



HAZARDOUS WASTE MANAGEMENT GUIDE

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EH&S Website:

www.ehs.ufl.edu

Hazardous Materials Management Website:

www.ehs.ufl.edu/hmm

HAZARDOUS WASTE MANAGEMENT GUIDE

I. OVERVIEW

The framework for hazardous waste regulation was established in 1976 by the Federal Resource Conservation and Recovery Act (RCRA). RCRA was enacted by Congress to protect human health and the environment from improper management of hazardous waste. RCRA introduced the concept that the generator of a waste is responsible for proper waste management from “cradle-to-grave” (i.e. from the laboratory to the waste’s ultimate destruction). RCRA regulations may be found in 40 CFR Parts 260-279.

At the University of Florida, all chemical waste disposal is managed by the Environmental Health and Safety (EH&S) Department of Hazardous Materials Management (HMM). Hazardous chemicals are not allowed to be disposed of in drains, in the trash, or by evaporation. All chemical waste is required to be held in the generating location (this location is defined as a “satellite accumulation area”) for subsequent pick-up and disposal by EH&S.

There are specific regulatory requirements for the individuals who generate and accumulate chemical waste. These individuals must properly identify and label all hazardous wastes in their workplace. They must properly store and submit requests for disposal of chemical wastes. Finally, they must minimize the amount of waste generated and recycle whenever possible. The purpose of this document is to assist labs and shops with this regulatory compliance. Every lab and shop on campus is subject to unannounced inspections by both the Federal Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (DEP). Lack of compliance can result in citations and fines.

The regulatory requirements covered in this document include:

- identification of hazardous wastes
- labeling of hazardous waste containers
- accumulation of hazardous wastes

II. IDENTIFYING A HAZARDOUS WASTE

The requirements described in this guide do not apply until a material becomes a waste. From a regulatory perspective, a waste is something that is spent, has no further use, or no intended use. A determination must be made for every waste generated at the University of Florida as to whether or not the waste should be considered a hazardous waste. A waste is determined to be hazardous by one of three means:

1. It is on one of the EPA's lists of hazardous chemicals
2. It meets the definition of at least one of the EPA-defined characteristics of toxicity, ignitability, reactivity, or corrosiveness.
3. The waste's generator, utilizing some outside source of information (MSDS, manufacturer's website, etc.) determines that the waste should be treated as hazardous.

Waste: A material/chemical that has no intended use or reuse, including chemicals and materials from a spill clean-up.

Hazardous Waste: A waste that is EPA listed, possesses one of the EPA's hazardous characteristics, or is determined to be hazardous by review of the material's MSDS or other source.

A. Listed Hazardous Wastes

The EPA has published four lists identifying hazardous wastes. Appendix B is a composite of approximately 850 chemicals that are recognized by the EPA and EH&S as hazardous.

Acutely toxic hazardous wastes, also called “P-listed” wastes, comprise a portion of appendix B. Any container that once held a P-listed waste must be triple rinsed before the container can be discarded. The rinsate can not be put down the sink. An alternative would be to have EH&S handle the unrinsed empty containers along with other chemical wastes.

B. EPA Characteristic Hazardous Wastes

A waste is hazardous if it exhibits any one of the four characteristics of a hazardous waste. The following are the four characteristics and a few examples of common wastes at the University:

1. Ignitable

- a) Flammable Liquids- Flashpoint $<140^{\circ}$ F
Examples: Alcohols, Benzene, Toluene, Xylene, Acetonitrile
- b) Oxidizers
Examples: Nitrates, Perchlorates, Bromates, Permanganates, Peroxides, Periodates
- c) Organic Peroxides
Examples: Benzoyl Peroxide, Cumene Hydroperoxide, Methyl Ethyl Ketone Peroxide

2. Corrosive – Aqueous liquids with $\text{pH} \leq 2$ or $\text{pH} \geq 12.5$

- a) Inorganic Acids
Examples: Hydrochloric Acid, Sulfuric Acid, Nitric Acid, Phosphoric Acid
- b) Organic Acids
Examples: Formic Acid, Lactic Acid, Acetic Acid
- c) Bases
Examples: Hydroxide solutions, Amines

3. Reactive - materials which can react violently with water, create toxic and /or flammable gases when mixed with water, ignite or react upon exposure to air, or are capable of detonation at standard temperature and pressure.

- a) Sulfides and Cyanides
- b) Peroxide formers
- c) Alkali metals - Sodium, Potassium, Lithium
- d) Dinitro - and Trinitro - compounds - Picric Acid
- e) Carbonyl compounds
- f) Isocyanates
- g) Perchlorate crystal formers - Perchloric Acid

4. Toxic – A selected group of eight (8) heavy metals, ten (10) pesticides, and twenty-two (22) organic chemicals are classified as hazardous due to their toxicity characteristic. **Any detectable amount of these chemicals must be identified on a hazardous waste label.** The complete list is located in Appendix ‘A’.

C. Determined by other sources

Many chemicals which are not listed by the EPA and do not possess a characteristic of a hazardous waste are nonetheless hazardous. Concentrated solutions of Ethidium Bromide are an example. Consult the product's MSDS or other product information prior to disposal. If you are ever unsure of a waste's characteristics, contact HMM so that a waste determination can be made.

III. ACCUMULATION REQUIREMENTS

It is the responsibility of the Principal Investigator (PI) and his/her designee to ensure that waste storage areas are maintained in accordance with applicable rules and regulations. Waste is accumulated only in areas classified as "satellite accumulation areas." A *Hazardous Waste Satellite Accumulation Area Requirements* sheet (Appendix D) must be posted close to the accumulated waste. The PI must designate a Lab Waste Manager to ensure that the waste is being handled correctly on a day-to-day basis; this Lab Waste Manager's name must appear in the designated space on the Satellite Accumulation Area Requirements sheet. The PI must also ensure that everyone in the lab has read and is familiar with the *Hazardous Waste Satellite Accumulation Area Requirements* sheet and the *Hazardous Waste Management Guide*. Once this familiarization training is accomplished, it must be documented by the individual's signature in Appendix 'E' of this guide, and this sheet must be maintained in the lab and provided upon request.

The Lab Waste Manager must attend Hazardous Waste Management training at least annually. Contact HMM for dates.

Hazardous waste at a satellite accumulation area can be accumulated as long as necessary, but the total quantity of all wastes at one Satellite Area can never exceed 55 gallons. Additionally, no more than 1 quart or 1 kilogram of an acutely hazardous waste (P-Listed Waste) may be accumulated at one time. Empty containers that once contained a P-listed waste must be triple rinsed prior to disposal, and the rinsate must be handled as a hazardous waste. P-listed wastes are identified in Appendix 'B' with bold print and an asterisk.

All waste containers must have at least one (1) inch of headspace to allow for expansion. The exterior of the container must be free of chemical contamination. Leaking or overfilled containers must be repackaged before they will be transported by EH&S.

A Hazardous Waste label should be affixed to a container before any hazardous waste is put into the container. Refer to section IV for additional labeling requirements.

Incompatible chemicals must not be placed in the same container. The Lab Safety Manual provides a list of incompatible chemicals. When placing a chemical into the waste container, consider venting to prevent overpressurization resulting from any abnormal reactions.

A spill kit must be accessible to all lab personnel. The spill absorbent or neutralizer must be appropriate for the spilled chemical.

Do not hold unneeded chemicals or waste. Dispose of these promptly to ensure regulatory compliance and to maintain a safe workplace.

V. WASTE SEGREGATION

For safety reasons, and for the waste management methods UF currently uses to dispose of chemical waste, the following waste streams should be kept separate when possible.

- Flammable Liquids & Oxidizers
- Acids
- Bases
- Oxidizers
- Halogenated Organic Compounds
- Non-halogenated Organic Compounds
- Oils
- Air Reactive Materials
- Water Reactive Materials
- Mercury & Mercury Compounds
- Ethidium Bromide
- Formalin/Formaldehyde
- Chromerge
- Photographic Waste
- Aqueous Heavy Metal Solutions

VI. CONTAINER COMPATIBILITY

It is vital that chemical waste be compatible with its container. If the waste is placed in an inappropriate container, the container might disintegrate or rupture.

The following chemical wastes must be placed in glass containers. These chemicals can not be placed in the plastic HDPE containers provided by EH&S.

