Safety Guideline: Sodium Azide

Description:
Sodium azide (NaN₃) is a colorless crystalline solid and is readily soluble in water. Sodium azide is a common sample preservative, stock solution, or reagent in synthetic work in laboratories.

Physical and Health Hazards:
- Sodium azide is an extremely toxic and powerful poison. Ingesting very small amounts can be fatal in a short period of time.
- When mixed with water or an acid, sodium azide changes rapidly to a toxic gas with a pungent odor. However, the odor may not be sharp enough to give a sufficient warning against the hazard.
- When it comes in contact with solid metals, sodium azide can change into a toxic gas.
- When heated to its decomposition temperature of -275°C, Sodium azide may undergo violent decomposition.
- Sodium azide reacts violently with nitric acid, bromine, carbon disulfide, dimethyl sulfate, and several heavy metals including copper and lead.

Occupational Exposure Hazard:
- When inhaled, it may cause irritation to the respiratory tract and mucous membranes causing coughing, dizziness, shortness of breath, and fainting.
- When ingested, it is highly toxic and may cause nausea, vomiting, low blood pressure, and rapid heart beats.
- Skin contact causes irritation and pain. Skin contact parallel ingestion.
- No information is available for chronic exposure.

Safe Work Methods:
Engineering Control
- Perform all work with sodium azide in a chemical fume hood to avoid inhalation exposure.
- Perform a dry run of your process to work out any potential pitfalls.

Personal Protective Equipment
- Wear Lab coat, safety glasses, or splash goggles, and gloves.
- Always wear full-length pants and closed-toe shoes.
- Always double-check your PPE before each use and leave all personal protective clothing in the lab when you leave work areas to prevent a cross contamination.
Good Work Practices

• Restrict access to the work area
• Keep container sizes and quantities in the work area as small as possible
• Line work surfaces with removable absorbent paper

Waste Disposal:
Store and dispose sodium azide waste as hazardous or extremely hazardous chemical waste and request a hazardous chemical waste collection through EHS.

Exposure and accidental spills:

• Give first-aid treatment, and then seek medical attention immediately for all hazardous material exposures.
• Treat any exposure of ingestion, skin exposure, and inhalation seriously, no matter how slight it may seem at the moment. For skin exposure, flush exposed skin with water for at least 15 minutes.
• Clean up only very small quantities of sodium azide, and only if you have been properly trained and have proper materials for sodium azide.
• Dispose all spill containment material as hazardous chemical waste.

* For Additional Information, contact Michelle Lee, Chemical Hygiene Officer, at EHS 323 864 3188 or mlee@caps.usc.edu.