COMPUTER, COPY , AND FAX;

* CARDBOARD, PLASTIC, METAL, AND FOOD.

1. GET TO KNOW YOUR WASTE.

* CONDUCT A VISUAL SURVEY OF THE CONTENTS OF THE TRASH CANS IN THE OFFICE. LIST THE ITEMS THAT OCCUR IN THE GREATEST QUANTITIES THESE WILL BE THE MATERIALS TARGETED FOR REDUCTION, REUSE, OR RECYCLING.

WASTE MINIMIZATION

2. LOOK FOR WAYS TO REDUCE AND TO REUSE ITEMS RATHER THAN THROW THEM AWAY;

* ENCOURAGE EMPLOYEES TO USE WASHABLE BEVERAGE CONTAINERS;

* CARRY LUNCH TO WORK IN REUSABLE CONTAINERS;

* EAT LUNCH AT THE FAST FOOD RESTAURANT, RATHER THEN BRINGING THE (HEAVILY PACKAGED) ITEMS BACK TO WORK;

* COFFEE CLUBS CAN USE LARGE CONTAINERS OF CREAMER AND SUGAR RATHER THEN SMALL PRE-PACKAGED ITEMS;

* AVOID VENDING MACHINES THAT USE DISPOSABLE CUPS;

* USE DOUBLE SIDED COPIES WHENEVER APPLICABLE;

* MAKE ONLY AS MANY COPIES AS YOU CURRENTLY NEED;

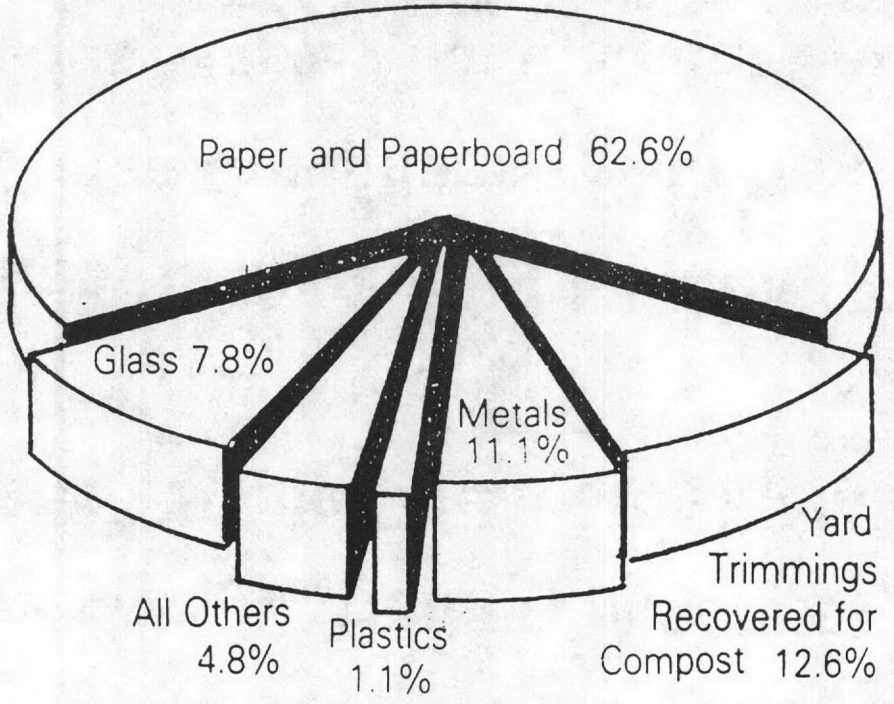
* CUT DOWN ON PAPER USAGE WITH ELECTRONIC MAIL, OR POSTING MESSAGES ON A BULLETIN BOARD, OR CIRCULATING MEMO'S;

* USE FAX MACHINES SPARINGLY, BECAUSE THE PAPER USED IS NOT RECYCLABLE. IN ADDITION, MANY MESSAGES WILL REQUIRE ADDITIONAL COPYING.

THE BENEFITS OF RECYCLING

- **Saves Energy, Timber, Minerals**
- **"Cleans" Waste Stream for Incineration**
- **Provides Revenue**
- **Extends Useful Life of Landfill**
- **Facilitates Compliance With Regulations**
- **Provides Waste Management Services Desired by Residents**

Recovery of Materials from the Municipal Solid Waste Stream, 1990 (By Weight)



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HAZ-MAT INSPECTION CHECK LIST

APPENDIX D

WEEKLY INSPECTION FORM FOR HAZARDOUS WASTE AND STORAGE SITES

Name and location of site: _____

Site Manager/Phone #: _____

Inspection Conducted by: _____

Date of Inspection: _____ Time: _____

AREA OF CONCERN	YES/NO	CORRECTIVE ACTION TAKEN AND DATE
CONDITION OF CONTAINERS		
1. Are containers closed	___/___	
2. Are containers DOT approved	___/___	
3. Are containers leaking	___/___	
4. Are containers bulging	___/___	
5. Are containers collapsed	___/___	
6. Are containers corroded	___/___	
7. Are containers overfilled	___/___	
8. Are serviceable pallets in use	___/___	

APPENDIX D

LABELING AND MARKING

1. Are HW and hazard class labels in place and correctly completed ___/___ _____

2. Are NSN and nomenclature clearly written on the container. ___/___ _____

SECURITY AND EMERGENCY

1. Is access limited to authorized personnel only ___/___ _____

2. Is Spill Contingency Plan posted ___/___ _____

3. Does SCP list all required response equipment ___/___ _____

4. Is the response equipment available ___/___ _____

5. Are required signs posted ___/___ _____

6. Are MSDS's available ___/___ _____

7. Are containers with an Accumulation Start Date under the 90 day limit ___/___ _____

SITE FEATURES

1. Fire extinguishers on hand ___/___ _____

2. Emergency response communication device in place ___/___ _____

3. Phone working ___/___ _____

APPENDIX E

2D ASLT PHIB BN
HMUU's MONTHLY HM/HW INSPECTION CHECKLIST

DATE: _____

SITE # _____ INSPECTED BY: _____

TRAINED PERSONNEL AT THE SITE

SITE MANAGER _____ DATE OF LAST TRAINING _____

HANDLER _____ DATE OF LAST TRAINING _____

HANDLER _____ DATE OF LAST TRAINING _____

HANDLER _____ DATE OF LAST TRAINING _____

HANDLER _____ DATE OF LAST TRAINING _____

AREA OF CONCERN	YES/NO	CORRECTIVE ACTION TAKEN AND DATE
TRAINING RECORDS		
1. Are training records being maintained for each person	___/___	_____
2. Does each training record folder contain the following:		
a. Appointment letter attached to the inner left flap	___/___	_____
b. Training record attached to inner right flap	___/___	_____
3. Are all training entries dated and signed	___/___	_____

4. Does job description accurately reflect job performed ___/___ _____

5. Has initial training been conducted for each person ___/___ _____

6. Is training current for all personnel ___/___ _____

TURNOVER FOLDERS

1. Does the Manager maintain a Turnover folder ___/___ _____

2. Does the turnover folder contain the following:

   a. Waste Material Profile Sheet for each waste generated ___/___ _____

   b. A copy of Satellite Accumulation Area permits ___/___ _____

   c. Current POC listing ___/___ _____

   d. The following references:

      BnO 6240.1A (Bn HWSOP.) ___/___ _____

      DivO 6240.5A (Div HWSOP.) ___/___ _____

      BO 6240.5B (Base HWSOP.) ___/___ _____

      BO 6280.8 (HAZMIN) ___/___ _____

      BO 11090.1B (Oil Pollution prevention spill contingency ___/___ _____

APPENDIX E

BO 11090.3 (Operations & Maint of abatement fac	___/___	_____
BO 5100.20 (Haz Comm)	___/___	_____
MCB HW training manual	___/___	_____
e. Material Safety Data Sheet for all material maintained	___/___	_____
f. Bn HW Notices	___/___	_____

TURN-IN DOCUMENTATION

1. Are copies of past turn-in documents maintained for 3 years	___/___	_____
2. Are documents prepared for wastes currently being held pending disposal	___/___	_____
3. Are wastes in excess of 45 days subject of a turn-in doc	___/___	_____
4. Are pending turn-in documents Properly filled out	___/___	_____

PAINT LOCKERS

a. Is paint locker authorized	___/___	_____
b. Is locker being inventoried	___/___	_____
c. Are all items maintained in locker serviceable	___/___	_____

d. Does it appear that excessive items are being stored ___/___ _____

e. Is locker OSHA approved ___/___ _____

GENERAL AREA INSPECTION

1. Are empty containers being properly controlled ___/___ _____

2. Is there evidence of unreported spills/improper disposal ___/___ _____

3. Are workers aware of HazCom ___/___ _____

4. Is a copy of "Do's & Don'ts posted on bulletin boards ___/___ _____

5. Are wastes being disposed of in recycling bins ___/___ _____

6. Is HazMat properly stored ___/___ _____

COMMENTS

_____

_____

_____

_____

_____

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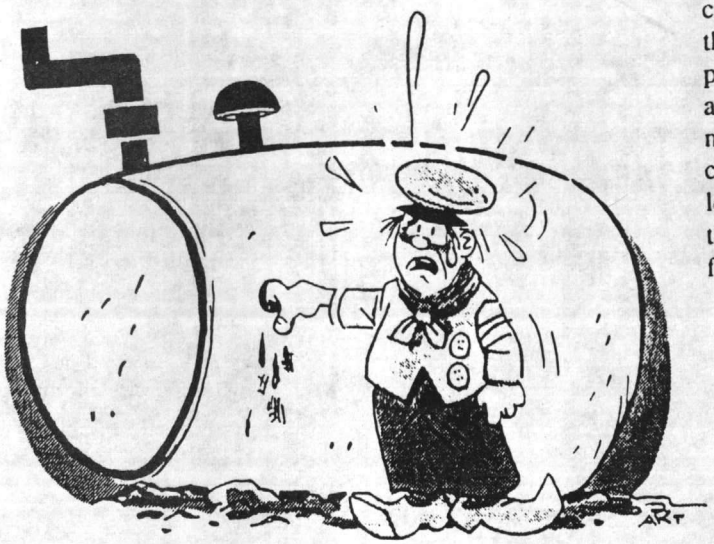
GENERAL INFORMATION

WHY WORRY ABOUT LEAKS AND SPILLS?

◆ ***Because your tank or its piping may leak.*** As many as 25 percent of all underground storage tanks (USTs) may now be leaking. Many more will leak in the near future, possibly including yours. Your tank or its piping might be leaking right now. If a tank system is past its prime (over 10 years old), especially if it's not protected against corrosion, the potential for leaking increases dramatically. Newer tank systems (especially the piping) can also leak, and spills can happen anytime. Don't let your profits drain away.



◆ ***Because it's in your best interest.*** Leaking UST sites can be very costly to clean up. Imagine how much money you'd lose if your tank could not be used for weeks during lengthy cleanups or if local residents sued you for property damages. The costs can run into the thousands, perhaps as much as $100,000 and more. Detect and clean up spills or leaks -- before they hurt you financially.

◆ ***Because it's the law.*** But it's the law for good reason. Much of our country depends on ground water for drinking water, and leaked or spilled petroleum can contaminate this vital resource. Explosions are another potential hazard. Many State and local governments, therefore, already require specific steps to prevent, detect, or clean up leaks and spills. Others will soon have similar requirements. Check with your local and State governments to learn what requirements apply to you.

◆ ***Because it's for the good of the community and the environment.*** Leaks and spills can have serious consequences. Petroleum can contaminate soil, drinking water supplies, and air. Petroleum and its resulting vapors can also accumulate in nearby confined spaces, such as septic tanks, sewers, and the basements of homes. These vapors are poisonous and can cause a fire or explosion.

How Will These Regulations Affect You?

The regulations describe the steps you -- the tank owner or operator -- need to take to help protect our health and environment. These steps will also help you avoid the high cost of cleaning up the environment and defending yourself in legal actions that can result if your tank or its piping leaks.

You should note the following major points of the UST regulations:

- If you install an UST after December 1988, it must meet the requirements for new USTs concerning correct installation, spill and overfill prevention, corrosion protection, and leak detection (see pages 7-11).
- If you have an UST that was installed before December 1988, it must meet two major requirements --
  1) Requirements for corrosion protection and spill and overfill prevention (see page 13).
  2) Leak detection requirements (see pages 14-15).
- You must take corrective action in response to leaks (see pages 19-20).
- You must follow closure requirements for tanks you temporarily or permanently close (see pages 23-24).
- You are financially responsible for the cost of cleaning up a leak and compensating other people for bodily injury and property damage caused by your leaking UST.