- amyl chloride
- aniline
- benzyl alcohol
- bromine
- bromobenzene
- bromoform
- butadiene
- butyric acid
- carbon disulfide
- concentrated acids
- cinnamon oil
- cresol
- cyclohexane
- o-dichlorobenzene
- p-dichlorobenzene
- diethyl benzene
- diethyl ether
- ethyl chloride, liquid
- nitrobenzene
- perchloroethylene
- nitric acid
- thionyl chloride
- trichloroethene
- trichloroethylene
- vinylidene chloride
- brominated & fluorinated solvent

VII. CLEAN GLASSWARE POLICY

A cost saving measure that is employed at the University of Florida is the disposal of ***Clean Lab and Glassware*** (Appendix C). All glassware and labware that has not been contaminated by chemicals listed in Appendix 'A' or 'B' may be disposed of in the normal solid waste (trash).

For a container to be thrown away it must be completely empty and rinsed. To avoid confusion, any original labels should be removed or defaced. Then place the container in a cardboard box lined with a plastic bag. On the outside of the box, write the words "Clean Glassware," and the room number.

If you are in the Health Center, you can place this box outside your lab's door and the custodial staff should remove it for you. If you are located anywhere else on campus, you should take the box to the nearest solid waste container or dumpster.

You may not dispose of sharps containers, red bags, or anything with the biohazard symbol on it in this manner. Also, tissue culture and biological labware may not be disposed of in this manner.

VIII. SPECIFIC WASTE MANAGEMENT PRACTICES

Certain wastes generated at the University have special handling or labeling requirements. Examples are:

- A. Unknowns** - Special effort should be exercised to prevent the generation of unknown wastes, since characterization of unknown wastes significantly increases the cost for disposal. To have unknowns picked up, place a *Hazardous Waste label* on the container with the word "Unknown" in the constituents column, then add the unknown to your *Chemical Pick-up Request form*.
- B. Pharmaceutical Waste** - There are many chemical and/or pharmaceutical compounds that are used in research or in the treatment of diseases that are also considered hazardous wastes by the EPA when disposed of. Call EH&S or refer to the Pharmaceutical Waste guide on the EH&S website for further guidance.
- C. Gas Cylinders** - generators should attempt to establish accounts with suppliers who will allow the return of unused product and empty cylinders. Matheson will take back most cylinders for a nominal fee while other manufacturers may not. EH&S will pick up Matheson lecture bottles and Aldrich Sure Seal cylinders, provided the cylinders are in good condition. If possible, the entire contents of the cylinder should be used up. Generators must ensure that aging cylinders are picked up by EH&S before the integrity of the valve and cylinder is compromised. The department may be billed directly for cylinders that require special handling and disposal procedures such as unknown or old cylinders. A compressed gas cylinder safety sheet is available on the EH&S website (<http://www.ehs.ufl.edu/General/Shop/cylinder.htm>) or by calling EH&S at 392-1591.
- D. Peroxide Formers** – These compounds must be picked up by EH&S within six (6) months after date of opening or one (1) year after date of receipt. Common peroxide formers are ethyl ether, ethylene glycol dimethyl ether (glyme), vinyl ethers, isopropyl ether, potassium metal, and sodium amide.
- E. Dinitro and trinitro compounds** - These compounds must be picked up by EH&S before the contents have dried. These crystals can become shock sensitive when the moisture content is less than 10%. Picric acid is a common example of this type of compound.
- F. Ethidium bromide** – Concentrated stock solutions must be handled by EH&S as a hazardous laboratory waste. The rinsate and destained gels can be placed down the sink and into the trash. EH&S will provide a 5 gallon bucket for stained gels to be handled as a hazardous laboratory waste. Researchers concerned about discarding gels or solutions with lower or questionable amounts can have them handled as a hazardous laboratory waste. If a lab chooses to decontaminate their ethidium bromide, the filter and/or resin beads must be handled by EH&S.

G. Common-Named Reagents – The following reagents contain mercury and should be handled as hazardous waste:

Dobbin's Reagent

Millon's Reagent

Hayem's Solution

Morell's Solution

Hopkins-Cole Reagent

Nessler's Reagent

Hubb's Reagent

Rohrbach's Solution

Tyrosine Reagents

Jacquemart's Reagent

Sachsse's Solution

Knapp's Solution

Spiegler's Reagent

Tanret's Reagent

Meyer's Solution.

Other hazardous reagents include: Flemming's Solution (osmium, chromic acid), Folin-Dennis Solution (mercuric cyanide), Fisher's Reagent (phenyl hydrazine), and Erlicki's Solution (chromium).

H. Photochemicals - EH&S recommends that labs which use large quantities of photochemicals have a silver recovery unit installed. This unit treats the spent fixer so that it may be discharged down the drain. If a silver recovery unit is not used, EH&S must handle the spent fixer. The developer and stop bath must be combined in a container to neutralize the solutions before being put down the sink. No concentrated photochemicals of any kind can be placed in the trash or sink. A "Safety and Disposal Procedures for Photographic Materials" pamphlet is available from EH&S.

I. Used Oil – Used oil includes all vacuum pump oil, synthetic oil, transmission and brake fluids, lubricating greases, etc. Used oil must be stored in securely closed containers provided with secondary containment. The secondary containment must have the capacity to hold 110 % of the volume of the largest container within the containment area. Each used oil container must be labeled clearly with the words "Used Oil". Used oil labels are available at no cost from Environmental Health and Safety at 392-8400 or by e-mailing Bill Coughlin at bcoughl@ehs.ufl.edu.

J. Spilled Materials - the spilled chemical and the absorbent must be packaged and handled as hazardous waste. The *Hazardous Waste* label and the *Chemical Waste Pickup Request* form must name the chemical(s) and the absorbent used. See section IX of this document for more details on spills.

Universal Wastes

Universal Wastes are EPA regulated wastes, but are not Hazardous Wastes if properly recycled. They include spent batteries, certain types of lamps and mercury containing devices or equipment. All universal waste containers must be labeled clearly with the appropriate label when waste is first added. Universal Waste labels are available at no cost from Environmental Health and Safety at 392-8400 or by e-mailing Bill Coughlin at bcoughl@chs.ufl.edu.

- K. Batteries** – Alkaline batteries can be disposed of in the trash. Large storage batteries and other batteries which contain hazardous metals such as mercury, lead, silver and cadmium must be handled by EH&S. Large storage batteries should be brought to the Waste Management Facility (located in the Surge Area, bldg 831) between 8 am and 9 am on Monday, Wednesday and Friday. All used batteries must be clearly labeled using one of the following phrases: “Universal Waste—Battery(ies),” or “Waste Battery(ies),” or “Used Battery(ies).”
- L. Light bulbs** - fluorescent and high-intensity discharge (HID) bulbs must be handled by EH&S. Other specialty bulbs which may contain mercury must be handled by EH&S as well (examples of this type of bulb would be germicidal bulbs or horticultural “grow” lights). For collection of spent lamps, please submit a chemical waste pick-up request form on-line. Departments which accumulate large quantities of bulbs must deliver them to the Waste Management Facility between 8am and 9am Monday, Wednesday or Friday. All spent lamps must be labeled clearly using one of the following phrases: “Universal Waste—Lamp(s),” or “Waste Lamp(s),” or “Used Lamp(s)”. Lamp boxes are available from EH&S at no cost.
- M. Mercury Containing Equipment** – There are many types of equipment that contain elemental mercury. Before disposing of any of these types of equipment, you should verify that they do not contain mercury. All used mercury containing equipment must be labeled clearly as “Universal Waste—Mercury Containing Equipment,” “Waste Mercury-Containing Equipment,” or “Used Mercury-Containing Equipment.”

Examples include:

- Heating and air conditioning thermostats
- Tilt switches used in silent light switches, washing machine lids, chest type freezers
- Pressure gauges, displacement/plunger relays
- Sump pump float switches
- Thermometers, manometers

N. Other Wastes from Maintenance Activities and Used Oil – see the Maintenance Activity Waste Management Guide.

VIII. CHEMICAL WASTE PICK-UP PROCEDURES

- A. In order to have hazardous waste picked-up from your accumulation area, submit a *Chemical Waste Pickup Request*. There are 2 options for submitting the request. The pickup request form can be completed and submitted on-line at www.ehs.ufl.edu/hmm/pickups/chempick.asp , or the pickup form can be downloaded at www.ehs.ufl.edu/HMM/Pickups/chempup.pdf, and submitted through campus mail. For those without Internet access, blank forms are available at no cost from Environmental Health and Safety by calling 392-8400.
- B. Provide as much information about the contents of each container as possible. As a minimum, the chemicals' names, the number of containers, and the total weight or volume should be listed.
- C. Direct EH&S personnel to the satellite accumulation area when they arrive to pick up the waste. When the chemicals are picked up, you will be asked to sign the pick-up request, acknowledging that the waste is properly labeled.
- D. Complete only one request form for large chemical waste pickups. If there are numerous chemical wastes to be picked up, a list of the chemicals should be attached to the request form or e-mailed to EH&S.

