

## Chemical Waste Disposal for 14<sup>th</sup> floor (green containers)

### 1. Definition:

- a. Chemical waste includes solids, liquids or gases containing or contaminated with any of:
  - flammable solvents (e.g., acetone, alcohols, acetonitrile)
  - leachate toxic materials (e.g. heavy metals, pesticides)
  - corrosives (e.g., hydrochloric acid, potassium hydroxide pellets)
  - reactive materials such as oxidizers, cyanides, sulphides, explosives, unstable materials and water-reactive materials (e.g., sodium metal, benzoyl peroxide)
  - toxic materials including mutagenic, carcinogenic, acute or chronic toxicity materials (e.g., chloroform, ethidium bromide)
  - polychlorinated biphenyls (> 50 ppm concentration)
  - non-returnable gas cylinders

### 2. Scope:

- a. This SOP pertains to **solid** chemical waste collected in the green bins.

### 3. Responsibility:

- a. The laboratory is responsible for providing appropriate containers, labels and materials.
- b. The waste generator is responsible for the proper collection and labelling of chemical waste using the most chemical-appropriate container. If unsure, the generator should contact their laboratory manager or contact Environmental Protection Services (EPS) at 416.978.7000 for guidance.
- c. EPS is responsible for scheduled waste collection and returning the emptied containers
  - **Exception:** containers will not be removed if improperly labeled or waste protrudes from container to prevent proper closing of lid.

### 4. Precaution:

- a) Never mix incompatible materials together in a single container (see *Section 5.2.4.1* of U of T's Laboratory Hazardous Waste Management and Disposal Manual for chemical compatibilities: <https://ehs.utoronto.ca/laboratory-hazardous-waste-management-and-disposal-manual/chemical-waste-disposal/#5.2.4.1> or consult EPS staff (416.978.7000 or [eps.hazdisposal@utoronto.ca](mailto:eps.hazdisposal@utoronto.ca))

- b) Waste must be stored in containers that are chemical-compatible. For example:
- **Do not** store hydrofluoric acid waste in glass containers.
  - **Do not** store corrosive chemicals in metal containers.
- c) **Do not** insert precipitates, solids or other non-fluid waste into safety cans.
- d) **Do not** package solid chemical waste into biohazard bags, because this incorrectly indicates a hazard that is not present.
- e) **Do not** mix liquid waste with other solid waste. Liquid waste should be affixed with a fully filled out chemical waste label and put into the flammable cabinet next to the drums where the liquid waste is stored.
- f) Use solvent safety cans to collect and temporarily store large volumes (10-20 litres) of flammable organic waste solvents.
- g) Package halogenated and non-halogenated solvents separately, if possible.
- h) Dispose of aging containers promptly. Some chemicals are time sensitive and may degrade into very hazardous by-products; e.g. ethers may degrade to form explosive organic peroxides.

## 5. Storage and Disposal:

- a) **The green bins:** for the storage of contaminated glass and plastic waste.



Figure 1: Green Bin

- Green bins are located in multiple areas around the lab. Additional bins are available upon request – notify [admin.tbep@utoronto.ca](mailto:admin.tbep@utoronto.ca) or [reception.tbep@utoronto.ca](mailto:reception.tbep@utoronto.ca).
- Line every green bin with a black garbage bag before using for disposal. Black garbage bags are available in the waste disposal area near room 1473.
- When full, tie up and transfer the garbage bag into a waste drum [Figure 2] located in the waste disposal area next to the yellow solvent waste bin.

### Notes

- All gel waste (especially Ethidium Bromide) should be collected in its own separate green pail for disposal. Gels should not be mixed in with lightly chemically contaminated glass and plastic waste drums or pails. Once the pail is 2/3 full it should be sealed with a lid and affixed with a fully filled out chemical waste label prior to being dropped off for disposal. This is because gel waste is considered a hazardous waste stream.

- Solid chemical waste that can puncture garbage bags should be collected separately (see Special Cases section 4a below).

b) **Waste drums:** for collecting full waste bags transferred from the green bins.



Figure 2: The waste drums

- U of T's Environmental Protection Services empties the drums every Wednesday.
- **Do not** dispose of empty metal solvent cans in the solid waste drums. The appropriate method of disposal for this item is to deface any hazardous markings on the can itself and have it picked up for metal recycling.

## 6. Special Cases

a) Solid chemical waste that can puncture garbage bags (glass and plastic ware) should not be collected in the lined bins. Instead, use an **unlined** green bin.

- When full, seal and label the bin as 'contaminated solids', place beside the waste drum.
- For more information, see *section 5.5.2.2 (b)* of U of T's Laboratory Hazardous Waste Management and Disposal Manual.
- Chemically contaminated needle and blade waste should be collected in a yellow sharps container (see SOP on Sharps Waste Disposal).

Ensure that hazardous liquids are drained from the syringes, collected in the appropriate container and stored in the yellow cabinet (see SOP: [Chemical Waste Disposal – Yellow Cabinet](#)).

b) The chemical waste listed below require special handling and should be separated from other waste wherever possible. Please refer to *section 5.2.5* of U of T's Laboratory Hazardous Waste Management and Disposal Manual for additional information on special cases: <https://ehs.utoronto.ca/laboratory-hazardous-waste-management-and-disposal-manual/chemical-waste-disposal/#SpecialCases>.

- Asbestos
- Batteries

- Empty drums
- Ethidium Bromide
- Explosives
- Gas Cylinders
- Mercury Thermometers
- Paint Cans
- Peroxidizable Compounds
- Polychlorinated Biphenyls

## 7. Reference:

- a. <https://ehs.utoronto.ca/laboratory-hazardous-waste-management-and-disposal-manual/chemical-waste-disposal/>