SAFETY DATA SHEET

1. Identification

Product Name: Sodium cyanoborohydride
Cat No.: 87839
CAS No: 25895-60-7
Synonyms: Sodium cyanotrihydroborate
Recommended Use: Laboratory chemicals.
Uses advised against: Food, drug, pesticide or biocidal product use.

Company
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757

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
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 2</td>
<td>Flammable solids</td>
</tr>
<tr>
<td>Category 2</td>
<td>Substances/mixtures which, in contact with water, emit flammable gases</td>
</tr>
<tr>
<td>Category 2</td>
<td>Acute oral toxicity</td>
</tr>
<tr>
<td>Category 2</td>
<td>Acute dermal toxicity</td>
</tr>
<tr>
<td>Category 2</td>
<td>Acute Inhalation Toxicity - Dusts and Mists</td>
</tr>
<tr>
<td>Category 1 B</td>
<td>Skin Corrosion/Irritation</td>
</tr>
<tr>
<td>Category 1</td>
<td>Serious Eye Damage/Eye Irritation</td>
</tr>
</tbody>
</table>

Label Elements
Signal Word
Danger

Hazard Statements
Flammable solid
In contact with water releases flammable gas
Causes severe skin burns and eye damage
Fatal if swallowed, in contact with skin or if inhaled

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Do not get in eyes, on skin, or on clothing
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear respiratory protection
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting equipment
Keep away from any possible contact with water, because of violent reaction and possible flash fire
Handle under inert gas. Protect from moisture
Response
Immediately call a POISON CENTER or doctor/physician
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
Wash contaminated clothing before reuse
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Brush off loose particles from skin. Immerse in cool water/wrap with wet bandages
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Ingestion
Rinse mouth
Do NOT induce vomiting
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
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
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects
Contact with acids liberates very toxic gas

3. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borate(1-), (cyano-C)trihydro-, sodium, (T-4)-</td>
<td>25895-60-7</td>
<td>&gt;94</td>
</tr>
</tbody>
</table>
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 and 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

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

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3</td>
<td>1</td>
<td>W</td>
</tr>
</tbody>
</table>

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.

8. Exposure controls / personal protection

Exposure Guidelines
This product does not contain any hazardous materials with occupational exposure limits established 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.

Personal Protective Equipment

Eye/face Protection
Tight sealing safety goggles. Face protection shield.

Skin and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure.

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

Recommended Filter type:
Particulates filter conforming to EN 143.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Powder Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>White</td>
</tr>
<tr>
<td>Odor</td>
<td>No information available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>8-9 10% aq. solution</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>&gt; 242 °C / &gt; 467.6 °F</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid,gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability or explosive limits</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water Decomposes in contact with water</td>
</tr>
<tr>
<td>Partition coefficient; n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>175 °C / 347 °F</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>242 °C</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
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</thead>
<tbody>
<tr>
<td>Borate(1-),(cyano-C)trihydro-, sodium, (T-4)-</td>
<td>25895-60-7</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>DOT</th>
<th>UN-No</th>
<th>Proper Shipping Name</th>
<th>Technical Name</th>
<th>Hazard Class</th>
<th>Subsidiary Hazard Class</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UN3134</td>
<td>Water-reactive solid, toxic, n.o.s.</td>
<td>Borate(1-), (cyano-C)trihydro-, sodium, (T-4)-</td>
<td>4.3</td>
<td>6.1</td>
<td>II</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TDG</th>
<th>UN-No</th>
<th>Proper Shipping Name</th>
<th>Technical Name</th>
<th>Hazard Class</th>
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<table>
<thead>
<tr>
<th>IATA</th>
<th>UN-No</th>
<th>Proper Shipping Name</th>
<th>Technical Name</th>
<th>Hazard Class</th>
<th>Subsidiary Hazard Class</th>
<th>Packing Group</th>
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<td>6.1</td>
<td>II</td>
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<thead>
<tr>
<th>IMDG/IMO</th>
<th>UN-No</th>
<th>Proper Shipping Name</th>
<th>Technical Name</th>
<th>Hazard Class</th>
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<td>6.1</td>
<td>II</td>
</tr>
</tbody>
</table>

15. Regulatory information

United States of America Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>TSCA</th>
<th>TSCA Inventory notification - Active-Inactive</th>
<th>TSCA - EPA Regulatory Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borate(1-), (cyano-C)trihydro-, sodium, (T-4)-</td>
<td>25895-60-7</td>
<td>X</td>
<td>ACTIVE</td>
<td>-</td>
</tr>
</tbody>
</table>

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed
Sodium cyanoborohydride

Revision Date 26-Mar-2024

TSCA - Per 40 CFR 751, Regulation of Certain Chemical Substances & Mixtures, Under TSCA Section 6(h) (PBT)
Not applicable

TSCA 12(b) - Notices of Export
Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>PICCS</th>
<th>ENCS</th>
<th>ISHL</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
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<td>25895-60-7</td>
<td>-</td>
<td>X</td>
<td>247-317-2</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>KE-05-1186</td>
</tr>
</tbody>
</table>

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

U.S. Federal Regulations

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories
Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act) Not applicable

Clean Air Act Not applicable

OSHA - Occupational Safety and Health Administration Not applicable

CERCLA
This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

California Proposition 65 This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations
Not applicable

U.S. Department of Transportation
Reportable Quantity (RQ): N
DOT Marine Pollutant: N
DOT Severe Marine Pollutant: N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations
Mexico - Grade No information available
**Sodium cyanoborohydride**

**Revision Date** 26-Mar-2024

### Authorisation/Restrictions according to EU REACH

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS No</th>
<th>OECD HPV</th>
<th>Persistent Organic Pollutant</th>
<th>Ozone Depletion Potential</th>
<th>Restriction of Hazardous Substances (RoHS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borate(1-), (cyano-C)trihydro-, sodium, (T-4)-</td>
<td>25895-60-7</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

**Contains component(s) that meet a ‘definition’ of per & poly fluoroalkyl substance (PFAS)?**

Not applicable

### Other International Regulations

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

### 16. Other information

**Prepared By**
Health, Safety and Environmental Department
Email: chem.techinfo@thermofisher.com
www.thermofisher.com

**Creation Date** 21-May-2014
**Revision Date** 26-Mar-2024
**Print Date** 26-Mar-2024
**Revision Summary** New emergency telephone response service provider.

**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**