IX. SPILL RESPONSE AND CLEAN-UP PROCEDURES

If there is an immediate danger to health, life, property, or risk of an environmental release, evacuate the area and contact EH&S and emergency personnel immediately. Contact EH&S at 392-8400. All spills occurring after normal working hours should be reported to the University Police Department (UPD) at 392-1111. A UPD representative will contact EH&S if necessary.

Each laboratory should have a spill kit. In the event of a spill which does not meet the above criteria; stop the spill, contain the spill, notify other's in area, and clean up immediately. All flames should be extinguished and spark-producing equipment turned off. All non-essential personnel should be evacuated.

After cleaning up the spill, place the chemical and absorbents in a container with a *Hazardous Waste* label on it. A *Chemical Waste Pickup Request* form should be submitted, as in other waste disposal. Ensure that the *Hazardous Waste* label identifies the absorbent and the chemical(s).

** **Mercury spill** clean-up information is available on the EH&S website (<http://www.ehs.ufl.edu/HMM/default.asp>) or by calling EH&S at 392-8400.

X. WASTE MINIMIZATION

Waste minimization is any action that reduces the amount and/or toxicity of chemical wastes that must be shipped off-site for disposal as hazardous waste. The success of any waste minimization program is dependent on the conscientious participation of every individual at the University of Florida. There are three methods of waste minimization.

Source Reduction:

The most desirable method of waste minimization is source reduction. This is any activity that reduces or eliminates the generation of chemical hazardous waste at the source. This can be accomplished by good materials management, substitution of less hazardous materials, and good laboratory procedures. Examples include:

- Implement a waste minimization policy and train all employees and students.
- Re-evaluate procedures to see if a less hazardous or non-hazardous reagent could be used.
- Centralize purchasing of chemicals through one person in the department or laboratory.
- Date chemical containers when received so that older ones will be used first.
- Keep MSDS's for chemicals on file.
- Inventory chemicals and identify their location at least once a year.
- Update inventory when chemicals are purchased or used up.
- Purchase chemicals in the smallest quantities needed.
- Label all chemical containers to prevent the generation of unknowns.
- When considering a new procedure, obtain the chemicals needed from another lab or purchase small quantities initially.
- Consider the use of microscale experiments.
- Consider the use of demonstrations or video presentations as a substitute for some student experiments that generate chemical wastes.
- Consider the use of pre-weighed or pre-measured reagent packets where waste generation is high.
- Avoid the use of reagents containing arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver.
- Eliminate the use of chromic acid cleaning solutions altogether. Use non-hazardous solutions such as Alconox and Pierce RBS35.
- Substitute red liquid (spirit-filled), digital, or thermocouple thermometers for mercury thermometers when it is feasible.
- Consider using detergent and hot water for cleaning parts instead of solvents.
- Use latex-based paints which are typically non-hazardous. Excess latex paints should be recycled. Excess non-latex paints must be handled by EH&S as a hazardous waste.
- Utilize vendors that will recycle used antifreeze. Some vendors will recycle the antifreeze on site so the antifreeze never leaves the site.

Recycling:

The second most desirable approach is recycling. When a waste material is used for another purpose, treated and reused in the same process, or reclaimed for another process, it is considered recycling. Examples include:

- When solvent is used for cleaning purposes, use contaminated solvent for initial cleaning and fresh solvent for final cleaning.
- Purchase compressed gas cylinders (including lecture bottles) only from manufacturers who will accept empty cylinders.
- Return excess pesticides to the distributor.
- Have a silver recovery unit installed in photography laboratories. The unit removes the silver from the fixer solution.
- Do not contaminate used oil with solvents because this prevents the oil from being recycled.
- Increase solvent reuse through the use of solvent redistillation.
- Recirculate unused or excess chemicals within the department.
- Collect metallic mercury for reclamation.

Appendix A:

TOXICITY CHARACTERISTICS

8 HEAVY METALS

ARSENIC
BARIUM
CADMIUM
CHROMIUM
LEAD
MERCURY
SELENIUM
SILVER

10 PESTICIDES

2,4-D
ENDRIN
HEPTACHLOR (AND ITS EPOXIDE)
HEXACHLOROBENZENE
HEXACHLOROBUTADIENE
HEXACHLOROETHANE
LINDANE
METHOXYCHLOR
TOXAPHENE
2,4,5-TP (SILVEX)

22 ORGANIC CHEMICALS

BENZENE
CARBON TETRACHLORIDE
CHLORDANE
CHLOROBENZENE
CHLOROFORM
O-CRESOL
M-CRESOL
P-CRESOL
CRESOL
1,4-DICHLOROBENZENE
1,2-DICHLOROETHANE
1,1-DICHLOROETHYLENE
2,4-DINITROTOLUENE
METHYL ETHYL KETONE
NITROBENZENE
PENTRACHLOROPHENOL
PYRIDINE
TETRACHLOROETHYLENE
TRICHLOROETHYLENE
2,4,5-TRICHLOROPHENOL
2,4,6-TRICHLOROPHENOL
VINYL CHLORIDE

Appendix B

LISTED HAZARDOUS WASTES

* P-Listed Waste – Requires glassware to be triple-rinsed

A2213	H-Azepine-1-carbothioic acid, hexahydro-,S-ethyl ester
Acetaldehyde (I)	Aziridine *
Acetaldehyde, chloro- *	Aziridine, 2-methyl- *
Acetaldehyde, trichloro-	Azirino(2,3:3,4)pyrrolo(1,2-a)-indole, 6-amino-8-(((aminocarbonyl) oxylmethyl)-1,1a,2,8,8a,8b-hexahydro- 8a-methoxy-5-methyl-,[1aS-(1alpha, 8beta,8aalpha,8balpha)]-
Acetamide, N-(aminothioxomethyl)- *	
Acetamide, N-(4-ethoxyphenyl)-	
Acetamide, N-9H-fluoren-2-yl-	
Acetamide, 2-fluoro-*	
Acetic acid,(2,4-dichlorophenoxy)-, salts & esters	
Acetic acid, ethyl ester (I)	Barban
Acetic acid, fluoro-, sodium salt*	Barium(Contaminant)(100.0 mg/L or more)
Acetic acid, lead(2+) salt	Barium cyanide *
Acetic acid, thallium(1+) salt	Bendiocarb
Acetic acid, (2,4,5-trichlorophenoxy)-	Bendiocarb phenol
Acetone (I)	Benomyl
Acetone (10% or more)	Benz[j]aceanthrylene, 1,2-dihydro-3- methyl-
Acetonitrile (I,T)	Benz[c]acridine
Acetophenone	Benzeneacetic acid, 4-chloro-alpha-(4- chlorophenyl)-alpha-hydroxy-, ethyl ester
Acetylaminofluorene, 2-	Benzal chloride
Acetyl chloride (C,R,T)	Benzamide, 3,5-dichloro-N-(1,1- dimethyl-2-propynyl)-
Acetyl-2-thiourea, 1-*	Benz[a]anthracene
Acrolein*	Benz[a]anthracene, 7,12-dimethyl-
Acrylamide	Benzenamine (I,T)
Acrylic acid (I)	Benzenamine, 4,4'-carbonimidoylbis [N,N-dimethyl-
Acrylonitrile	Benzenamine, 4-chloro- *
Aldicarb *	Benzenamine, 4-chloro-2-methyl-, hydrochloride
Aldicarb sulfone *	Benzenamine, N,N-dimethyl-4(phenylazo)-
Allyl alcohol *	Benzenamine, 2-methyl-
Aluminum phosphide (R,T) *	Benzenamine, 2-methyl,hydrochloride
Aminomethyl-3-isoxazolol, 5- *	Benzenamine, 2-methyl-5-nitro-
Aminopyridine, 4- *	Benzenamine, 4-methyl-
Amitrole	Benzenamine, 4,4'-methylenebis [2-chloro]-
Ammonium picrate (R) *	Benzenamine, 4-nitro- *
Ammonium vanadate *	Benzene (I,T)
Aniline (I,T)	Benzene (10% or more)
Argentate(1-), bis(cyano-C)-,potassium*	Benzene (Contaminant)(0.5 mg/L or more)
Arsenic (Contaminant)(5.0 mg/L or more)	Benzene, 1-bromo-4-phenoxy-
Arsenic acid H-3 As O-4 *	Benzene, chloro-
Arsenic oxide As-2 O-3 *	
Arsenic oxide As-2 O-5 *	
Arsenic pentoxide *	
Arsenic trioxide *	
Arsine, diethyl- *	
Arsinic acid, dimethyl-	
Arsonous dichloride, phenyl- *	
Auramine	
Azaserine	