Although these points are discussed in the following sections, additional information appears in the "Technical Questions & Answers" section starting on page 31.

What's Your "Financial Responsibility" For Petroleum Leaks?

A complete explanation of your financial responsibility requirements will appear in the **Federal Register** and in an EPA brochure later in 1988.

In general, owners or operators of petroleum USTs must be able to demonstrate their ability to pay for damage that could be caused if their tanks leaked. These payments would need to cover the costs of cleaning up a site (see page 20) and compensating other people for bodily injury and property damage.

Who Is "The Regulatory Authority"?

This booklet describes EPA's basic requirements for USTs, but your State or local regulatory authority may have requirements that are somewhat different or more strict. You will need to identify your regulatory authority and its specific requirements for your USTs. If you are not sure who your regulatory authority is, call your local fire marshall for help.

What's An "UST"?

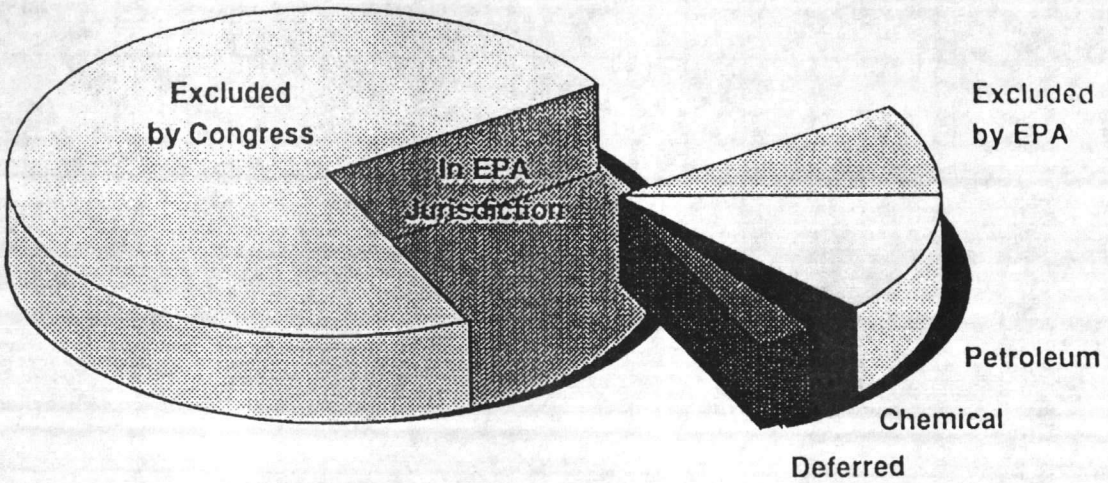
An UST is any tank, including underground piping connected to the tank, that has at least 10 percent of its volume underground. The regulations apply only to USTs storing either petroleum or certain hazardous chemicals.

The "For Chemical USTs Only" section starting on page 27 identifies hazardous chemicals and special requirements for chemical USTs. Generally, the requirements for both petroleum and chemical USTs are very similar.

Some kinds of tanks are not covered by these regulations:

- Farm and residential tanks holding 1,100 gallons or less of motor fuel used for noncommercial purposes.
- Tanks storing heating oil used on the premises where it is stored.
- Tanks on or above the floor of underground areas, such as basements or tunnels.
- Septic tanks and systems for collecting storm water and wastewater.
- Flow-through process tanks.
- Tanks holding 110 gallons or less.
- Emergency spill and overfill tanks.

Other storage areas that might be considered "tanks" are also excluded, such as surface impoundments and pits. Some "tanks," such as field-constructed tanks, have been deferred from most of the regulations. The regulations published in the **Federal Register** fully identify various tank types and which requirements apply to them.



UST Program Scope

Detecting Leaks From Tanks

You must check your tanks at least once a month to see if they are leaking.

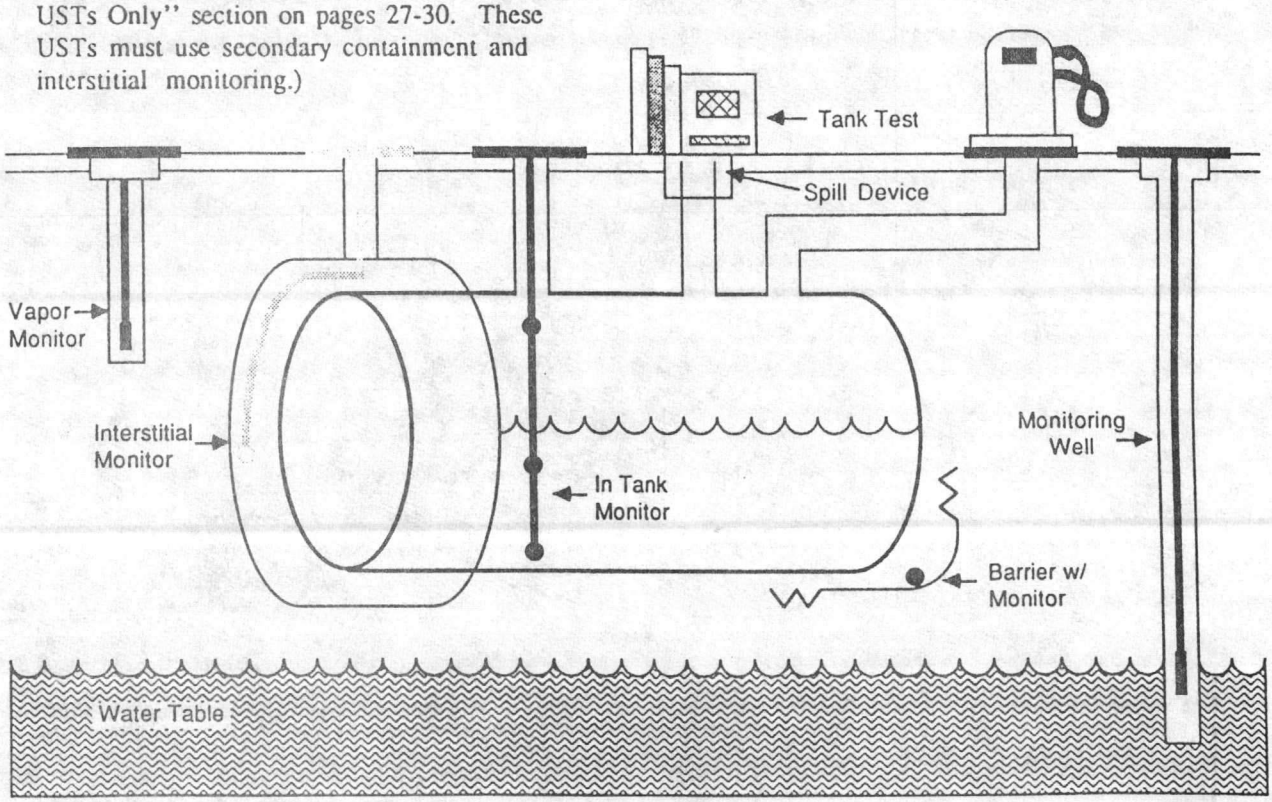
You **must** use one (or a combination) of the following monthly monitoring methods:

- Automatic tank gauging.
- Monitoring for vapors in the soil.
- Interstitial monitoring.
- Monitoring for liquids on the ground water.
- Other approved methods.

Information on these leak detection methods appears in the "Technical Questions & Answers" section on pages 34-35. (Special requirements for USTs containing hazardous chemicals are described in the "For Chemical USTs Only" section on pages 27-30. These USTs must use secondary containment and interstitial monitoring.)

For Young Tanks...
An Alternate Leak Detection Method

You have one additional leak detection choice, but **only for 10 years** after you install your UST. Instead of using one of the monthly monitoring methods noted above, you can check for leaks by combining monthly inventory control with tank tightness testing every 5 years. After 10 years, you must use one of the monthly monitoring methods listed above.



Leak Detection Alternatives

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GLOSSARY

GLOSSARY

ACCUMULATION	**The short term storage of hazardous waste, such as 90 days or less for most generators of hazardous waste.**
BDAT	**Best Demonstrated Available Technology.**
CFR	**Code of Federal Regulations. Title 40 covers Environmental Protection and Title 49 covers Transportation.**
CAA	**Clean Air Act.**
CWA	**Clean Water Act.**
CERCLA	**Comprehensive Environmental Response, Compensation, and Liabilities Act. Also known as SUPERFUND. Regulates uncontrolled sites contaminated with hazardous substances.**
CLOSURE	**The act of closing a hazardous waste management unit os UST system in accordance with the requirements of RCRA, 40CFR Parts 264 and 265.**
DOT	**Department of Transportation.**
DISPOSAL	**The discharge, deposit, injection, dumping, spilling, leaking, or placing of any solid waste, or hazardous waste into or on any land or water so that the solid waste or hazardous waste or any constituent thereof may enter the environment or be emitted into the air or discharged into the waters, including ground waters. (40CFR Part 260.10).**
EPA	**Environmental Protection Agency.**
FACILITY	**All contiguous lands, structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste.**

GENERATOR	**Any person, by site, whose act of process produces hazardous waste identified or listed in 40 CFR Part 261 or whose act first causes a hazardous waste to become subject to regulation (40CFR Part 260.10).**
HSWA	**The Hazardous and Solid Waste Amendment.**
HWM	**Hazardous Waste Management. The systematic control of the collection, source separation, storage, transportation, processing, treatment, recovery, and disposal of hazardous waste. (40CFR Part 260.10)**
HAZARDOUS WASTE	**A solid waste that is not excluded from regulation as a hazardous waste under 40CFR Part 261.4(b) and meets any of the following criteria: exhibits any of the characteristics identified in 40CFR Part 261 Subpart C; is listed in 40CFR Part 261 Subpart D; or is a mixture of a solid waste and a hazardous waste.**
HAZARDOUS MATERIAL	**Materials regulated by the Department of Transportation.**
HAZARDOUS SUBSTANCE	**Substances regulated by the Environmental Protection Agency.**
LEACHATE	**Any liquid, including any suspended components in the liquid, that has percolated through or drained from land-disposed waste.**
MANIFEST	**The shipping document that tracts hazardous waste from the generator to transporter(s) to the final treatment, storage, and disposal facility**
OSHA	**Occupational Safety and Health Administration.**
POST-CLOSURE	**The period following closure of a hazardous waste management unit in accordance with 40CFR Parts 264 and 265.**

P & P Plan	**Preparedness and Prevention Plan. (40CFR Part 264.30).**
SMALL QUANTITY GENERATOR (SQG)	**A generator who generates less than 1000 kg. of hazardous waste in a calendar month. (40CFR Part 260.10)**
STORAGE	**The holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere.**
TSD FACILITY	**Treatment, Storage , and Disposal Facility.**
TCLP	**Toxicity Characteristic Leaching Procedure. Testing procedure to replace the EP-Toxicity Test in determining whether a solid waste has the characteristic of toxicity.**
TRANSPORTER	**A person engaged in the off-site transportation of hazardous waste by air, rail, highway, or water. (40CFR Part 260.10)**
TREATMENT	**Any method, technique, or process, including neutralization, designed to change the physical or biological character or composition of any hazardous waste, so as to neutralize such waste, or as to recover energy or material resources from the waste, or so render such waste non-hazardous or less hazardous; safer to transport, store, or dispose of; or amenable for recovery, amenable for storage,or reduced by volume. (40CFR Part 260.10)**
UST	**Underground Storage Tank. Any one tank or combination of tanks (including underground pipes connected to them) used to contain an accumulation of regulated substances, the volume of which (including the pipes connected to them) is 10% or more beneath the surface of the ground. (40CFR Part 280.1)**
USED OIL	**Any oil that has been refined from crude oil, used, and as a result of such use, is contaminated by physical or chemical impurities. (40CFR Part 266.40)**

HAZARDOUS CHEMICAL

OSHA

ANY CHEMICAL THAT PRESENTS A PHYSICAL, OR HEALTH HAZARD TO EMPLOYEES.

HAZARDOUS SUBSTANCE

DESIGNATED BY THE CLEAN WATER ACT/COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA) TO INCLUDE ANY PRODUCT ENTERING A WATER WAY OR THE ENVIRONMENT WHEN RELEASED.

EXTREMELY HAZARDOUS SUBSTANCE

ANY PRODUCT THAT IS EXTREMELY HAZARDOUS TO THE COMMUNITY DURING AN EMERGENCY SPILL AND/OR RELEASE.

HAZARDOUS WASTE

LISTED BY RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) IN CFR 40 PART 261.

HAZARDOUS MATERIAL

ALL OF THE ABOVE WHEN TRANSPORTED IN COMMERCE.

