













University of Pittsburgh

Department of Environmental Health and Safety





Laboratory Waste Management Summary

Chemical Waste			
Waste Type	Examples	Waste Management	Disposal Procedures
Solvents (halogenated and non-halogenated) 	Acetone, Methanol, Ethyl Acetate, Hexane, Ethyl Ether, Dichloromethane	Collect waste in appropriate container. Affix completed “WASTE CHEMICALS” label. Keep container closed unless actively adding waste. Properly segregate from incompatible materials.	Place container in box with absorbent materials and segregate from incompatible waste materials. Take box to designated chemical waste accumulation area or call EH&S to schedule pickup (412-624-9505).
Acids/Bases 	Nitric Acid, Sulfuric Acid, Acetic Acid, Sodium Hydroxide, Ammonium Hydroxide	Collect waste in appropriate container. Affix completed “WASTE CHEMICALS” label. Keep container closed unless actively adding waste. Properly segregate from incompatible materials.	Place container in box with absorbent materials and segregate from incompatible waste materials. Take box to designated chemical waste accumulation area or call EH&S to schedule pickup (412-624-9505).
Dry Chemicals/Toxic Solids 	Potassium Cyanide, Phenol, Sodium Sulfate, Silica Gel, Metal Salts	Collect waste in appropriate container. Affix completed “WASTE CHEMICALS” label. Keep container closed unless actively adding waste. Properly segregate from incompatible materials.	Place container in box with absorbent materials and segregate from incompatible waste materials. Take box to designated chemical waste accumulation area or call EH&S to schedule pickup (412-624-9505).
Oils 	Vacuum Pump Oil, Motor Oil, Hydraulic Fluid, Lubricating Oil	Collect waste in appropriate container. Affix completed “WASTE CHEMICALS” label. Keep container closed unless actively adding waste. Properly segregate from incompatible materials.	Place container in box with absorbent materials and segregate from incompatible waste materials. Take box to designated chemical waste accumulation area or call EH&S to schedule pickup (412-624-9505).

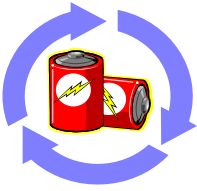

<p>Compressed Gas Cylinders</p> 	<p>Hydrogen Chloride, Carbon Monoxide, Helium, Nitrogen, Oxygen, Ammonia (anhydrous)</p>	<p>Affix completed “WASTE CHEMICALS” label. Properly segregate from incompatible materials.</p>	<p>Contact vendor/supplier to determine if cylinder can be returned. If returnable to vendor, obliterate Pitt "Waste Chemicals" label. If not returnable, take cylinder to designated chemical waste accumulation area or call EH&S to schedule pickup (412-624-9505).</p>
<p>Acrylamide Waste</p> 	<p>Polyacrylamide gels, acrylamide powder/salts</p>	<p>Collect waste in appropriate container. Affix completed “WASTE CHEMICALS” label. Keep container closed unless actively adding waste. Properly segregate from incompatible materials. Do not collect in red bags or biological waste bags.</p>	<p>Place container in box with absorbent materials and segregate from incompatible waste materials. Take box to designated chemical waste accumulation area or call EH&S to schedule pickup (412-624-9505).</p>
<p>Ethidium Bromide Waste</p> 	<p>Ethidium Bromide solutions, gels, and contaminated debris</p>	<p>Collect waste in appropriate container. Affix completed “WASTE CHEMICALS” label. Keep container closed unless actively adding waste. Properly segregate from incompatible materials. Do not collect in red bags or biological waste bags.</p>	<p>Place container in box with absorbent materials and segregate from incompatible waste materials. Take box to designated chemical waste accumulation area or call EH&S to schedule pickup (412-624-9505).</p>
<p>Mercury and mercury-containing apparatus and compounds</p> 	<p>Mercury-containing thermometers, barometers, manometers, sphygmomanometers, switches, thermostats; mercuric chloride; mercuric acetate</p>	<p>Collect waste in appropriate container. Affix completed “WASTE CHEMICALS” label. Keep container closed unless actively adding waste. Properly segregate from incompatible materials.</p>	<p>Place container in box with absorbent materials and segregate from incompatible waste materials. Take box to designated chemical waste accumulation area or call EH&S to schedule pickup (412-624-9505).</p>

<p>Chemical Contaminated Sharps (NOT BIOLOGICALLY CONTAMINATED)</p> 	<p>Syringes, needles, scalpel blades, razor blades, lancets, wires, Pasteur pipettes that are contaminated with chemicals</p>	<p>Collect in approved sharps container. Affix completed "WASTE CHEMICALS" label. Label as "Non-infectious Sharps" or Non-Biological Sharps". Keep container closed unless actively adding sharps.</p>	<p>When sharps container is 2/3 full, take sharps container to designated chemical waste accumulation area or call EH&S to schedule pickup (412-624-9505).</p>
<p>Aerosol cans (includes empty cans)</p> 	<p>Spray lubricants, paints and cleaners, anti-static spray, etc.</p>	<p>Affix completed "WASTE CHEMICALS" label. Properly segregate from incompatible materials.</p>	<p>Package aerosol cans in box and take box to designated chemical waste accumulation area or call EH&S to schedule pickup (412-624-9505).</p>