* P-Listed Waste – Requires glassware to be triple-rinsed

Benzene, (chloromethyl)- *

Benzene, 1,2-dichloro-
 Benzene, 1,2-dichloro(a.k.a ortho-dichloro-)(10% or more)
 Benzene, 1,3-dichloro-
 Benzene, 1,4-dichloro-
 Benzene, 1,1'-(2,2-dichloroethylidene) bis[4-chloro-
 Benzene, (dichloromethyl)-
 Benzene, 1,3-diisocyanatomethyl- (R,T)
 Benzene, dimethyl- (I,T)
 Benzene, hexachloro-
 Benzene, hexahydro-(I)
 Benzene, methyl-
 Benzene, 1-methyl-2,4-dinitro-
 Benzene, 2-methyl-1,3-dinitro-
 Benzene, (1-methylethyl)- (I)
 Benzene, nitro-
 Benzene, pentachloro-
 Benzene, pentachloronitro-
 Benzene, 1,2,4,5-tetrachloro-
 Benzene, 1,1'-(2,2,2-trichloroethylidene) bis[4-chloro-
 Benzene, 1,1'-(2,2,2-Trichloroethylidene)bis [4-methoxy-
 Benzene, (trichloromethyl)-
 Benzene, 1,3,5-trinitro-
 Benzenebutanoic acid, 4-[bis(2-chloroethyl)amino]-
 Benzenediamine, ar-methyl-
 Benzenedicarboxylic acid(1,2)-bis(2-ethylhexyl)ester
 Benzenedicarboxylic acid(1,2), dibutyl ester
 Benzenedicarboxylic acid(1,2), diethyl ester
 Benzenedicarboxylic acid(1,2), dimethyl ester
 Benzenedicarboxylic acid(1,2), dioctyl ester
 Benzenediol(1,3)
Benzenediol(1,2-), 4-[1-hydroxy-2(methylamino) ethyl]-, (R) *
Benzeneethanamine(alpha,alpha-dimethyl)- *
 Benzenesulfonic acid chloride (C,R)
 Benzenesulfonyl chloride (C, R)
Benzenethiol *
 Benzidine
 Benzisothiazol-3(2H)-one(1,2), 1,1-dioxide, & salts

Benzodioxole(1,3), 5-(2-propenyl)-
 Benzodioxole(1,3-), 5-propyl-
 Benzodioxole(1,3-), 5-(1-propenyl)-
 1,3-Benzodioxol-4-ol, 2,2-dimethyl-
 1,3-Benzodioxol-4-ol, 2,2-dimethyl-, methylcarbamate
 7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-
7-Benzofuranol,2,3-dihydro-2,2-dimethyl-,methylcarbamate *
Benzoic acid,2-hydroxy-,compd. with (3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl methylcarbamate ester *
 Benzo[rs]t]pentaphene
Benzopyran-2-one(2H-1), 4-hydroxy-3-(3-oxo-1-phenylbutyl)-,& salts, when present at concentrations greater than 0.3% *
 Benzopyran-2-one(2H-1), 4-hydroxy-3-(3-oxo-1-phenyl-butyl)-, & salts, when present at concentrations of 0.3% or less
 Benzo[a]pyrene
 p-Benzoquinone
 Benzotrichloride (C,R,T)
Benzyl chloride *
Beryllium *
 Bioxirane(2,2'-)
 Biphenyl(1,1'-]4,4'-diamine
 Biphenyl(1,1']-4,4'-diamine, 3,3'-dichloro-
 Biphenyl(1,1']-4,4'-diamine, 3,3'-dimethoxy
 Biphenyl(1,1']-4,4'-diamine, 3,3'-dimethyl-
 Bis(dimethylthiocarbamoyl) sulfide
 Bis(pentamethylene)thiuram tetrasulfide
Bromoacetone *
 Bromoform
 Bromophenyl(4) phenyl ether
Brucine *
 Butadiene(1,3), 1,1,2,3,4,4-hexachloro-
 Butanamine(1), N-butyl_N-nitroso-
 Butanol(1) (I)
 Butanone(2-) (I,T)
Butanone(2),3,3-dimethyl-1-(methylthio)-,O[(methylamino)carbonyl] oxime *
 Butanone(2-), peroxide (R,T)
 Butenal(2)
 Butene(2), 1,4-dichloro- (I,T)

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Butenoic acid(2-), 2-methyl-, 7-[[2,3-dihydroxy-2-(1-methoxyethyl-3-methyl-1-oxobutoxy)methyl]-2,3,5,7a-tetrahydro-1H-pyrrolizin-1-ylester, [1S-[1alpha(Z),7(2S*,3R*), 7aalpha]]-	Carbamodithioic acid, dimethyl-, sodium salt
n-Butyl alcohol (I)	Carbamodithioic acid, dimethyl-, tetraanhydrosulfide with orthoselenious acid
n-Butyl alcohol (10% or more)	Carbamodithioic acid, 1,2-ethanediybis-,salts & esters
Butylate	Carbamodithioic acid,(hydroxymethyl) methyl-,monopotassium salt
Cacodylic acid	Carbamodithioic acid, methyl-, monosodium salt
Cadmium(Contaminant)(1.0 mg/L or more)	Carbamodithioic acid, methyl-, monopotassium salt
Calcium chromate	Carbamothioic acid, bis(1-methylethyl)-,S-(2,3-dichloro-2-propenyl) ester
Calcium cyanide *	Carbamothioic acid,bis(1-methylethyl)-,S-(2,3,3,-trichloro-2-propenyl) ester
Calcuim cyanide Ca(CN)2 *	Carbamothioic acid, bis(2-methylpropyl)-, S-ethyl ester
Carbamic acid, 1H-benzimidazol-2-yl, methyl ester	Carbamothioic acid, butylethyl-, S-propyl ester
Carbamic acid, (1-((butylamino) carbonyl)-1H-benzimidazol 2-yl]-, methyl ester	Carbamothioic acid, cyclohexylethyl-, S-ethyl ester
Carbamic acid, butyl-, 3-iodo-2-propynyl ester	Carbamothioic acid, dipropyl-, S-ethyl ester
Carbamic acid,(3-chlorophenyl)-,4-chloro-2-butynyl ester	Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester
Carbamic acid, [(dibutylamino)-thio] methyl-,2,3-dihydro-'2,2-dimethyl-7-benzofuranyl ester *	Carbamothioic acid, dipropyl-, S-propyl ester
Carbamic acid,dimethyl-,1-[(dimethylamino)carbonyl]-5-methyl- 1H-pyrazol-3-yl ester *	Carbaryl
Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester*	Carbendazim
Carbamic acid, ethyl ester	Carbofuran *
Carbamic acid, methyl-,3-methylphenyl ester *	Carbofuran phenol
Carbamic acid, methylnitroso-, ethyl ester	Carbon disulfide *
Carbamic acid, phenyl-, 1-methylethyl ester	Carbon disulfide (10% or more)
Carbamic acid, [1,2- phenylenebis (iminocarbonothioyl)]bis-, dimethyl ester	Carbon oxyfluoride (R,T)
Carbamic chloride, dimethyl-	Carbon tetrachloride
Carbamodithioic acid, dibutyl, sodium salt	Carbon tetrachloride (Contaminant) (0.5 mg/L or more)
Carbamodithioic acid, diethyl-, 2-chloro-2-propenyl ester	Carbon tetrachloride (DEGREASING ONLY) (10% or more)
Carbamodithioic acid, diethyl-, sodium salt	Carbonic acid, dithallium(1+) salt
Carbamodithioic acid, dimethyl-, potassium salt	Carbonic dichloride
	Carbonic difluoride
	Carbonochloridic acid, methyl ester (I,T)
	Carbosulfan *
	Chloral
	Chlorambucil
	Chlordane, alpha & gamma isomers

