




LABORATORY SAFETY GUIDELINE

Sodium Azide [CAS No. 26628-22-8]

All users of sodium azide and sodium azide solutions should review this document. 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. Consequently, labs should have a written SOP. Office of Research Safety Affairs does not require acutely toxic materials to be locked up, but your lab should consider security and access controls wherever it is stored.

	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

PRECAUTIONS

Before starting work:

- Review manufacture's Safety Data Sheet and additional chemical information at <http://www.uthsc.edu/research/safety/safety-data-sheets.php>. Ensure that a written experimental protocol including safety information is available.
- Make sure you are familiar with general University emergency procedures in the Office of Research Safety Affairs webpage, <http://www.uthsc.edu/research/safety/index.php>.
- Order the most dilute solutions available that will meet experimental needs. Order only what you need.
- Identify the location of the nearest eyewash and shower and verify that they are accessible.

Storage considerations:

- Sodium azide can be stored with other acutely toxic materials in a dark, cool, dry location away from acids.
- Close proximity to acids, acid vapor or heat generating processes should be avoided. Contact with acids produces highly toxic gas – hydrazoic acid.
- Sodium azide should be stored separately from metals, acids, carbon disulfide, bromine, chromyl chloride, sulfuric acid, nitric acid, hydrazine, and dimethyl sulfate.
- Mark the primary and secondary container with the words "ACUTELY TOXIC"

During work:

CAUTION

- 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 ok.
- 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, 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.

- If you predict that you will be pouring large amounts of powder, please contact Office of Research Safety Affairs for recommendations on Electrostatic Discharge devices.
- Sodium azide is thermally unstable, and if heated to above 275°C (527°F) may undergo violent decomposition.
- AVOID INHALATION! Perform all operations in a certified chemical fume hood, wet bench or other approved ventilated enclosure.
- AVOID CONTACT! Wear appropriate PPE including:
 - Lab coat, long pants, and closed toed shoes.
 - Chemical protective goggles.
 - Work behind sash.
 - Nitrile gloves provide adequate protection (at least 0.11mm [4 mils]) thickness. Change gloves frequently. Wash hands thoroughly each time gloves are removed.
- Keep all containers tightly closed when not in use and during transport.

After completing the work:

- 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.
 - Dispose of sodium azide waste following the University's Hazardous Waste Procedures:
 - Hazardous Waste Classification: Toxic
- Wash hands before leaving lab.
- Wipe all materials and surfaces used to work with sodium azide down with soap and water solution (pH of 9), paper towels and then ethanol. All the clean-up materials should be disposed of as a solid hazardous waste.

EMERGENCY PROCEDURES

First Aid

SKIN CONTACT

- Flush skin with tepid water for 15 minutes using the closest available sink, portable drench hose or safety shower. Remove any exposed clothing and jewelry.
- Call 911 on a landline phone for medical assistance (or provide location if calling on a mobile phone).

EYE CONTACT

- Using eyewash, flush eyes for 15-minutes while hold eyelid open and away from exposed eye.
- Remove contact lenses if present and easy to do.
- Call 911 on land line phone for medical assistance.

INHALATION

- Immediately move to fresh air.
- 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.
- Call 911 on land line phone for medical assistance.

INGESTION

- Do not induce vomiting.
- Call 911 and the Poison Control Center: 1 (800) 222-1222 on a land line phone for medical assistance.

Spill Response

LARGE SPILL OR OUTSIDE FUME HOOD OR VENTILATED ENCLOSURE

- Alert others and evacuate to a safe distance and prevent entry.
- Contact the University Office of Research Safety Affairs at (901) 448-6114.
- Remain in a safe location until Office of Research Safety Affairs or other response personnel arrive.

INSIDE FUME HOOD OR VENTILATED ENCLOSURE

- If trained and confident, don protective clothing, extinguish all ignition sources and
 - For a solid spill: cover the sodium azide with a paper towel, and then dampen the towel with alkaline water. **REMEMBER:** Sodium azide rapidly hydrolyses in water to form hydrazoic acid. Using alkaline water (pH >9) would help prevent that reaction.
 - For liquid spills, cover with absorbent material. Surfaces should be cleaned with pH adjusted water (pH >9).

Dispose of clean-up material as hazardous waste.

- Contact the University Office of Research Safety Affairs at (901) 448-**6114** if you need support or technical assistance.