

Chemical Waste Storage

Every effort should be made to eliminate chemical wastes wherever possible. This includes choosing labs that use non-hazardous chemicals. As well, many heavy metal salts can be treated and disposed of safely (i.e. precipitating silver from $\text{Ag}^+_{(\text{aq})}$ solution or nickel from $\text{Ni}^{2+}_{(\text{aq})}$ solution, etc.). However, it is the responsibility of all who generate or come in contact with waste materials to dispose of them properly.

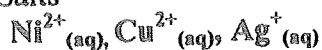
Recommendation:

- Waste Segregation – the major responsibility belongs to the initial generator. Identification, segregation, storage and containment must occur until it can be picked up for disposal. The following are guidelines for waste storage:
 - Storage must be in sealed containers. These may be used chemical containers if properly WHMIS re-labeled.
 - All containers **MUST** be properly WHMIS labeled.
 - Possible Storage breakdown:
 - Oxidizers – Redox chemicals, metal salts.
Note – treatment possibilities below
 - Acids and Bases – most acids and bases should be neutralized and poured down the sink
Note – neutralization treatments below
 - Organics – Organics should be stored in a glass container.
All organics should be stored for proper disposal.
 - Mercury – Must be stored separately and should be removed from all labs (including mercury thermometers, barometers, etc.)

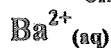
Treatment

Oxidizers:

Metal Salts



- Place aqueous solution in large beaker. Place a piece of Zinc metal in the container and leave for a few days. If the metal disappears, add more. When the metal remains after a few days you may pour the aqueous material down the sink. The precipitated metal can be disposed of in the garbage. What happens: The zinc metal will precipitate the nickel, copper and silver metals. These metal salts are not environmentally dangerous in their metallic state(only).



- Place aqueous solution in a large beaker. Add a solution of sodium sulfate ($\text{Na}_2\text{SO}_{4(\text{aq})}$) to precipitate barium sulfate ($\text{BaSO}_{4(\text{aq})}$). Let the precipitate settle, pour off the clear aqueous solution. Collect the solid white precipitate and dispose of it in the garbage.

Note: this is the only form of barium salt that can be disposed of safely.