HARVARD
Campus Services
ENVIRONMENTAL HEALTH, SAFETY & EMERGENCY MANAGEMENT

FREQUENTLY ASKED QUESTIONS MISCELLANEOUS WASTE STREAMS

ETHYLENE AND PROPYLENE GLYCOL

1. Q - *How do I dispose of Ethylene Glycol from chillers, boilers and other recirculation systems in my facility?*

The Massachusetts Water Resource Authority (MWRA) prohibits drain discharge of Propylene and Ethylene Glycol based heat transfer fluids if they do not meet MWRA discharge limits. Harvard is required to analyze spent glycol for copper, lead, nickel, zinc, pH (Approximately $100) and send results to MWRA for review and approval. Alternatively, you may store waste glycols in 55-gallon drums and ship off-site as non hazardous waste. In either case, call EHS prior to draining and recharging systems to request a sample and analysis or to arrange pickup.

LIGHT BALLASTS

1. Q - *Can a fluorescent light ballast be disposed in the regular trash?*

Answer - No, a ballast will contain packing material that is typically ignitable or may contain PCB's. The proper disposal route for all (non leaking) ballast is recycling. Contact EH&S to ensure proper handling.

2. Q - *How do I know if a ballast contains Polychlorinated Biphenyl's (PCB's)?*

Answer - Unless the ballast label does not specifically read - "NON PCB CONTAINING" or something similar, you must assume that the ballast contains PCB's. If the ballast label is illegible, consider it to contain PCB's. All (non leaking) PCB ballasts must be collected for recycle.

3. Q - *What should I do if the PCB ballast are LEAKING?*

Answer - Leaking ballast cannot be recycled, they must be managed as hazardous waste. Contact EH&S for assistance in collection and removal.

4. Q - *What should I do with LEAKING, NON PCB Ballasts?*

Answer - Leaking ballast cannot be recycled, they must be managed as hazardous waste. Contact EHS for assistance in collection and removal.

BATTERIES

1. Q - *Are spent batteries hazardous waste?*

Answer - The majority of rechargeable batteries have to be managed as hazardous waste for disposal under the Resource Conservation and Recovery Act (RCRA) as Universal Waste, contact EH&S for assistance (Note: Lead Acid batteries are not required to be managed as universal wastes if they are intact and are to be recycled through a distributor or supplier).

To Comply with Universal Waste Standards

- Post collection area with UNIVERSAL WASTE AREA sign
- Container must be in good condition and closed.
- Containers in which batteries are collected for recycle must be labeled or marked clearly with the phrase Universal Waste Batteries.
- Containers must be dated with the accumulation start date, and may be used accumulate batteries for no longer than one (1) year.

If your department has contracted with FMO for Solid Waste and Recycling Services, contact Rob Gogan (5-3042 Mgr. FMO Solid Waste Recycling) and ask about obtaining some battery recycling containers (typically 5 gallon buckets) and labels. If you do not contract with FMO, Contact EH&S for labels and to request pickup of these batteries.

2. Q - *What should I do with LEAKING batteries --LEAD ACID--*

Answer - These batteries must be managed as hazardous waste. Caution! When leaking, these batteries pose a significant contact hazard. SULFURIC ACID is often the liquid constituent of these batteries, and is severely corrosive to skin. Only handle if properly trained and if proper personal protective equipment is available. Leaking batteries cannot be recycled, they must be managed as hazardous waste. Contact EH&S for assistance in collection and removal.

FLUORESCENT AND OTHER LIGHTS

1. ***Q- What should I do with spent (intact) NON BROKEN lights? (Fluorescent, Ultra Violet, Mercury Bulbs)***

Answer - These intact lights must be collected for recycle due to their inherent risk to the environment as Universal Waste. The Universal Waste Management Standards states that universal waste lamps must be managed in such a way that prevents releases of any

components of the universal waste to the environment. Fluorescent and Ultraviolet lights are similar in size and technology, and should be collected and packed in original shipping packages or boxes provided by Facility Maintenance. Mercury lamps require special attention and packaging procedures. Mercury lamps are under higher pressure and have elevated levels of mercury over their counterparts. There is an inherently higher risk for breakage and exposure. Only original packaging or Facility Maintenance approved packaging may be used for collection and transport.

To Comply with Universal Waste Standards

- Post collection area with UNIVERSAL WASTE AREA sign
- Container/Boxes must be in good condition and closed.
- Containers in which batteries are collected for recycle must be labeled or marked clearly with the phrase Universal Waste Used Mercury-Containing Lamps.
- Containers must be dated with the accumulation start date, and may be used accumulate batteries for no longer than one (1) year.