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Chlordane (Contaminant) (0.03 mg/L or more)	Cyanide-bearing material (when pH between 2 and 12.5)
Chlornaphazin	Cyanogen *
Chloroacetaldehyde *	Cyanogen bromide (CN)Br
p-Chloroaniline *	Cyanogen chloride *
Chlorobenzene	Cyanogen Chloride (CN)Cl *
Chlorobenzene (10% or more)	Cycloate
Chlorobenzene (Contaminant) (100.0 mg/L or more)	Cyclohexadiene(2,5)-1,4-dione
Chlorobenzilate	Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha, 5alpha,6beta)-
Chloro(2-)-1,3-butadiene (HOC)	Cyclohexane (I)
p-Chloro-m-cresol	Cyclohexanone (I)
Chloroethyl (2) vinyl ether	Cyclohexanone (10% or more)
Chlorofluorocarbons (DEGREASING ONLY) (10% or more)	Cyclohexyl(2)-4,6-dinitrophenol *
Chloroform	Cyclopentadiene(1,3-), 1,2,3,4,5,5- hexachloro-
Chloroform (Contaminant) (6.0 mg/L or more)	Cyclophosphamide
Chloromethyl methyl ether	
Chloronaphthalene, beta-	D(2,4-)(Contaminant)(10.0 mg/L or more)
Chloronaphthalene(2-) (HOC)	D(2,4-), salts & esters
Chlorophenol (o-)	Daunomycin
Chlorophenyl(1-o-)thiourea *	Dazomet
Chloropropionitrile(3-) *	DDD
Chloro-o-toluidine(4), hydrochloride	DDT
Chromic acid H-2 CrO-4, calcium salt	Diallate
Chromium(Contaminant)(5.0 mg/L or more)	Dibenzo[a,i]pyrene
Chrysene	Dibenz[a,h]anthracene
Copper, bis (dimethylcarbamodithioato- S,S'),	Dibromo(1,2-)-3-chloropropane
Copper cyanide *	Dibutyl phthalate
Copper cyanide Cu(CN) *	o-Dichlorobenzene
Copper dimethyldithiocarbamate	o-Dichlorobenzene (10% or more)
Corrosive (LIQUIDS ONLY) [pH ≤ 2 or pH ≥ 12.5]	m-Dichlorobenzene
Creosote	p-Dichlorobenzene
Cresol (Cresylic acid)	Dichlorobenzene(1,4)(Contaminant) (7.5 mg/L or more)
Cresol (Cresylic acid) (10% or more)	Dichloro-2-butene(1,4) (I,T)
Cresol (Contaminant) (200.0 mg/L or more)	Dichloroisopropyl ether
o-Cresol (Contaminant) (200.0 mg/L or more)	Dichlorobenzidine(3,3')
m-Cresol (Contaminant) (200.0 mg/L or more)	1,4-Dichloro-2-butene
p-Cresol (Contaminant) (200.0 mg/L or more)	Dichlorodifluoromethane
Cresylic acid (See Cresol)	Dichloroethane(1,2)(Contaminant) (0.5 mg/L or more)
Crotonaldehyde	Dichloroethylene(1,1)(Contaminant) (0.7 mg/L or more)
Cumene (I)	Dichloroethyl ether
m-Cumenyl methylcarbamate *	Dichloroethylene(1,1)
Cyanides(soluble cyanide salts), not otherwise specified *	Dichloroethylene(1,2)
	Dichloromethane (a.k.a Methylene chloride) (10% or more)

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Dichloromethane (DEGREASING ONLY)

(10% or more)

Dichloromethoxy ethane

Dichloromethyl ether *

Dichlorophenol(2,4)

Dichlorophenol(2,6)

Dichlorophenylarsine *

Dichloropropene(1,3)

Dieldrin *

Diepoxybutane(1,2:3,4) (I,T)

Diethylarsine *

Diethylene glycol, dicarbamate

Diethyleneoxide(1,4)

Diethylhexyl phthalate

Diethylhydrazine (N,N-)

N,N'-Diethylhydrazine

O,O-Diethyl S-methyl dithiophosphate

Diethyl-p-nitrophenyl phosphate *

Diethyl phthalate

O,O-Diethyl O-pyrazinyl

phosphorothioate *

Diethylstilbesterol

Dihydrosafrole

Diisopropylfluorophosphate (DFP) *

Dimethanonaphthalene(1,4,5,8)1,2,3,4,

10,10-hexachloro-1,4,4a,5,8,8a-

hexahydro-,(1alpha,4alpha,

4abeta,5beta,8beta,8abeta)- *

Dimethanonaphthalene(1,4,5,8)1,2,3,4,

10,10-hexachloro-1,4,4a,5,8,8a-

hexahydro-,(1alpha,4alpha,4abeta,

5alpha,8alpha,8abeta)- *

Dimethanonaphth(2,7:3,6)[2,3b]oxirene,

3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,

6a,7,7a-octahydro-,(1alpha,2beta,

2abeta,3alpha,6alpha,6abeta,

7beta,7aalpha)-, & metabolites *

Dimethanonaphth(2,7:3,6)[2,3-b]oxirene,

3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,

6a,7,7a-octahydro-,(1alpha,2beta,

2aalpha,3beta,6beta,6aalpha,

7beta,7aalpha)*

Dimethoate *

Dimethoxydenzidine(3,3')

Dimethylamine (I)

p-Dimethylaminoazobenzene

Dimethylbenz[a]anthracene(7,12)

Dimethylbenzidine(3,3')

alpha.alpha-Dimethylbenzylhydro-

peroxide (R)

Dimethylcarbamoyl chloride

Dimethylhydrazine(1,1)

Dimethylhydrazine(1,2)

Dimethylphenol(2,4)

Dimethylphenethylamine(alpha,alpha-) *

Dimethyl phthalate

Dimethyl sulfate

Dimetilan *

Dinitro-o-cresol(4,6), and salts *

Dinitrophenol(2,4) *

Dinitrotoluene(2,4)

Dinitrotoluene(2,4) (Contaminant)

(0.13 mg/L or more)

Dinitrotoluene(2,6)

Dinoseb *

Di-n-octyl phthalate

Dioxane(1,4)

Diphenylhydrazine(1,2)

Diphosphoramidate, octamethyl- *

Diphosphoric acid,tetraethyl ester*

Dipropylamine (I)

Disulfoton *

Disulfiram

Dithiobiuret *

1,3-Dithiolane-2-carboxaldehyde, 2,4-dimethyl-,O-[(methylamino) carbonyl] oxime *

Ethyleneimine *

Endosulfan *

Endothall *

Endrin *

Endrin, and metabolites *

Endrin (a.k.a. 1,2,3,4,10,10-hexa

chloro-1,7-epoxy-1,4,4a,5,6, 7,8, 8a-

octahydro-1,4-endo, endo-5,8-dimeth

ano-naphthalene(0.02 mg/L or more)

Epichlorohydrin

Epinephrine *

EPTC

Ethanal (I)

Ethanal (I)

Ethanamine, N,N-diethyl-

Ethanamine, N-ethyl-N-nitroso-

Ethane, 1,2-dibromo-

Ethane, 1,1-dichloro-

Ethane, 1,2-dichloro-

Ethane, hexachloro-

Ethane, 1,1'-[methylenebis

(oxy)]bis[2-chloro-

Ethane, 1,1'-oxybis- (I)

