

This document covers basic chemical safety information for acutely toxic potentially explosives corrosives and supplements the laboratory Chemical Hygiene Plan as appropriate. The use of any acutely toxic potentially explosive chemical is subject to pre-approval by the Principal Investigator (PI) and/or designated Laboratory Responsible Safety Person. DO NOT USE ACUTELY TOXIC POTENTIAL EXPLOSIVES UNTIL YOU HAVE OBTAINED THE NECESSARY PRE-APPROVAL.

Acutely Toxic Potentially Explosive Chemicals

Acutely toxic potentially explosive chemicals are materials that can be fatal in small doses and can also undergo a sudden release of pressure, gas, and heat when subjected to an initiating mechanism such as friction, impact, catalysts, light, or heat. Examples include **dipicrylamine** and **hydrazoic acid**.



Chemicals covered by this CSP **do not** include acutely toxic peroxide-forming chemicals because peroxide formers and potential explosives are two different hazard classes.

Personal Protective Equipment & Personnel Monitoring



Lab Coat

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



Gloves

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.



Eye Protection



Face Shield

ANSI Z87.1-compliant safety glasses or safety goggles. Consider using a blast shield for extra protection.

Labeling & Storage

Store in secondary containment at the manufacturer's recommended temperature in an explosion-proof refrigerator/freezer, or an explosion-proof cabinet, that does not contain flammables or chemically incompatible materials. Keep away from heat, light, and any potential initiating mechanisms. Each container's label must include appropriate pictograms and identify the material as acutely toxic. Containers of acute toxicants must be stored in leak-proof secondary containment within a Designated Area. The secondary container's label must include appropriate pictograms and identify the material as acutely toxic. Also, if not plainly visible (e.g., through a cabinet window), labeling must be applied to storage locations where these are stored to avoid an inadvertent encounter.

Engineering Controls, Equipment & Materials

Fume Hood

Work in a chemical fume hood. If your protocol does not permit the handling of such materials in a fume hood, contact the Department of Environmental Health, Safety and Sustainability (EHSS) to determine whether additional respiratory protection is warranted.

Blast Shield

When working with potentially explosive chemicals the use of a portable blast shield inside the fume hood is highly recommended.

Cautions and Considerations

Initiating Mechanism

Before working with any potentially explosive chemicals, determine the initiating mechanism that could lead to an explosion; friction, impact, catalysts, light, or heat. Refer to the chemical SDS for this information. Also consider working with equipment that cannot generate static electricity or sparks.

Housekeeping

Spills

Notify others in the area of the spill, including your PI/Responsible Safety Person. If it is a small spill that you can easily handle, use the contents of your lab spill kit to clean it up. If it is a large spill, then evacuate the area where the spill occurred. Call Vanderbilt University Public Safety (VUPS) at 615-421-1911 (mobile) or use the VandySafe app on your smart phone. Report any exposure through Risk and Insurance Management's Origami portal and mark that it occurred in research when prompted. Both VUPS and the Origami system will notify EHSS of the incident. Remain on site at a safe distance to provide detailed information to first responders.

Decontamination

Decontaminations methods will vary based on the materials handled and equipment being used. Please review the chemical SDS for guidance on cleaning materials. It may be necessary to dispose of the used chemical and contaminated disposables as hazardous waste following the guidelines in the CHP.

Waste

Acutely toxic potentially explosive chemicals should be collected in sealed containers protected from light and heat and disposed of as hazardous waste. Refer to the laboratory *Chemical Hygiene Plan* (Section 6.7) for information on proper chemical waste disposal procedures.

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.