DANGEROUS GOODS

CANADIAN REGULATIONS

ENVIRONMENTAL MANAGEMENT DEPARTMENT
GLOSSARY OF TERMINOLOGY IN BO 6240.5-

1. HAZARDOUS WASTE - (Sect 240.101) - A waste or combination of wastes which pose a substantial present or potential hazard to human health or living organisms because such wastes are non-degradable or persistent in nature or because they can be biologically magnified, or because they can be lethal, or because they may otherwise cause or tend to cause detrimental cumulative effect and whose disposal is regulated by RCRA.

2. HAZARDOUS MATERIAL - A material which has a hazardous or toxic constituent or characteristic. The material may be used, or when finished use, because it may be resold or recyled, is not a hazardous waste for disposal. All hazardous wastes were originally hazardous materials.

3. GENERATION SITE - Physical location within a Unit where Hazardous Waste is generated.

4. GENERATOR - The organization commander responsible for the function which generated the Hazardous Waste.

5. 90 DAY STORAGE SITE - A site authorized by the CG, MCB, for the temporary storage of hazardous waste for not more than 90 days. All containers in this area will have Hazardous Waste labels with Accumulation Start Dates.

6. LONG TERM STORAGE FACILITY - DRMO maintains the only long term storage facility at ~~TP-451/TP-463 complex~~. lot 201

7. SATELLITE ACCUMULATION AREA - An area authorized by the CG, MCB, for the accumulation of hazardous waste over the standard permitted 90 days. The waste container must have a WASTE NAME , but no Accumulation Start Date will be placed on the label at this time. No larger than a 55 gallon drum is is permitted in this area. When the container is filled, a date must be placed on the DRUM, and the drum removed to the 90 day storage area within 72 hours.

8. RECYCLED - A material is recycled if it is used, reused, or reclaimed.

9. WASTE OIL - Any used oil or related petroleum compound which has any contaminants or constituents which could render it a hazardous waste, ie. lead. In North Carolina, waste oil is not considered a hazardous waste, but a special waste, if it can be recycled or sold. Presence of solvents in waste or used oil will render it a hazardous waste.

10. LAND BAN (LAND DISPOSAL RESTRICTIONS) - 40 CFR 268 - RCRA LAND BANS - Prohibitions of specific toxic materials from disposal in landfills under RCRA. The entire set of restirctions are now in effect.

11. MINIMIZATION (HAZMIN PROGRAM) - The process by which the total volume of hazardous waste is reduced. The requirement is in BO 6280.8 to minimize the volume and toxicity of hazardous waste through avoidance of generation by best management procedures, etc., and the reuse or treatment of the hazardous waste that is generated to reduce it to a nonhazardous state.

12. WASTE STREAM - The process through which a material becomes a hazardous waste, either by contamination during use, or if a hazardous material, by being disposed of with no means for further use or reclamation.

13. EMPTY CONTAINER - A container, often a paint can, in which the contents have been used up. Only one inch or less of dried substance may remain, or the contents and propellant both have been completely discharged.

14. SPILL - The release of a hazardous substance or waste into the environment.

15. HAZARDOUS WASTE PROFILE SHEET - A document required for the disposal of hazardous waste by HQ DRMS. It contains information for the identification of physical, chemical, hazardous composition of disposal wastes. Analysis for TCLP (toxicity) also required where applicable.

16. TURN IN DOCUMENT DD-1348-1 - A form required by the Department of Defense for the turn in to DRMO of used, waste, hazardous, unwanted, surplus, etc. materials. DRMO then disposes of/recycles/sells the materials as appropriate.

17. MANIFEST (UNIFORM HAZARDOUS WASTE MANIFEST) - A form required by the EPA for the turn in and disposal of hazardous waste off site to an authorized disposal or treatment facility. A manifest is also required by Department of Transportation when hazardous wastes are hauled on a public highway.

18. SPILL CONTINGENCY PLAN - A plan which must be contained in the Desk Top Procedures and posted in the affected areas. It identifies the who, what, where and why of handling and reporting, and personnel authorized to work in the areas where hazardous wastes are generated. It is a requirement in RCRA.

19. MATERIAL SAFETY DATA SHEET - A form required by OSHA and "The Right to Know Act" which provides 10 different types of information on the composition, physical characteristics, hazards, health and safety precautions and toxicity characteristics of materials which have hazardous constituents. Must be provided along with a DD 1348-1 for the disposal of HM.

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HAZARDOUS WASTE COMPATIBILITY CHART

HAZARDOUS WASTE 1PATIBILITY CHART

	REACTIVITY GROUP NAME
1	Acids, Mineral, Non-Oxidizing
2	Acids, Mineral, Oxidizing
3	Acids, Organic
4	Alcohols and Gycols
5	Aldehydes
6	Amides
7	Amines, Aliphatic and Aromatic
8	Azo Compounds, Diazo Compounds and Hydrazines
9	Carbamates
10	Caustics
11	Cyanides
12	Dithiocarbamates
13	Esters
14	Ethers
15	Flourides, Inorganic
16	Hydrocarbons, Aromatic
17	Halogenated Organics
18	Isocyanates
19	Ketones
20	Mercaptans and other Organic Sulfides
21	Metals, Alkali and Alkaline Earth, Elemental
22	Metals, other Elemental & Alloys as Powders, Vapors or Sponges
23	Metals, other Elemental & Alloys as Sheets, Rods, Drops, Moldings, etc
24	Metals and Metal Compounds Toxic
25	Nitrides
26	Nitrides
27	Nitro Compounds Organic
28	Hydrocarbons, Aliphatic, Unsaturated
29	Hydrocarbons, Aliphatic, Saturated
30	Peroxides and Hydroperoxides, Organic
31	Phenols and Cresols
32	Organophosphates, Phosphothiotes, Phosphodithioates
33	Sulfides, Inorganic
34	Exoxides
101	Combustible and Flammable Material, Misc.
102	Explosives
103	Polymerizable Compounds
104	Oxidizing Agents, Strong
105	Reducing Agents, Strong
106	Water and Mixtures Containing Water
107	Water Reactive Substances

REACTIVITY CODE	CONSEQUENCES
H	HEAT GENERATION
F	FIRE
G	INNOCUOUS AND NON-FLAMMABLE GAS GENERATION
GT	TOXIC GAS GENERATION
GF	FLAMMABLE GAS
E	EXPLOSION
P	VIOLENT
S	SOLUBILIZATION OF TOXIC SUBSTANCES
U	MAY BE HAZARDOUS BUT UNKNOWN

EXTREMELY REACTIVE! DO NOT MIX WITH ANY OTHER REACTIVITY GROUP! EXTREMELY REACTIVE!

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 101 102 103 104 105 106 107

APPENDIX A

LIST OF REACTIVITY GROUP NUMBERS (RGNs) FOR CHEMICAL SUBSTANCES

This appendix lists the chemical substances that may be found in hazardous wastestreams. The list is not inclusive but represents the data compiled through a literature survey and examination of hazardous waste management practices.

The list consists of three columns. The first column lists the chemical or trade names in alphabetical order. The trade names are denoted by asterisks (*). The second column list the synonyms or common names of the chemical substances when available. The third column lists the reactivity group numbers (RGN) assigned to the substances as derived in Appendix 2. A compound may be assigned more than one RGN.

This appendix is used to obtain the RGN of waste constituents when known specifically. The RGN is used to determine the compatibility of the combinations of wastes according to the compatibility method in Section 4.

The chemical substances listed were compiled from several sources. The list of Hazardous Wastes and Hazardous Materials and List of Extremely Hazardous Wastes and Extremely Hazardous Materials in California's Industrial Waste Law of 1972 (Ref. 44) served as the starting reference. The primary sources of information consisted of published reports (Ref. 1, 7, 12, 13, 14, 32, and 52) identifying the hazardous chemical substances in industrial wastestreams. Additional chemical entries were abstracted from the California Waste Haulers Record files (Ref. 10), California Extremely Hazardous Waste Disposal Permit files (Ref. 8), and the TRW Systems' report on recommended methods of reduction, neutralization, recovery, and disposal of hazardous wastes (Ref. 77).

RGN	Names	Synonyms
32	Abate*	
16	Acenaphthene	
6	Acetamide	
5	Acetaldehyde	
3	Acetic acid	
107	Acetic anhydride	
19	Acetone	Dimethyl ketone
4, 26	Acetone cyanohydrin	Hydroxyisobutyronitrile
26	Acetonitrile	Methyl cyanide
19	Acetophenone	
13	Acetoxybutane	Butyl acetate
13	Acetoxypentane	Amyl acetate
19	Acetyl acetone	
102	Acetyl azide	
30	Acetyl benzoyl peroxide	
17, 107	Acetyl bromide	
17, 107	Acetyl chloride	
28	Acetylene	
27, 102	Acetyl nitrate	
30	Acetyl peroxide	
5, 103	Acrolein	
3, 103	Acrylic acid	Aqualin
26, 103	Acrylonitrile	
3	Adipic acid	
26	Adiponitrile	
	Agallol	
24	Agaloaretan	Methoxyethylmercuric chloride
24		Methoxymethylmercuric chloride
9, 20	Aldicarb	Temik*
17	Aldrin	
107	Alkyl aluminum chloride	
101	Alkyl resins	
28	Allene	
4	Allyl alcohol	2-Propen-1-ol
17	Allyl bromide	Bromopropene
17	Allyl chloride	Chloropropene
13, 17	Allyl chlorocarbonate	Allyl chloroformate
13, 17	Allyl chloroformate	Allyl chlorocarbonate
107	Allyl trichlorosilane	
22, 23	Aluminum	
107	Aluminum aminoborohydride	
103, 107	Aluminum borohydride	
107	Aluminum bromide	
105	Aluminum carbide	
107	Aluminum chloride	
105, 107	Aluminum diethyl monochloride	Diethylaluminum chloride
15, 107	Aluminum fluoride	
105	Aluminum hydride	
107	Aluminum hypophosphide	
107	Aluminum phosphide	
8	Aluminum tetraazidoborate	
7	Aminobenzene	
7	Aminobutane	Aniline
7, 17	Aminochlorotoluene	Butylamine
7	Aminodiphenyl	Chlorotoluidine
7	Aminoethane	
4, 7	Aminoethanol	Ethylamine
7	Aminoethanolamine	
7	Aminohexane	
7	Aminomethane	Hexylamine
7	Aminopentane	Methylamine
7, 31	Aminophenol	Amylamine

RGN	Names	Synonyms
24, 105	Barium hydride	
10, 24	Barium hydroxide	
24, 105	Barium hypophosphide	
24, 104	Barium iodate	
24	Barium iodide	
10, 24, 107	Barium monoxide	Barium oxide
24, 104	Barium nitrate	
10, 24, 107	Barium oxide	Barium monoxide
24, 104	Barium perchlorate	
24, 104	Barium permanganate	
24, 104	Barium peroxide	
24	Barium phosphate	
24	Barium stearate	
24, 33, 105, 107	Barium sulfide	
24	Barium sulfite	
9	Bassa•	BPMC
32	Bayer 25141	Fensulfothion
9	Baygon•	Topcide•
6	Benzadox	
17	Benzal bromide	
17	Benzal chloride	
5	Benzaldehyde	
16	Benz-a-pyrene	
16	Benzene	
8, 102	Benzene diazonium chloride	
107	Benzene phosphorus dichloride	
7	Benzidine	
3	Benzoic acid	
26	Benzonitrile	
19	Benzophenone	
19	Benzoquinone	Quinone
8, 102	Benzotriazole	
17	Benzotribromide	
17	Benzotrichloride	
17	Benzotrifluoride	Trifluoromethylbenzene
107	Benzoyl chloride	
30, 102	Benzoyl peroxide	Dibenzoyl peroxide
6	Benzyl alcohol	
7	Benzylamine	
16	Benzyl benzene	Diphenylmethane
17	Benzyl bromide	Bromotoluene
17	Benzyl chloride	Chlorotoluene
17	Benzyl chlorocarbonate	Benzyl chloroformate
17	Benzyl chloroformate	Benzyl chlorocarbonate
105, 107	Benzyl silane	
105	Benzyl sodium	
24	Beryllium	
24	Beryllium copper alloy	
15, 24	Beryllium fluoride	
24, 105, 107	Beryllium hydride	

