

 STATE UNIVERSITY OF NEW YORK	Environmental Health and Safety Manual	
	Policy Number: EH&S 8-1	
Title: Hazardous Waste Management		
Effective Date: 1980	Revision: 1/00	Number of Pages: 36

PURPOSE: To establish policies, work practices, and systematic procedures for handling, packaging, collection, treatment, and disposal of wastes that are regulated by law. Hazardous wastes include radioactive, chemical, asbestos, mixed hazard wastes and regulated medical waste. The goals of this integrated waste management system are to minimize waste generation and ensure safe and efficient handling of all hazardous and non-hazardous wastes.

SCOPE: University wide.

POLICY: All waste at this University shall be generated, handled, packaged, collected, transported, treated, and disposed of in such a manner as to protect health and safety, assure compliance with environmental regulations and permit requirements, promote effective utilization of resources and contribute to and support the mission of the University. The University also supports and will strive to meet or exceed the waste minimization objectives stated in the Resource Conservation and Recovery Act and similar initiatives.

PROCEDURE:

I. Responsibilities

1. The Department of Environmental Health and Safety shall assume overall responsibility for coordination of the hazardous waste management program and shall assume responsibility for providing technical assistance and support regarding occupational health and safety matters relating to waste management.
2. A generator of hazardous waste is defined as any person who discards hazardous materials or agents. To assure the safety of all individuals who may come into contact with waste, the generator shall assume primary responsibility for properly identifying, segregating, handling, labeling, and storing hazardous materials or agents for collection, transportation, treatment, and disposal as defined in this policy. It is the generator's responsibility to make certain that all waste packaging, handling, and storage procedures ensure that the external surfaces of completed containers are free from contamination and physical hazards prior to removal from the work area. Any work that generates hazardous waste shall be performed in a safe manner. Segregation

of waste streams are necessary in order to allow safe and cost effective waste disposal. The costs of waste storage and disposal shall be borne by the generator, unless other arrangements have been made in advance.

II. Work Practices

1. When packaging any type of waste for collection, do not put more than 40 pounds of waste in a single container nor fill more than 3/4 full. Allow space in containers for expansion of vapors.
2. All materials that pose a potential puncture hazard (e.g., hypodermic needles, broken glass, and plastic-ware) must be packaged in puncture resistant containers prior to removal from the work area.
3. Do not mix general waste with hazardous wastes (e.g., Regulated Medical Waste, Asbestos, Chemical, or Radioactive Waste) or package general waste in hazardous waste containers.
4. Non-water soluble materials, Primary Radioactive Wastes, and Hazardous Chemical Wastes such as Corrosives, Flammable Liquids, Carcinogens, Mutagens and other toxic or reactive chemicals shall not be discharged into any sanitary or storm drain systems.
5. Hazardous wastes must never be left on loading docks, freight elevator lobbies, hallways or any other unrestricted locations.
6. All hazardous wastes must be identified before being offered for disposal. Waste of unknown or incorrectly described composition presents difficult handling and disposal problems and may require costly analysis before removal and disposal can be accomplished. The cost of this analysis and disposal is the responsibility of the generator.
7. The generation of hazardous waste is to be minimized. Investigators are encouraged to develop and use validated experimental procedures that replace hazardous materials with non-hazardous materials, minimize generation of hazardous wastes, or result in effective treatment of wastes to reduce or eliminate hazardous characteristics.
8. Empty containers that once held chemicals or radioactive materials must be clearly identified using the procedures described for the category.

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9. Before initiating treatment of a hazardous waste, generators are requested to contact the Department of Environmental Health and Safety to ensure that the proposed treatment process meets safety, regulatory, and recordkeeping requirements.

III. Waste Segregation and Handling Procedures

A. General Non-Hazardous Waste

Any discarded solid items that are not known or suspected to be contaminated with potentially hazardous materials.

1. Segregation and Packaging Instructions

- a. Office waste
 1. Small quantities of general waste should be disposed of in a trash receptacle which is lined with a plastic bag.
 2. Paper waste, including general office paper, computer paper, newspaper and catalogs, should be packaged in cardboard boxes or recycling bins for collection and recycling.
- b. All uncontaminated or clean disposable glass and rigid plastic-ware should be disposed of in an appropriate puncture resistant container (e.g., a cardboard box) with a plastic liner. The container must be labeled "glassware" and taped securely closed.
- c. Experimental animal bedding materials from healthy animals should be packaged in a doubled heavy duty plastic garbage bag.

2. Collection

1. General Non-Hazardous Waste is routinely collected by the custodial/housekeeping staff.

B. Decontaminated Objectionable Waste

Any biological waste material that is not Regulated Medical Waste that can be rendered non hazardous by a chemical process or through autoclaving.

1. Segregation Categories

a. Liquid Media

1. Autoclave and pour down the local drain.
2. Add appropriate disinfectant (i.e. bleach) and pour down the drain.

b. Semi Solid Media

1. Autoclave in an appropriate autoclave bag, place in general waste container after checking that indicator changed color.

c. Microbiological specimens

1. All non-infectious fungal, bacterial and virus cultures that have not been used in the diagnosis, treatment, or immunization of human beings or animals, in the research pertaining thereto, or in the testing of biologicals, can be autoclaved in an appropriate autoclave bag. Place in general waste container after checking that indicator changed color.

C. Regulated Medical Waste**1. Definitions**

- a. **Regulated Medical Waste:** Any waste which is generated in the diagnosis, treatment or immunization of human beings or animals, in research pertaining thereto, or in the production or testing of biologicals, provided however, that "regulated medical waste" shall not include any hazardous waste or radioactive waste.

1. **Cultures and stocks.** This waste shall include cultures and stocks of agents infectious to humans, and associated biologicals, cultures from medical or pathological laboratories, cultures and stocks of infectious agents from research laboratories, wastes from the production of biologicals, discarded live and attenuated vaccines, and culture dishes and devices used to transfer, inoculate, or mix cultures, nutrient agars, gels, broths (including those utilizing human blood and blood products), human and primate cell lines, animal cell lines known or likely to be infected or contaminated with human microbes or agents classified as bloodborne pathogens.