If your department has contracted with FMO for these services, contact Rob Gogan (5-3042 Mgr. FMO Solid Waste Recycling) and ask about obtaining boxes and Universal Waste labels for collection of spent fluorescent bulbs. If you do not contract with FMO Solid Waste and Recycling, contact EH&S for supplies and pickup of these bulbs.

PAINTS

1. Q - *I just finished going through the stock of various paints we have used over the years, there are many old cans and colors that we do not have a use for, how should I dispose of them?*

Answer - Paint is a common product used throughout the University. The following information will help you make decisions on how to avoid health and environmental hazards from disposing of paint. Most paint has four components: resin, solvent, pigment and additives. To determine the hazardous ingredients of paint, request a Material Safety Data Sheet from the retailer when you buy it.

- The resin is the main ingredient and forms a coating or film on the surface being painted. This typically non-hazardous component includes linseed, acrylic or other synthetic resins. The solvent keeps the paint in a liquid form until the solvent evaporates after the paint is applied.

- The solvent in oil-based paint is derived from a petroleum distillate and can include such hazardous ingredients as mineral spirits, toluene and xylene. The solvent in latex paint is water and therefore not hazardous as a result of its solvent component.
- Pigments provide the color and opacity or covering power. The major pigments used presently are titanium oxide, iron oxide, calcium sulfate, clay or silicates. These pigments are relatively nontoxic and not considered to be hazardous according to the EPA. Some highly colored pigments may contain heavy metals such as chromium, cadmium, or arsenic. If your paint contains these metals for pigmentation, the paint is considered to be hazardous waste.
- Paints purchased before 1977 may contain lead in the pigment. Lead, also a heavy metal, is poisonous. Do not use paint purchased prior to 1977. Paint may also have additives. Some latex paints contain a mercury-based fungicide preservative. Mercury is a heavy metal that is highly toxic. Paints containing mercury produced since August 1990 had to be labeled exclusively for exterior use.

2. Q - *I have a small amount of latex paint, it's in a semi-solid state after having sat around for a while, can I solidify the paint and throw it into the trash?*

Answer - Yes, as a last resort, small amounts of latex paint not containing heavy metals for pigmentation can be solidified.

Leave the lid off the paint cans so that the hauler can see that they are empty. Place the empty paint cans and lids along side or on top of your trash.

DARKROOM CHEMICALS

1. Q - *I have a darkroom and use a variety of chemicals to develop my film and I know that some of these chemicals require special handling. Can I pour them down the sink drain?*

Answer - Due to the chemical constituents in these substances (some used and mostly unused), you cannot pour these substances down the drain. Contact EH&S to assist with the handling of used dark room chemicals.

CHIP TANKS

1. Q - *I recently took a job that requires cleaning or removing a neutralization tank full of marble chips, about 5 gallons . Is there a protocol to clean the tank and get rid of the old chips?*

Answer – Contact EH&S before servicing any chip tank to ensure the proper procedures are being followed.

ETHIDIUM BROMIDE

1. Q - *How should I manage and dispose of ethidium bromide waste?*

Answer - Ethidium bromide is a laboratory waste stream that, depending on where the waste came from or how it was used, will determine how it must be handled. Please contact EH&S for specific information.

SHARPS

1. Q - *What is a sharp, and how do I manage them?*

Answer - Sharps are defined by the regulation as medical articles that may cause punctures or cuts including but not limited to, all used and discarded hypodermic needles and syringes, pasteur pipettes, broken medical glassware, scalpel blades, disposable razors, and suture needles. Sharps containers are to be available in the laboratory where sharps are used. These containers must be disposed of as biological waste by placing them into "burn" boxes, location of boxes are typically designated by your lab.

Cambridge/Allston Campus: Sharps containers are sold in the Biological and Chemistry VWR Stockrooms. To set up a Biohazard "burn" box or identify the closest available location for proper disposal of your sharps container call EHS.

Longwood Campus: Sharps containers are available through the Longwood EH&S Safety Office (2-1720). To set up a Biohazard "burn" box or identify the closest available location for proper disposal of your sharps container call facilities Harvard Medical School (2-1567) / School of Public Health (2-4720).

Refer to the EH&S Biosafety web site for additional information. **/ehs/biosafety/**

2. Q - *I do not work with biological material, but use and generate sharps (hypodermic needles, Pasteur pipettes, broken medical glassware, scalpel blades, disposable razors, and suture needles) which are put in a sharps container. How do I properly dispose of my sharps container?*

Answer - Sharps containers are to be available in the laboratory where sharps are used. These containers used to collect spent sharps should be disposed of as biological waste by placing them into "burn" boxes located in areas designated by your lab. Ask personnel in your lab where the nearest "burn" box is located.