Ethane, 1,1'-oxybis[2-chloro-

Ethane, pentachloro-

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Ethane, 1,1,1,2-tetrachloro-	Famphur *
Ethane, 1,1,2,2-tetrachloro-	Ferbam
Ethane, 1,1,1-trichloro-	Flammable material (Liquid, solid, or gas)(Flash point 140 F (60 C) or less)
Ethane, 1,1,2-trichloro-	Fluoranthene
Ethane, 1,1,2-trichloro-1,2,2-trifluoro- (10% or more)	Fluorine *
Ethanediamine(1,2), N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-	Fluoroacetamide *
Ethanedinitrile *	Fluoroacetic acid, sodium salt *
Ethanethioamide	Formaldehyde
Ethanimidothioic acid, 2-(dimethylamino)-N-hydroxy-2-oxo-,methyl ester	Formetanate hydrochloride *
Ethanimidothioic acid, 2-(dimethylamino)-N-[[[(methylamino) carbonyl]oxy]-2-oxo-, methyl ester *	Formic acid (C,T)
Ethanimidothioic acid, N,N'-[thiobis[(methylimino) carbonyloxy]]bis-,dimethyl ester	Formparanate *
Ethanimidothioic acid, N-[[[(methylamino)carbonyl]oxy]-, methyl ester *	Fulminic acid, mercury(2+)salt (R,T) *
Ethanol, 2-ethoxy-	Furan (I)
Ethanol, 2,2'-(nitrosoimino)bis-	Furan, tetrahydro- (I)
Ethanol, 2,2'-oxybis-, dicarbamate	Furancarboxaldehyde(2) (I)
Ethanone, 1-phenyl-	Furandione (2,5)
Ethene, chloro-	Furfural (I)
Ethene, (2-chloroethoxy)-	Furfuran (I)
Ethene, 1,1-dichloro-	
Ethene, 1,2-dichloro-, (E)-	Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-
Ethene, tetrachloro-	D-Glucose, 2-deoxy-2-[[[(methylnitrosoamino)-carbonyl]amino]-
Ethene, trichloro-	Glycidylaldehyde
Ethoxyethanol(2-) (10% or more)	Guanidine, N-methyl-N'-nitro-N-nitroso-
Ethyl acetate (I)	
Ethyl acetate (10% or more)	Heptachlor *
Ethyl acrylate (I)	Heptachlor(and its epoxide)
Ethylbenzene (10% or more)	(Contaminant)(0.008 mg/L or more)
Ethyl carbamate (urethane)	Hexachlorobenzene
Ethyl cyanide *	Hexachlorobenzene(Contaminant)
Ethylene(bis)dithiocarbamic acid, salts & ester	(0.13 mg/L or more)
Ethylene dibromide	Hexachlorobutadiene
Ethylene dichloride	Hexachlorobutadiene(Contaminant)
Ethylene glycol monoethyl ether	(0.5 mg/L or more)
Ethyleneimine *	Hexachlorocyclopentadiene
Ethylene oxide (I,T)	Hexachloroethane
Ethylenethiourea	Hexachloroethane(Contaminant)
Ethyl ether (I)	(3.0 mg/L or more)
Ethyl ether (10% or more)	Hexachlorophene
Ethylidene dichloride	Hexachloropropene
Ethyl methacrylate	Hexaethyl tetraphosphate *
Ethyl methanesulfonate	Hydrazine (R,T)
Ethyl ziram	Hydrazinecarbothioamide *
	Hydrazine, 1,2-diethyl-
	Hydrazine, 1,1-dimethyl-
	Hydrazine, 1,2-dimethyl-
	Hydrazine, 1,2-diphenyl-
	Hydrazine, methyl- *

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Hydrocyanic acid *

Hydrofluoric acid (C,T)

Hydrogen cyanide *

Hydrogen fluoride (C,T)

Hydrogen phosphide *

Hydrogen sulfide

Hydrogen sulfide H-2 S

Hydroperoxide,1-methyl-1-phenylethyl-(R)

Imidazolidinethione(2)

Indeno[1,2,3-cd]pyrene

3-Iodo-2-propynyl-n-butylcarbamate

Iron dextran

Iron, tris

(dimethylcarbomodithioato-S,S')-

Isobenzofurandione(1,3)

Isobutyl alcohol (I,T)

Isobutyl alcohol (10% or more)

Isodrin *

Isolan *

3-Isopropylphenyl N-methylcarbamate *

Isosafrole

Isoxazolone(3(2H)),5-(aminomethyl)- *

Kepone

Lasiocarpine

Lead (Contaminant)(5.0 mg/L or more)

Lead (Liquids-500mg/L or more)

Lead acetate

Lead, bis(acetato-O) tetrahydroxytri-

Lead phosphate

Lead subacetate

Lindane

Lindane(1,2,3,4,5,6-hexachlorocyclo-
hexane, gamma isomer(0.4 mg/L or more)

Maleic anhydride

Maleic hydrazide

Malononitrile

Melphalan

**Manganese, bis (dimethyl
carbomodithioato-S,S')-, ***

Manganese dimethyldithiocarbamate *

Mercury

Mercury(Contaminant)(0.2 mg/L or more)

Mercury, (acetato-O)phenyl- *

Mercury fulminate (R,T) *

Metam sodium

Methacrylonitrile (I,T)

Methanamine, N-methyl- (I)

Methanamine, N-methyl-N-nitroso- *

Methane, bromo-

Methane, chloromethoxy-

Methane, chloro- (I,T)

Methane, dibromo-

Methane, dichlorodifluoro-

Methane, dichloro-

Methane, iodo-

Methane, isocyanato- *

Methane, oxybis[chloro- *

Methane, tetrachloro-

Methane, tetranitro- (R) *

Methane, tribromo-

Methane, trichloro-

Methane, trichlorofluoro-

Methanesulfonic acid, ethyl ester

Methanethiol (I,T)

Methanethiol, trichloro- *

Methanimidamide, N,N-dimethyl-N'-

[3--[[[(methylamino)-carbonyl]

oxy]phenyl]-, monohydrochloride *

Methanimidamide, N,N-dimethyl-N'[2-

methyl-4-([(methylamino)carbonyl]

oxy]phenyl]- *

Methiocarb *

Metolcarb *

Methanol (I)

Methanol (10% or more)

Methano(6,9-)-2,4,3,benzo dioxathiepin

,6,7,8,9,10,10-hexachloro-1,5,5a,

6,9,9a-hexahydro-, 3-oxide *

Methano-1H-indene(4,7),1,4,5,6,7,8,

8-heptachloro-3a,4,7,7a-tetrahydro- *

Methano(4,7)-1H-indene,1,2,4,5,6,7,

8,8-octachloro-2,3,3a,4,7,7a-

hexahydro-

Methapyrilene

Metheno-2H-cyclobuta(1,3,4)[cd]pentalen-

2-one,1,1a,3,3a,4,5,5a,5b,6-

decachlorooctahydro-

Methomyl *

Methoxychlor

Methoxychlor (a.k.a. 1,1,1-Trichloro-

2,2-bis[p-methoxyphenyl]ethane)

(Contaminant)(10.0 mg/L or more)

Methyl alcohol (I)

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Methyl bromide
 Methylbutadiene(1) (I)
 Methyl chloride (I,T)
 Methyl chlorocarbonate (I,T)
 Methyl chloroform
 Methylcholanthrene (3-)
 Methylene(4,4')bis(2-chloroaniline)
 Methylene bromide
 Methylene chloride (DEGREASING ONLY)
 (10% or more)
 Methylene chloride
 Methylene chloride (10% or more)
 Methyl ethyl ketone peroxide (R,T)
 Methyl ethyl ketone (MEK) (I,T)
 Methyl ethyl ketone (10% or more)
 Methyl ethyl ketone (Contaminant)
 (200.0 mg/L or more)
Methyl hydrazine *
 Methyl iodide
 Methyl isobutyl ketone (I)
 Methyl isobutyl ketone(10% or more)
Methyl isocyanate *
Methyl lactonitrile(2) *
 Methyl methacrylate (I,T)
 1-Methyl-3-nitro-1-nitrosoguanidine
Methyl parathion *
 Methyl(4-)-2-pentanone (I)
 Methylthiouracil
Mexacarbate *
 Mitomycin C
 MNNG (a.k.a. 1-Methyl-3-nitro-1-nitrosoguanidine)
 Molinate

Naphthacenedione(5,12), 8-acetyl-
 10-[(3-amino -2,3,6-trideoxy)-
 alpha-L-lyxo-hexopyranosyl]oxy]-
 7,8,9,10-tetrahydro-6,8,11-
 trihydroxy-1-methoxy-, (8S-cis)-
 Naphthalenamine(2-)
 Naphthalenamine, N,N'-bis(2-
 chloroethyl)-
 Naphthalene
 Naphthalene, 2-chloro-
 Naphthalenamine(1-)
 Naphthalenedione(1,4)
 Naphthalenedisulfonic acid(2,7),3,3'-
 [(3,3'-dimethyl[1,1'-biphenyl]4,4'-
 diyl)bis(azo)bis[5-amino-4-hydroxy]-
 ,tetrasodium salt
 1-Naphthalenol, methylcarbamate