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2. **Human pathological wastes.** This waste shall include tissues, organs, body parts (except teeth and contiguous areas of bone and gum) and body fluids that are removed during surgery or autopsy or other medical procedures, or specimens of body fluids and their containers and discarded material saturated with such body fluids other than urine. This waste shall not include urine or fecal materials submitted for other than diagnosis of infectious diseases.
 3. **Human blood and blood products.** This waste shall include:
 - i. discarded waste human blood or blood components, including serum and plasma, containers with free flowing blood or blood components or discarded saturated material containing free flowing blood or blood components; and
 - ii. materials saturated to the point of dripping with blood or blood products.
 4. **Sharps.** This waste shall include but not be limited to discarded unused sharps and sharps used in animal or human patient care, medical research, or in clinical or pharmaceutical laboratories, including hypodermic, intravenous, or other medical needles, hypodermic or intravenous syringes to which a needle or other sharp is still attached, pasteur pipettes, scalpel blades, or blood vials, and broken or unbroken glass (including slides and cover slips) in contact with infectious agents. This waste shall not include those parts of syringes from which sharps have been designed to be removed, and which are intended for recycling or other disposal, so long as such syringes have not come in contact with infectious agents.
 5. **Animal Waste.** This waste shall mean discarded materials including carcasses, body parts, body fluids, blood, or bedding originating from animals known to be contaminated with infectious agents (i.e. zoonotic organisms) or from animals inoculated during research, production of biologicals, or pharmaceutical testing with infectious agents, provided that such waste can serve as a means of transmission of the infectious agent.
- b. **Infectious Agents:** Defined as any organisms that cause disease or an adverse health impact to humans and listed in section 2.1 of the State Sanitary Code and those found in Biosafety Levels 2 through 4 of the Centers for Disease Control's Manual for Biosafety in Microbiological and Biomedical Laboratories (May 1993). Other organisms defined as infectious by Infection Control or the Department of

Environmental Health and Safety may also be included.

Examples of Regulated Medical Waste:

1. Cultures and Stocks
 - a. Cultures and stocks from medical and pathological laboratories, including bacterial cultures, viral cultures, fungal cultures, throat cultures, mucous cultures, exudate cultures, lung fluid cultures, pleural fluid cultures, synovial fluid cultures, and cerebrospinal fluid cultures.
 - b. Culture media that has come in contact with infectious materials, including agar gel, nutrient broth, discarded media from cultures and blood agar.
 - c. Cultures and stocks of infectious agents from research and industrial laboratories, including tissue culture materials from human cell lines, human blood and blood products, impure animal cell lines, preparations made from living organisms and their products, including vaccines, cultures, etc, intended for use in diagnosis, immunizing or treating human beings or animals or in research pertaining thereto.
 - d. Clean up materials such as absorbents and paper towels from culture and stock mixing.
 - e. Biologicals such as medicinal preparations made from living organisms and their products, including serums, vaccines, antigens and antitoxins.
 - f. Culture dishes, flasks and devices used to transfer, inoculate, and mix cultures, such as tissue culture plates, assay plates, test tubes, centrifuge tubes, cotton swabs, pipettes, pipette tips, stirring jars, spatulas, inoculation loops, wires, corks, stoppers, cell scrappers, cell lifters, paraffin sealing paper, foil, cotton, filters, mixing sticks, tubing, etc, that have come in contact with infectious materials.
2. Sharps
 - a. Glassware (broken or unbroken), including pasteur pipettes, glass, glass culture dishes, blood vials, glass beakers, glass flasks, glass test tubes, slides, and cover slips that have come in contact with infectious materials.

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- b. Plastic-ware, including broken rigid plastic items, broken plastic culture dishes and flasks, plastic pipettes, and unopettes that have come in contact with infectious materials.
- c. Syringes, including hypodermic needles, whether or not they have come in contact with infectious materials.
- d. Other materials capable of puncturing, including scalpel blades, suture needles, surgical needles, lancets, surgical staples, and instruments designed for cutting and puncturing such as bone saws, scissors, tweezers, etc, that have come in contact with infectious materials.

NOTE: If these items have not come in contact with infectious materials, they must be disposed of in a rigid, puncture resistant container for disposal as municipal waste.

- 3. Items that are **not** included as regulated medical waste
 - a. Items that would be considered "household" waste are not considered regulated medical waste. Examples include diapers and feminine hygiene products.

2. Waste Disposal Methods

a. General

- 1. Regulated medical waste as defined above must be placed in a red bag. However, waste which has a strong potential for leakage must be placed into double bags of which at least the outer bag is red in color. Items such as I.V. tubing or containers which contain small amounts (<20 cc) of fluids (blood) may be disposed of in this manner. Large amounts of fluids (>20 cc) cannot be disposed of in this manner.
- 2. The bags must be tied or otherwise secured so as to prevent leakage during storage, handling and transport. The red bags will be placed into RMW boxes supplied by the Department of Environmental Health and Safety. The Department of Environmental Health and Safety will collect the RMW boxes on a scheduled day. Contact the department for the schedule for your area.

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b. Sharps

1. All sharps must be disposed of in appropriately labelled puncture resistant sharps containers.

c. Liquid Waste

1. Includes blood and body fluids, will be disposed of through the sanitary sewer system (i.e. toilet or hopper, but not the hand washing sink!). Body fluids greater than 20 cc in containers which are not easily emptied (i.e. pleuravac or 1 liter evacuated bottles), or may cause unnecessary exposure to employees when poured, are to be segregated from other RMW. If possible, place the containers in a red bag, and then inside a box. Label the box as "BIOHAZARD. Contact the Department of Environmental Health and Safety. Free liquids must not be disposed of in red bags.

d. Pathological Waste

1. All tissue and anatomical parts will be placed into leak-proof waste bags, and placed in a fiber drum or other corrugated regulated medical waste container and brought to the regulated medical waste transfer area for final disposal.

3. Radioactive Regulated Medical Waste

- a. Regulated medical waste which is also radioactive will be disposed of in red bags and segregated from other waste. These red bags will be handled by Radiation Protection Services. See the appropriate policies for this mixed waste.

4. Special Disposal

- a. Alternate methods of special infectious waste disposal will be directed by the Department of Environmental Health and Safety.

5. Final Disposal Methods

- a. All red bags, infectious agents or others as defined by the Department of Health will be collected and disposed of as Regulated Medical Waste.

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- b. All waste will be scrutinized to insure proper packaging and disposal (i.e. general refuse free of potentially infectious waste material).
 - 1. Any general waste which is found to contain regulated medical waste will be placed into a red bag and disposed of as regulated medical waste.
 - 2. When a violation of policy is identified by Housekeeping or Custodial Staff, immediate notification will be given to the area supervisor. These employees will be expected to review such occasions and enact whatever may be necessary to assist in prevention of similar problems in the future. With this in mind, the area/unit will be required to develop a "plan of correction" and submit it to the Department of Environmental Health and Safety.
 - 3. Copies of the inspection report will be sent to the Department of Environmental Health and Safety.
- c. The regulated medical waste is either incinerated in the Pathological Destructor, or treated in a New York State certified and permitted autoclave by the Department of Environmental Health and Safety, for disposal as non-hazardous or removed from the facility by an outside regulated medical waste transporter for treatment offsite.