RGN	Names	Synonyms
10, 24	Beryllium hydroxide	
24	Beryllium oxide	
33, 105	Beryllium sulfide	
24, 105, 107	Beryllium tetrahydroborate	
32	Bidrin•	
22, 23, 24	Bismuth	
24	Bismuth chromate	
24	Bismuthic acid	
24, 25, 102	Bismuth nitride	
24, 107	Bismuth pentafluoride	
24	Bismuth pentaoxide	
24, 33, 105	Bismuth sulfide	
24	Bismuth tribromide	
24	Bismuth trichloride	
24	Bismuth triiodide	
24	Bismuth trioxide	
24, 33, 105	Bismuth trisulfide	
32	Blada-fum•	Sulfotepp
24	Blue vitriol	Copper sulfate
32	Bomyl	
24, 107	Borane	
24	Bordeaux arsenites	
1	Boric acid	
24, 105	Boron arsenotribromide	
24, 107	Boron bromodiiodide	
24, 107	Boron dibromoiodide	
24, 25	Boron nitride	
24, 107	Boron phosphide	
24, 102	Boron triazide	
24, 107	Boron tribromide	
24, 107	Boron trichloride	
24, 107	Boron trifluoride	
24, 107	Boron triiodide	
24, 33, 105	Boron trisulfide	
9	BPMC	Bassa•
23	Brass	
2	Bromic acid	
104	Bromine	
102	Bromine azide	
11	Bromine cyanide	Cyanogen bromide
104, 107	Bromine monofluoride	
104, 107	Bromine pentafluoride	
104, 107	Bromine trifluoride	
17	Bromoacetylene	
6, 19	Bromobenzoyl acetanilide	
17	Bromobenzyl trifluoride	
105	Bromodiborane	
107	Bromodiethylaluminum	
14	Bromodimethoxyaniline	
17	Bromoform	Tribromomethane

RGN	Names	Synonyms
7	Aminopropane	Isopropyl amine
7, 26	Amino propionitrile	
7, 8	Aminothiazole	
7	Aminotoluene	Toluidine
10	Ammonia	
24	Ammonium arsenate	
102	Ammonium azide	
15	Ammonium bifluoride	
102, 104	Ammonium chlorate	
24, 102	Ammonium dichromate	
15	Ammonium fluoride	
24, 102	Ammonium hexanitrocobaltate	
10	Ammonium hydroxide	
105	Ammonium hypophosphide	
24	Ammonium molybdate	
102	Ammonium nitrate	
24, 104	Ammonium nitridoosmate	
102	Ammonium nitrite	
104	Ammonium perchlorate	
102, 104	Ammonium periodate	
24, 102, 104	Ammonium permanganate	
104	Ammonium persulfate	
102	Ammonium picrate	
33, 105	Ammonium sulfide	
24, 104	Ammonium tetrachromate	
24, 102, 104	Ammonium tetraperoxychromate	
24, 104	Ammonium trichromate	
13	Amyl acetate	Acetoxy pentane
6	Amyl alcohol	
17	Amyl chloride	Chloropentane
26	Amyl cyanide	
7	Amylamine	Aminopentane
28	Amylene	Pentene
20	Amyl mercaptan	Pentanethiol
7	Aniline	
20	Animert• V-101	Tetrasul
14	Anisole	
107	Anisole chloride	
16	Anthracene	
23, 24	Antimony	
24, 107	Antimony chloride	Antimony trichloride
24, 107	Antimony fluoride	Antimony trifluoride
24, 25	Antimony nitride	
24	Antimony oxychloride	
24	Antimony oxide	Antimony trioxide
24	Antimony pentachloride	
24	Antimony pentafluoride	
24, 33, 105	Antimony pentasulfide	
24, 104	Antimony perchlorate	
24	Antimony potassium tartrate	

RGN	Names	Synonyms
24	Antimony sulfate	
24, 33, 105	Antimony sulfide	Antimony trisulfate
24, 107	Antimony tribromide	Antimony trisulfide
24, 107	Antimony trichloride	
24, 107	Antimony trifluoride	Antimony chloride
24, 107	Antimony triiodide	Antimony fluoride
24	Antimony trioxide	
24	Antimony trisulfate	Antimony oxide
24, 33	Antimony trisulfide	Antimony sulfate
24, 107	Antimony trivinyl	Antimony sulfide
5, 103	Aqualin	
106	Aqueous solutions & mixtures	Acrolein
	Aretan•	
24		Methoxyethylmercuric chloride
17	Aroclor•	Polychlorinated biphenyl
24	Arsenic	
24, 107	Arsenic bromide	
24, 107	Arsenic chloride	Arsenic tribromide
24, 33, 105	Arsenic disulfide	Arsenic trichloride
24, 107	Arsenic iodide	Arsenic sulfide
24	Arsenic oxide	Arsenic triiodide
24	Arsenic pentaselenide	Arsenic pentoxide
24, 33	Arsenic pentasulfide	
24	Arsenic pentoxide	
24, 33, 105	Arsenic sulfide	Arsenic oxide
24, 107	Arsenic tribromide	Arsenic disulfide
24, 107	Arsenic trichloride	Arsenic bromide
24	Arsenic trifluoride	Arsenic chloride
24, 107	Arsenic triiodide	
24, 33, 105	Arsenic trisulfide	Arsenic iodide
24, 105	Arsine	
17	Askarel	
101	Asphalt	Polychlorinated biphenyl
8, 102	Azidocarbonyl guanidine	
8	Azido-s-triazole	
32	Azinphos ethyl	
7, 103	Aziridine	
8, 26	a,a'-Azodilsobutyronitrile	Ethyleneimine
32	Azodrin•	
101	Bakelite•	Monocrotophos
9	Banol	
21, 24, 107	Barium	Carbanolate
24, 102	Barium azide	
24, 104	Barium bromate	
24, 105, 107	Barium carbide	
24, 104	Barium chlorate	
24	Barium chloride	
24, 104	Barium chromate	
15, 24	Barium fluoride	
24	Barium fluosilicate	

RGN	Names	Synonyms
17	Bromomethane	Methyl bromide
17, 31	Bromophenol	
17	Bromopropene	Allyl bromide
17	Bromopropyne	
105	Bromosilane	
17	Bromotoluene	Benzyl bromide
17	Bromotrichloromethane	
17	Bromotrifluomethane	
17, 26, 31	Bromoxynil	3,5-Dibromo-4-hydroxy benzonitrile
23	Bronze	
101	Buna-N*	
101	Bunker fuel oil	
9	Butacarb	
28, 103	Butadiene	
28	Butadiyne	Diacetylene
5	Butanal	Butyraldehyde
29	Butane	
4	Butanediol	
20	Butanethiol	Butyl mercaptan
102	Butanetriol trinitrate	
4	Butanol	Butyl alcohol
19	Butanone	Methyl ethyl ketone
5	Butenal	Crotonaldehyde
28	Butene	
19	Butene-2-one	Methyl vinyl ketone
13	Butyl acetate	Acetoxybutane
13, 103	n-Butyl acrylate	
7	Butylamine	Aminobutane
4	Butyl alcohol	Butanol
8	t-Butyl azidoformate	
16	Butyl benzene	Phenylbutane
13	Butyl benzyl phthalate	
4	Butyl cellusolve*	
105	Butyl dichloroborane	
14	Butyl ether	Dibutyl ether
13	Butly formate	
17	Butyl fluoride	
34	Butyl glycidyl ether	
30	Butyl hydroperoxide	
102, 104	t-Butyl hypochlorite	
105, 107	n-Butyl lithium	
20	Butyl mercaptan	Butanethiol
30	Butyl peroxide	
30	Butyl peroxyacetate	t-Butyl perbenzoate
30	Butyl peroxybenzoate	
30	Butyl peroxypivalate	
30	t-Butyl perbenzoate	Butyl peroxyacetate
34	t-Butyl-3-phenyl oxazirane	
107	Butyl trichlorosilane	

RGN	Names	Synonyms
6	Butyramide	
5	Butyraldehyde	Butanol
3	Butyric acid	
26	Butyronitrile	
9	Bux*	
24	Cacodylic acid	Dimethylarsenic acid
23, 24	Cadmium	
24, 105, 107	Cadmium acetylide	
24, 10, 107	Cadmium amide	
24, 102	Cadmium azide	
24	Cadmium bromide	
24, 104	Cadmium chlorate	
24	Cadmium chloride	
11, 24	Cadmium cyanide	
15, 24	Cadmium fluoride	
24, 102	Cadmium hexamine chlorate	
24, 102	Cadmium hexamine perchlorate	
24	Cadmium iodide	
24, 102, 104	Cadmium nitrate	
24, 25, 102	Cadmium nitride	
24	Cadmium oxide	
24	Cadmium phosphate	
24, 33, 105	Cadmium sulfide	
24, 102	Cadmium trihydrazine chlorate	
24, 102	Cadmium trihydrazine perchlorate	
24, 102	Calcium	
24	Calcium arsenate	
24	Calcium arsenite	
104	Calcium bromate	
105, 107	Calcium carbide	
104	Calcium chlorate	
104	Calcium chlorite	
15	Calcium fluoride	
105	Calcium hexammoniate	
105, 107	Calcium hydride	
10	Calcium hydroxide	Hydrated lime
104	Calcium hypochlorite	Calcium oxychloride
105	Calcium hypophosphide	
104	Calcium iodate	
23	Calcium-manganese-silicon alloy	
104	Calcium nitrate	Lime nitrate, nitrocalcite
10, 107	Calcium oxide	Slaked lime
104	Calcium oxychloride	Calcium hypochlorite
104	Calcium perchromate	
104	Calcium permanganate	
104	Calcium peroxide	
107	Calcium phosphide	
33, 105	Calcium sulfide	
101	Camphor oil	
3	Capric acid	

RGN	Names	Synonyms
3	Caproic acid	Hexanoic acid
3	Caprylic acid	
30	Caprylyl peroxide	Octyl peroxide
31	Carbacrol	
9	Carbaryl	
6	Carbetamide	
9	Carbanolate	Banol
9	Carbofuran	Furadan®
31	Carbolic acid	Phenol
31	Carbolic oil	
101	Carbon, activated, spent	
20	Carbon bisulfide	Carbon disulfide
20	Carbon disulfide	Carbon bisulfide
17	Carbon tetrachloride	Tetrachloromethane
17	Carbon tetrafluoride	
17	Carbon tetraiodide	
7	Castrix	Crimidine
31	Catechol	
10	Caustic potash	Potassium hydroxide
10	Caustic soda	Sodium hydroxide
12	CDEC	
101	Cellulose	
27, 102	Cellulose nitrate	Nitro cellulose
22	Cerium	
105	Cerium hydride	
33, 105	Cerium trisulfide	
105	Cerous phosphide	
21	Cesium	
107	Cesium amide	
102	Cesium azide	
105	Cesium carbide	
15	Cesium fluoride	
105	Cesium hexahydroaluminate	
105, 107	Cesium hydride	
107	Cesium phosphide	
33, 105	Cesium sulfide	
5	Chloral hydrate	Trichloroacetaldehyde
17	Chlordane	
17	Chlorestol	Polychlorinated biphenyl
32	Chlorfenvinphos	
2, 104	Chloric acid	
104	Chlorine	
102	Chlorine azide	
102, 104, 107	Chlorine dioxide	
102, 104	Chlorine fluoroxide	
104, 107	Chlorine monofluoride	
104	Chlorine monoxide	
104, 107	Chlorine pentafluoride	
104, 107	Chlorine trifluoride	
102, 104	Chlorine trioxide	

RGN	Names	Synonyms
5, 17	Chloroacetaldehyde	
3, 17	Chloroacetic acid	Monochloroacetic acid
17, 19	Chloroacetone	Monochloroacetone
17, 19	Chloroacetophenone	Phenyl chloromethyl ketone
107	Chloroacetyl chloride	
102	Chloroacetylene	
17, 26	Chloroacrylonitrile	
8, 17	Chloroazodin	
17	Chlorobenzene	
8, 17	Chlorobenzotriazole	
17, 30	Chlorobenzoyl peroxide	
17, 26	Chlorobenzylidene malononitrile	
17, 26	Chlorobutyronitrile	
24, 104, 107	Chloro chromic anhydride	Chromyl chloride
17, 31	Chlorocreosol	
105	Chlorodiborane	
105, 107	Chlorodiisobutyl aluminum	
105	Chlorodimethylamine diborane	
17, 27	Chlorodinitrobenzene	
17, 27	Chloro dinitrotoluene	Dinitrochlorobenzene
105	Chlorodipropyl borane	
17	Chloroethane	
4, 7	Chloroethanol	Ethyl chloride
17	Chloroethylenimine	
17	Chloroform	
17	Chlorohydrin	Trichloromethane
17	Chloromethane	
17	Chloromethyl methyl ether	Methyl chloride
3, 17	Chloromethyl phenoxyacetic acid	
17, 27	Chloronitroaniline	
17, 27	Chloronitrobenzene	
17	Chloropentane	Nitrochlorobenzene
31	Chlorophenol	Amyl chloride
17, 18, 107	Chlorophenyl isocyanate	
17, 27, 102	Chloropicrin	Chlorpicrin, Trichloronitromethane
17	Chloropropane	Isopropyl chloride
17	Chloropropene	Allyl chloride
17, 34	Chloropropylene oxide	Epichlorohydrin
105	Chlorosilane	
1	Chlorosulfonic acid	
17, 32	Chlorothion®	
17	Chlorotoluene	Benzyl chloride
7, 17	Chlorotoluidine	
17, 27, 102	Chlorotrinitrobenzene	Picryl chloride
24	β-Chlorovinyldichloroarsine	Lewisite
17, 27, 102	Chlorpicrin	Trichloronitromethane
2, 24, 104	Chromic acid	Chromic anhydride, Chromium trioxide