Naphthoquinone(1,4)
 alpha-Naphthylamine
 beta-Naphthylamine
alpha-Naphthylthiourea *
Nickel carbonyl *
Nickel carbonyl Ni(CO)₄,(T-4)- *
Nickel cyanide *
Nickel cyanide Ni(CN)₂ *
Nicotine, and salts *
 Nitric acid, thallium(1+) salt
Nitric oxide *
p-Nitroaniline *
 Nitrobenzene (I,T)
 Nitrobenzene (10% or more)
 Nitrobenzene(Contaminant)
 (2.0 mg/L or more)
Nitrogen dioxide *
Nitrogen oxide NO *
Nitrogen oxide NO₂ *
Nitroglycerine (R) *
 p-Nitrophenol
 Nitropropane(2) (I,T)
 Nitropropane(2) (10% or more)
 N-Nitrosodi-n-butylamine
 N-Nitrosodiethanolamine
 N-Nitrosodiethylamine
N-Nitrosodimethylamine *
 N-Nitroso-N-ethylurea
 N-Nitroso-N-methylurea
 N-Nitroso-N-methylurethane
N-Nitrosomethylvinylamine *
 N-Nitrosopiperidine
 N-Nitrosopyrrolidine
 Nitro(5-)-o-toluidine

Octamethylpyrophosphoramidate *
Osmium oxide OsO₄, (T-4)- *
Osmium tetroxide *
**Oxabicyclo(7)[2.2.1]heptane-2,3-
 dicarboxylic acid ***
Oxamyl *
 Oxathiolane(1,2-),2,2-dioxide
 Oxazaphosphorin(2H-1,3,2-)-2-amine,N,N-
 bis(2-chloroethyl)tetrahydro-,2-oxide
 Oxidizer (Liquid and Solid)
 Oxirane (I,T)
 Oxiranecarboxyaldehyde
 Oxirane, (chloromethyl)-

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Paraldehyde	Phorate *
Parathion *	Phosgene *
Pebulate	Phosphine *
Pentachlorobenzene	Phosphoric acid, diethyl 4-nitrophenyl ester *
Pentachlorodibenzo-p-dioxins (HOC)	Phosphoric acid, lead(2+) salt(2:3)
Pentachlorodibenzofuran	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl] ester *
Pentachloroethane	Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester *
Pentachloronitrobenzene (PCNB)	Phosphorodithioic acid, O,O-diethyl S-methyl ester
Pentachlorophenol	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester *
Pentachlorophenol(Contaminant) (100.0 mg/L or more)	Phosphorofluoric acid, bis(1-methylethyl) ester *
Pentadiene(1,3) (I)	Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester *
Pentanol, 4-methyl-	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester *
Phenacetin	Phosphorothioic acid, O-[4-[dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester *
Phenol	Phosphorothioic acid, O,O,-dimethyl O-(4-nitrophenyl) ester *
Phenol, 2-chloro-	Phosphorus sulfide (R)
Phenol, 4-chloro-3-methyl-	Phthalic anhydride
Phenol, 2-cyclohexyl-4,6-dinitro- *	Physostigmine *
Phenol, 2,4-dichloro-	Physostigmine salicylate *
Phenol, 2,6-dichloro-	Picoline(2)
Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-,(E)-	Piperidine, 1-nitroso-
Phenol, 2,4-dimethyl-	Piperidine, 1,1'-(tetra thiodicarbonothioyl)-bis-
Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate *	Plumbane, tetraethyl-
Phenol, 4-(dimethylamino)-3,5-dimethyl-,methylcarbamate(ester)*	Polychlorinated Biphenols (PCB's) *
Phenol, 2,4-dinitro- *	Potassium cyanide *
Phenol, methyl-	Potassium cyanide K(CN) *
Phenol,2-methyl-4,6-dinitro-,and salts*	Potassium dimethyldithiocarbamate
Phenol, 2,2'-methylenebis[3,4,6-trichloro]-	Potassium n-hydroxymethyl-n-methyldithiocarbamate
Phenol, 3-(1-methylethyl)-, methylcarbamate *	Potassium n-methyldithiocarbamate
Phenol, 2-(1-methylethoxy)-, methylcarbamate	Potassium silver cyanide *
Phenol, 3-methyl-5-(1-methylethyl), methylcarbamate *	Promecarb *
Phenol, 2-(1-methylpropyl)-4,6-dinitro- *	Pronamide
Phenol, 4-nitro-	Propanal, 2-methyl-2-(methylthio)-,O-[(methylamino)carbonyl]oxime *
Phenol, pentachloro-	Propanal, 2-methyl-2-(methylsulfonyl)-,O-[(methylamino)carbonyl] oxime *
Phenol, 2,3,4,6-tetrachloro-	Propanamine(1-) (I,I)
Phenol, 2,4,5-trichloro-	
Phenol, 2,4,6-trichloro-	
Phenol,2,4,6-trinitro-, ammonium salt (R) *	
L-Phenylalanine, 4-[bis(2-chloroethyl)amino]-	
Phenylmercury acetate *	
Phenylthiourea *	

* P-Listed Waste – Requires glassware to be triple-rinsed

Propanamine(1-),N-nitroso-N-propyl-	Pyrimidinone(4(1H)), 2,3-dihydro-6-
Propanamine(1), N-propyl- (I)	methyl-2-thioxo-
Propane, 1,2-dibromo-3-chloro-	Pyrrolidine, 1-nitroso-
Propane, 1,2-dichloro-	Pyrrolo[2,3-b]indol-5-ol,1,2,3,3a,8,8a-
Propane, 2,2'-oxybis[2-chloro-	hexahydro-1,3a,8-trimethyl,methyl-
Propane, 2-nitro- (I,T)	carbamate (ester),(3aS-cis)- *
Propane sultone(1,3)	
Propanedinitrile	
Propanenitrile *	Reactive Material (Liquid or Solid)
Propanenitrile, 3-chloro- *	Reserpine
Propanenitrile,2-hydroxy-2-methyl-*	Resorcinol
Propanetriol(1,2,3),trinitrate (R)*	
Propanoic acid, 2-(2,4,5-	
trichlorophenoxy)-	Saccharin, and salts
Propanol(1), 2,3-dibromo-,	Safrole
phosphate (3:1)	Selenious acid
Propanol(1), 2-methyl- (I,T)	Selenious acid, dithallium(1+)salt*
Propanone(2) (I)	Selenium (Contaminant)
Propanone(2), 1-bromo- *	(1.0 mg/L or more)
Propargyl alcohol *	Selenium dioxide
Propenal(2) *	Selenium sulfide
Propenamide(2)	Selenium sulfide SeS-2 (R,T)
Propenenitrile(2)	Selenium, tetrakis
Propenenitrile(2), 2-methyl- (I,T)	(dimethyldithiocarbamate)
Propene(1), 1,3-dichloro-	Selenourea *
Propene(1), 1,1,2,3,3,3-hexachloro-	L-Serine, diazoacetate (ester)
Propenoic acid(2), ethyl ester (I)	Silver(Contaminant)(5.0 mg/L or more)
Propenoic acid(2) 2-methyl-, ethyl	Silver cyanide *
ester	Silver cyanide Ag(CN) *
Propenoic acid(2), 2-methyl-,	Silvex (2,4,5-TP)
methyl ester (I,T)	Silvex(2,4,5-TP)(Contaminant)
Propenoic acid(2) (I)	(1mg/L or more)
Propen(2-)-1-ol *	Sodium azide *
Propham	Sodium cyanide *
Propoxur	Sodium cyanide Na(CN) *
n-Propylamine (I,T)	Sodium dibutyldithiocarbamate
Propylene dichloride	Sodium diethyldithiocarbamate
Propylenimine(1,2) *	Sodium dimethyldithiocarbamate
Di-n-propylnitrosamine	Streptozotocin
Propyn(2-)-1-ol *	Strontium sulfide SrS *
Prosulfocarb	Strychnidin-10-one,2,3-dimethoxy-*
Pyridazinedione(3,6) 1,2-dihydro-	Strychnidin- 10-one, and salts *
Pyridinamine(4) *	Strychnine, and salts *
Pyridine	Sulfallate
Pyridine (10% or more)	Sulfide-bearing material (when pH
Pyridine (Contaminant)	between 2 and 12.5)
(5.0 mg/L or more)	Sulfur phosphide (R)
Pyridine, 2-methyl-	Sulfuric acid, dimethyl ester
Pyridine, 3-(1-methyl-2-pyrrolidiny)-,	Sulfuric acid, dithallium(1+) salt*
(S)-, & salts *	
Pyrimidinedione(2,4-(1H,3H)),	
5-[bis(2-chloroethyl)amino]-	