D. Radioactive Waste

1. General

- a. Waste that contains or is contaminated with radioactive material. Examples of radioactive waste include liquid waste, liquid scintillation vials, animal carcasses, disposable or unusable contaminated labware and protective wear, and spill or cleanup materials contaminated with radioactive material.
- b. The Department of Environmental Health and Safety Radiation Safety Officer will interview any Principal Investigator using radioactive materials to:
 - 1. Determine which waste types will be generated (Aqueous, Liquid Scintillation, Solid).
 - 2. Review University guidelines and procedures for disposal of

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radioactive material.

3. Review New York State guidelines for what is considered waste and what activities and waste types are to be handled specially.
4. Deliver appropriate containers to collect the waste.

2. Segregation Categories

- a. Liquid radioactive waste should be discarded utilizing proper protective procedures. All primary aqueous liquids are to be collected in bulk form using plastic carboys or approved 5-gallon polyethylene containers, available from the Department of Environmental Health and Safety. Liquid levels should not exceed the marked indicator line. In the absence of an indicator line, the level height of liquid should not exceed the maximum diameter of the container (3 gallons). Once filled, caps should be tightly secured on the container. Label and tag the container immediately, including type of liquid waste, activity amount, current date and Principal Investigator's (PI) name/signature. A swipe survey must be performed on the outside of the container and results recorded on the reverse side of the card. Disposal of radioactive waste should be handled by contacting the Department of Environmental Health and Safety for proper removal.
- b. Secondary and Tertiary aqueous liquids may be poured down the designated radioactive sink (with cold running water) after a 1 ml sample is collected. The isotope, date, activity and volume should be recorded in sink waste log book.
- c. Biodegradable liquid scintillation cocktail must be disposed of as radioactive waste. This includes Ecolume, Ecoscint, and EnviroSAFE. These may not be poured down the drain.
- d. Dry or solid radioactive waste should be placed in approved 55 gallon drum containers. Pourable liquid or other types of waste such as vials or test tubes which contain residue liquids must not be placed in this container. Drums must be clearly labeled. Fill out the radioactive waste card on the drum: PI name, radionuclides and activity. Perform wipe test on the outside of the drum and record results on the reverse side of the card.
- e. Vials

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1. Liquid scintillation vials should be placed in an approved, labeled vial drum. Do not combine with other dry or solid radioactive waste. Complete a waste record card including the P.I., radionuclides and amounts of activity. Perform a swipe test and record the results on the card.
 2. Scintillation vials containing 0.05 uci/ml or less of H3 and C14 can be uncapped and the fluid collected and disposed of as regular organic chemical waste. It is advised that this procedure be carried out in a hood and the empty, unbroken vials be rinsed and placed into a plastic bag to be disposed as general waste.
 3. All H3 and C14 liquid scintillation vials greater than 0.05 uci/ml, as well as all other isotope waste used for liquid scintillation counting are to be collected in the designated waste drums supplied by the Department of Environmental Health and Safety. Fill out cards - PI, etc.
- f. Radioactive waste contaminated with an infectious agent and/or toxic chemical should be chemically inactivated. If contaminated with an infectious agent and a highly toxic chemical, do not use a disinfecting agent that may increase the toxicity of the contaminating chemical. All carcinogenic, flammable, or other toxic or hazardous waste substances must be clearly identified.
 - g. All animal tissue containing 0.05 uci/gm or less of H3 and C14 when averaged over the weight of the entire animal may be incinerated in an approved pathogenic incinerator. Contact DLAR for proper procedures to follow.
 - h. Animal tissue containing more than 0.05 uci/gm of H3 and C14 or other isotopes will be collected in approved containers supplied by the Department of Environmental Health and Safety for placement in the DLAR freezer room.
 - i. Radioactive Sharps (syringes and pipettes) must be placed in a radioactive waste drum.
 - j. Procedures for disposing short half-lived radionuclide waste are available from the Department of Environmental Health and Safety.

NOTE: The lab must be able to supply a log book, and a secured storage area

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for the waste for at least 10 half-lives (e.g., for I 125 - 600 days; all waste must be decayed to background levels).

- k. Empty containers should be surveyed to confirm that it is not contaminated. Place an "Empty" label over the DOT label. Use indelible marker to mask all references to radioactive materials. Dispose of in the general waste container.

NOTE: Radioactive waste must be shielded such that:

1. Radiation levels do not exceed 2.5 millirem/hr anywhere within a restricted area (e.g., posted laboratory); and,
2. Radiation levels do not exceed 2.0 millirem/hr or an average of 0.6 millirem/hr in any 7 consecutive days in any unrestricted area (e.g., spaces adjacent to posted laboratories). Under no circumstances should radioactive waste be placed in corridors.

2. Disposal

- a. Solid waste will be collected in fiber drums in clear plastic bags to allow for the Department of Environmental Health and Safety to inspect the waste to assure that no liquid waste is present.
- b. Aqueous liquid waste will be collected in 5-gallon carboys and be filled to the three gallon mark only.
- c. Liquid scintillation vials will be collected either:
 1. Individually pouring off the liquid from each vial into a labeled container.
 2. Each vial will be placed in a 55-gallon metal drum with vermiculite and a 4-mil plastic liner.
- d. All waste must be labeled with the following information:
 1. Date of each usage
 2. Activity of isotope at each usage with initials of user
 3. Isotope of each usage

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4. Wipe test of exterior of container
 5. Name of Principle investigator/lab supervisor
 6. Address of lab
- e. When waste container is near filled, the lab should call the Department of Environmental Health and Safety to establish an appointment for waste removal.
 - f. Shipping papers will be appropriately filled out and empty containers will be dropped off to replace filled ones.
 - g. Questions or problems should be directed to the Radiation Protection Services, Department of Environmental Health and Safety @ 632-6410.

E. Hazardous Waste

1. Definition

Any solid or liquid that is contaminated or potentially contaminated with a hazardous chemical. A hazardous chemical has at least one of the following characteristics: ignitable, corrosive, reactive, toxic or would cause harm if disposed of improperly. The following have been identified as hazardous waste by using either laboratory analysis of representative samples done by waste contractor, knowledge of all the constituents or knowledge of the process generating wastes.

2. Categories of Hazardous Waste. [with typical hazard identifications]

- a. Acetonitrile with concentrations of 1% (v/v) or greater. [Waste Flammable Liquid, Class 3, pg III, UN1993 (D001)]
- b. Antineoplastic Drug solutions of concentrations of 1% (v/v) or greater. [Waste Toxic Liquid, Class 6.1, UN2810, pg II (U010)]
- c. Asbestos. [Waste Asbestos, Class 9, pg III, UN2212, DEP, Type ID27A]
- d. Batteries: Includes lead/acid (automotive), nickel cadmium, lithium, mercury and others with hazardous components. [Waste Lead Acid Batteries, Class 8, UN2794, pg III (D002, D008)]
- e. Carcinogens, Mutagens, and Teratogens: Any substance that will cause the

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development of cancerous growths, induce mutations in DNA and in living cells, or cause abnormalities in a fetus, respectively. i.e.