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RGN	Names	Synonyms
2, 24, 104	Chromic anyhdride	Chromium trioxide, Chromic acid
24	Chromic chloride	Chromium trichloride
15, 24	Chromic fluoride	Chromium trifluoride
24	Chromic oxide	
24	Chromic sulfate	Chromium sulfate
23, 24	Chromium	
24	Chromium sulfate	Chromic sulfate
24, 33, 105	Chromic sulfide	
24	Chromium trichloride	Chromic chloride
15, 24	Chromium trifluoride	Chromic fluoride
	Chromium trioxide	Chromic acid, Chromic anhydride
2, 24, 104		
24, 104, 107	Chromyl chloride	Chloro chromic anhydride
16	Chrysene	
14, 17	CMME	Methyl chloromethyl ether
101	Coal oil	
31	Coal tar	
22, 23, 24	Cobalt	
24	Cobalt bromide	Cobaltous bromide
24	Cobalt chloride	Cobaltous chloride
24, 104	Cobalt nitrate	Cobaltous nitrate
24	Cobaltous bromide	Cobalt bromide
24	Cobaltous chloride	Cobalt chloride
24, 104	Cobaltous nitrate	Cobalt nitrate
24	Cobaltous resinate	Cobalt resinate
24	Cobaltous sulfate	Cobalt sulfate
24	Cobalt resinate	Cobaltous resinate
24	Cobalt sulfate	Cobaltous sulfate
27	Collodion	Pyroxylin
23, 24	Copper	
24	Copper acetoarsenite	Paris Green
24, 102, 105, 107	Copper acetylide	
24	Copper arsenate	Cupric arsenate
24	Copper arsenite	Cupric arsenite
24	Copper chloride	Cupric chloride
24	Copper chlorotetrazole	
11, 24	Copper cyanide	Cupric cyanide
24, 104	Copper nitrate	Cupric nitrate
24, 25	Copper nitride	
24	Copper sulfate	Cupric sulfate, Blue vitriol
24, 33, 105	Copper sulfide	
17, 32	Compound 1836	Diethyl chlorvinyl phosphate
32	Coroxon®	
19	Coumafuryl	Fumarin
19	Coumatetralyl	
31	Cresol	
34	Cresol glydicyl ether	
31	Cresote	
7	Crimidine	Castrix

RGN	Names	Synonyms
5	Crotonaldehyde	Butenal
4	Crotyl alcohol	
17	Crotyl bromide	
17	Crotyl chloride	
16	Cumene	Isopropyl benzene
30	Cumene hydroperoxide	Dimethylbenzyl hydrope
24	Cupric arsenate	Copper arsenate
24	Cupric arsenite	Copper arsenite
24	Cupric chloride	Copper chloride
11, 24	Cupric cyanide	Copper cyanide
24, 104	Cupric nitrate	Copper nitrate
24	Cupric sulfate	Copper sulfate
7, 24	Cuprietylenediamine	
3, 26	Cyanoacetic acid	Malonic nitrile
17, 26	Cyanochloropentane	
26	Cyanogen	
11	Cyanogen bromide	Bromine cyanide
26, 32	Cyanophenphos	Surecide®
102	Cyanuric triazide	
29	Cycloheptane	
29	Cyclohexane	
4	Cyclohexanol	
19	Cyclohexanone	
30	Cyclohexanone peroxide	
7	Cyclohexylamine	
107	Cyclohexenyl trichlorosilane	
31	Cyclohexyl phenol	
107	Cyclohexyl trichlorosilane	
29	Cyclopentane	
4	Cyclopentanol	
28	Cyclopentene	
29	Cyclopropane	
27, 102	Cyclotrimethylene trinitraamine	RDX
16	Cymene	
20, 32	Cyolan®	Phospholan
3, 17	2,4-D	Dichlorophenoxyacetic ac
32	Dasanit®	Fensulfothion
17	DBCP	Dibromochloropropane
17	DCB	Dichlorobenzene
17	DDD	
8, 27, 102	DDNP	Diazodinitrophenol
17	DDT	
17, 32	DDVP	Dichlorovos, Vapona®
105, 107	DEAC	Diethylaluminum chloride
107	Decaborane	
29	Decahydronaphthalene	Decalin
29	Decalin	Decahydronaphthalene
29	Decane	
4	Decanol	
28	Decene	

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RGN	Names	Synonyms
16	Decyl benzene	
32	Delnav*	
32	Demeton-s-methyl sulfoxid	Dioxathion
4, 19	Diacetone alcohol	Metasystox R*
19	Diacetyl	
28	Diacetylene	
8, 105	Diamine	Butadiyne
7	Diaminobenzene	Hydrazine
7	Diaminohexane	Phenylene diamine
8, 102	Diazidoethane	Hexamethylenediamine
32	Diazinon*	
27, 102	Diazodinitrophenol	DDNP
30, 102	Dibenzoyl peroxide	Benzoyl peroxide
105, 107	Diborane	Diboron hexahydride
105, 107	Diboron hexahydride	Diborane
14	Dibutyl ether	Butyl ether
13	Dibutyl phthalate	
17, 26, 31	3,5-Dibromo-4-hydroxybenzonitrile	Bromoxynil
17	Dibromochloropropane	DBCP, Fumazone*, Nemagon*
17	Dibromoethane	Ethylene dibromide
17, 19	Dichloroacetone	
104	Dichloroamine	
17	Dichlororobenzene	DCB
7, 17	Dichlorobenzidine	
107	Dichlorodimethylsilane	Dimethyl dichlorosilane
17	Dichloroethane	Ethylene dichloride
17	Dichloroethene	Dichloroethylene
14, 17	Dichloroether	Dichloroethyl ether
24, 107	Dichloroethylarsine	
107	Ethyl dichlorosilane	
14, 17	Ethyl ether	Dichloroether
104	Dichloroisocyanuric acid	Dichloro-s-triazine-2,4,5-trione
17	Dichloromethane	Methylene chloride
17	Dichlorophene	
17, 31	Dichlorophenol	
3, 17	Dichlorophenoxyacetic acid	2,4-D
17	Dichloropropane	Propylene dichloride
4, 17	Dichloropropanol	
17	Dichloropropene	Dichloropropylene
17	Dichloropropylene	Dichloropropene
104	Dichloro-s-triazine-2,4,5-trione	Dichloroisocyanuric acid
17, 32	Dichlorovos	DDVP
30	Dicumyl peroxide	
28	Dicyclopentadiene	
17	Dieldrin	
4, 7	Diethanolamine	
105, 107	Diethyl aluminum chloride	Aluminum diethylmonochloride, DEAL
7	Diethylamine	
16	Diethyl benzene	

RGN	Names	Synonyms
17, 32	Diethyl chlorovinyl phosphate	Compound 1836
107	Diethyl dichlorosilane	
14	Diethylene dioxide	Dioxane
27, 102	Diethylene glycol dinitrate	
13	Diethylene glycol monobutyl ether acetate	
7	Diethylene triamine	
14	Diethyl ether	
19	Diethyl ketone	
6	Diethyltoluamide	
24, 105, 107	Diethyl zinc	Zinc ethyl
101	Diesel oil	
1	Difluorophosphoric acid	
34	Diglycidyl ether	Bis(2,3-epoxypropyl) eth
28	Diisobutylene	
19	Diisobutyl ketone	
4, 17	Diisopropanolamine	
30	Diisopropylbenzene hydroperoxide	
24, 104, 107	Diisopropyl beryllium	
14	Diisopropyl ether	Isopropyl ether
30	Diisopropyl peroxydicarbonate	Isopropyl percarbonate
32	Dimecron*	Phosphamidon
6, 32	Dimefox	Hanane*
28	Dimethyl acetylene	
7	Dimethyl amine	
7, 8	Dimethylamino azobenzene	Methyl yellow
24	Dimethyl arsenic acid	Cacodylic acid
30	Dimethylbenzyl hydroperoxide	Cumene hydroperoxide
29	Dimethyl butane	Neohexane
28	Dimethyl butyne	
107	Dimethyl dichlorosilane	Dichlorodimethylsilane
32	Dimethyldithiophosphoric acid	
14	Dimethyl ether	
19	Dimethyl formal	
6	Dimethyl formamide	
30	Dimethylhexane dihydroperoxide	
8	Dimethyl hydrazine	UDMH
19	Dimethyl ketone	Acetone
105, 107	Dimethyl magnesium	
27	Dimethylnitrobenzene	Nitroxylene
7, 27	Dimethylnitrosoamine	N-Nitrosodimethyl amin
20	Dimethyl sulfide	Methyl sulfide
32	Dimeton	
27	Dinitrobenzene	
17, 27	Dinitrochlorobenzene	Chlorodinitrobenzene
27, 31	2,4-Dinitro-6-sec-butyl phenol	Dinoseb
27, 31	Dinitrocresol	DNOC, Elgetol 30
27, 31	Dinitrophenol	
8, 27	Dinitrophenyl hydrazine	
27	Dinitrotoluene	

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RGN	Names	Synonyms
27, 31	Dinoseb	2,4-Dinitro-6-sec-butylphenol
9	Dioxacarb	
14	Dioxane	Diethylene dioxide
32	Dioxathion	Delnav*
27, 102	Dipentaerythritol hexanitrate	
28	Dipentene	
6	Diphenamide	
16	Diphenyl	Phenylbenzene
16	Diphenyl acetylene	
7	Diphenylamine	
7, 24	Diphenylamine chloroarsine	Phenarsazine chloride
16	Diphenyl ethane	
16	Diphenyl ethylene	Stilbene
16	Diphenyl methane	Benzylbenzene
18, 107	Diphenylmethane diisocyanate	
14	Diphenyl oxide	
7, 27, 102	Dipicryl amine	Hexanitrodiphenylamine
7	Dipropyl amine	
32	Disulfoton	Disyston*
1	Disulfuric acid	
25, 102	Disulfur dinitride	
107	Disulfuryl chloride	
32	Disyston*	Disulfoton
12	Dithane* M-45	
32	Dithione*	Sulfotepp
27, 31	DNOC	Dinitrocresol
28	Dodecene	
16	Dodecyl benzene	
107	Dodecyl trichlorosilane	
9	Dowco-139*	Mexacarbate
31	Dowicide 1	o-Phenyl phenol
16	Dowtherm	
16	Durene	
32	Dyfonate*	Fonofos
101	Dynes Thinner	
27, 31	Elgetol 30	Dinitrocresol
17, 20	Endolsulfan	Thiodan*
3	Endothall	
32	Endothion	Exothion
17	Endrin	
32	EPN	
17, 34	Epichlorohydrin	Chloropropylene oxide
34	Epoxybutane	
34	Epoxybutene	
34, 103	Epoxyethane	Ethylene oxide
34	Epoxyethylbenzene	
34	Bis(2-3-Epoxypropyl) ether	Diglycidyl ether
29	Ethane	
20	Ethanethiol	Ethyl mercaptan
4	Ethanol	Ethyl alcohol

