



Appendix EPS 50-R1

Chemical/Material List of EHMs

Introduction

This appendix lists the environmentally harmful materials (EHMs), including the chemicals, hazardous wastes, and oil products normally present at Jefferson Lab that have potential reporting requirements if accidentally released into the environment.

Respond to and report spills and releases as noted in *Appendix 3510-R1 Spill/Release Response Procedures* by calling ext. 4444. An event exceeding defined regulatory limits, such as Reportable Quantity (RQ) limits, may require that additional notifications be made. Whatever the case, in the event of a spill or release, contact the Facility Manager Designee at 876-1750. (The Facility Manager will determine if further notifications are necessary. If necessary, all contacts will be managed together with the site office.)

Note that most of these substances have identified RQ limits which can be as small as one pound.



Environmental Release Reporting Information

EHMs that require reporting are identified under various regulations as listed in Table 1. Some are listed in multiple places and therefore may be subject to varied reporting requirements.

The substances at Jefferson Lab with regulated release reporting requirements are shown in Tables 2, 3, and 4. These tables, which do not include all EHMs, are divided by EHM categories. The three main categories are: Chemical (Table 2), Hazardous Waste (Table 3), and Oil (Table 4).

A fourth category contains radiological releases. Most regulatory requirements address particular isotopes. If not specifically identified, a release of radioactive material that is n.o.s. (not otherwise specified) must be reported if it exceeds 1 Ci of activity.

For information on responding to a spill, refer to *Appendix 3510-R1 Spill/Release Response Procedures* and for reporting criteria, refer to *Appendix EPS 50-T1 Spill and Release Reporting Requirements*.

Table 1: Acronyms and Regulatory Reference Laws

Laws	
CAA	Clean Air Act [40 CFR 68.130]
CWA	Clean Water Act [40 CFR 117.3]
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
EPCRA	Emergency Planning and Community Right to Know Act [40 CFR 372]
RCRA	Resource Conservation And Recovery Act
Other Acronyms	
CAS	Chemical Abstract Service
EHS	Extremely Hazardous Substance
HS	Hazardous Substance
NRC	National Response Center
RQ	Reportable Quantity [HS 40 CFR 302.4/EHS 40 CFR 355, App. A]
TPQ	Threshold Planning Quantity [40 CFR 355, App. A]
TQ	Threshold Quantity [40 CFR 68]



NOTES for Tables 2, 3, and 4:

Internal

All spills or releases above a determined quantity of the materials listed in Tables 2, 3, and 4 are reportable internally.

External

Items listed are ONLY externally reportable (Table 3-CERCLA; Table 4-CWA) if releases are ≥ the RQ.

*Exception: OSHA reporting (see note at the end of this appendix)

All releases exceeding the RQs shown in Tables 2, 3, and 4 qualify as DOE Reportable Occurrences. The Facility Manager will report to DOE and DOE and SURA will jointly notify the NRC and other agencies, as required.

Conversions: 1 lb = 0.454 kg
 10 lb = 4.54 kg
 100 lb = 45.4 kg
 1,000 lb = 454 kg

Tables 2, 3, 4, and 5 list the regulated EHM's currently on-site.

Table 2: Regulated EHM's - Chemicals

CAS Registry Number	Regulated EHM's [EHM's are in bold]	Applicable Law(s)	RQ or TQ (CAA) (pounds)
67-64-1	Acetone (2-Propanone)	EPCRA	5,000
74-86-2	Acetylene	CAA	10,000
1336-21-6	Ammonium Hydroxide	CWA & EPCRA	1,000
1332-21-4	Asbestos (friable), (Stabilized) Bromine	EPCRA	1
7726-95-6	Bromine	EPCRA	500 (10,000)
****	Buffered Chemical Polish (BCP) [mixture of HF, H₃PO₄, HNO₃]	CWA & EPCRA	100
7782-50-5	Chlorine	CWA & EPCRA CAA	10 2,500
7758-98-7	Cupric Sulfate	CWA & EPCRA	10
75-71-8	Dichlorodifluoromethane (CFC-12)	EPCRA	5,000
107-21-1	Ethylene Glycol (2-ethoxyethanol)	EPCRA	5,000
7705-08-0	Ferric Chloride	CWA & EPCRA	1,000
75-63-8	Halon 1301 (Bromotrifluoromethane)	-----	---
110-54-3	Hexane (n-hexane)	EPCRA	5,000
7647-01-0	Hydrochloric Acid (Hydrogen Chloride)	CWA, EPCRA, & CAA	5,000
7647-01-0	Hydrochloric Acid (≥ 37% conc.)	CWA & EPCRA CAA	5,000 15,000
7664-39-3	Hydrofluoric Acid (Hydrogen Fluoride)	CWA & EPCRA	100