[Waste Toxic Liquid, Class 6.1, UN2810, pg II (D004, D006, D022)]

- f. **Combustible Liquid:** Any liquid that does not meet the definition of other classifications and has a flashpoint at or above 100 degrees F and below 200 degrees F.

[Waste Combustible Liquid, Class 9, NA 1993, pg III (D039)]

- g. **Contaminated Containers:** Empty containers that previously contained a hazardous material and have not been triple rinsed according to EH&S guidelines.

- h. **Contaminated Equipment:** Includes equipment that has been contaminated by external hazardous chemicals or contains an internal source of hazardous chemicals, such as PCBs in electrical transformers and capacitors or mercury in a sphygmomanometer.

[RQ Polychlorinated Biphenyls, Class 9, UN2315, pg III (PCB1, B006)]

[Waste Mercury, Class 8, UN2809, pg III (D009)]

- i. **Corrosive:** A liquid or solid that causes visible destruction or irreversible alterations in human skin tissue at the site of contact, or a liquid that has a severe corrosion rate on steel.

Acids: Any material with a pH less than 2.0

[Waste Corrosive Liquid, Acidic, Class 8, UN2922, pg II (D002)] Sulfuric Acid

Bases: Any material with a pH greater than 12.5

[Waste Corrosive Liquid, Basic, Class 8, UN3267, pg II (D002)] Sodium Hydroxide

- j. **Cryogenic Liquid:** A refrigerated liquefied gas having a boiling point colder than -90 degrees C (-130 degrees F) at 14.7 psi absolute. Includes Liquid Nitrogen.

[Waste Nonflammable Gas, Class 2.2, UN1066, pg II] Liquid Nitrogen

- k. **Deregulated Scintillation Fluid:** Scintillation Fluid with an activity of less than 0.05 microcuries per milliliter of H3 or C14.

[Waste Flammable Liquid, Class 3, UN1993, pg II (D001, F003)]

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- l. Explosives: Any chemical compound, mixture or device, that will detonate or deflagrate due to a shock or heat.
[Waste Flammable Solid, Class 4.1, UN1325 pg III (D001, U234)] Picric Acid
- m. Flammable Gas: A compressed gas that forms a flammable mixture with air at 13% or less by volume, has a flammability range in air exceeding 12%, or can have significant flame projection beyond the ignition source.
[Waste Flammable Gas, Class 2.1, UN1978 (D001)] Propane
- n. Flammable Solid: Any solid or semi-solid that ignites easily and burns rapidly under normal room conditions, including white phosphorous and fine metal powders.
[Waste Flammable Solids, Class 4.1, UN13385, pg III (D001)]
- o. Formaldehyde: Waste liquid with concentrations of 1% (v/v) or greater formaldehyde or formalin.
[Waste Flammable Liquid, Class 3, pg III, UN1993 (D001)]
- p. Gas: Any pressurized vessel containing a gaseous material or a liquid which will readily become a gas when under normal room conditions.
- q. Halogenated Solvents. Liquid solvents with halogens.
[Waste Flammable Liquid, NOS, Class 3, UN1993, pg II (D001, F002, F003)] methylene chloride, chloroform
- r. Irritant: A liquid or solid substance that upon contact with fire or exposure to air gives off dangerous or intensely irritating fumes.
- s. Nitroglycerin bottles 1% in Dextrose. Class A, with alcohol Class 3.
[Waste nitroglycerin solution, Class 3, UN1204, pg II (D001)]
- t. Non Halogenated Solvents. Liquid solvents without halogens.
[Waste Flammable Liquid, NOS, Class 3, UN1993, pg II (D001)] acetone, toluene, alcohols
- u. Organic Peroxide: An organic compound containing the bivalent [-O-O-] structure and that may be considered a derivative of hydrogen peroxide where one or more of the hydrogen atoms have been replaced by organic radicals. Organic peroxides are often temperature sensitive and unstable.

[Waste Organic Peroxide, Class 5.2, UN3106, pg II (D001)]Benzol Peroxide

- v. ORMs: Other regulated materials that may pose an unreasonable risk to health and safety or property when transported in commerce and do not meet the definitions of other hazard classes. Specific materials have been classified as ORMs for transportation purposes.
[Waste Solid, Class 9, UN3077, pg III (D006, D009) Alkaline Batteries
- w. Oxidizer: Any chemical that spontaneously liberates oxygen either at room temperature or under slight heating which readily stimulates the combustion of organic material. Includes chlorates, permanganates, inorganic peroxides, and nitrates.
[Waste Oxidizing Liquid, Class 5.1, UN3139, pg II (D001) Sodium Nitrate
- x. Paint: Any of the following surface coating materials.
Latex paint is Non Hazardous Non DOT Regulated Class A.
Aerosols are Waste Flammable, 2.1, UN1950 (D001)
Waste Paint Related Material, 3, UN1263, pg II (U122)
Lead Based Paint, Other Regulated Substances, Solid, NOS, Class 9, pg III UN3077 (D008)
- y. Photographic chemical waste. This includes waste from X-ray machines.
[Hazardous Waste Liquid, Class 9, NA3082, pg III (D006, D008, D011)]
- z. Poison: A gas or liquid that at very small amounts is dangerous to life. Or, a liquid with an LD50 for acute oral toxicity of not more than 500 mg/kg, a solid with an LD50 for acute oral toxicity of not more than 200 mg/kg, a material with an LD50 for acute dermal toxicity of not more than 1000 mg/kg, a dust or mist with an LC50 for acute toxicity on inhalation of not more than 10 mg/L, or is an irritating material, with properties similar to tear gas, which causes extreme irritation, especially in confined spaces.
[WasteToxic Liquid, Class 6.1, UN2810, pg II (D004, D006, D022)] Phenol
- aa. Poison Gas Inhalation Hazard: A gas at 20 degrees C or less and a pressure of 101.3 kPA and which is known to be toxic, with an LC50 not more than 5000 ppm, or a material other than a gas which is known to be toxic.
[Waste Toxic, Inhalation Hazard Zone B, 6.1, UN2644, pg I (U138) Methyl Iodine
- bb. Pyrophoric: A liquid or solid that, even in small quantities and without an

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- external ignition source, can ignite within minutes after coming in contact with air.
- cc. Readily Combustible Solid: A solid which may cause a fire through friction, such as matches, or any metal powders that can be ignited and react over the whole length of a sample in 10 minutes or less.
 - dd. Self-Heating Material: A material that, when in contact with air and without an energy supply, is liable to self-heat or spontaneously ignite.
 - ee. Self-Reactive Material: A material that is liable to undergo, at normal or elevated temperatures, a strongly exothermal decomposition caused by excessively high transport temperatures or by contamination.
 - ff. Surplus Chemicals: Unused or excess chemicals, or unopened laboratory grade chemicals.
 - gg. Temperature Sensitive: Any chemical that becomes unstable, generates pressure, forms a toxic by-product, or otherwise becomes hazardous at room temperature or following rapid temperature changes.
 - hh. Unused Hazardous Drugs that cannot be returned to the manufacturer.
[Waste Toxic Organic Liquid, Class 6.1, UN2810, pg II (U010)] Chlorambucil
 - ii. Water Reactive: Any chemical that will react violently when exposed to water, including sodium and potassium.
[Waste Water Reactive Solid, Class 4.3, UN3132, (D001, D003)] Phosphorus
 - jj. Waste Oils and other combustible petroleum based products, including pump oil, automotive oil, and oil based paints.
[Non Hazardous, Non DOT Regulated, Used Oils]
 - kk. Miscellaneous: Other items contaminated with hazardous chemicals including material from spill clean up procedures. Also, a material that has an anesthetic, noxious, or other similar property which could cause extreme annoyance or discomfort
 - ll. Waste of unknown composition.

