Hazardous Waste Procedures

Hazardous waste is defined as a waste, or combination of wastes, which because of its quantity, concentration, or physical or chemical characteristics may pose a substantial present or potential threat to human health or the environment when improperly treated, stored, disposed of, transported, or otherwise managed. At CCSF we produce predominately two types of hazardous waste, biohazardous and chemical. All biological material is at a biohazardous BSL 1 level. We do not have any BSL2 level microbes or above at City College. For chemical waste we do have some toxic, defined as an LD$_{50}$ (oral-rat) less than 500 mg/kg. We also have some chemicals that have been identified as carcinogenic, mutagenic, or tetratogenic, it is your responsibility, as an instructor, to be familiar with the properties and emergency treatment for any chemicals that are included on your preps. You, as an instructor, are also responsible for any first response to injuries, chemical or biological spills, or inhalation contact problems for any of the items that your order for your experiments. You should also be familiar with all safety procedures and how to respond to any emergency. MSDS forms for all chemicals that we stock, past and present, are available on the shelves just inside the storeroom door. If you need more clarification I hold biology department EHandS safety class at the beginning of each term for all new lab aids. This is followed by a test and must be attended by all lab aids before starting work in the storeroom. Faculty are always welcome and this class is taught every FLEX day at 1pm. See the Storeroom Manager for details.

Biohazardous waste definition

- Human and animal blood and blood products.
- Cultures and stocks of etiologic agents and associated biologicals.
- Laboratory waste that has come in contact with a biohazard as listed in 1. and 2. above. This includes but is not limited to culture dishes, blood specimen tubes, devices used to transfer, inoculate and mix cultures, and other materials which have come in contact with biohazards. (Including disposable personal protective equipment and clothing).
- Sharps that have been in contact with biological materials.
- Animal waste, animal carcasses and body parts.
- Human pathological waste, including but not limited to cheek cells, blood, urine.

Drugs are not biohazardous waste they are considered chemical waste.
Chemical Waste Definition

Chemical waste includes both, the chemical byproducts of laboratories, as well as the smaller-scale solvents and other chemicals disposed of by households. Chemical waste may fall under the classification of hazardous waste depending on the nature of the chemicals – for example, chemicals such as ethanol and glycerol don’t require special disposal procedures, but must be collected and not dumped into the sinks. In the United States, chemical waste is regulated by the Resource Conservation and Recovery Act as well as the Clean Water Act, thus no chemical including ethanol and iodine should be poured down the sink.

Examples of chemical waste include but are not limited to:

- Unused and surplus reagent chemicals
- Chemical waste generated from research and educational experiments and procedures
- Spent solvents, stains, strippers, thinners, varnish, and wood preservatives
- Used oil of all types
- Batteries (does not apply to alkaline batteries)
- Non-returnable gas cylinders
- Spent acids and bases
- Personal protective equipment and laboratory equipment and glassware contaminated with chemicals
- Clean-up debris generated from chemical spills
- Discarded equipment containing hazardous materials
- Photographic film processing solutions
- Pesticides, herbicides, fertilizers
- Mercury containing items
- Unused and surplus cleaners (e.g., bleach, carpet cleaners, disinfectants, floor polish and wax, toilet cleaners)
- Unused and surplus paint - Both oil and latex
- Aerosol cans (e.g., air fresheners, paint, cleaners, etc.)
- Fuel oils

Examples of chemicals that we use include Benedict's solution, CuSO4 (Biuret B), iodine, cadaver wetting solution, and buffers.
Sharps and Glass slides

All sharps, e.g. needles, syringes, blades, and glass slides etc, coming from using infectious (cheek cells, bacteria and yeasts) materials should be place in a hard sided hazardous waste container. Glass slides used for non-infectious material (onion, potato, plants ) should be placed in a bin or bucket for lab aids to clean. Remember to order your disposal reciprocal for these on your prep. E.g. for infectious order a sharps container for non-infectious order a bin, bucket, or beaker with correct labeling.

Glassware

All glassware e.g., beakers, test tubes, pasteur pipettes, flasks, bottles and graduated cylinders that have been in contact with biological wastes, but not chemical wastes should be placed in a bin or bucket for cleaning. All dirty test tubes should be placed in either a bin or bucket for cleaning. Do not place test tubes in beakers, but you can place empty test tubes in test tube racks, holders, or plastic or metal baskets. Make sure you order these on your preps.

It is storeroom policy that you should order waste containers by the type of waste you are producing.

The types of waste containers available from the Biology Dept. storeroom are:

- Biohazardous Sharps Container (plastic)
- Biohazardous Pouch Container (cardboard with Stand)
- Biohazardous autoclave bag (plastic with stand)
- Clearly labeled beaker
- Pan or bin for dirty glassware.
See below for what terminology you should use for ordering waste containers.

Please make sure that you use one line for each type of container that way nothing gets missed or is ticked off when only part of it is completed

**BIOHAZARDOUS SHARPES CONTAINER**

For disposal of any shapes, biologically contaminated glass slides, or razor blades please order for your prep a **BIOHAZARDOUS SHARPES CONTAINER**

**BIOHAZARDOUS WASTE POUCH**

For tips, disposable loops, or eppendorf tubes that have come into contact with a **biological** waste please order for your prep a **BIOHAZARDOUS WASTE POUCH**
LARGE BIOHARZARD BAG

For bacterial plates, animal whole or parts, contaminated gloves, paper towels, specimen cups or cotton tipped applicators that have been in contact with biological waste please order for your preps LARGE BIOHARZARD BAG.

LABELED LIQUID WASTE CONTAINER

For all liquid waste, be it biological or chemical please order a fully correctly labeled LIQUID WASTE CONTAINER. Please stipulate labeling.

It you need to do multiple types of disposal order a biohazardous container that is appropriate for each type of waste that your class produces.

It is important for you to realize that the student lab aids are not mind readers and that we go by what is written on the prep. When we check the preps before they go out we look at the written prep and make sure it matches what is on the cart. We do not anticipate your unwritten requirements e.g. if you ask for iodine we don’t think ‘they will need a waste
container for the liquid’. We will give you only what is written on the prep. Thus it is extremely important for you to include clear complete instructions on your preps. Make sure that you stipulate exactly what you want a label to say when asking for labeled containers. We do not have the budget to hire more lab aids and we are running at a 20% loss in lab aid budget.

Also we do not accept hand written preps. It leads to miscommunications and frustration on both sides as hand writing is often illegible.

Do not put anything down the drain, including ethanol, iodine, or buffers. Please collect these in a labeled beaker and return it to the storeroom. If you are unsure of anything please see the storeroom or myself for clarification. We are only too happy to help.