UNIVERSITY OF ARKANSAS

Facilities Management
Environmental Health and Safety

Principal Investigator: Date Approved:

This document covers basic chemical safety information for acutely toxic potential explosives. The use of any acutely toxic potentially explosive chemical is subject to pre-approval by the Toxic Substance Committee. DO NOT USE ACUTELY TOXIC CHLORINATED SOLVENTS UNTIL YOU HAVE OBTAINED THE NECESSARY APPROVAL.

Acutely Toxic Potentially Explosive Chemicals

Refer to the University of Arkansas Chemical Hygiene Plan for a description of chemicals that will be considered as a Particularly Hazardous Substance (PHS).

Chemicals that meet the definition of a PHS acutely toxic potentially explosive must be used only in a designated area where limited access, special procedures, knowledge, and work skills are required. A designated area can be the entire laboratory, a specific laboratory workbench, or a laboratory hood. Designated areas must be clearly marked with signs that identify the chemical hazard and include an appropriate warning; for example: WARNING! ACUTELY TOXIC POTENTIALLY EXPLOSIVE WORK AREA

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 SOP do not include acutely toxic peroxide-forming chemicals because peroxide formers and potential explosives are two different hazard classes.

Exposure, Signs and Symptoms and Chemical Properties

Review the appropriate sections of the chemical specific Safety Data Sheet (SDS) for information on ways to detect exposure, appropriate exposure limits, signs and symptoms of exposures and chemical properties. If data is lacking in any area, refer to the following sites for additional information:

https://pubchem.ncbi.nlm.nih.gov/ https://druginfo.nlm.nih.gov/drugportal/

https://toxnet.nlm.nih.gov/index.html http://web.doh.state.nj.us/rtkhsfs/indexfs.aspx

Always use the smallest amount of chemical that is consistent with the requirements of the work performed. Understand the chemical properties and what are the likely routes of exposure based on those properties and the procedures to be performed. Use containment devices (e.g., fume hood, glove box) when substance can volatilize, when the substance is manipulated, whenever aerosols or particulates may be produced, or when an action may result in an uncontrolled release.

Contact Environmental Health and Safety (EHS) if there are any questions (479-575-5448).

Personal Protective Equipment (PPE) & Personnel Monitoring

 Lab Coat	 Gloves	 Eye Protection  Face Shield
Chemical/Flame resistant	Two pairs of nitrile or neoprene gloves, when the glove is chemically exposed, the outer glove must be removed and replaced immediately. Alternatively, butyl rubber gloves may be used.	ANSI Z87.1-compliant safety glasses or safety goggles if a splash hazard is present. Consider using a blast shield for extra protection.

Labeling & Storage

Store away from other materials that are chemically incompatible. 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	Use a fume hood (or equivalent) to keep exposure to materials as low as possible. If your protocol does not permit the handing of such materials in a fume hood, contact EH&S (479-575-5448) to perform an exposure assessment to determine whether alternative engineering controls or additional respiratory protection is required.

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 supervisor. Evacuate the location where the spill occurred. Call 911 and report any exposure to EHS (479-575-5448). Remain on-site (at a safe distance) to provide detailed information to first responders.

Decontamination	After each use (or day), wipe down the immediate work area and equipment to prevent accumulation of chemical residue. Decontaminate workspace with appropriate materials (refer to the SDS). When finished wash hands and arms with soap and water and properly dispose of all wastes. Contaminated items (e.g., solid and liquid materials and PPE) should be discarded as hazardous waste.
Waste	Refer to the UA Chemical Hygiene Plan for details and contact EHS (479-575-5448) for specific disposal instructions.

First Aid & Emergencies

Skin or Eye Contact	Remove contaminated clothing and accessories; flush affected area for at least 15 minutes with water. If symptoms persist, get medical attention/call 911.
Inhalation	Move person into fresh air. If symptoms persist, get medical attention/call 911.
Ingestion	Rinse mouth with water. If symptoms persist, get medical attention/call 911.

Attachments: Chemical Specific Safety Data Sheet (SDS)

Note: If there is more than one chemical that classifies as a PHS based on acute toxicity potential explosive; include all appropriate SDSs with this SOP.

Authorized and Trained Personal

Name	Signature	Date