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3. Waste Management

A. General Information

1. No hazardous wastes may be dumped down the drain or discharged to sanitary sewer.
2. Only trained personnel may manage waste. Waste Management Training is required if an employee has the responsibility for:
 - a. Determining what is a hazardous waste.
 - b. Adding hazardous waste into accumulation containers.
 - c. Transporting hazardous waste from accumulation point.
 - d. Inspecting hazardous waste storage areas.
 - e. Responding to spills involving hazardous wastes.

New employees may not manage or handle hazardous waste unless supervised. Employees will receive training in the management and handling of hazardous within six months of commencing work with hazardous waste.

3. Hazardous wastes may be accumulated in areas close to the point of generation (accumulation area) and that are under the control of the area supervisor.
4. No more than 55-gallons of hazardous waste may be stored in an accumulation area. No more than 1 quart of acutely hazardous waste may be stored in an accumulation area.
5. Full containers must be removed from accumulation area in three (3) days.
6. Waste accumulation areas must be inspected weekly.

B Labeling Instructions

- a. All chemical wastes must be labeled with a University Chemical Waste Disposal Label prior to collection. If the waste or surplus chemical is in the original manufacturer's container, confirm the identity of the chemical and place a small (1" X 2 ") "Hazardous Waste" Label next to the original label.
- b. If the waste is a mixture, identify the chemical waste constituents by proper chemical name including any deactivators/disinfectants used and the

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approximate quantity or concentration. Avoid use of obscure acronyms and brand names.

- c. Labels must have the date when accumulation began and be accessible to visual inspection.
- d. For chemicals in containers that were previously used to package other chemicals, mark a bold XXX through the original label, complete a Waste Chemical Label and attach over the original label.
- e. A Chemical Waste Manifest must be completely filled out each time chemical waste is picked up from a lab or other location. The identification of the chemicals on the manifest must match those on the Chemical Waste Disposal labels having been placed on the chemical waste containers. The number of containers and the size of the containers must also be listed. The size of the container, not the amount in the container, should be listed on the manifest. The completed and signed manifest, with account numbers, must be available when a pickup is made.

C. Waste Segregation

- 1. Do not store incompatible materials near each other .
 - a. Check incompatibility charts.
 - b. Store acids away from bases, active metals, oxidizers and chemicals, which could generate toxic gasses.
 - c. Store flammables in a flammable storage cabinet.
 - d. Do not mix flammables with oxidizers.
 - e. Store large bottles on low shelves.
- 2. Keep containers closed when not being filled.
- 3. Leaking containers must be transferred to another container.
- 4. Liquid laboratory wastes in un-sealable containers must be transferred into a container that can be securely sealed to prevent spillage. Whenever transferring a chemical into a new container, check to make sure that the chemical is compatible with (i.e., will not corrode, dissolve, or permeate) the container.
- 5. Waste streams should be kept as pure as possible. Before mixing chemical

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wastes, check to make sure all are compatible and will not react. If unsure about the type of container to use for a waste or if a waste can be mixed with other chemicals, consult with the Department of Environmental Health and Safety.

6. Bulk liquid laboratory wastes must be placed in containers that are compatible with the waste chemical and will prevent leakage of liquids and vapors.
7. Store containers in separate secondary containment whenever possible.
8. Chemical reagents in small containers including vials and bottles of 100 ml or less must be segregated and the labeled chemical containers are to be packaged in strong cardboard packing boxes. Sort containers by chemical compatibility using separate boxes for each group

D. Waste Transportation

1. During chemical transport wear personal protective equipment.
 - a. Nitrile chemical gloves
 - b. Chemical goggles
 - c. Apron or lab coat
2. Have spill clean-up material available.
3. Do not lift bottles by the cap alone. Always support the bottom of the bottle. When handling keep bottles below eye level.
4. Place bottles in a tray as secondary containment or use a cart with secondary containment.
5. Do not overload carts. Place containers with the correct side up, into the boxes using cardboard separations or small amounts of other suitable packing material, to ensure the stability and immobility of the containers within the carton during transport.
6. Do not bury small containers in packing material or between larger containers where they may be lost or broken in transit.
7. Do not seal the tops of the packing boxes. Department of Environmental Health and Safety personnel must check the contents before removing the

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waste from the work area. Do not stack packing boxes of chemical waste.

8. Do not store incompatible materials near each other while waiting to have waste picked up. All containers must be securely sealed and leak proof.
9. Bulk dry solids wastes, including contaminated disposable laboratory refuse, absorbed hazardous liquid wastes, and other nonvolatile solid wastes that do not contain free liquids, can be packaged in doubled heavy duty plastic bags, 5 gallon open top metal can, 15 gallon blue polypropylene drums, 30 gallon fiber drums or 55 gallon open top metal drums. Consult with the Department of Environmental Health and Safety to determine which type of containers should be used for the types and amounts of dry waste being generated.
10. Semisolid wastes and other volatile solid wastes, including solid chemical wastes that are wet, corrosive, generate toxic or flammable vapors, or otherwise require more secure packaging than dry solid wastes, can be placed in a wide mouth glass jar, plastic container, or other container that is compatible with the waste chemical and prevents leakage of liquid vapors. If the waste contains culture media or other material subject to putrefication, add a sufficient amount of a chemically compatible disinfectant to suppress microbial growth.

