

SAFETY DATA SHEET

Creation Date 21-May-2014

Revision Date 26-June-2024

Revision Number 1

1. Identification

Product Name Sodium Cyanoborohydride

Cat No. : S60426

CAS-No 25895-60-7
Synonyms Sodium cyanotrihydroborate

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Importer/Distributor

Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Emergency Telephone Number

For information **US** call: 001-800-227-6701 / **Europe** call: +32 14 57 52 11

Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99

CHEMTREC Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

WHMIS 2015 Classification

Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

| | | |
|---|--------------|--------------------|
| Flammable solids | Category 2 | |
| Substances/mixtures which, in contact with water, emit flammable gases | Category 2 | Gas(es) = Hydrogen |
| Acute oral toxicity | Category 2 | |
| Acute dermal toxicity | Category 2 | |
| Acute Inhalation Toxicity | Category 2 | |
| Skin Corrosion/Irritation | Category 1 B | |
| Serious Eye Damage/Eye Irritation | Category 1 | |
| Health Hazards Not Otherwise Classified | Category 1 | |
| Contact with acids liberates very toxic gas (HCN) | | |

Label Elements

Signal Word

Danger

Hazard Statements

Flammable solid

In contact with water releases flammable gas

Fatal if swallowed, in contact with skin or if inhaled

Causes severe skin burns and eye damage

Contact with acids liberates very toxic gas (HCN)

**Precautionary Statements****Prevention**

Take any precaution to avoid mixing with acids

Do not breathe dust/fumes/gas/mist/vapours/spray

Wear respiratory protection

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

Do not allow contact with water

Ground/bond container and receiving equipment

Do not get in eyes, on skin, or on clothing

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

Wear protective gloves/protective clothing/eye protection/face protection

Handle and store contents under inert gas. Protect from moisture

Response

IF INHALED: Remove person to fresh air and keep comfortable for breathing

Immediately call a POISON CENTER/doctor

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

Rinse mouth

Do NOT induce vomiting

Wash contaminated clothing before reuse

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

IF ON SKIN: Brush off loose particles from skin. Immerse in cool water

Storage

Store locked up

Store in a well-ventilated place. Keep container tightly closed

Store in a dry place. Store in a closed container

Disposal

Dispose of contents/container to an approved waste disposal plant

Other Hazards

Very toxic to aquatic life with long lasting effects

3. Composition/Information on Ingredients

| Component | CAS-No | Weight % |
|--|------------|----------|
| Borate(1-), (cyano-C)trihydro-, sodium, (T-4)- | 25895-60-7 | >94 |

4. First-aid measures

| | |
|--|---|
| General Advice | Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. |
| Eye Contact | In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |
| Skin Contact | Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required. |
| Inhalation | Remove to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. |
| Ingestion | Do NOT induce vomiting. Call a physician or poison control center immediately. |
| Most important symptoms/effects | Causes burns by all exposure routes. . Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| Notes to Physician | Treat symptomatically |

5. Fire-fighting measures

| | |
|---|--------------------------|
| Unsuitable Extinguishing Media | DO NOT USE WATER |
| Flash Point | No information available |
| Method - | No information available |
| Autoignition Temperature | 175 °C / 347 °F |
| Explosion Limits | |
| Upper | No data available |
| Lower | No data available |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical

The product causes burns of eyes, skin and mucous membranes. Do not allow run-off from fire-fighting to enter drains or water courses.

Hazardous Combustion Products

Nitrogen oxides (NOx). Hydrogen cyanide (hydrocyanic acid). Hydrogen. Oxides of boron. Thermal decomposition can lead to release of irritating gases and vapors.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health
3

Flammability
3

Instability
1

Physical hazards
W

6. Accidental release measures

| | |
|----------------------------------|---|
| Personal Precautions | Evacuate personnel to safe areas. Use personal protective equipment as required. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid dust formation. |
| Environmental Precautions | Do not flush into surface water or sanitary sewer system. Do not allow material to |

contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

7. Handling and storage

| | |
|-----------------|--|
| Handling | Use only under a chemical fume hood. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Wear personal protective equipment/face protection. Do not breathe (dust, vapor, mist, gas). Avoid dust formation. |
| Storage. | Keep containers tightly closed in a dry, cool and well-ventilated place. Corrosives area. Incompatible Materials. Acids. Water. Oxidizing agent. |

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limitsestablished by the region specific regulatory bodies.

Engineering Measures Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection

Goggles

Hand Protection

Protective gloves

| Glove material | Breakthrough time | Glove thickness | Glove comments |
|----------------|-------------------|-----------------|------------------------|
| Natural rubber | See manufacturers | - | Splash protection only |
| Nitrile rubber | recommendations | | |
| Neoprene | | | |
| PVC | | | |

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion. gloves with care avoiding skin contamination.

Respiratory Protection

A NIOSH/MSHA approved air purifying dust or mist respirator or European Standard EN 149.

