

Material Safety Data Sheet

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Version 1.6

According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

1 - Product and Company Information

Product Name	SODIUM CYANOBOROHYDRIDE, REAGENT GRADE, 95%
Product Number	156159
Company	Sigma-Aldrich Pty, Ltd Unit 2, 14 Anella Avenue Castle Hill NSW 1765 Australia
Technical Phone #	+61 2 9841 0555
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2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number	
SODIUM CYANOBOROHYDRIDE	25895-60-7	247-317-2	None	
Ingredient Name	Percent	CAS #	EC no	Annex I Index Number
THE FOLLOWING SUBSTANCES ARE PRESENT AS RESIDUAL COMPONENTS OF PRODUCTION.		None	None	None
SODIUM HYDRIDE	7646-69-7	231-587-3	None	

Symbols: F
R-Phrases: 15
Contact with water liberates extremely flammable gases.

Formula NaBH₃CN
Molecular Weight 62.84 AMU

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Highly flammable. Very toxic by inhalation, in contact with skin and if swallowed. Contact with acids liberates very toxic gas. Causes burns. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4 - First Aid Measures

AFTER INHALATION

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately. Do not induce vomiting.

5 - Fire Fighting Measures

EXPLOSION DATA

Dust Potential: This material, like most materials in powder form, is capable of creating a dust explosion.

EXTINGUISHING MEDIA

Suitable: Dry chemical powder.
Unsuitable: Do not use water.

SPECIAL RISKS

Specific Hazard(s): Flammable solid. Contact with other material may cause fire. Emits toxic fumes under fire conditions.
Explosion Hazards: Material readily reacts with water generating flammable and/or explosive hydrogen gas

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Avoid raising dust. Carefully sweep up and remove. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING

Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid all contact. Open carefully.

STORAGE

Conditions of Storage: Keep tightly closed. Keep away from heat, sparks, and open flame.
Incompatible Materials: Do not allow contact with water

SPECIAL REQUIREMENTS: May develop pressure. Open carefully.
Hygroscopic. Handle and store under inert gas.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Use only in a chemical fume hood.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Full-face breathing apparatus. Positive pressure respirator should be worn. Self-contained breathing apparatus should be worn

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

Special Protective Measures: Faceshield (8-inch minimum).

9 - Physical and Chemical Properties

Appearance	Physical State: Solid Color: Faintly beige Odor: Stench.
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Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	242 °C	
Flash Point	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Oxidizing Properties	N/A	
Explosive Properties	N/A	
Explosion Limits	N/A	
Vapor Pressure	N/A	
SG/Density	N/A	
Partition Coefficient	N/A	
Viscosity	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Evaporation Rate	N/A	
Bulk Density	N/A	
Decomposition Temp.	N/A	
Solvent Content	N/A	
Water Content	N/A	
Surface Tension	N/A	
Conductivity	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions of Instability: May decompose on exposure to moist air or water.

Conditions to Avoid: Do not allow water to enter container because of violent reaction. Moisture.

Materials to Avoid: Avoid contact with acid., Oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, and nitrogen oxides, Hydrogen cyanide, Borane/boron oxides.
Hazardous Decomposition Products Formed Upon Contact with Water:
Liberates flammable/explosive hydrogen gas

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

11 - Toxicological Information

SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. May be fatal. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

ROUTE OF EXPOSURE

Skin Contact: Causes burns.
Skin Absorption: May be fatal if absorbed through skin.
Eye Contact: Causes burns.
Inhalation: May be fatal if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion: May be fatal if swallowed.

TARGET ORGAN INFORMATION

Blood.

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR

UN#: 3179
Class: 4.1
PG: II
Proper Shipping Name: Flammable solid, toxic, inorganic, n.o.s.

IMDG

UN#: 3179
Class: 4.1
PG: II

Subrisk: 6.1
Proper Shipping Name: FLAMMABLE SOLID, TOXIC,
INORGANIC, N.O.S.
Marine Pollutant: No
Severe Marine Pollutant: No
Technical Name: Required

IATA

UN#: 3179
Class: 4.1
PG: II
Subrisk: 6.1
Proper Shipping Name: Flammable solid, toxic,
inorganic, n.o.s.
Inhalation Packing Group I: No
Technical Name: Required

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES

INDICATION OF DANGER: F T+ N

Highly Flammable. Very toxic. Dangerous for the environment.

R-PHRASES: 11 26/27/28 32 34 50/53

Highly flammable. Very toxic by inhalation, in contact with skin and if swallowed. Contact with acids liberates very toxic gas. Causes burns. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-PHRASES: 26 28 36/37/39 45 60 61

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. After contact with skin, wash immediately with plenty of soap-suds. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

16 - Other Information

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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