E. Specific Hazardous Waste Handling

1. Acetonitrile:
 - a. Acetonitrile are solutions of 1% (v/v) or greater. Acetonitrile solutions considered flammable as they generally contain alcohol. Wastes labeled HPLC waste often contain acetonitrile and may be bulked with acetonitrile solutions. Acetonitrile solutions often contain materials corrosive to metal drums.
 - b. Acetonitrile wastes should be accumulated in glass or plastic containers and may be bulked into 30-gal white plastic drums in the accumulation area or into 55-gal plastic drums at the HMMF.
2. Antineoplastic Drugs:
 - a. Antineoplastic Agents are solutions of 1% (v/v) or greater. Items are

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gross contaminated if they contain greater than 3% by volume (not to exceed 15 cc of fluid) of antineoplastic agents. Items are trace contaminated if the material has secondarily come in contact with a prepared antineoplastic agent, such as gloves, gowns, material soiled by excreta of patients who are being treated with antineoplastic agents (up to 72 hours after treatment), IV bags, vials, syringes, tubing, or containers with less than 3% by volume (not exceeding 15 cc of fluid) remaining in them, or chux contaminated with small amounts of drug.

- i. If several trace contaminated items are disposed of in the same disposal container, the entire contents must be handled as gross contaminated when a cumulative total of 15 cc or more of antineoplastic agents is reached.
 - b. Dispose of trace contaminated (<15 cc of fluid) sharps in a regular sharps container.
 - c. Dispose of gross contaminated (>15 cc of fluid) sharps in an approved sharps container which has been pre-labeled with BIOHAZARD and CHEMOTHERAPY labels. A Department of Environmental Health and Safety Hazardous Waste Label shall be filled out and adhered to this container prior to pick-up by. Contact the Department of Environmental Health and Safety Waste Management Coordinator for labels and assistance.
 - d. Dispose of trace contaminated (<15 cc of fluid) Regulated Medical Waste (RMW) in a red bag.
 - e. Dispose of gross contaminated (>15 cc of fluid) RMW in a yellow chemotherapy container which has been pre-labeled with "BIOHAZARD" and "CHEMOTHERAPY" labels. Contact the Department of Environmental Health and Safety Waste Management Coordinator for containers and assistance. EH&S or it's contractor will bulk chemotherapy waste into 55-gal metal drums for disposal.
 - f. Dispose of trace contaminated (< 15 cc of fluid) non-RMW in the regular trash.
3. Asbestos:

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Asbestos waste handling is outlined in EH&S Policy Number: 8-3, Asbestos management.

4. Batteries:
 - a. Place nickel cadmium, lithium, and mercury batteries up to size D in a labeled plastic bag. Larger batteries have to be individually handled. The caps on all batteries containing a corrosive or toxic material must be placed on tightly to prevent spillage. The batteries should be drained of all charge. If a battery still has a charge, the terminals must be covered with a non-conducting insulation material, (duct tape) and the word "CHARGED" clearly written on the top.
 - b. Use Campus Mail to sent small batteries to EH&S Recycling Center, Z=6551. At University Hospital, return batteries to Biomedical Engineering L-1 room 141. Contact the Department of Environmental Health and Safety @ 2-6410 for pick-up of large batteries or additional disposal information
5. Carcinogens, Mutagens and Teratogens:
 - a. Treat liquids as chemical waste as described in General Information.
 - b. Solid bulk waste contaminated with carcinogens, mutagens or teratogens such as benzidine, ethidium bromide, o-phenylenediamine, diaminobenzidine or rhodamine should be placed into blue polypropylene 5 gallon pails or 15 gallon drums. Contact the Department of Environmental Health and Safety for instructions on the use of the metal drums for dry waste. Both the blue polypropylene and metal containers are available from the Department of Environmental Health and Safety.
5. Combustible Liquid:

Treat combustible liquids as flammable liquids outlined below.
6. Contaminated Containers:
 - a. All containers that held a hazardous material must be triple rinsed with an appropriate solvent to insure that the container has been properly decontaminated before disposal. Depending on the nature of the materials, the rinse solvent may have to be disposed of as chemical

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waste.

- b. After the containers have been triple rinsed, deface the original label with an indelible marker or by placing an "Triple Rinsed" sticker over it. Drums can be marked as empty by writing "MT" with an indelible marker in a color that will be visible over the original label. Place a "Triple Rinsed" label on all containers. Replace bungs, caps or other sealing devices and tighten. Remove grease, oil, and chemical residues from the exterior of all containers.
- c. One gallon or smaller decontaminated glass and plastic bottles should be recycled whenever possible.
- d. Under no circumstances may a container labeled with the international radioactive symbol or with the words "Hazardous Waste" be disposed of in the regular trash.
- e. Do not discard bungs or make holes in drums. Incomplete or damaged drums are difficult to transport safely, cannot be recycled, and require costly disposal procedures.
- f. Metal 5-gal drums, that can not be reused, should be triple rinsed and compacted in drum compactor and placed into metal recycling roll-off container for recycling.
- g. Metal 55-gal drums, that can not be reused, should be triple rinsed, de-headed and compacted in drum compactor and placed into metal recycling roll-off.
- h. Before putting non-hazardous waste that might be mistaken for a laboratory chemical, label the bag with the contents and the words "non-hazardous" and put a note on the bag reading: "For questions, contact Your Name Here".

7. Contaminated Equipment:

- a. When equipment has been contaminated, the generator should attempt to decontaminate equipment prior to requesting disposal as chemical waste. If decontamination is performed by a contractor, equipment will be certified as clean before disposal. Contact the Department of

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Environmental Health and Safety for information on decontamination methods and assistance.

- b. Equipment may intrinsically contain toxic chemicals (e.g., electrical transformers and capacitor units may contain PCBs) requiring special handling procedures, testing, and disposal as chemical waste if the toxic chemicals cannot be removed. Contact the Department of Environmental Health and Safety for assistance prior to moving units or handling such equipment.
8. Corrosive Acids and Bases:
 - a. Certain acids and bases which are strong oxidizers, such as perchloric, or those that contain toxic metals, such as chromic acids, or those that form highly toxic salts, such as hydrofluoric acid, should not be neutralized and cannot be poured down the drain.
9. Deregulated Scintillation Fluid:
 - a. Attach a copy of the scintillation counter printout to the Chemical Waste Manifest to demonstrate that the material is deregulated (<0.05 millicuries/ml of H3 or C14).
 - b. Scintillation fluids may be disposed of in scintillation vials. Alternately, the fluid may be poured off into another container. Due to the additional handling and possible increase in exposure, it is required that this procedure be carried out in a chemical fume hood. The empty unbroken vials can be rinsed with water, placed in a plastic bag, and disposed of as General Non-Hazardous Waste.
 - c. All toluene or xylene based scintillation fluids are to be treated as flammable solvent waste.
 - d. All other scintillation fluids (e.g., alkyl benzene or other non-flammable based materials), should be treated as general chemical waste. Scintillation fluids of any type cannot be poured down the drain.
10. Explosives:
 - a. Examples of potentially explosive chemicals encountered in campus

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laboratories include nitrosoguanidines, nitrosoureas, and picric acid.