Biological/Medical Waste

Waste Type	Examples	Waste Management	Disposal Procedures
<p>Solid Biological Waste</p>  <p>BIOHAZARD</p>	<p>Plastic culture plates, disposable lab coats, gloves, PPE</p>	<p>Collect biological waste in an approved biological waste bag.</p>	<p>Place biological waste bags in approved biological waste box (labeled with a Pitt biological waste label) and seal with packaging tape. Place in the designated biological waste pickup area of the building. Biological waste is removed from buildings/labs on a weekly basis. If the building doesn't have a designated biological waste pickup area, contact EH&S to schedule a pickup (412-624-9505).</p>
<p>Liquid Biological Waste</p> 	<p>Blood, virus stock, cell culture waste, human body fluid</p>	<p>Should be carefully poured or collected into the appropriate disinfectant to inactivate potentially infectious material. *Large volumes should be autoclaved prior to drain disposal.</p>	<p>Following sufficient contact time, the disinfected solution can be safely poured directly down the drain.</p>
<p>Biological Sharps Waste</p> 	<p>Syringes, needles, scalpel blades, razor blades, lancets, wires, Pasteur pipettes</p>	<p>Must be placed in approved sharps container with biohazard label.</p>	<p>Once sharps container is 2/3 full, place in a biological waste box and seal with packaging tape. Place completed Pitt biological waste label on box. Write the words, "CONTAINS SHARPS", on the label and box.</p>
<p>Pathological Waste</p> 	<p>Materials consisting of only human remains, anatomical parts, and/or tissues. Contact EH&S at 412-624-9505 for guidance.</p>	<p>N/A</p>	<p>N/A</p>

Recycled Materials

Waste Type	Examples	Waste Management	Disposal Procedures
Batteries 	Nickel-Cadmium, Lithium Ion, Lead Acid, Metal Hydride, Alkaline	Tape terminals on all batteries except AAA-, AA-, C-, and D-size alkaline batteries and collect in a cardboard box/container. Affix completed “ WASTE CHEMICALS ” label. Label as “Universal Waste Batteries”. Separate batteries by type when applicable.	Take batteries to designated chemical waste accumulation area or call EH&S to schedule pickup (412-624-9505).
Electronics 	Computer Monitors, CPUs, Keyboards, Printers, Fax Machines, Copiers	N/A	Do not discard in regular trash. Call Surplus Property to make arrangements for pickup (412 244-7071).

Other Wastes

Waste Type	Examples	Waste Management	Disposal Procedures
Glass 	Bottles, beakers, pipettes	Non-chemically contaminated glassware (broken and intact) should be placed in glass disposal boxes.	Broken and intact glassware that is not chemically contaminated should be placed in glass disposal boxes and disposed of via the regular trash. See University Safety Manual: EH&S Guideline 04-019 for empty chemical container disposal guidance.

Questions about laboratory waste handling and disposal procedures should be directed to Pitt EH&S at (412) 624-9505 or www.ehs.pitt.edu.

Recommendations Regarding Disposal of Chemical Waste from Research Laboratories

Task: To review the chemical disposal process in Chevron and attempted to identify potential hazards and areas of improvement.

Observations and Suggestions:

- Potential Hazard:* Solvent waste spillage during transport from labs to loading dock.
Recommendation: Require the use of carts with built in side-lips to prevent accidental spillage from spreading off of the cart. Two-tiered carts are available from suppliers. Alternative suggestion is having the machine shop weld edging around one of the existing flat-beds in the stockroom.
- Potential Hazard:* Large number of stacked containers in the waste room (empty and full).
Recommendation: Build new and/or additional storage shelving (with secondary containment) to house waste chemicals, or have more frequently scheduled pick-ups.
- Potential Hazard:* Improper labeling and chemical dumping/access to storage room.
Recommendation: Only allow distribution of key by stockroom personal to those members of each group approved by EH&S to handle waste disposal. Implies implementation of brief training by EH&S to selected individuals.
- Potential Hazard:* Possible breakage of empty containers during transport to stockroom and back for “check out”.
Recommendation: Record number or remove labels from bottles for use with current check out procedure. Or, establish method for students to self check out, possible through scanners of data entry at kiosks.

Rubbermaid Utility Cart

Model # 4520-88

Dimensions, W x L x H (inches): 26 x 45 x 33

Load Capacity: 500 lbs.

The following supplier site has a nice collection of pictures of the desired model:

<http://www.globalindustrial.com/gcs/product/productInfo.web?infoParam.mode=1&infoParam.itemKey=30077273>

For reference, here is a picture of the same cart model carrying several containers of solvents/chemicals:



Here is the unit as sold by Grainger:

<http://www.grainger.com/Grainger/items/1FD43>

The price of this model varies from supplier to supplier but is in the ballpark area of \$170-200. There are less expensive, smaller carts of the same type, however the specifications of this unit (specifically the weight rating, 2-tiered construction, and side walls) meet with what was discussed during the last safety meeting. The dimensions of this cart are also adequate for two 20L drums to fit side-by-side for easy transportation.