

**STANDARD OPERATING PROCEDURE**

**Sodium Cyanoborohydride**

According to the Material Safety Data Sheet (MSDS) special precautions must be taken when working with the chemical described above. The following information includes the chemical characteristics of followed by recommendations for handling and any paperwork needed in order to use the chemical in the laboratory. This Standard Operating Procedure will be followed along with the requirements of the Chemical Hygiene Plan.

Classification (if applicable): Water reactive flammable solid

Brief description of proposed chemical work: Used in reactions crosslinking proteins and RNA in our lab.

***\*\*Attach additional pages as needed\*\****

**Brief Safety Overview:**

● The Principal Investigator is responsible for training employees using the material on site. The training should include a discussion of the known and potential hazards; an explanation of the relevant policies, techniques and procedures including the proper use of personal protective equipment, emergency/spill procedures and containment equipment (engineering controls).

● Limit access to authorized users.

● Minimize the possibility of inadvertent ingestion, inhalation and direct skin or eye contact with the substance.

● Chemical has been placed in the Chemical Inventory (EHS Assistant)

● Require annual training.

**Routes of Exposure**

**Eye:** Causes eye burns.   
**Skin:** Toxic in contact with skin. May be metabolized to cyanide which in turn acts by inhibiting cytochrome oxidase impairing cellular respiration. Causes skin irritation and burns.   
**Ingestion:** Poison by ingestion. Causes gastrointestinal tract burns. Ingestion may result in symptoms similar to cyanide poisoning which is characterized by asphyxiation. Toxic if swallowed.   
**Inhalation:** Causes chemical burns to the respiratory tract. Toxic if inhaled. May be metabolized to cyanide which in turns act by inhibiting cytochrome oxidase impairing cellular respiration.

**Toxicological Effects**

Chronic Effects/ Precautionary Safety Measures: no information available

**Handling and Storage Instructions**

**Handling:** Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

**Storage:** Keep away from sources of ignition. Store in a tightly closed container. Keep under a nitrogen blanket. Store in a cool, dry, well-ventilated area away from incompatible substances. Water free area.

***Location – Engineering controls***

X Ventilation (example: Fume Hood, Canopy Hoods, etc): use fume hood

X Designated area (specify): stored in dessicator room 3047

N/A Bio-Safety Cabinet

***PPE required:***

X Skin/Body Protection (example: Lab Coat) Wear laboratory coat

X Eye protection: wear safety goggles

N/A Face shield

N/A Respirator (example: N95):

X Hand protection (example: Nitrile gloves): wear gloves

**Exposure Response and First Aid Measures**

**Eyes:** Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).   
**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.   
**Ingestion:** Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately. Treat patient as for inhalation.   
**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask. If inhaled, do NOT induce vomiting, and seek medical aid immediately. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

**Emergency Procedure for Chemical Spills and Accidental Releases**

Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Remove all sources of ignition. Provide ventilation. Do not let this chemical enter the environment.

**Disposal Procedures**

Dispose of waste in labeled, leak proof, hazardous waste containers, to be disposed of by EHS.

This Standard Operating Procedure must be placed in the Chemical Hygiene Plan and the MSDS must be accessible. Also, all laboratory personnel must be familiar with safe handling practices (i.e., training with documentation of training) when working with these chemicals. This must be incorporated into the comprehensive chemical hygiene plan of the laboratory. If you have any questions regarding a comprehensive mandatory laboratory chemical hygiene plan please contact your Representative at Environmental Health and Safety (292-1284).For any other questions or concerns, please contact:

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