- b. Do not place containers of potentially explosive chemicals in boxes containing other waste chemicals. Pack separately with appropriate noncombustible cushioning materials. Do not place metal sensitive compounds such as picric acid in metal containers or wrap them with aluminum foil.
- c. Some chemicals such as dinitrophenyl hydrazine, picric acid, and other trinitro compounds may become shock sensitive and dangerous to handle if allowed to dry out. Do not allow inventories of these chemicals to dry out while in use and storage. Prior to disposal as chemical waste, fill bottles with water and tighten caps. If a container of this type of material has dried out, do not attempt to open container. Contact Environmental Health & Safety @2-6410. EH&S staff will fully submerge the container in water until the container is filled with water. Container will be labeled and placed in a secure area. When safe for transport, the container will be moved to the HMMF.
- d. Certain chemicals, such as ethers and alkali metals, can form potentially explosive peroxides. Clearly indicate the date of purchase or receipt and the date opened on all containers of chemicals that tend to form dangerous peroxides during storage. This information is needed to meet safety and transportation requirements.
- e. Opened containers of peroxide forming chemicals should be tested for peroxide formation or be discarded as chemical wastes within 3 to 6 months after opening.
- f. Unopened containers of peroxide forming chemicals should not be held for more than 12 months after receipt. Contact the Department of Environmental Health and Safety for disposal.
- i. If evidence of peroxide formation, such as crystal formation, is noted in a waste chemical container, do not attempt to move it. Contact EH&S @ 2-6410 for removal.
- j. Advise the Department of Environmental Health and Safety at the time a call for a pickup is placed that an explosive chemical is to be removed.

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- k. EH&S staff will use MSDS information and safety bulletins on peroxide-formers to determine safest means of handling and transporting peroxide-forming compounds.
11. Flammable Liquids:
- a. Collect flammable liquids in appropriate flammable waste disposal containers.
 - b. Collect halogenated and non-halogenated solvents in separate waste containers.
 - c. Place only chemically compatible waste solvents in the container. Do not place solids, aqueous chemical wastes, concentrated halogenated solvents, phenol, heavy metal compounds, strong acids or bases, oxidizers, or radioactive wastes in solvent collection containers.
 - d. If different solvents are added to a container use a waste description list that can accompany the container. Identify solvent components by chemical name. Write in pencil; solvent splash and vapors quickly render inks illegible.
 - e. Do not fill containers above the indicated fill line. Overfilled containers cannot be safely transported or emptied and will be refused by the Department of Environmental Health and Safety.
 - f. Do not remove flame arrestor screens from solvent can spouts or prop spring hinged lids open. These are important safety devices.
 - g. Store containers away from sources of heat or ignition. 55-gallon drums stored at the HMMF must be grounded and placed on a pallet in flammable storage area.
12. Flammable Solids:
- a. White Phosphorus and fine metal catalysts (e.g., palladium or platinum on carbon, platinum oxide and Raney nickel) should be stored under water.

13. Fluorescent Lamps:
 - a. Used fluorescent lamps and high intensity discharge lamps (HID) (i.e. high-pressure sodium lamps, metal halide lamps, mercury vapor lamps, germicidal lamps and ultra violet lamps) may contain mercury.
 - b. Pack used bulbs in original box or in boxes provided by EH&S. Boxes must show accumulation date.
 - c. Broken lamps and associated debris is hazardous and must be collected in separate containers.
 - d. Call EH&S @ 2-6410 when box is full. EH&S will transport boxes to HMMF, where boxes will be skidded and shipped to recycler within one year.

14. Formaldehyde:
 - a. Waste formaldehyde and waste formalin solutions are collected in plastic 55-gal drums at the Marine Science Research Center in Dana Hall Room # 173, the Formalin Transfer room and in 55-gal drums in the Pathology Department of the University Hospital, L-2 Room #735.
 - b. Place only chemically compatible waste solvents in the container. Do not place solids, aqueous chemical wastes, concentrated halogenated solvents, phenol, heavy metal compounds, strong acids or bases, oxidizers, or radioactive wastes in solvent collection containers.
 - c. Store containers away from sources of heat or ignition. 55-gallon drums stored at the HMMF must be placed on a pallet in the flammable storage area.

15. Gases:
 - a. Close and tighten valves and replace safety caps on cylinders.
 - b. If the container is empty and not pressurized, write "EMPTY" on the container label. Identify the gas that was previously held in the container. Valves will be removed from empty gas cylinders before disposal as metal scrap.

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- c. Contact supplier to obtain guidelines for the shipment of cylinders to be returned.
 - d. Contact EH&S for removal of orphaned cylinders.
 - e. Always use hand truck to move large, compressed gas cylinders.
16. Halogenated Solvents:
- a. Collect waste halogenated solvents in appropriate waste disposal containers.
 - b. Collect halogenated and non-halogenated solvents in separate waste containers.
 - c. Place only chemically compatible waste solvents in the container. Do not place solids, aqueous chemical wastes, phenol, heavy metal compounds, strong acids or bases, oxidizers, or radioactive wastes in halogenated solvent collection containers.
 - e. If different solvents are added to a container use a waste description list that can accompany the container. Identify solvent components by chemical name. Write in pencil; solvent splash and vapors quickly render inks illegible.
 - f. Do not fill containers above the indicated fill line. Overfilled containers cannot be safely transported or emptied and will be refused by the Department of Environmental Health and Safety.
 - g. Waste halogenated solvents may contain flammable solvents and should be handled as if they are flammable. Use safety funnel to transfer liquids. Do not remove flame arrestor screens from solvent can spouts or prop spring hinged lids open.
 - h. Store containers away from sources of heat or ignition. 55-gallon drums stored at the HMMF must be grounded and placed on a pallet in flammable storage area.
17. Non Halogenated Solvents:

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Liquid solvents will be handled as flammable wastes outlined above.

18. Nitroglycerin Bottles:
 - a. Used nitroglycerin bottles are generated and collected on the Cardiac Patient floors at the University Hospital. (i.e. 16 N & 17 S) in 30-gal plastic, open-topped drums.
 - b. The nitroglycerin bottles are removed from the hospital and transferred to the HSC Waste Storage room. Used nitroglycerin bottles are transferred to 55-gal metal drums and held for disposal.
19. Oxidizers:
 - a. Never mix oxidizers with easily oxidized organic or inorganic materials. Make sure that the waste container is compatible with oxidizers. Treat as chemical waste as described in General Information.
20. Paint:
 - a. Cans of oil based paints that still contain liquids have to be disposed of as chemical waste. Waste paint may be accumulated at the physical plants and disposed as outlined in general information above.
 - b. 55-gal drums of waste paint and waste aerosol cans must be placed on a skid in the flammable section of the HMMF.
21. Photographic Waste
 - a. All photographic waste and unused photographic chemicals should be treated as described in General Information.
 - b. A silver recovery system must be used to bring the waste below the allowable levels before discharge. Silver recovery units must be monitored and maintained to insure compliance with sewer regulations. Maintenance slips and hauling receipts must be kept by each department and forwarded to the Department of Environmental Health and Safety upon request.

