

Poisons/Toxins

This SOP covers chemicals in a solid, liquid, or gas phase that pose a moderate level of health risk to individuals upon exposure. via four routes: **ingestion, skin absorption, injection** and **inhalation**. With each route of exposure, the likelihood of injury depends on the toxicity of the chemical involved, the concentration of the material, and the duration of contact. Under the Globally Harmonized System (GHS), they are classified as Category 3 or 4 Acute Toxins. Please note that this SOP is not intended to cover the use of Category 1 or 2 Acute Toxins; use of these items requires additional precautions and safeguards that are beyond the scope of this general use SOP.

Routes of Exposure		Toxicity Range		Hazard Statement	Pictogram
		Category 3	Category 4		
Oral (mg/kg body weight)		LD ₅₀ > 50 and ≤ 300	LD ₅₀ > 300 and ≤ 2000	Toxic if swallowed OR Harmful if swallowed	 OR 
Dermal (mg/kg body weight)		LD ₅₀ > 200 and ≤ 1000	LD ₅₀ > 1000 and ≤ 2000	Toxic in contact with skin OR Harmful in contact with skin	
Inhalation	Gases (ppm)	LC ₅₀ > 500 and ≤ 2500	LC ₅₀ > 2500 and ≤ 20000	Toxic if inhaled OR Harmful if inhaled	
	Vapors (mg/L)	LC ₅₀ > 2.0 and ≤ 10.0	LC ₅₀ > 10.0 and ≤ 20.0		
	Dust (mg/L)	LC ₅₀ > 0.5 and ≤ 1.0	LC ₅₀ > 1.0 and ≤ 5.0		

Personal Protective Equipment & Personnel Monitoring


Lab Coat

Gloves

Eye Protection



Traditional lab coat or flame resistant lab coat when working with flammable materials.

Nitrile or neoprene gloves typically provide adequate protection against minor splashes. Consult with your PI or supervisor to determine whether any materials involved in your process require alternative hand protection.

ANSI Z87.1-compliant safety glasses, or safety goggles if a splash hazard is present

Labeling & Storage

Store upright & tightly closed away from materials that are not particularly hazardous or which may be incompatible. Each container holding one of these items should comply with OSHA/GHS regulations. It is recommended that storage locations holding these items be labeled as a storage location for poisons/toxins to avoid an accidental encounter.

For poisons and toxins in a compressed gas cylinder, the cylinders should be individually anchored to a stable structure such as a wall with a chain or strap approximately 1/2 to 3/4 of the way up the cylinder. Additionally, cylinders should be tagged as full, in-use, or empty. Untagged cylinders are assumed to be full. Cylinders not in use should have regulators removed and safety caps in place. A gas detection system should be installed in order to quickly detect leaks.

Engineering Controls, Equipment & Materials

Fume Hood

Use of a fume hood when working with these substances is expected, particularly if the hazard is toxic by inhalation. If the use of a fume hood is impossible or impractical, please contact the Office of Research Safety (ORS) to determine whether additional respiratory protection is required. Respirators may be needed, particularly for sensitive populations.

Housekeeping

Spills

Notify others in the area of the spill, including your supervisor. Evacuate the location where the spill occurred and call 911. Any exposure must be reported to ORS at 706-542-5288. Remain onsite at a safe distance to answer questions from first responders.

Decontamination

Decontamination methods vary based on the materials handled and equipment being used. Please review the chemical Safety Data Sheet for guidance on cleaning materials.

Waste

Any waste from this chemical class should be disposed of through the UGA Hazardous Waste Program. For assistance with arranging a waste pickup, you may contact the Environmental Safety Division (ESD) at 706-542-5801. Prior to pickup, any container used to hold hazardous waste should be labeled with the following:

- "Hazardous Waste"
- chemical contents
- one or more of the following waste characteristics recognized by EPA: Ignitable, Corrosive, Reactive, or Toxic



In addition, any liquid hazardous waste must be stored in secondary containment trays until picked up by ESD.

First Aid & Emergencies

Skin Contact

Immediately remove contaminated clothing and shoes; flush skin with water for at least 15 minutes. Get medical attention immediately.

Eye Contact

Check for and remove contact lenses. Immediately flush eyes with water for at least 15 minutes. Get medical attention immediately.

Inhalation

Move person into fresh air. Get medical attention immediately.

Ingestion

Get medical attention immediately.