To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

Recommended Filter type: Particulates filter conforming to EN 143

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

Prevent product from entering drains. Do not allow material to contaminate ground water system. Local authorities should be advised if significant spillages cannot be contained.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

| | |
|--|---|
| Physical State | Powder Solid |
| Appearance | White |
| Odor | No information available |
| Odor Threshold | No information available |
| pH | No information available |
| Melting Point/Range | > 242 °C / > 467.6 °F |
| Boiling Point/Range | No information available |
| Flash Point | No information available |
| Evaporation Rate | Not applicable |
| Flammability (solid,gas) | No information available |
| Flammability or explosive limits | |
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | No information available |
| Vapor Density | Not applicable |
| Specific Gravity | No information available |
| Solubility | Soluble in water Decomposes in contact with water |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | 175 °C / 347 °F |
| Decomposition Temperature | 242 °C |
| Viscosity | Not applicable |
| Molecular Formula | C H3 B N Na |
| Molecular Weight | 62.84 |

10. Stability and reactivity

| | |
|----------------------------------|---|
| Reactive Hazard | Yes |
| Stability | Decomposes slowly on exposure to water. Moisture sensitive. |
| Conditions to Avoid | Incompatible products. Excess heat. Exposure to moist air or water. |
| Incompatible Materials | Acids, Water, Oxidizing agent |
| Hazardous Decomposition Products | Nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid), Hydrogen, Oxides of boron, Thermal decomposition can lead to release of irritating gases and vapors |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

11. Toxicological information

Acute Toxicity

Product Information

Component Information

| | |
|--------------------------------------|--------------------------|
| Toxicologically Synergistic Products | No information available |
|--------------------------------------|--------------------------|

Delayed and immediate effects as well as chronic effects from short and long-term exposure

| | |
|-----------------|--|
| Irritation | Causes burns by all exposure routes |
| Sensitization | No information available |
| Carcinogenicity | The table below indicates whether each agency has listed any ingredient as a carcinogen. |

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|-------------|------------|------------|------------|------------|------------|------------|
| Borate(1-), | 25895-60-7 | Not listed | Not listed | Not listed | Not listed | Not listed |

| | | | | | | |
|------------------------------------|--|--|--|--|--|--|
| (cyano-C)trihydro-, sodium, (T-4)- | | | | | | |
|------------------------------------|--|--|--|--|--|--|

| | |
|---|--|
| Mutagenic Effects | No information available |
| Reproductive Effects | No information available. |
| Developmental Effects | No information available. |
| Teratogenicity | No information available. |
| STOT - single exposure | None known |
| STOT - repeated exposure | None known |
| Aspiration hazard | No information available |
| Symptoms / effects, both acute and delayed | Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated: Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation |
| Endocrine Disruptor Information | No information available |
| Other Adverse Effects | The toxicological properties have not been fully investigated. |

12. Ecological information

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment. Reacts with water so no ecotoxicity data for the substance is available.

| | |
|--------------------------------------|--|
| Persistence and Degradability | Persistence is unlikely based on information available. Soluble in water |
| Bioaccumulation/ Accumulation | No information available. |
| Mobility | Is not likely mobile in the environment. Will likely be mobile in the environment due to its water solubility. |

13. Disposal considerations

| | |
|-------------------------------|---|
| Waste Disposal Methods | Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification. |
|-------------------------------|---|

14. Transport information

DOT

| | |
|--------------------------------|--|
| UN-No | UN3134 |
| Proper Shipping Name | Water-reactive solid, toxic, n.o.s. |
| Technical Name | Borate(1-), (cyano-C)trihydro-, sodium, (T-4)- |
| Hazard Class | 4.3 |
| Subsidiary Hazard Class | 6.1 |
| Packing Group | II |

TDG

| | |
|--------------------------------|-------------------------------------|
| UN-No | UN3134 |
| Proper Shipping Name | Water-reactive solid, toxic, n.o.s. |
| Hazard Class | 4.3 |
| Subsidiary Hazard Class | 6.1 |
| Packing Group | II |

IATA

| | |
|--------------------------------|-------------------------------------|
| UN-No | UN3134 |
| Proper Shipping Name | Water-reactive solid, toxic, n.o.s. |
| Hazard Class | 4.3 |
| Subsidiary Hazard Class | 6.1 |

| | |
|--------------------------------|-------------------------------------|
| Packing Group | II |
| IMDG/IMO | |
| UN-No | UN3134 |
| Proper Shipping Name | Water-reactive solid, toxic, n.o.s. |
| Hazard Class | 4.3 |
| Subsidiary Hazard Class | 6.1 |
| Packing Group | II |

15. Regulatory information

International Inventories

| Component | CAS-No | DSL | NDSL | TSCA | TSCA Inventory notification - Active-Inactive | EINECS | ELINCS | NLP |
|--|------------|-----|------|------|---|-----------|--------|-----|
| Borate(1-), (cyano-C)trihydro-, sodium, (T-4)- | 25895-60-7 | - | X | X | ACTIVE | 247-317-2 | - | - |

| Component | CAS-No | IECSC | KECL | ENCS | ISHL | TCSI | AICS | NZIoC | PICCS |
|--|------------|-------|----------------|------|------|------|------|-------|-------|
| Borate(1-), (cyano-C)trihydro-, sodium, (T-4)- | 25895-60-7 | X | KE-05-118 6 | - | X | X | X | X | X |

Legend:

X - Listed '-' - Not Listed

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

Other International Regulations

Authorisation/Restrictions according to EU REACH Not applicable

Safety, health and environmental regulations/legislation specific for the substance or mixture

| Component | CAS-No | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|--|------------|----------------|------------------------------|---------------------------|--|
| Borate(1-), (cyano-C)trihydro-, sodium, (T-4)- | 25895-60-7 | Not applicable | Not applicable | Not applicable | Not applicable |

| Component | CAS-No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|--|------------|---|--|----------------------------|------------------------------------|
| Borate(1-), (cyano-C)trihydro-, sodium, (T-4)- | 25895-60-7 | Not applicable | Not applicable | Not applicable | Not applicable |

16. Other information

Prepared By Product Safety Department
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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS