HAZARDOUS WASTE MANAGEMENT GUIDE

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Revised 7/08

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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 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° 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 pH ≤ 2 or pH ≥ 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. **<u>Any detectable amount of these chemicals must be identified on a hazardous waste label.</u>** 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.

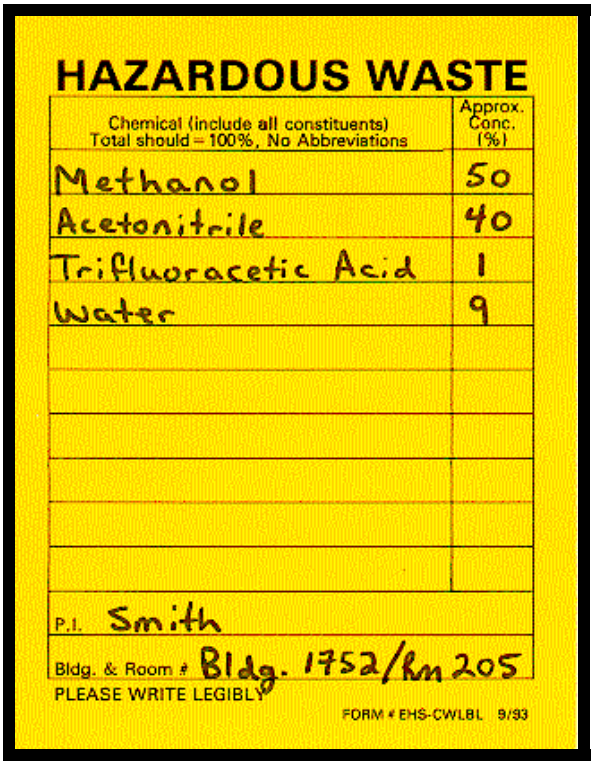
Incompatible chemicals must not to be placed in the same container. The Lab Safety Manual provides a list of incompatible chemicals. When placing a chemical into the waste container, consider venting to prevent overpressurization resulting from any abnormal reactions.

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.

IV. LABELING REQUIREMENTS

All hazardous waste containers must be labeled correctly. Below is an example of a correctly completed label. Hazardous Waste 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.



HAZARDOUS WASTE

Chemical (include all constituents) Total should = 100%, No Abbreviations	Approx. Conc. (%)
Methanol	50
Acetonitrile	40
Trifluoracetic Acid	1
Water	9

P.I. Smith

Bldg. & Room # Bldg. 1752/Rm 205

PLEASE WRITE LEGIBLY

FORM # EHS-CWLBL 9/93

Directions for Labeling

1. The *Hazardous Waste* label must be placed on the container BEFORE any waste is put into the container.
2. Abbreviations and formulas are not permitted.
3. The % of each chemical constituent must be listed, and these %'s must total 100%. It is crucial to include water, if any, as part of the 100%.
4. Computer generated labels are acceptable as long as they say "Hazardous Waste" at the top and meet the requirements of items 2 & 3. Another option is to tape the computer generated label onto one of the yellow hazardous waste labels.
5. Ensure that the Principal Investigator's name, building, and room number are included on the label.
6. Hazardous waste labels are not necessary on containers holding pure, unused product as long as the original label is legible. Simply place these containers in the waste accumulation area and include them on the *Chemical Waste Pick-up Request* form.

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 of 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@ehs.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 lableled 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 labled 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. Contactl 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
Acetaldehyde (I)
Acetaldehyde, chloro- *
Acetaldehyde, trichloro-
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)
Acetic acid, fluoro-, sodium salt*
Acetic acid, lead(2+) salt
Acetic acid, thallium(1+) salt
Acetic acid, (2,4,5-trichlorophenoxy)-
Acetone (I)
Acetone (10% or more)
Acetonitrile (I,T)
Acetophenone
Acetylaminofluorene, 2-
Acetyl chloride (C,R,T)
Acetyl-2-thiourea, 1-*
Acrolein*
Acrylamide
Acrylic acid (I)
Acrylonitrile
Aldicarb *
Aldicarb sulfone *
Allyl alcohol *
Aluminum phosphide (R,T) *
Aminomethyl-3-isoxazolol, 5- *
Aminopyridine, 4- *
Amitrole
Ammonium picrate (R) *
Ammonium vanadate *
Aniline (I,T)
Argentate(1-), bis(cyano-C)-,potassium*
Arsenic (Contaminant)(5.0 mg/L or more)
Arsenic acid H-3 As O-4 *
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
H-Azepine-1-carbothioic acid, hexahydro-,S-ethyl ester
Aziridine *
Aziridine, 2-methyl- *
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-(1aalpha, 8beta,8aalpha,8balpha)]-

Barban
Barium(Contaminant)(100.0 mg/L or more)
Barium cyanide *
Bendiocarb
Bendiocarb phenol
Benomyl
Benz[j]aceanthrylene, 1,2-dihydro-3-methyl-
Benz[c]acridine
Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester
Benzal chloride
Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-propynyl)-
Benz[a]anthracene
Benz[a]anthracene, 7,12-dimethyl-
Benzenamine (I,T)
Benzenamine, 4,4'-carbonimidoylbis [N,N-dimethyl-
Benzenamine, 4-chloro- *
Benzenamine, 4-chloro-2-methyl-, hydrochloride
Benzenamine, N,N-dimethyl-4(phenylazo)-
Benzenamine, 2-methyl-
Benzenamine, 2-methyl,hydrochloride
Benzenamine, 2-methyl-5-nitro-
Benzenamine, 4-methyl-
Benzenamine, 4,4'-methylenebis [2-chloro]-
Benzenamine, 4-nitro- *
Benzene (I,T)
Benzene (10% or more)
Benzene (Contaminant)(0.5 mg/L or more)
Benzene, 1-bromo-4-phenoxy-
Benzene, chloro-

* 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-trichloro-ethylidene) bis[4-chloro-
Benzene, 1,1'-(2,2,2-Trichloro-ethylidene)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[rst]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)

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]]-
n-Butyl alcohol (I)
n-Butyl alcohol (10% or more)
Butylate

Cacodylic acid
Cadmium(Contaminant)(1.0 mg/L or more)
Calcium chromate
Calcium cyanide *
Calcuim cyanide Ca(CN)2 *
Carbamic acid, 1H-benzimidazol-2-yl, methyl ester
Carbamic acid, (1-((butylamino) carbonyl)-1H-benzimadazol 2-yl]-, methyl ester
Carbamic acid, butyl-, 3-iodo-2-propynyl ester
Carbamic acid,(3-chlorophenyl)-,4-chloro-2-butynyl ester
Carbamic acid, [(dibutylamino)-thio] methyl-,2,3-dihydro-'2,2-dimethyl-7-benzofuranyl ester *
Carbamic acid,dimethyl-,1-[(dimethylamino)carbonyl]-5-methyl- 1H-pyrazol-3-yl ester *
Carbamic acid, dimethyl-, 3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester*
Carbamic acid, ethyl ester
Carbamic acid, methyl-,3-methylphenyl ester *
Carbamic acid, methylnitroso-, ethyl ester
Carbamic acid, phenyl-, 1-methylethyl ester
Carbamic acid, [1,2- phenylenebis (iminocarbonothioyl)]bis-, dimethyl ester
Carbamic chloride, dimethyl-
Carbamodithioic acid, dibutyl, sodium salt
Carbamodithioic acid, diethyl-, 2-chloro-2-propenyl ester
Carbamodithioic acid, diethyl-, sodium salt
Carbamodithioic acid, dimethyl-, potassium salt
Carbamodithioic acid, dimethyl-, sodium salt
Carbamodithioic acid, dimethyl-, tetraanhydrosulfide with orthoselenious acid
Carbamodithioic acid, 1,2-ethanediylbis-,salts & esters
Carbamodithioic acid,(hydroxymethyl) methyl-,monopotassium salt
Carbamodithioic acid, methyl-, monosodium salt
Carbamodithioic acid, methyl-, monopotassium salt
Carbamothioic acid, bis(1-methylethyl)-,S-(2,3-dichloro-2-propenyl) ester
Carbamothioic acid,bis(1-methylethyl)-,S-(2,3,3,-trichloro-2-propenyl) ester
Carbamothioic acid, bis(2-methylpropyl)-, S-ethyl ester
Carbamothioic acid, butylethyl-, S-propyl ester
Carbamothioic acid, cyclohexylethyl-, S-ethyl ester
Carbamothioic acid, dipropyl-, S-ethyl ester
Carbamothioic acid, dipropyl-, S-(phenylmethyl) ester
Carbamothioic acid, dipropyl-, S-propyl ester
Carbaryl
Carbendazim
Carbofuran *
Carbofuran phenol
Carbon disulfide *
Carbon disulfide (10% or more)
Carbon oxyfluoride (R,T)
Carbon tetrachloride
Carbon tetrachloride (Contaminant) (0.5 mg/L or more)
Carbon tetrachloride (DEGREASING ONLY) (10% or more)
Carbonic acid, dithallium(1+) 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)
Chlornaphazin
Chloroacetaldehyde *
p-Chloroaniline *
Chlorobenzene
Chlorobenzene (10% or more)
Chlorobenzene (Contaminant)
(100.0 mg/L or more)
Chlorobenzilate
Chloro(2-)-1,3-butadiene (HOC)
p-Chloro-m-cresol
Chloroethyl (2) vinyl ether
Chlorofluorocarbons (DEGREASING ONLY)
(10% or more)
Chloroform
Chloroform (Contaminant)
(6.0 mg/L or more)
Chloromethyl methyl ether
Chloronaphthalene, beta-
Chloronaphthalene(2-) (HOC)
Chlorophenol (o-)
Chlorophenyl(1-o-)thiourea *
Chloropropionitrile(3-) *
Chloro-o-toluidine(4), hydrochloride
Chromic acid H-2 CrO-4, calcium salt
Chromium(Contaminant)(5.0 mg/L or more)
Chrysene
Copper, bis (dimethylcarbamodithioato-
S,S')-,
Copper cyanide *
Copper cyanide Cu(CN) *
Copper dimethyldithiocarbamate
Corrosive (LIQUIDS ONLY)
[pH $\leq$ 2 or pH $\geq$12.5]
Creosote
Cresol (Cresylic acid)
Cresol (Cresylic acid) (10% or more)
Cresol (Contaminant)
(200.0 mg/L or more)
o-Cresol (Contaminant)
(200.0 mg/L or more)
m-Cresol (Contaminant)
(200.0 mg/L or more)
p-Cresol (Contaminant)
(200.0 mg/L or more)
Cresylic acid (See Cresol)
Crotonaldehyde
Cumene (I)
m-Cumenyl methylcarbamate *
Cyanides(soluble cyanide salts),
not otherwise specified *
Cyanide-bearing material
(when pH between 2 and 12.5)
Cyanogen *
Cyanogen bromide (CN)Br
Cyanogen chloride *
Cyanogen Chloride (CN)Cl *
Cycloate
Cyclohexadiene(2,5-)-1,4-dione
Cyclohexane, 1,2,3,4,5,6-hexachloro-,
(1alpha,2alpha,3beta,4alpha,
5alpha,6beta)-
Cyclohexane (I)
Cyclohexanone (I)
Cyclohexanone (10% or more)
Cyclohexyl(2)-4,6-dinitrophenol *
Cyclopentadiene(1,3-), 1,2,3,4,5,5-
hexachloro-
Cyclophosphamide

D(2,4-)(Contaminant)(10.0 mg/L or more)
D(2,4-), salts & esters
Daunomycin
Dazomet
DDD
DDT
Diallate
Dibenzo[a,i]pyrene
Dibenz[a,h]anthracene
Dibromo(1,2-)-3-chloropropane
Dibutyl phthalate
o-Dichlorobenzene
o-Dichlorobenzene (10% or more)
m-Dichlorobenzene
p-Dichlorobenzene
Dichlorobenzene(1,4)(Contaminant)
(7.5 mg/L or more)
Dichloro-2-butene(1,4) (I,T)
Dichloroisopropyl ether
Dichlorobenzidine(3,3')
1,4-Dichloro-2-butene
Dichlorodifluoromethane
Dichloroethane(1,2)(Contaminant)
(0.5 mg/L or more)
Dichloroethylene(1,1)(Contaminant)
(0.7 mg/L or more)
Dichloroethyl ether
Dichloroethylene(1,1)
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-,(1aalpha,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-,(1aalpha,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)
Diphosphoramide, 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-

Ethane, 1,1,1,2-tetrachloro-
Ethane, 1,1,2,2-tetrachloro-
Ethane, 1,1,1-trichloro-
Ethane, 1,1,2-trichloro-
Ethane, 1,1,2-trichloro-1,2,2-trifluoro- (10% or more)
Ethanediamine(1,2), N,N-dimethyl-N'-2-pyridinyl-N'-(2-thienylmethyl)-
Ethanedinitrile *
Ethanethioamide
Ethanimidothioic acid, 2-(dimethyl-amino)-N-hydroxy-2-oxo-,methyl ester
Ethanimidothioic acid, 2-(dimethyl-amino)-N-[[(methylamino) carbonyl] oxy]-2-oxo-, methyl ester *
Ethanimidothioic acid, N,N'-[thiobis[(methylimino) carbonyloxy]]bis-,dimethyl ester
Ethanimidothioic acid, N-[[(methyl-amino)carbonyl]oxy]-, methyl ester *
Ethanol, 2-ethoxy-
Ethanol, 2,2'-(nitrosoimino)bis-
Ethanol, 2,2'-oxybis-, dicarbamate
Ethanone, 1-phenyl-
Ethene, chloro-
Ethene, (2-chloroethoxy)-
Ethene, 1,1-dichloro-
Ethene, 1,2-dichloro-, (E)-
Ethene, tetrachloro-
Ethene, trichloro-
Ethoxyethanol(2-) (10% or more)
Ethyl acetate (I)
Ethyl acetate (10% or more)
Ethyl acrylate (I)
Ethylbenzene (10% or more)
Ethyl carbamate (urethane)
Ethyl cyanide *
Ethylene(bis)dithiocarbamic acid, salts & ester
Ethylene dibromide
Ethylene dichloride
Ethylene glycol monoethyl ether
Ethyleneimine *
Ethylene oxide (I,T)
Ethylenethiourea
Ethyl ether (I)
Ethyl ether (10% or more)
Ethylidene dichloride
Ethyl methacrylate
Ethyl methanesulfonate
Ethyl ziram

Famphur *
Ferbam
Flammable material (Liquid, solid, or gas)(Flash point 140 F (60 C)or less)
Fluoranthene
Fluorine *
Fluoroacetamide *
Fluoroacetic acid, sodium salt *
Formaldehyde
Formetanate hydrochloride *
Formic acid (C,T)
Formparanate *
Fulminic acid, mercury(2+)salt (R,T) *
Furan (I)
Furan, tetrahydro- (I)
Furancarboxaldehyde(2) (I)
Furandione (2,5)
Furfural (I)
Furfuran (I)

Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-, D-
D-Glucose, 2-deoxy-2-[[(methylnitroso-amino)-carbonyl]amino]-
Glycidylaldehyde
Guanidine, N-methyl-N'-nitro-N-nitroso-

Heptachlor *
Heptachlor(and its epoxide) (Contaminant)(0.008 mg/L or more)
Hexachlorobenzene
Hexachlorobenzene(Contaminant) (0.13 mg/L or more)
Hexachlorobutadiene
Hexachlorobutadiene(Contaminant) (0.5 mg/L or more)
Hexachlorocyclopentadiene
Hexachloroethane
Hexachloroethane(Contaminant) (3.0 mg/L or more)
Hexachlorophene
Hexachloropropene
Hexaethyl tetraphosphate *
Hydrazine (R,T)
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
(dimethylcarbamodithioato-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
carbamodithioato-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)
Methananmine, 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 *
Methyllactonitrile(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

Octamethylpyrophosphoramide *
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)-

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

Paraldehyde
Parathion *
Pebulate
Pentachlorobenzene
Pentachlorodibenzo-p-dioxins (HOC)
Pentachlorodibenzofuran
Pentachloroethane
Pentachloronitrobenzene (PCNB)
Pentachlorophenol
Pentachlorophenol(Contaminant) (100.0 mg/L or more)
Pentadiene(1,3) (I)
Pentanol, 4-methyl-
Phenacetin
Phenol
Phenol, 2-chloro-
Phenol, 4-chloro-3-methyl-
Phenol, 2-cyclohexyl-4,6-dinitro- *
Phenol, 2,4-dichloro-
Phenol, 2,6-dichloro-
Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-,(E)-
Phenol, 2,4-dimethyl-
Phenol, (3,5-dimethyl-4-(methylthio)-, methylcarbamate *
Phenol, 4-(dimethylamino)-3,5-dimethyl-,methylcarbamate(ester)*
Phenol, 2,4-dinitro- *
Phenol, methyl-
Phenol,2-methyl-4,6-dinitro-,and salts*
Phenol, 2,2'-methylenebis[3,4,6-trichloro]-
Phenol, 3-(1-methylethyl)-, methylcarbamate *
Phenol, 2-(1-methylethoxy)-, methylcarbamate
Phenol, 3-methyl-5-(1-methylethyl), methylcarbamate *
Phenol, 2-(1-methylpropyl)-4,6-dinitro- *
Phenol, 4-nitro-
Phenol, pentachloro-
Phenol, 2,3,4,6-tetrachloro-
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 *
Phorate *
Phosgene *
Phosphine *
Phosphoric acid, diethyl 4-nitrophenyl ester *
Phosphoric acid, lead(2+) salt(2:3)
Phosphorodithioic acid,O,O-diethyl S-[2-(ethylthio)ethyl] ester *
Phosphorodithioic acid, O,O-diethyl S-[(ethylthio)methyl] ester *
Phosphorodithioic acid, O,O-diethyl S-methyl ester
Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester *
Phosphorofluoridic acid, bis(1-methylethyl) ester *
Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester *
Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester *
Phosphorothioic acid,O-[4-[dimethylamino)sulfonyl]phenyl] O,O-dimethyl ester *
Phosphorothioic acid, O,O,-dimethyl O-(4-nitrophenyl) ester *
Phosphorus sulfide (R)
Phthalic anhydride
Physostigmine *
Physostigmine salicylate *
Picoline(2)
Piperidine, 1-nitroso-
Piperidine, 1,1'-(tetra thiodicarbonothioyl)-bis-
Plumbane, tetraethyl-
Polychlorinated Biphenols (PCB's) *
Potassium cyanide *
Potassium cyanide K(CN) *
Potassium dimethyldithiocarbamate
Potassium n-hydroxymethyl-n-methyldithiocarbamate
Potassium n-methyldithiocarbamate
Potassium silver cyanide *
Promecarb *
Pronamide
Propanal, 2-methyl-2-(methylithio)-,O-[(methylamino)carbonyl]oxime *
Propanal, 2-methyl-2-(methyl-sulfonyl)-,O-[(methylamino) carbonyl] oxime *
Propanamine(1-) (I,T)

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

Propanamine(1-),N-nitroso-N-propyl-
Propanamine(1), N-propyl- (I)
Propane, 1,2-dibromo-3-chloro-
Propane, 1,2-dichloro-
Propane, 2,2'-oxybis[2-chloro-
Propane, 2-nitro- (I,T)
Propane sultone(1,3)
Propanedinitrile
Propanenitrile *
Propanenitrile, 3-chloro- *
Propanenitrile,2-hydroxy-2-methyl-*
Propanetriol(1,2,3),trinitrate (R)*
Propanoic acid, 2-(2,4,5-trichlorophenoxy)-
Propanol(1), 2,3-dibromo-, phosphate (3:1)
Propanol(1), 2-methyl- (I,T)
Propanone(2) (I)
Propanone(2), 1-bromo- *
Propargyl alcohol *
Propenal(2) *
Propenamide(2)
Propenenitrile(2)
Propenenitrile(2), 2-methyl- (I,T)
Propene(1), 1,3-dichloro-
Propene(1), 1,1,2,3,3,3-hexachloro-
Propenoic acid(2), ethyl ester (I)
Propenoic acid(2) 2-methyl-, ethyl ester
Propenoic acid(2), 2-methyl-, methyl ester (I,T)
Propenoic acid(2) (I)
Propen(2-)-1-ol *
Propham
Propoxur
n-Propylamine (I,T)
Propylene dichloride
Propylenimine(1,2) *
Di-n-propylnitrosamine
Propyn(2-)-1-ol *
Prosulfocarb
Pyridazinedione(3,6) 1,2-dihydro-
Pyridinamine(4) *
Pyridine
Pyridine (10% or more)
Pyridine (Contaminant) (5.0 mg/L or more)
Pyridine, 2-methyl-
Pyridine, 3-(1-methyl-2-pyrrolidiny)-, (S)-, & salts *
Pyrimidinedione(2,4-(1H,3H)), 5-[bis(2-chloroethyl)amino]-
Pyrimidinone(4(1H)), 2,3-dihydro-6-methyl-2-thioxo-
Pyrrolidine, 1-nitroso-
Pyrrolo[2,3-b]indol-5-ol,1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl,methyl-carbamate (ester),(3aS-cis)- *

Reactive Material (Liquid or Solid)
Reserpine
Resorcinol

Saccharin, and salts
Safrole
Selenious acid
Selenious acid, dithallium(1+)salt*
Selenium (Contaminant) (1.0 mg/L or more)
Selenium dioxide
Selenium sulfide
Selenium sulfide SeS-2 (R,T)
Selenium, tetrakis (dimethyldithiocarbamate)
Selenourea *
L-Serine, diazoacetate (ester)
Silver(Contaminant)(5.0 mg/L or more)
Silver cyanide *
Silver cyanide Ag(CN) *
Silvex (2,4,5-TP)
Silvex(2,4,5-TP)(Contaminant) (1mg/L or more)
Sodium azide *
Sodium cyanide *
Sodium cyanide Na(CN) *
Sodium dibutyldithiocarbamate
Sodium diethyldithiocarbamate
Sodium dimethyldithiocarbamate
Streptozotocin
Strontium sulfide SrS *
Strychnidin-10-one,2,3-dimethoxy-*
Strychnidin- 10-one, and salts *
Strychnine, and salts *
Sulfallate
Sulfide-bearing material (when pH between 2 and 12.5)
Sulfur phosphide (R)
Sulfuric acid, dimethyl ester
Sulfuric acid, dithallium(1+) salt*

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

T(2,4,5-)
TP(2,4,5-) Silvex (2,4,5-Trichlorophenoxypropionic acid (Contaminant)(1.0 mg/L or more)
Tetrabutylthiuram disulfide
Tetrachlorobenzene(1,2,4,5)
Tetrachloroethane(1,1,1,2)
Tetrachloroethane(1,1,2,2)
Tetrachloroethylene (DEGREASING ONLY) (10% or more)
Tetrachloroethylene
Tetrachloroethylene (10% or more)
Tetrachloroethylene(Contaminant) (0.7 mg/L or more)
Tetrachlorophenol(2,3,4,6)
Tetraethyldithiopyrophosphate *
Tetraethyl lead *
Tetraethyl pyrophosphate *
Tetrahydrofuran (I)
Tetramethylthiuram monosulfide
Tetranitromethane (R) *
Tetraphosphoric acid, hexaethyl ester *
Thallic oxide *
Thallium(I) acetate
Thallium(I) carbonate
Thallium(I) chloride
Thallium chloride TlCl
Thallium(I) nitrate
Thallium oxide Tl-2 O-3 *
Thallium(l) selenite *
Thallium(l) sulfate *
2H-1,3,5-Thiadiazine-2-thione, tetrahydro-3,5-dimethyl-
Thioacetamide
Thiodicarb
Thiodiphosphoric acid, tetraethyl ester*
Thiofanox *
Thioimidodicarbonic diamide [(H-2N) C(S)]-2 NH *
Thiomethanol (I,T)
Thioperoxydicarbonic diamide, tetrabutyl
Thioperoxydicarbonic diamide, tetraethyl
Thioperoxydicarbonic diamide[(H-2N)C(S)]-2 S-2, tetramethyl-
Thiophanate-methyl
Thiophenol *
Thiosemicarbazide *
Thiourea
Thiourea, (2-chlorophenyl)- *
Thiourea, 1-naphthalenyl- *
Thiourea, phenyl *
Thiram
Tirpate *
Toluene
Toluene (10% or more)
Toluene diisocyanate (R,T)
Toluenediamine
o-Toluidine
p-Toluidine
o-Toluidine hydrochloride
Toxaphene *
Toxaphene(C10H10Cl8, Technical Chlorinated camphene,67-69% chlorine) (Contaminant)(0.5 mg/L or more)
Triallate
Triazol(1H-1,2,4-)-3-amine
Trichloroethane(1,1,1)(10% or more)
Trichloroethane(1,1,1) (DEGREASING ONLY) (10% or more)
Trichloroethane(1,1,2)
Trichloroethane(1,1,2)(10% or more)
Trichloroethylene (DEGREASING ONLY) (10% or more)
Trichloroethylene
Trichloroethylene (10% or more)
Trichloroethylene(Contaminant) (0.5 mg/L or more)
Trichlorofluoromethane(10% or more)
Trichloromethanethiol *
Trichloromonofluoromethane
Trichlorophenol(2,4,5)
Trichlorophenol(2,4,5)(Contaminant) (400.0 mg/L or more)
Trichlorophenol(2,4,6)
Trichlorophenol(2,4,6)(Contaminant) (2.0 mg/L or more)
Trichloro(1,1,2-)-1,2,2-trifluoroethane (Contaminant)(10% or more)
Triethylamine
Trinitrobenzene(1,3,5) (R,T)
Trioxane(1,3,5), 2,4,6-trimethyl-
Tris(2,3-dibromopropyl) phosphate
Trypan blue