RGN	Names	Synonyms
32	Ethion*	Nialate
4, 14	Ethoxyethanol	
13	Ethyl acetate	
28	Ethyl acetylene	
13, 103	Ethylacrylate	
4	Ethyl alcohol	Ethanol
7	Ethylamine	Aminoethane
16	Ethyl benzene	Phenylethane
13	Ethyl butanoate	Ethyl butyrate
13	Ethyl butyrate	Ethyl butanoate
17	Ethyl chloride	Chloroethane
13, 17	Ethyl chloroformate	
24, 107	Ethyl dichloroarsine	Dichloroethylarsine
107	Ethyl dichlorosilane	
14	Ethyl ether	Diethyl ether
28	Ethylene	
24, 104	Ethylene chromic oxide	
4, 17	Ethylene chlorohydrin	
4, 26	Ethylene cyanohydrin	Hydroxypropionitrile
7	Ethylene diamine	
17	Ethylene dibromide	Dibromoethane
17	Ethylene dichloride	Dichloroethane
4	Ethylene glycol	
27, 102	Ethylene glycol dinitrate	Glycol dinitrate
4, 14, 17	Ethylene glycol monomethyl ether	
7, 103	Ethyleneimine	Aziridine
34, 103	Ethylene oxide	Epoxyethane
13	Ethyl formate	
13, 103	2-Ethylhexyl acrylate	
20	Ethyl mercaptan	Ethanethiol
27, 102	Ethyl nitrate	
27, 102	Ethyl nitrite	
13	Ethyl propionate	
107	Ethyl trichlorosilane	
32	Exothion	Endothion
31	Eugenol	
32	Fensulfothion	Bayer 25141, Dasani
12	Ferbam	
24	Ferric arsenate	
33	Ferric sulfide	
24	Ferrous arsenate	Iron arsenate
33, 103	Ferrous sulfide	
16	Fluoranthrene	
16	Fluorene	
104, 107	Fluorine	
102	Fluorine azide	
104, 107	Fluorine monoxide	Oxygen difluoride
6, 17	Fluoroacetanilide	
3	Fluoroacetic acid	
1, 13	Fluoroboric acid	

RGN	Names	Synonyms
1, 107	Fluorosulfonic acid	Fluosulfonic acid
1, 107	Fluosulfonic acid	Fluorosulfonic acid
1, 15	Fluosilicic acid	
32	Fonofos•	Dyfonate•
5	Formaldehyde	Methanal
6	Formamide	
6	Formetanate hydrochloride	
3	Formic acid	Methanoic acid
32	Fostion•	Prothoate
17	Freon•	
3	Fumaric acid	
19	Fumarin	Coumafuryl
17	Fumazone•	Dibromochloropropane
9	Furadan•	Carbofuran
14	Furan	Furfuran
5	Furfural	
14	Furfuran	
101	Gas oil, cracked	
101	Gasoline	
33, 105	Germanium sulfide	
5	Glutaraldehyde	
4	Glycerin	
34	Glycidol	
13	Glycol diacetate	
27, 102	Glycol dinitrate	Ethylene glycol dinitrate
14	Glycol ether	
3	Glycolic acid	
27, 102	Glycol monolactate trinitrate	
26	Glycolonitrile	
105, 107	Gold acetylide	
102	Gold cyanate	Gold fulminate
102	Gold fulminate	Gold cyanate
33, 105	Gold sulfide	
101	Grease	
31	Guaiacol	
8, 102	Guanyl nitrosaminoguanylidene hydrazine	
27, 104	Guanidine nitrate	
27, 102	Gun cotton	Nitrocellulose
32	Guthion•	
22	Hafnium	
6, 32	Hanane•	Dimefox
16	Hemimellitene	
17	Heptachlor	
29	Heptane	
5	Heptanal	
4	Heptanol	
19	Heptanone	
28	Heptene	
105	Hexaborane	
17	Hexachlorobenzene	
107	Hexadecyl trichorosilane	
32	Hexaethyl tetraphosphate	
1, 15	Hexafluorophosphoric acid	
105, 107	Hexahydride diborane	Diborane
16	Hexamethyl benzene	
7	Hexamethylenediamine	Diaminohexane
7	Hexamethylenetetraamine	
5	Hexanal	
7, 27, 102	Hexanitrodiphenylamine	Dipicrylamine
4	Hexanol	
3	Hexanoic acid	Caproic acid
28	Hexene	
7	Hexylamine	Aminohexane
107	Hexyl trichlorosilane	
28	Hexyne	
102	HMX	
9	Hopcide•	
10	Hydrated lime	Calcium hydroxide
8, 105	Hydrazine	Diamine
8, 102	Hydrazine azide	
102	Hydrazoic acid	Hydrogen azide
1	Hydriodic acid	Hydrogen iodide
1, 107	Hydrobromic acid	Hydrogen bromide
1	Hydrochloric acid	Muriatic acid
1, 11	Hydrocyanic acid	Hydrogen cyanide
1, 15	Hydrofluoric acid	Hydrogen fluoride
102	Hydrogen azide	Hydrazoic acid
1, 107	Hydrogen bromide	Hydrobromic acid
1, 11	Hydrogen cyanide	Hydrocyanic acid
1, 15	Hydrogen fluoride	Hydrofluoric acid
1	Hydrogen iodide	Hydroiodic acid
104	Hydrogen peroxide	
105	Hydrogen phosphide	Phosphine
24, 105	Hydrogen selenide	
33, 105	Hydrogen sulfide	
31	Hydroquinone	
19, 31	Hydroxyacetophenone	
3, 17	Hydroxydibromobenzoic acid	
31	Hydroxydiphenol	
31	Hydroxyhydroquinone	
19, 31	Hydroxyacetophenone	
4, 26	Hydroxyisobutyronitrile	Acetone cyanohydrin
105	Hydroxyl amine	
4, 26	Hydroxypropionitrile	Ethylene cyanohydrin
2	Hypochlorous acid	
16	Indene	
22, 23, 24	Indium	
17	Inerteen	Polychlorinated biphenyl
107	Iodine monochloride	
104	Iodine pentoxide	

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RGN	Names	Synonyms
23	Iron	
24	Iron arsenate	Ferrous arsenate
29	Isobutane	
4	Isobutanol	
13	Isobutyl acetate	
13, 103	Isobutyl acrylate	
28	Isobutylene	
13	Isodecyl acrylate	
16	Isodurene	
31	Isoeugenol	
29	Isohexane	
29	Isooctane	Trimethylpentane
28	Isooctene	
29	Isopentane	Methylbutane
19	Isophorone	
28, 103	Isoprene	Methyl butadiene
4	Isopropanol	
13	Isopropyl acetate	
28	Isopropyl acetylene	
7	Isopropylamine	Aminopropane
16	Isopropyl benzene	Cumene
17	Isopropyl chloride	Chloropropane
14	Isopropyl ether	Diisopropyl ether
20	Isopropyl mercaptan	
9	N-Isopropylmethylcarbamate	
17, 32	o-Isopropyl methylphosphoryl fluoride	
30	Isopropyl percarbonate	Diisopropyl peroxydicarbonate
101	Isotactic propylene	
101	J-100	
101	Jet oil	
101	Kerosene	
101	Lacquer thinner	
9	Landrin®	
9, 20	Lannate®	Methomyl
30	Lauroyl peroxide	
23, 24	Lead	
24	Lead acetate	
24	Lead arsenate	
24	Lead arsenite	Lead orthoarsenate
24, 102	Lead azide	
24	Lead carbonate	
24, 104	Lead chlorite	
11, 24	Lead cyanide	
24, 27, 102	Lead dinitroresorcinate	
24, 27, 102	Lead mononitroresorcinate	
24, 104	Lead nitrate	
24	Lead orthoarsenate	
24	Lead oxide	Lead arsenate
24, 27, 102	Lead styphnate	
24, 33, 104	Lead sulfide	Lead trinitroresorcinate

RGN	Names	Synonyms
24, 27, 102	Lead trinitroresorcinate	Lead styphnate
24	Lewisite	β-Chlorovinyldichlor
104	Lime nitrate	Calcium nitrate
17	Lindane	
21, 107	Lithium	
105, 107	Lithium aluminum hydride	
10, 107	Lithium amide	
107	Lithium ferrosilicon	
105, 107	Lithium hydride	
10	Lithium hydroxide	
104	Lithium hypochlorite	
25	Lithium nitride	
104, 107	Lithium peroxide	
107	Lithium silicon	
33, 105	Lithium sulfide	
24	London purple	
10	Lye	Sodium hydroxide
21, 22	Magnesium	
24	Magnesium arsenate	
24	Magnesium arsenite	
104	Magnesium chlorate	
15	Magnesium fluoride	
104	Magnesium nitrate	
104	Magnesium perchlorate	
104	Magnesium peroxide	
33, 105	Magnesium sulfide	
32	Malathion	
3	Maleic acid	
3, 26	Malonic nitrile	Cyanoacetic acid
12	Maneb	
22, 23, 24	Manganese	
24	Manganese acetate	
24	Manganese arsenate	Manganous arsenate
24	Manganese bromide	Manganous bromide
24	Manganese chloride	Manganous chloride
24	Manganese methylcyclopentadienyl-tricarbonyl	
24, 104	Manganese nitrate	Manganous nitrate
24, 33, 105	Manganese sulfide	
24	Manganous arsenate	Manganese arsenate
24	Manganous bromide	Manganese bromide
24	Manganous chloride	Manganese chloride
104	Manganous nitrate	Manganese nitrate
27, 102	Mannitol hexanitrate	Nitromannite
9	Matacil®	
24	Mayer's reagent	
13, 27	Medinoterb acetate	Mercuric potassium Io
9	Meobal	
8, 20	Mercaptobenzothiazole	
4, 20	Mercaptoethanol	

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RGN	Names	Synonyms
32	Mercarbam	
24	Mercuric acetate	
24	Mercuric ammonium chloride	Mercury ammonium chloride
24	Mercuric benzoate	Mercury benzoate
24	Mercuric bromide	
24	Mercuric chloride	Mercury chloride
11, 24	Mercuric cyanide	Mercury cyanide
24	Mercuric dioxysulfate	Mercuric subsulfate
24	Mercuric iodide	Mercury iodide
24, 104	Mercuric nitrate	Mercury nitrate
24	Mercuric oleate	Mercury oleate
24	Mercuric oxide	
11, 24, 102	Mercuric oxycyanide	
24	Mercuric potassium iodide	Mayer's reagent
24	Mercuric salicylate	Salicylated mercury
24	Mercuric subsulfate	Mercuric dioxysulfate
24	Mercuric sulfate	Mercury sulfate
24, 33, 105	Mercuric sulfide	
24	Mercuric thiocyanate	Mercury thiocyanide
24	Mercuric thiocyanide	Mercury thiocyanate
24	Mercurol	Mercury nucleate
24	Mercurous bromide	
24	Mercurous gluconate	
24	Mercurous iodide	
24, 104	Mercurous nitrate	
24	Mercurous oxide	
24	Mercurous sulfate	Mercury bisulfate
24	Mercury	
22, 24	Mercury (vapor)	
24	Mercury acetate	Mercuric acetate
24	Mercury ammonium chloride	Mercuric ammonium chloride
24	Mercury benzoate	Mercuric benzoate
24	Mercury bisulfate	Mercurous sulfate
24	Mercury chloride	Mercuric chloride
11, 24	Mercury cyanide	Mercuric cyanide
24, 102	Mercury fulminate	
24	Mercury iodide	Mercuric iodide
24, 104	Mercury nitrate	Mercuric nitrate
24	Mercury nucleate	Mercurol
24	Mercury oleate	Mercuric oleate
24	Mercury sulfate	Mercuric sulfate
16	Mesitylene	1,3,5-trimethylbenzene
19	Mesityl oxide	
9	Mesurol®	
32	Metasystox-R	Demeton-S-methyl sulfoxid
12	Metham	
5	Methanal	Formaldehyde
29	Methane	
20	Methanethiol	Methyl mercaptan
3	Methanoic acid	Formic acid

RGN	Names	Synonyms
4	Methanol	Methyl alcohol
9, 20	Methomyl	Lannate®
24	Methoxyethylmercuric chloride	Agallolaretan®
13	Methyl acetate	
101	Methyl acetone	
28	Methyl acetylene	Methyl butyne
13, 103	Methyl acrylate	
4	Methyl alcohol	Methanol
105, 107	Methyl aluminum sesquibromide	
105, 107	Methyl aluminum sesquichloride	
7	Methylamine	Aminomethane
13	Methyl amyl acetate	
7	N-Methyl aniline	
7	Methyl aziridine	Propyleneimine
16	Methyl benzene	Toluene
17	Methyl bromide	Bromomethane
28, 103	Methyl butadiene	Isoprene
29	Methyl butane	Isopentane
28	Methyl butene	
14	Methyl butyl ether	
19	Methyl t-butyl ketone	
28	Methyl butyne	Isopropyl acetylene
13	Methyl butyrate	
17	Methyl chloride	Chloromethane
13, 17	Methyl chlorocarbonate	Methyl chloroformate
17	Methyl chloroform	
13, 17	Methyl chloroformate	Methyl chlorocarbonate
14, 17	Methyl chloromethyl ether	CMME
26	Methyl cyanide	Acetonitrile
29	Methyl cyclohexane	
24	Methyl dichloroarsine	
107	Methyl dichlorosilane	
17	Methylene chloride	Dichloromethane
18, 107	Methylene diisocyanate	
7, 17	4,4-Methylene bis(2-chloroaniline)	
17	Methyl ethyl chloride	
14	Methyl ethyl ether	
19	Methyl ethyl ketone	Butanone
30	Methyl ethyl ketone peroxide	
7	Methyl ethyl pyridine	
13	Methyl formate	
8	Methyl hydrazine	Monomethyl hydrazine
17	Methyl iodide	
19	Methyl isobutyl ketone	
18, 107	Methyl isocyanate	
19	Methyl isopropenyl ketone	
105, 107	Methyl magnesium bromide	
105, 107	Methyl magnesium chloride	
105, 107	Methyl magnesium iodide	
20	Methyl mercaptan	Methanethiol

