

Principal Investigator: _____

Date Approved: _____

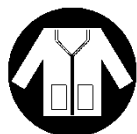
This document covers basic chemical safety information for acutely toxic water reactive chemicals and supplements the laboratory Chemical Hygiene Plan as appropriate. The use of any acutely toxic water reactive chemical is subject to pre-approval by the Principal Investigator (PI) and/or designated Laboratory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

Acutely Toxic Water Reactive Chemicals

Water reactive materials are chemicals that may react violently with water. If this reaction produces a toxic gas the material may be acutely toxic in addition to being water reactive. Typical toxic gases produced are: H₂S, NH₃, PH₃, HCN, HF, HCl, SO₂, and SO₃.



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

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

Labeling & Storage

Store these materials in secondary containment in a dry place away from moisture/humidity, heat sources and other incompatible chemicals such as acids. Labels identifying the materials as an Acute Toxicant and Water Reactive must appear on the bottles and secondary containers. Also, if not plainly visible (e.g., through a cabinet window), labelling must be applied to storage locations where these are stored to avoid an inadvertent encounter.

Engineering Controls, Equipment & Materials

Glove Box

Work under an inert atmosphere (e.g., argon, nitrogen) in a glove box.

Fume Hood

Work in a chemical fume hood away from any water sources. 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.

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 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

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

Waste

Acutely toxic water –reactive chemicals should be collected in sealed containers free from water, 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

Fire

DO NOT use water to put out fire, instead use a Class B fire extinguisher.

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.