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22. Poisons:
- a. Advise the Department of Environmental Health and Safety at the time a call for chemical waste pick up is placed that poisons are to be removed.
23. Surplus Chemicals
- a. Containers of unopened, pure laboratory chemicals which are in good condition and no longer needed by an investigator may be held in the laboratory or other appropriate storage area for possible redistribution to other University laboratories. Contact the Department of Environmental Health and Safety for current information on listing and availability of surplus chemicals.
 - b. Surplus chemicals should be properly sealed, labeled, and packaged for transfer. The Department of Environmental Health and Safety will contact both the supplier and potential receiver of surplus chemicals. The actual transfer of the chemicals may have to be arranged by the supplier and receiver.
24. Temperature Sensitive
- a. Wastes containing chemicals that require a special temperature range must be maintained by the generator at a safe temperature until they are removed by the Department of Environmental Health and Safety.
 - b. Advise the Department of Environmental Health and Safety at the time a call for a pickup is placed that chemicals requiring temperature control are to be removed.
25. Unused Hazardous Drugs
- a. Contact the Department of Environmental Health and Safety with the names, amounts and manufacturers of the drugs that cannot be returned to the manufacturer for an evaluation of the proper methods for disposal.
26. Water Reactive

- a. Make sure all containers are tightly closed. Seal caps on with parafilm or filament tape. Certain water reactive chemicals, such as sodium and potassium, should be stored in mineral oil.
 - b. Advise the Department of Environmental Health and Safety at the time a call for a pickup is placed that water reactive chemicals are to be removed.
27. Used oil and other combustible petroleum based products
- a. Used pump oil, automotive oils and oil filters, or used oil from a known origin will be handled as non hazardous, non DOT regulated waste.
 - b. Containers of waste oil with unknown origin will be tested for the presence of polychlorinated biphenyls (PCBs) using the Clor-N-Oil 50 brand PCB screening kit. This kit uses EPA SW-46 Method 9079 to determine the presence of PCBs in the 0-50 ppm range. Oil that indicates the presence of PCBs, will be sent out as hazardous, waste PCB oil.
 - c. Waste oil that is suspected of containing PCBs will be tested for PCB content using an outside lab. The lab will use EPA Method 8082 found in 49 CFR, No 209 to determine the concentration of PCBs. The following labs have been contracted to perform this analysis:

South Mall Analytical Labs, Inc.
26 North Mall
Plainview, NY 11803
ELAP ID NO # 10950
28. Miscellaneous
- a. Any items contaminated with a hazardous chemical are assumed to have the same hazardous properties as the chemical, unless the items can be decontaminated or testing demonstrates that the items are not hazardous. This includes items used to clean up hazardous chemical spills. The type of decontamination or testing that has to be performed depends on the nature of the hazardous material. Contact the Department of Environmental Health and Safety for information on decontamination procedures and testing requirements. If the items

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cannot be decontaminated and testing is not performed, the contaminated items must be treated as chemical waste.

- b. Discarded chemical products, off-specification chemicals, container residue and spill residues from acute hazardous wastes are assumed to have the same hazardous properties as the chemical and cannot be decontaminated. These wastes must be disposed of as acutely hazardous waste. Refer to 40 CFR Part 261.33 Acute Hazardous Wastes (P-Listed Wastes).

29. Wastes of unknown composition

- a. Wastes of unknown or incorrectly described composition present difficult handling and disposal problems, and may require costly analyses before removal and disposal can be accomplished. "Orphan" reaction mixtures and unidentified chemicals left by departed laboratory workers are the most frequent source of unknowns. Investigators should label all stored reaction mixtures with the name and concentration of the chemical compound, date they were formed, the name of the investigator and a notebook reference. Laboratories are encouraged to institute a check out procedure that requires departing workers to identify all reaction mixtures and unlabeled chemicals that they have not discarded.
- b. In the case of a vacated investigator, the responsibility for the proper disposal of abandoned chemicals, identifiable or unidentifiable, lies with investigator's department.
- c. SUNY at Stony Brook's waste disposal contractor will perform limited field screening of unknown chemicals contained in small lab size containers, less than one (1) gallon liquid or one (1) pound solid, to determine proper disposal classification.
- d. Unknown chemicals present within containers greater than lab-pack size will require analytical testing for the following parameters: pH, flashpoint, reactivity, corrosivity, priority pollutant metals, volatile organic compounds, semi-volatile organic compounds, pesticides, herbicides and polychlorinated biphenyls. The following labs have been contracted to perform these tests:

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Pedneault Associates, Inc.
1615 Ninth Avenue
P.O. Box 205
Bohemia, NY 11716

F. Mixed Wastes

1. Any wastes that exhibit multiple hazardous properties such as infectious, radioactive, and/or toxic. Due to the increasingly restrictive environmental initiatives and regulations concerning the acceptance and disposal of wastes contaminated with mixed hazardous materials, these wastes may warrant assessment by the Department of Environmental Health and Safety.

G. Asbestos Wastes

1. Any discarded material that contains greater than 1% asbestos by weight. Examples of asbestos contaminated waste items encountered at the University are:
 - a. Thermal insulation such as pipe, fitting, boiler and duct insulation.
 - b. Insulated gloves, laboratory apparatus, laboratory bench tops, and interior fume hood panels.
 - c. Dust collected at motorpool operations from brake linings.
 - d. Vinyl asbestos floor tiles and associated mastic (glue).
2. All personnel involved in handling asbestos wastes must be certified as a NYSDOL Asbestos Handler or Supervisor. Contact the Department of Environmental Health and Safety to have any asbestos waste removed.

IV. Departmental Policies

1. All Departments handling or generating hazardous waste must develop a policy for proper handling and disposal of this waste. The Department policy is to be reviewed by the Department of Environmental Health and Safety.
2. The policy must include:

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- a. Department procedures for disposal of material as hazardous waste.
- b. The appropriate safety equipment needed for handling waste and the proper use of that equipment.
- c. Items considered hazardous by generating Departments and not discussed in this policy must be reviewed by the Department of Environmental Health and Safety.

INQUIRIES/REQUESTS:

Environmental Health and Safety
110 Suffolk Hall
Zip 6200
Main Office: 632-6410
FAX: 632-9683

RELATED FORMS:**RELATED DOCUMENTS:**

6 NYCRR Subchapter B New York State Department of Environmental Conservation *Solid Waste*

10 NYCRR Part 70 New York State Department of Health *Regulated Medical Waste*

40 CFR Subchapter D Environmental Protection Agency *Water Programs*

40 CFR Subchapter I Environmental Protection Agency *Solid Waste*

40 CFR Subchapter R Environmental Protection Agency *Toxic Substances Control Act*

Conditions for Discharge to Suffolk County Sewer District 21
Discharge Certification 021-003-0001