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(diethylcarbamodithioato-
S,S')-
Zinc, bis(dimethylcarbamodithioato-
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 Policy for Disposal of Clean Glass

What's permitted:

All glass or plastic (except as stated below) which is not contaminated with chemical, radioactive, or biological materials. Labels must be removed or defaced.

What's not permitted:

Red bags
Anything with Biohazard symbol
Syringes or other materials that belong in "sharps containers".
Used tissue culture or molecular biology lab ware.

What is "clean":

Empty containers must be rinsed. P-listed hazardous waste containers must be triple rinsed.
The rinsate is required to go into a waste container, not down the drain.

How to package:

All materials must be placed in a poly bag lined box.
The box must be closed and sealed.
The box must be labeled "Clean Glass" and have the generator's room number.

How to dispose:

In the Health Center, place in hallway for building services to collect.
Other locations, take to nearest solid waste container or dumpster.

If you have any questions contact:

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

Appendix D: HAZARDOUS WASTE SATELLITE ACCUMULATION AREA REQUIREMENTS

1. **Mark** all waste containers with the words "**Hazardous Waste**."
2. **Label** all waste containers accurately indicating the constituents and percentage of each. The concentration of the constituents must add up to 100%. Standardized labels may be obtained from HMM at no charge. Call 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.
5. **Funnels** must be removed from containers when not in immediate use. All waste must be collected in sealable containers.
6. **Seal** all containers tightly. No beakers or open containers shall be used for waste accumulation.
7. **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.
8. **Biohazard** waste and hazardous waste must not be mixed.
9. **Keep** containers near the process generating the waste.
10. **Inform** all students and employees of waste accumulation site requirements.

11. **Designate** an accumulation point manager: Laboratory Waste Manager (print name)_____

12. **Know** the location of your spill kit, emergency shower, fire extinquisher, and exits.

Emergency Response

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

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

1. Contact Emergency Coordinator at 392-8400 immediately.

After hours emergency call UPD at 392-1111

Appendix 'E'

Hazardous Waste Familiarity Training for SAA Workers

It is the responsibility of each Laboratory Waste Manager to ensure that all personnel who work with, generate, or otherwise come into contact with Hazardous Waste receive adequate familiarization training on the requirements which this manual covers. Each worker must thoroughly understand the rules and regulations associated with Hazardous Waste before any duties requiring them to come into contact with such materials are assigned to them.

This sheet is to be maintained in the laboratory by the lab's Waste Manager, and provided upon request.

By my signature below, I acknowledge that I am thoroughly aware of and understand the rules and regulations associated with Hazardous Waste as covered in this manual. Furthermore, I agree to comply with these rules as they apply to the storage, labeling, segregation, and minimization of all Hazardous Wastes in my workplace.

Name (Printed)	Signature	Date Training Completed