

Lab Life: Waste Disposal

How you dispose of chemicals has an impact that extends beyond the laboratory. Be smart about your chemical waste practices with these tips, and get guidance from instructors and research advisors before disposing of chemicals and lab equipment.

What is lab waste?

- Excess reagents or lab byproducts
- Degraded or expired chemicals
- Chemicals that are no longer needed
- Damaged or unusable labware

EXP 11/18

Consequences of improper disposal

- Fires, explosions when incompatible wastes react
- Injuries
- Damage to facilities and equipment
- Contaminated soil and drinking water
- Higher disposal costs

Storage tips

- Use OSHA-compliant chemical safety cabinets
- Learn which wastes can be stored together safely
- Label waste storage containers clearly and consistently

HAZARDOUS WASTE

ACCUMULATION

START DATE _____

CONTENTS _____

HANDLE WITH CARE!
CONTAINS HAZARDOUS OR TOXIC WASTES

Common Hazardous Waste

Organic solvents

Carbon-based compounds

Heavy metals

As, Be, Cd, Cr(VI), Pb, and Hg

Corrosive liquids

Strong acids (pH < 4) and strong bases (pH > 10)

COMMON HAZARD LABELS



Radioactive*



Biological hazard*



Flammable



Environmental hazard



Corrosive



Carcinogenic

*Handled by separate protocols

Disposal Routes



Containers labeled "hazardous waste"



Containers for broken/unusable glass and sharps



Laboratory drains for approved wastes



Regular trash for solid wastes placed in packages that will not spill or break



Be sure to verify laboratory waste procedures with your instructor, advisor, or supervisor. If you accidentally dispose of something improperly, tell the person in charge of the lab immediately.

Keeping It Green

Applying green chemistry principles may reduce the amount of hazardous waste generated.

Atom economy

Use reactions that generate fewer byproducts

Less hazardous chemical syntheses

Use procedures that require/produce fewer toxic materials

Safer solvents and auxiliaries

Use less toxic solvents and separating agents, or eliminate them

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REFERENCES

1. Managing Chemical Wastes in the High School Lab, by Jennifer Panther Bishoff
2. Lab Waste Drain Disposal, Montana State University

