TOXIC CHEMICALS

**Toxic chemicals** can refer to chemicals with acute toxicity or chronic toxicity. Toxic materials may target a specific organ, e.g., substances that are hepatotoxins, nephrotoxins, neurotoxins or hematotoxins. In addition to organ-specific toxicities, toxic chemicals may have the following reported median lethal doses (LD**50**) or median lethal concentrations (LC**50**):

* Oral LD**50** >50 mg/kg but ≤300 mg/kg in rats
* Dermal LD**50** >200 mg/kg but ≤1000 mg/kg in rabbits
* Inhalation LC**50** >500 ppm but ≤2500 ppm (gas), >2 mg/L but ≤10 mg/L (vapor) or >0.5 mg/L but ≤1 mg/L (mist, fume or dust) when administered for 4 hours to rats

Toxicological information is available in Section 11 of a material’s safety data sheet (SDS).

# ENGINEERING/VENTILATION CONTROLS

At minimum, adequate general laboratory ventilation must be provided to maintain exposure below safe regulatory limits.

If Permissible Exposure Limits (PELs) may be exceeded, a chemical fume hood or other engineering control is required. PELs can be found in Section 8 of an SDS.

# SAFE WORK PRACTICES

* Know the signs and symptoms of exposure to the material before working with it. (Consult the SDS.)
* Follow universal administrative controls described in the [Chemical Hygiene Plan](https://www.seattleu.edu/media/academic-safety/files/Chemical-Hygiene-Plan.pdf).
* Limit the amount of material handled: use the smallest amount possible.
* Wash hands thoroughly after handling toxic substances.

# PPE

* Eye Protection: ANSI Z87.1 safety glasses or goggles
* Body Protection: lab coat
* Hand Protection: protective gloves appropriate for the chemical being used (consult the SDS)

Additional PPE may be required if the chemical has additional hazard classification(s).

# HANDLING AND STORAGE

* Keep containers closed when not in use.
* Ensure containers are in good condition and compatible with the material.
* Store liquid toxic chemicals in secondary containment.
* Consult Sections 7 and 10 of the SDS for chemical-specific storage recommendations.

# SPILL AND ACCIDENT PROCEDURE

Consult the [Chemical Hygiene Plan](https://www.seattleu.edu/media/academic-safety/files/Chemical-Hygiene-Plan.pdf) for spill and accident procedures.

# DECONTAMINATION AND WASTE DISPOSAL

* Decontaminate work areas, fume hoods/gloveboxes and equipment after each use while wearing proper PPE. Consult the SDS for decontamination procedures. Soap and water are effective for many materials.
* Collect waste in chemically compatible containers labeled with a Seattle University Hazardous Waste Label.
* Segregate incompatible waste streams. Refer to Section 10 of the SDS for specific incompatibilities.
* Consult the [Regulated Waste Management policy](https://seattleu.policystat.com/policy/8670318/latest) for more details on waste disposal. Specific disposal recommendations are available in the SDS.