Table 2: Regulated EHMs - Chemicals

CAS Registry Number	Regulated EHMs [<i>EH</i> Ss are in bold]	Applicable Law(s)	RQ or TQ (CAA) (pounds)
7664-39-3	Hydrofluoric Acid (≥ 50% conc.)	CWA & EPCRA CAA	100 1,000
1333-74-0	Hydrogen	CAA	10,000
7439-92-1 and various	Lead and Lead Compounds (EPCRA 313)	CWA EPCRA	1, 10 10
7487-94-7	Mercuric Chloride	EPCRA	500
10045-94-0	Mercuric Nitrate	CWA & EPCRA	10
7439-97-6	Mercury	EPCRA	1
67-56-1	Methanol (Methyl Alcohol)	EPCRA	5,000
78-93-3	Methyl Ethyl Ketone (MEK)	EPCRA	5,000
75-09-2	Methylene Chloride	EPCRA	1,000
7440-02-0	Nickel and Compounds	EPCRA	100
7718-54-9	Nickel Chloride	CWA & EPCRA	100
7697-37-2	Nitric Acid	CWA & EPCRA	1,000
7697-37-2	Nitric Acid (≥80% conc.)	CWA & EPCRA CAA	1,000 15,000
10102-44-0	Nitrogen Dioxide	CWA & EPCRA	10
108-95-2	Phenol	CWA & EPCRA	1,000
7664-38-2	Phosphoric Acid	CWA & EPCRA	5,000
1336-36-3	Polychlorinated Biphenyls (PCBs)	CWA & EPCRA	1
1310-58-3	Potassium Hydroxide	CWA & EPCRA	1,000
7440-22-4	Silver and Compounds	EPCRA	1,000
1310-73-2	Sodium Hydroxide	CWA & EPCRA	1,000
100-42-5	Styrene	EPCRA	1,000
7664-93-9	Sulfuric Acid	CWA & EPCRA	1,000
109-99-9	Tetrahydrofuran	EPCRA	1,000
108-88-3	Toluene	CWA & EPCRA	1,000
71-55-6	1,1,1 Trichloroethane (TCA, Trichloro Methyl Chloroform)	EPCRA	1,000
79-01-6	Trichloroethylene	CWA & EPCRA	100
75-69-4	Trichlorofluoromethane (CFC-11)	EPCRA	5,000
Varies	Unlisted Hazardous Substances	EPCRA	100
1330-20-7	Xylene	EPCRA	100

- Some of the columns indicate an RQ value that, if reached or exceeded, could require reporting.
- The TPQ and TQ values indicate that special reporting or preventative measures may be needed if these amounts are present. Note that atmospheric releases above the CAA TQ values may be reportable to emergency planning groups.
- The EHMs for which usage rates must be evaluated for annual reporting under EPCRA Section 313 are also noted.



Table 3: Regulated EHM's - Hazardous Wastes

Hazardous Waste	CERCLA RQ
Unlisted Characteristic - ignitable	100
Unlisted Characteristic - corrosive	100
Unlisted Characteristic - reactive	100
Unlisted Characteristic - toxic	100
Listed Toxic	--
Lead	10
Mercury	1
Methyl Ethyl Ketone (MEK)	5000
Spent halogenated solvents and mixtures (F001)	--
Methylene Chloride	1000
1,1,1 Trichloroethane	1000
Spent halogenated solvents and mixtures (F002)	--
Methylene Chloride	1000
1,1,1 Trichloroethane	1000
1,1,2 Trichloroethane	100
Trichlorofluoromethane	5000
Spent non-halogenated solvents (F003)	--
Acetone	5000
Methanol	5000

Table 4: Regulated EHM's - Oil Products

Oil Product (Categorized)	
Oil, used Oil, or Fuel Contaminated Products (unless hazardous)	
Examples: Crankcase Oil & Other Liquid Oil	
Reportable Quantity	Applicable Regulation
Case 1: ≥ 10 gallons at any given time; or,	CWA
Case 2: a sheen entering a storm drain or water channel or visible on surface water; or,	
Case 3: any release to the sanitary sewer system	

Table 5: Regulated EHM's - Radionuclides

Radionuclide	RQ
Be-7, H-3	100 Ci
Na-22, Na-24, Ca-45, Mn-54	10 Ci
All N.O.S.	1 Ci

N.O.S.: not otherwise specified
 This information is taken from 40 CFR 302.4 Appendix B.

OSHA NOTE: It is DOE policy to inform OSHA within 8 hours (oral or written) of: Any release that results in the hospitalization of 3 or more employees OR is fatal to one or more employees.