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RGN	Names	Synonyms
13, 103	Methyl methacrylate	
16	Methyl naphthalene	
32	Methyl parathion	
13	Methyl pentanoate	Methyl valerate
13	Methyl propionate	
19	Methyl n-propyl ketone	
28, 103	Methyl styrene	
20	Methyl sulfide	Dimethyl sulfide
107	Methyl trichlorosilane	
13	Methyl valerate	Methyl pentanoate
19	Methyl vinyl ketone	Butene-2-one
7, 8	Methyl yellow	Dimethylamino azobenzene
32	Mevinphos	Phosdrin®
9	Mexacarbate	Dowco-139®
101	Mineral spirits	
32	Mintacol®	Paraoxon
9	Mipcin®	
9	Mobam®	
32	Mocap®	
22, 23, 24	Molybdenum	
24	Molybdenum anhydride	Molybdenum trioxide
24, 33, 105	Molybdenum sulfide	
24	Molybdenum trioxide	Molybdenum anhydride
24	Molybdic acid	
17, 19	Monochloroacetone	Chloroacetone
3, 17	Monochloroacetic acid	Chloroacetic acid
32	Monocrotophos	Azodrin®
4, 7	Monoethanol amine	
1	Monofluorophosphoric acid	
4, 7	Monoisopropanolamine	
8	Monomethyl hydrazine	Methyl hydrazine
7	Morpholine	
101	Municipal solid waste	Refuse
1	Muriatic acid	Hydrochloric acid
12	Nabam	
21, 107	Nack	Sodium-potassium alloy
21, 107	Nak	Sodium-potassium alloy
101	Naptha	
16	Naphthalene	
31	Naphthol	
7	Naphthylamine	
20	Naphthyl mercaptan	
27, 102	Naphtite	Trinitronaphthalene
17	Nemagon®	Dibromochloropropane
29	Neohexane	Dimethyl butane
27	4-NBP	Nitrobiphenyl
12	Niacide®	
32	Nialate	Ethion
22, 24	Nickel	
24	Nickel acetate	
24, 107	Nickel antimonide	
24	Nickel arsenate	
24	Nickel arsenite	Nickelous arsenate
24	Nickel carbonyl	Nickelous arsenite
24	Nickel chloride	Nickel tetracarbonyl
11, 24	Nickel cyanide	Nickelous chloride
24, 104	Nickel nitrate	
24	Nickelous arsenate	Nickelous nitrate
24	Nickelous arsenite	Nickel arsenate
24	Nickelous chloride	Nickel arsenite
24, 104	Nickelous nitrate	Nickel chloride
24	Nickel selenide	Nickel nitrate
24, 33, 105	Nickel subsulfide	
24	Nickel sulfate	
24	Nickel tetracarbonyl	
7, 27	Nitraniline	Nickel carbonyl
2	Nitric acid	Nitroaniline
7, 27	Nitroaniline	
27	Nitrobenzene	Nitraniline
27	Nitrobenzol	Nitrobenzol
27	Nitrobiphenyl	Nitrobenzene
104	Nitrocalcity	4-NBP
27, 102	Nitrocellulose	Calcium nitrate
17, 27	Nitrochlorobenzene	Cellulose nitrate, gun cotton
104	Nitrogen dioxide	Chloronitrobenzene
27, 102	Nitromannite	
7, 17	Nitrogen mustard	Mannitol hexanitrate
104	Nitrogen tetroxide	
27, 102	Nitroglycerin	
2	Nitrohydrochloric acid	Trinitroglycerin
27, 31	Nitrophenol	
27	Nitropropane	
7, 27	Nitrosodimethylamine	
27, 102	Nitrosoguanidine	Dimethylnitrosiamine
27, 102	Nitrostarch	
27	Nitroxylene	Starch nitrate
27	Nitroxylos	Nitroxylol, Dimethylnitrobenzene
7, 27	N-Nitrosodimethylamine	Nitroxylene, Dimethylnitrobenzer
31	Nonyl phenol	Dimethylnitrosoamine
107	Nonyl trichlorosilane	
29	Nonane	
28	Nonene	
19	Nonanone	
5	Nonanal	
4	Nonanol	
107	Octadecyl trichlorosilane	
28	Octadecyne	
6, 32	Octamethylpyrophosphoramide	Schradan
5	Octanal	
29	Octane	

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RGN	Names	Synonyms
19	Octanone	
4	Octanol	
28	Octene	
30	Octyl peroxide	Caprylyl peroxide
107	Octyl trichlorosilane	
101	Oil of bergamot	
1	Oil of vitriol	Sulfuric acid
2, 24	Oleum	Sulfuric acid
101	Orris root	
31	Orthozenol	o-Phenyl phenol
23, 24	Osmium	
24, 104	Osmium amine nitrate	
24, 104	Osmium amine perchlorate	
9	Oxamyl	
3	Oxalic acid	
104, 107	Oxygen difluoride	
17	PCB	Polychlorinated biphenyl
101	Paper	
32	Paraoxon	Mintacol•
32	Parathion	
24	Paris green	Copper acetoarsenite
12	PETD	Polyram combi•
	PETN	Pentaerythrityl tetranitrate, Pentaerythritol tetranitrate
27, 102		
103	Pentaborane	
17, 31	Pentachlorophenol	
27, 102	Pentaerythritol tetranitrate	Pentaerythrityl tetranitrate, PETN
16	Pentamethyl benzene	
29	Pentane	
20	Pentanethiol	Amyl mercaptan
5	Pentanal	Valeraldehyde
19	Pentanone	
28	Pentene	Amylene
7	Pentylamine	
28	Pentyne	
3, 30	Peracetic acid	Peroxyacetic acid
2	Perbromic acid	
2	Perchloric acid	
17	Perchloroethylene	Tetrachloroethylene
17, 20	Perchloromethyl mercaptan	Trichloromethylsulfenylchloride
2	Perchlorous acid	
104	Perchloryl fluoride	
2	Periodic acid	
1	Permonosulfuric acid	
3, 30	Peroxyacetic acid	
12	rETD	Peracetic acid
101	Petroleum naptha	Polyram combi•
101	Petroleum oil	
16	Phenanthrene	
7, 24	Phenarsazine chloride	Diphenylamine chloroarsine

RGN	Names	Synonyms
31	Phenol	Carbolic acid
3	Phenyl acetic acid	
26	Phenyl acetonitrile	
16	Phenyl acetylene	
7	Phenylaniline	Diphenylamine
16	Phenylbenzene	Diphenyl
16	Phenylbutane	Butylbenzene
17, 19	Phenylchloromethyl ketone	Chloroacetophenone
24	Phenyl dichloroarsine	
7	Phenylene diamine	Diaminobenzene
16	Phenylethane	Ethylbenzene
8	Phenyl hydrazine hydrochloride	
31	o-Phenyl phenol	Orthozenol, Dowicide 1
107	Phenyl trichlorosilane	
26	Phenyl valerylnitrile	
16	Phenylpropane	Propylbenzene
31	Phloroglucinol	
32	Phorate	Thimet•
32	Phosdrin•	Mevinphos
32	Phosphamidon	Dimecron•
105	Phosphine	Hydrogen phosphide
20, 32	Phospholan	Cyolan•
105, 107	Phosphonium iodide	
1	Phosphoric acid	
107	Phosphoric anhydride	Phosphorus pentoxide
33, 105, 107	Phosphoric sulfide	Phosphorus pentasulfide
105, 107	Phosphorus (Amorphous red)	
105	Phosphorus (White-Yellow)	
33, 105	Phosphorus heptasulfide	
104, 107	Phosphorus oxybromide	Phosphoryl bromide
104, 107	Phosphorus oxychloride	Phosphoryl chloride
107	Phosphorus pentachloride	Phosphoric chloride
33, 105, 107	Phosphorus pentasulfide	Phosphoric sulfide
107	Phosphorus pentoxide	Phosphoric anhydride
33, 105, 107	Phosphorus sesquisulfide	Tetraphosphorus trisulfide
107	Phosphorus tribromide	
107	Phosphorus trichloride	
33, 105, 107	Phosphorus trisulfide	
104, 107	Phosphoryl bromide	Phosphorus oxybromide
104, 107	Phosphoryl chloride	Phosphorus oxychloride
3	Phthalic acid	
7, 27, 102	Picramide	
27, 31, 102	Picric acid	Trinitroaniline, Trinitrophenol
7	Picridine	
17, 27, 102	Picryl chloride	Chlorotrinitrobenzene
7	Piperidine	
9	Pirimicarb	
14	Polyglycol ether	
101	Polyamide resin	
17	Polybrominated biphenyl	

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RGN	Names	Synonyms
28	Polybutene	
17	Polychlorinated biphenyls	PCB, Askarel, Arochlor®, Chlorextol, Inerteen
17	Polychlorinated triphenyls	
101	Polethylene	
101	Polyester resin	
101	Polymeric oil	
18, 107	Polyphenyl polymethylisocyanate	
28, 101	Polypropylene	
12	Polyram combi®	
20, 101	Polysulfide polymer	PETD
101	Polystyrene	
101	Polyurethane	
101	Polyvinyl acetate	
101	Polyvinyl chloride	
27, 102	Polyvinyl nitrate	
32	Potasan	
21, 107	Potassium	
15	Potassium acid fluoride	Potassium fluoride
10	Potassium aluminate	
24	Potassium arsenate	
24	Potassium arsenite	
15	Potassium bifluoride	Potassium fluoride
24, 104	Potassium bichromate	Potassium dichromate
104	Potassium bromate	
10	Potassium butoxide	
11	Potassium cyanide	
104	Potassium dichloroisocyanurate	
24, 104	Potassium dichromate	Potassium bichromate
27, 102	Potassium dinitrobenzfuroxan	
15	Potassium fluoride	Potassium acid fluoride
105, 107	Potassium hydride	
10	Potassium hydroxide	Caustic potash
102, 104	Potassium nitrate	Saltpeter
25	Potassium nitride	
104	Potassium nitrite	
107	Potassium oxide	
104	Potassium perchlorate	
24, 104	Potassium permanganate	
104, 107	Potassium peroxide	
33, 105	Potassium sulfide	
9	Promecarb	
5	Propanal	Propionaldehyde
29	Propane	
20	Propanethiol	Propyl mercaptan
3	Propanoic acid	Propionic acid
4	Propanol	Propyl alcohol
17	Propargyl bromide	
17	Propargyl chloride	
4	2-Propen-1-ol	Allyl alcohol
13	Propiolactone	
5	Propionaldehyde	Propanal
6	Propionamide	
3	Propionic acid	Propanoic acid
26	Propionitrile	
13	Propyl acetate	
4	Propyl alcohol	Propanol
7	Propylamine	
16	Propyl benzene	Phenyl propane
17	Propylene dichloride	Dichloropropane
4	Propylene glycol	
4, 14	Propylene glycol monomethyl ether	
34, 103	Propylene oxide	
7	Propyleneimine	Methyl aziridine
14	Propyl ether	
13	Propyl formate	
20	Propyl mercaptan	Propanethiol
107	Propyl Trichlorosilane	
32	Prothoate	
16	Pseudocumene	Fostion®
7	Pyridine	1,2,4 trimethylbenzene
31	Pyrogallol	
107	Pyrosulfuryl chloride	Disulfuryl chloride
27	Pyroxylin	Collodion
19	Quinone	Benzoquinone
22	Raney nickel	
27, 102	RDX	Cyclotrimethylene trinitram
101	Refuse	Municipal solid waste
101	Resins	
31	Resorcinol	
21	Rubidium	
24	Salicylated mercury	Mercuric salicylate
31	Saligenin	
102, 104	Saltpeter	Potassium nitrate
	Schradan	Octamethyl pyrophosphoramide OMPA
6, 32		
1, 24	Selenious acid	Selenous acid
22, 23, 24	Selenium	
12, 24	Selenium diethyldithiocarbamate	
15, 24	Selenium fluoride	
1, 24	Selenous acid	Selenious acid
107	Silicochloroform	Trichlorosilane
107	Silicon tetrachoride	
15, 107	Silicon tetrafluoride	
24, 102, 105, 107	Silver acetylide	
24, 102	Silver azide	
11, 24	Silver cyanide	
24, 104	Silver nitrate	
24, 25, 102	Silver nitride	
24, 27, 102	Silver styphnate	Silver trinitroresorcinate