Cambridge/Allston Campus: Sharps containers are sold in the Biological and Chemistry VWR Stockrooms. To set up a Biohazard "burn" box or identify the closest available location for proper disposal of your sharps container call EHS.

Longwood Campus: Sharps containers are available through the Longwood EH&S Safety Office (2-1720). To set up a Biohazard "burn" box or identify the closest available location for proper disposal of your sharps container call facilities Harvard Medical School (2-1567) / School of Public Health (2-4720).

SECONDARY CONTAINMENT

1. Q - *What happens if our secondary containment bins used for hazardous waste storage and segregation becomes contaminated over time? Should I throw them away?*

Answer - If the secondary containment bins used in your Satellite Accumulation Area becomes grossly contaminated, please call EHS for its removal and replacement.

2. Q - *How can I properly segregate incompatible waste containers?*

Answer - EH&S has mandated the use of secondary containment bins (plastic bins) at all locations generating hazardous waste. Secondary containment bins are available to laboratories through the VWR Stockrooms on the Cambridge Campus and through the EH&S Office in Longwood (2-1720). These secondary containment bins are used for storage of hazardous waste containers to ensure that the "surface underlying the container shall be free of cracks, gaps, and sufficiently impervious to contain leaks". (310 CMR 30.340(4)(d)). Secondary containment bins are also used to separate incompatible hazardous wastes during accumulation (e.g. use separate trays or bins).By definition incompatible hazardous waste are materials that as a result of commingling under uncontrolled conditions may produce heat or pressure; fire or explosion; violent reaction; toxic dusts, mists, fumes or gasses; or flammable fumes or gasses. Listed below are web-site resources to help you identify possible incompatible storage conditions. You may also call EHS for additional technical assistance.

For more information see the following links for compatibility briefs and charts.

- **EPAChemicalCompatibilityChart.pdf**
- **RCRAChemicalCompatibilityList.pdf**

LABELS

1. Q - *How can I get a supply of hazardous waste labels?*

Answer - If you reside on the Cambridge Campus hazardous waste labels are available through your local VWR stockrooms (Biology Basement / Naito Basement).

In Longwood you must call EHS, and request hazardous waste labels which will be dropped off during routine hazardous waste pickups (Tuesday & Friday).

TRAINING

1. Q - *Do I need hazardous waste training if I work in a Laboratory that generates hazardous waste even if I don't? How and when is training is offered, and how frequently must I take it?*

Answer - Personnel who generate, handle or may handle hazardous waste must be trained in hazardous waste requirements every year. The training program at Harvard University consists of both classroom and web based training sessions and reviews the key procedures of Harvard's hazardous waste program. These procedures have been developed through a cooperative effort between the Department of Environmental Health & Safety (EH&S), the faculty, and the administrative staff at Harvard and meet the regulatory requirements prescribed by Massachusetts and Federal law. Following these procedures will help to maintain a safe and environmentally responsible workplace by ensuring that wastes are properly identified, stored and removed from the laboratory. These procedures are presented in four sections:

Section 1: Legal & Regulatory Background
Section 2: Identifying Hazardous Wastes in the Lab
Section 3: Storing Hazardous Wastes in the Lab
Section 4: EH&S Waste Pick-up Service

For a schedule of classroom training, visit our web site at **/redir/training.html**

GLASSWARE RINSING

1. Q - *I often wash and dry my glassware with acetone, is it ok to pour the "acetone rinse" down the drain?*

Answer - No. Acetone has a very low flash point and cannot safely be poured in the sink.

2. Q - Can acetone be discharged to drain?

Answer – No, when used to clean glass it is regulated either as ignitable or as F003 hazardous waste, both of which are prohibited from being drain disposed.

EMPTY CONTAINERS

1. Q - *Our lab has quite a few empty glass bottles that used to contain stock solvent. What should we do with them now that they are empty?*

Answer - First, EH&S recommends keeping a supply of bottles for hazardous waste accumulation. Certain chemicals are considered “acutely hazardous” or “P Listed Wastes” and empty bottles that previously contained these chemicals are hazardous waste and must be disposed of or triple rinsed with an appropriate material to remove the waste (the rinsate must be collected and treated as a hazardous waste). Other container may be disposed through the regular trash as long as they are "empty". (All material has been removed that can be removed using the practices commonly employed to remove materials from that type of container. eg, pouring, pumping and aspirating). Contact EH&S if you have any questions.