* P-Listed Waste – Requires glassware to be triple-rinsed

T(2,4,5-)	Thiourea, (2-chlorophenyl)- *
TP(2,4,5-) Silvex (2,4,5- Trichlorophenoxypropionic acid (Contaminant)(1.0 mg/L or more)	Thiourea, 1-naphthalenyl- *
Tetrabutylthiuram disulfide	Thiourea, phenyl *
Tetrachlorobenzene(1,2,4,5)	Thiram
Tetrachloroethane(1,1,1,2)	Tirpate *
Tetrachloroethane(1,1,2,2)	Toluene
Tetrachloroethylene (DEGREASING ONLY) (10% or more)	Toluene (10% or more)
Tetrachloroethylene	Toluene diisocyanate (R,T)
Tetrachloroethylene (10% or more)	Toluenediamine
Tetrachloroethylene(Contaminant) (0.7 mg/L or more)	o-Toluidine
Tetrachlorophenol(2,3,4,6)	p-Toluidine
Tetraethyldithiopyrophosphate *	o-Toluidine hydrochloride
Tetraethyl lead *	Toxaphene *
Tetraethyl pyrophosphate *	Toxaphene(C ₁₀ H ₁₀ Cl ₈ , Technical Chlorinated camphene,67-69% chlorine) (Contaminant)(0.5 mg/L or more)
Tetrahydrofuran (I)	Triallate
Tetramethylthiuram monosulfide	Triazol(1H-1,2,4-)-3-amine
Tetranitromethane (R) *	Trichloroethane(1,1,1)(10% or more)
Tetraphosphoric acid, hexaethyl ester *	Trichloroethane(1,1,1) (DEGREASING ONLY) (10% or more)
Thallic oxide *	Trichloroethane(1,1,2)
Thallium(I) acetate	Trichloroethane(1,1,2)(10% or more)
Thallium(I) carbonate	Trichloroethylene (DEGREASING ONLY) (10% or more)
Thallium(I) chloride	Trichloroethylene
Thallium chloride TlCl	Trichloroethylene (10% or more)
Thallium(I) nitrate	Trichloroethylene(Contaminant) (0.5 mg/L or more)
Thallium oxide Tl-2 O-3 *	Trichlorofluoromethane(10% or more)
Thallium(I) selenite *	Trichloromethanethiol *
Thallium(I) sulfate *	Trichloromonofluoromethane
2H-1,3,5-Thiadiazine-2-thione, tetrahydro-3,5-dimethyl-	Trichlorophenol(2,4,5)
Thioacetamide	Trichlorophenol(2,4,5)(Contaminant) (400.0 mg/L or more)
Thiodicarb	Trichlorophenol(2,4,6)
Thiodiphosphoric acid, tetraethyl ester*	Trichlorophenol(2,4,6)(Contaminant) (2.0 mg/L or more)
Thiofanox *	Trichloro(1,1,2-)-1,2,2-trifluoroethane (Contaminant)(10% or more)
Thioimidodicarbonic diamide [(H-2N) C(S)]-2 NH *	Triethylamine
Thiomethanol (I,T)	Trinitrobenzene(1,3,5) (R,T)
Thioperoxydicarbonic diamide, tetrabutyl	Trioxane(1,3,5), 2,4,6-trimethyl-
Thioperoxydicarbonic diamide, tetraethyl	Tris(2,3-dibromopropyl) phosphate
Thioperoxydicarbonic diamide[(H- 2N)C(S)]-2 S-2, tetramethyl-	Trypan blue
Thiophanate-methyl	
Thiophenol *	
Thiosemicarbazide *	
Thiourea	Uracil mustard
	Urea, N-ethyl-N-nitroso-
	Urea, N-methyl-N-nitroso-

* P-Listed Waste – Requires glassware to be triple-rinsed

Vanadic acid, ammonium salt *

Vanadium pentoxide *

Vanadium oxide V-2 O-5 *

Vernolate

Vinylamine, N-methyl-N-nitroso- *

Vinyl chloride (Contaminant)

(0.2 mg/L or more)

Warfarin, & salts,

at concentrations >0.3% *

Warfarin, & salts, when at conc.

0.3% or less

Waste, manufacturing (see 49CFR)

Wastewater treatment sludge

(see 49CFR)

Xylene (I)

Xylene (10% or more)

Yohimban-16-carboxylic acid, 11,17-

dimethoxy-18-[(3,4,5-trimethoxy-

benzoyl)oxy]-,methyl ester(3beta,

16beta,17alpha,18beta,20alpha)-

Zinc, bis(diethylcarbamdithioato-
S,S')-

**Zinc, bis(dimethylcarbamdithioato-
S,S')- ***

Zinc cyanide *

Zinc cyanide Zn(CN)-2 *

Zinc phosphide Zn-3 P-2,

at conc. > 10% (R,T) *

Zinc phosphide Zn-3 P-2, at conc.

of 10% or less

Ziram *

Appendix C: University of Florida Procedure for Disposal of Clean Lab Ware

What is permitted?

All glass or plastic (except as stated below), broken or unbroken, which is not contaminated with chemical, radioactive, biohazardous, or other materials. Labels must be removed or defaced. Includes bottles, lab glass and plastic ware.

What is not permitted?

Red bags or anything with Biohazard symbol.
Syringes or other materials that belong in “sharps containers”.
Tissue culture or molecular biology lab ware (even if autoclaved).

What is “clean”?

Rinsed, Empty containers (P-listed hazardous waste containers must be triple rinsed. Rinses from P listed material are hazardous waste).
Non-contaminated glass or plastic lab ware.

What is “empty”?

Contains no chemical residue. Contains no liquids.

How to package?

All materials must be placed in a clear poly bag lined box.
No bio-waste boxes!!
The box must be closed and taped shut.
The box must be labeled “Clean Lab Ware” and have the PI name and lab number.

How to dispose?

In Health Center building place in hallway for building services to collect.
In other locations, take to building solid waste container.

If you have any questions contact;

Hazardous Materials Management @ 392-8400 or bcoughl@ehs.ufl.edu
Biological Safety @ 392-1591 or bso@ufl.edu

5/2011

Appendix D:

HAZARDOUS WASTE SATELLITE ACCUMULATION AREA REQUIREMENTS

1. **Mark** all waste containers conspicuously with the words “**Hazardous Waste.**”
2. **Label** all containers accurately, indicating the constituents and approximate percentage of each. The concentration of the constituents must add up to 100%. Labels may be obtained from EH&S at no charge by calling 392-8400. HW labels are not necessary on unused product as long as the original label is intact.
3. **Limit** the satellite area waste volume to no more than 55 gallons of waste, or one quart of a “P” waste at any one time. Submit a collection request well before you exceed these volumes. Refer to the Hazardous Waste Management Guide Appendix ‘B’ for assistance in identifying waste types.
4. **Close** all containers during accumulation except when necessary to add or remove wastes. Do not overfill containers. Leave adequate headspace for expansion. Funnels must be removed from containers when not in immediate use
5. **Seal** all containers tightly. No open or parafilm covered containers may be used for waste accumulation.
6. **Ensure** waste is compatible with other wastes in the container, and with the type of container it is stored in. The exterior of the container must be free of chemical contamination; leaking containers will not be picked up. Segregate containers of incompatible waste to prevent reactions.
7. **Biohazardous** waste and **Radioactive** waste must not be mixed with or stored in the same location(s) as Hazardous Waste.
8. **Keep** containers near the process which is generating the waste; waste must be under the continuous control and supervision of its generator.
9. Designated **Laboratory Hazardous Waste Manager:** _____ (print)
10. **Train** all students and staff in workplace of waste accumulation site requirements including emergency response.

11. Emergency Response

1. **Know** the location of your spill kit, emergency shower, fire extinguisher, and exits.

2. Chemical Spill – minor
1. Stop the spill
 2. Cover the spill.
 3. Spread the word
 4. Decontaminate
 5. Dispose of cleanup debris as Hazardous Waste

- Chemical Spill – major
1. Evacuate area, isolate area to prevent entry
 2. Call 911. Call Emergency Coordinator at 392-8400

- Fire
1. Pull Fire Alarm,
 2. Evacuate, Call 911
 3. Call Emergency Coordinator at 392-8400

Fire, Explosion, or Spill threatening life or health outside of facility

1. Call 911. Contact Emergency Coordinator at 392-8400 immediately.

After hours emergency call UPD at 392-1111

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