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RGN	Names	Synonyms.
24, 33, 105	Silver sulfide	
24, 102	Silver tetrazene	
24, 27, 102	Silver trinitroresorcinate	Silver styphnate
10, 107	Slaked lime	Calcium oxide
102	Smokeless powder	
10, 107	Sodamide	Sodium amide
104	Soda niter	Sodium nitrate
21, 105, 107	Sodium	
15	Sodium acid fluoride	Sodium fluoride
10, 105	Sodium aluminate	
105, 107	Sodium aluminum hydride	
10, 107	Sodium amide	Sodamide
24	Sodium arsenate	
24	Sodium arsenite	
102	Sodium azide	
24, 104	Sodium bichromate	Sodium dichromate
15	Sodium bifluoride	Sodium fluoride
104	Sodium bromate	
24	Sodium cacodylate	Sodium dimethylarsenate
10	Sodium carbonate	
104	Sodium carbonate peroxide	
104	Sodium chlorate	
104	Sodium chlorite	
24	Sodium chromate	
11	Sodium cyanide	
104	Sodium dichloroisocyanurate	
24, 104	Sodium dichromate	Sodium bichromate
24	Sodium dimethylarsenate	Sodium cacodylate
15	Sodium fluoride	Sodium acid fluoride
105, 107	Sodium hydride	
10	Sodium hydroxide	Caustic soda, Lye
10, 104	Sodium hypochlorite	
105	Sodium hyposulfite	Sodium thiosulfate
10, 107	Sodium methylate	Sodium methoxide
10, 107	Sodium methoxide	Sodium methylate
24	Sodium molybdate	
10, 107	Sodium monoxide	Sodium oxide
104	Sodium nitrate	Soda niter
25	Sodium nitride	
104	Sodium nitrite	
10, 107	Sodium oxide	Sodium monoxide
31	Sodium pentachlorophenate	
104	Sodium perchlorate	
24, 104	Sodium permanganate	
104, 107	Sodium peroxide	
31	Sodium phenolsulfonate	
27, 102	Sodium picramate	
101	Sodium polysulfide	
21, 107	Sodium potassium alloy	Nak, Nack
24	Sodium selenate	

RGN	Names	Synonyms
24, 33, 105	Sodium sulfide	
105	Sodium thiosulfate	
24, 107	Stannic chloride	Tin tetrachloride
33, 105	Stannic sulfide	
27, 102	Starch nitrate	Nitrostarch
16	Stilbene	Diphenyl ethylene
101	Stoddard solvent	
24	Strontium	
24	Strontium arsenate	
24, 104	Strontium dioxide	Strontium peroxide
24, 33, 105	Strontium monosulfide	
24, 104	Strontium nitrate	
104	Strontium peroxide	Strontium dioxide
24, 33, 105	Strontium tetrasulfide	
27, 31, 102	Styphnic acid	Trinitroresorcinol
16, 28, 103	Styrene	Vinylbenzene
3	Succinic acid	
30	Succinic acid peroxide	
107	Sulfonyl chloride	Sulfuryl chloride
107	Sulfonyl flouride	
32	Sulfotepp	
107	Sulfur chloride	Dithlone*, Blada-Fum*
101	Sulfur (elemental)	Sulfur monochloride
2, 107	Sulfuric acid	
104, 107	Sulfuric anhydride	Oil of Vitriol, Oleum
107	Sulfur monochloride	Sulfur trioxide
20	Sulfur mustard	Sulfur chloride
107	Sulfur oxychloride	
15, 107	Sulfur pentafluoride	Thionyl chloride
104, 107	Sulfur trioxide	
107	Sulfuryl chloride	Sulfuric anhydride
107	Sulfuryl fluoride	Sulfonyl chloride
32	Supracide*	Sulfonyl fluoride
32	Surecide*	Ultracide*
101	Synthetic rubber	Cyanophenphos
14, 17	TCDD	
32	TEDP	Tetrachlorodibenzo-p-dioxin
24	TEL	Tetrethyl dithionopyrophosphate
6, 32	TEPA	Tetraethyl lead
32	TEPP	Tris-(1-aziridinyl) phosphine oxide
14	THF	Tetraethyl pyrophosphate
7	TMA	Tetrahydrofuran
24	TML	Trimethylamine
27, 102	TNB	Tetramethyl lead
27, 102	TNT	Trinitrobenzene
101	Tall oil	Trinitrotoluene
101	Tallow	
101	Tar	
15, 24	Tellurium hexafluoride	
9, 20	Temik*	Aldicarb

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RGN	Names	Synonyms
103	Tetraborane	
14, 17	Tetrachlorodibenzo-p-dioxin	TCDD
17	Tetrachloroethane	
17	Tetrachloroethylene	Perchloroethylene
17	Tetrachloromethane	Carbon tetrachloride
17, 31	Tetrachlorophenol	
14, 17	Tetrachloropropyl ether	
28	Tetradecene	
32	Tetraethyl dithionopyrophosphate	TEDP
24	Tetraethyl lead	TEL
32	Tetraethyl pyrophosphate	TEPP
14	Tetrahydrofuran	THF
7	Tetramethylenediamine	
24	Tetramethyl lead	TML
26	Tetramethyl succinonitrile	
27, 102	Tetranitromethane	
16	Tetraphenyl ethylene	
33, 103, 107	Tetraphosphorus trisulfide	Phosphorus sesquisulfide
24, 25, 102	Tetraselenium tetranitride	
20	Tetrasul	Animert® V-101
25, 102	Tetrasulfur tetranitride	
8, 102	Tetrazene	
24	Thallium	
24, 25, 102	Thallium nitride	
24, 33, 103	Thallium sulfide	
24	Thallous sulfate	
32	Thimet®	
107	Thionyl chloride	Phorate
107	Thiocarbonyl chloride	Sulfur oxychloride
17, 20	Thiodan®	Thiophosgene
32	Thionazin	Endosulfan
107	Thionyl chloride	Zinophos®
107	Thiophosgene	Sulfur oxychloride
107	Thiophosphoryl chloride	Thiocarbonyl chloride
12	Thiram	
22, 23, 24	Thorium	
24, 107	Tin tetrachloride	
24, 107	Titanic chloride	Stannic chloride
22, 23, 24	Titanium	Titanium tetrachloride
24, 33, 103	Titanium sesquisulfide	
24	Titanium sulfate	
24, 33, 103	Titanium sulfide	
24, 107	Titanium tetrachloride	
7	TMA	Titanic chloride
27, 102	TNB	Trimethylamine
27, 102	TNT	Trinitrobenzene
5	Tolualdehyde	Trinitrotoluene
16	Toluene	
18, 107	Toluene diisocyanate	Toluol, Methylbenzene
3	Toluic acid	
7	Toluidine	Aminotoluene
16	Toluol	Toluene, Methylbenzene
6	Topcide®	Benzadox
9, 26	Tranid®	
6, 32	Triamphos	Wepsyn® 155
17	Tribromomethane	Bromoform
107	Tri-n-butylaluminum	
24, 25	Tricadmium dinitride	
25	Tricalcium dinitride	
24, 25	Tricesium nitride	
5, 17	Trichloroacetaldehyde	Chloral hydrate
107	Trichloroborane	
17	Trichloroethane	
17	Trichloroethene	Trichloroethylene
104	Trichloroisocyanuric acid	
17	Trichloromethane	Chloroform
17, 20	Trichloromethyl sulfenyl chloride	Perchloromethyl mercapt
17, 27, 102	Trichloronitromethane	Chloropicrin
3, 17	Trichlorophenoxyacetic acid	
17	Trichloropropane	
107	Trichlorosilane	Silicochloroform
28	Tridecene	
4, 7	Triethanolamine	
105, 107	Triethyl aluminum	
24, 105, 107	Triethyl antimony	Triethylstibine
24, 107	Triethyl arsine	
24	Triethyl bismuthine	
7	Triethylamine	
6, 32	Triethylene phosphoramide	Tris(1-aziridinyl) phosphine oxide
7	Triethylene tetraamine	
24, 105, 107	Triethyl stibine	Triethyl antimony
17	Trifluoroethane	
17	Trifluoromethylbenzene	Benzotrifluoride
105, 107	Triisobutyl aluminum	
24, 25, 102	Trilead dinitride	
24, 25, 102	Trimercury dinitride	
105, 107	Trimethyl aluminum	
7	Trimethylamine	
24, 105	Trimethyl antimony	TMA
24, 107	Trimethyl arsine	Trimethylstibine
16	1,2,4-Trimethylbenzene	Pseudocumene
16	1,3,5-Trimethylbenzene	Mesitylene
24	Trimethyl bismuthine	
29	Trimethyl pentane	Isooctane
24, 105, 107	Trimethylstibine	Trimethyl antimony
105, 107	Tri-n-butylborane	
7, 27, 102	Trinitroaniline	Picramide
14, 27	Trinitroanisole	Trinitrophenylmethyl eth
27, 102	Trinitrobenzene	TNB

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RGN	Names	Synonyms
3, 27, 102	Trinitrobenzoic acid	
27, 102	Trinitroglycerin	Nitroglycerin
27, 102	Trinitronaphthalene	Naphtite
27, 31, 102	Trinitrophenol	Picric acid
14, 27	Trinitrophenyl methyl ether	Trinitroanisole
27, 31, 102	Trinitroresorcinol	Styphnic acid
27, 102	Trinitrotoluene	TNT
105, 107	Trioctyl aluminum	
16	Triphenyl ethylene	
16	Triphenyl methane	
7	Tripropylamine	
24, 107	Tripropyl stibine	
24, 107	Trisilyl arsine	
6, 32	Tris-(1-aziridinyl) phosphine oxide	TEPA, Triethylene phosphoramide
32	Trithion	
24, 25	Trithorium tetranitride	
24, 107	Trivinyl stibine	
9	Tsumacide*	
24	Tungstic acid	
101	Turpentine	
8	UDMH	Dimethyl hydrazine
32	Ultracide*	Supracide*
28	Undecene	
101	Unisolve	
24, 104	Uranium nitrate	Uranyl nitrate
24, 33, 105	Uranium sulfide	
24, 104	Uranyl nitrate	Uranium nitrate
5	Urea formaldehyde	
27, 102, 104	Urea nitrate	
17, 103	VC	Vinylidene chloride
5	Valeraldehyde	Pentanal
6	Valeramide	
3	Valeric acid	
24	Vanadic acid anhydride	Vanadium pentoxide
24	Vanadium oxytrichloride	
24	Vanadium pentoxide	Vanadic acid anhydride
24	Vanadium sulfate	Vanadyl sulfate
24	Vanadium tetroxide	
24, 107	Vanadium trichloride	
24	Vanadium trioxide	
24	Vanadyl sulfate	Vanadium sulfate
32	Vapona*	DDVP
13, 103	Vinyl acetate	
102	Vinyl azide	
16, 28, 103	Vinylbenzene	Styrene
17, 103	Vinyl chloride	
26, 103	Vinyl cyanide	
14	Vinyl ethyl ether	
17	Vinyl isopropyl ether	
17, 103	Vinylidene chloride	VC
28, 103	Vinyl toluene	
107	Vinyl trichlorosilane	
20, 32	VX	
106	Water	
101	Waxes	
6, 32	Wepsyn* 155	
101	Wood	
9	Zectran*	Triamiphos
22, 23, 24	Zinc	Dowco 139*
24, 105, 107	Zinc acetylide	
24, 104	Zinc ammonium nitrate	
24	Zinc arsenate	
24	Zinc arsenite	
24	Zinc chloride	
24, 102, 104, 107	Zinc dioxide	
24, 105, 107	Zinc ethyl	Zinc peroxide
11, 24	Zinc cyanide	Diethyl zinc
24, 13	Zinc fluoborate	
24, 104	Zinc nitrate	
24, 104	Zinc permanganate	
24, 102, 104, 107	Zinc peroxide	
24, 107	Zinc phosphide	Zinc dioxide
12, 24	Zinc salts of dimethyl dithiocarbamic acid	
24	Zinc sulfate	
24, 33, 105	Zinc sulfide	
12, 24	Zineb*	
20	Zinophos*	
12, 24	Ziram*	Thioazin
22, 23, 24	Zirconium	
24	Zirconium chloride	
24, 104	Zirconium picramate	Zirconium tetrachloride
24	Zirconium tetrachloride	Zirconium chloride

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