

Principal Investigator: _____

RUA: _____

Date Approved: _____

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

SODIUM AZIDE

Sodium azide is classified as a particularly hazardous substance under the OSHA Lab Standard due to its high acute toxicity, particularly by the dermal route, and is dangerously reactive when heated. Sodium azide is highly toxic through skin contact, inhalation, and ingestion. Acute central nervous system (CNS) and cardiovascular effects. Irritation to eyes, skin, and respiratory tract. Chronic exposure may result in liver and kidney damage. Repeated exposure may cause damage to the spleen. Very toxic to aquatic life.



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 with other acutely toxic materials in a dark, cool, dry location away from acids. Sodium azide should be stored separately from metals, acids, carbon disulfide, bromine, chromyl chloride, sulfuric acid, nitric acid, hydrazine, and dimethyl sulfate. Close proximity to acids, acid vapor or heat generating processes should be avoided. Contact with acid produces a highly toxic and explosive gas (hydrazoic acid). Sodium azide rapidly hydrolyzes in water, which also can form hydrazoic acid. 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 Environmental Health, Safety, and Sustainability (EHSS) to determine whether additional respiratory protection is warranted.

Cautions and Considerations**Before starting work**

Review manufacture's Safety Data Sheet and additional chemical information. Ensure that a written experimental protocol including safety information is available. Order the most dilute solutions available that will meet experimental needs. Order only what you need.

During Work

Sodium azide will react with metals such as silver, gold, lead, copper, brass, or solder in plumbing systems, to produce explosive metal azides. A stainless-steel spatula is suitable for this task.

Sodium azide rapidly hydrolyzes in water, when mixed with water or acid, to form hydrazoic acid, a highly toxic and explosive gas.

Sodium azide can become statically charged and dissipates easily with fume hood drafts. Use caution when transferring weighed material to desired container.

- Powder processing activities, such as pouring or transferring powders, can generate static electricity. When stored static energy discharges, where it can spark. Fine powders that are recklessly transferred have the potential to cause dust clouds that can spark and catch fire, especially in the presence of flammable materials or Bunsen burners.
- Sodium azide is thermally unstable, and if heated to above 275°C (527°F) may undergo violent decomposition

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 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

Sodium azide is classified as a p-listed waste by the Environmental Protection Agency. This means that any waste stream generated while handling sodium azide, must be managed as hazardous waste.

- This includes the empty bottle, as well as other solid waste you may generate such as pipette tips, paper towels, etc. Do not triple rinse and dispose of in the trash, broken glass box, or recycling.

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. If unconscious, do not give mouth-to-mouth CPR. A person who has accidentally inhaled sodium azide may have residual powder around their nose and mouth. By giving them CPR, you may expose yourself to this toxic material as well.
Ingestion	Do not induce vomiting. Get medical attention immediately.
Fire Response	Do not attempt to put fire out with water, use only B/C type fire extinguishers

