

Safety Data Sheet

according to Regulation (EC) No 1907/2006 (REACH)

Classifications according to Regulation (EC) No 1272/2008.

Printdate 01 Sep 2022

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product name:

Sodium borodeuteride

1.1. Catalog No.:

1149

1.2. Relevant identified uses of the substance or mixture

Identified: Laboratory chemical
uses: R&D

1.3. Uses advised against:

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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture Classification according to Regulation (EC) No 1272/2008 Substances, which in contact with water, emit flammable gases (Category 1), H260 Acute toxicity, Oral (Category 3), H301 Acute toxicity, Dermal (Category 3), H311 Skin corrosion (Category 1B), H314

2.2. Label elements

2.2.1. Pictogram



2.2.2.

2.2 Label elements Labelling according Regulation (EC) No 1272/2008

Signal word Danger

Hazard statement(s) H260 In contact with water releases flammable gases which may ignite spontaneously. H301 Toxic if swallowed. H311 Toxic in contact with skin. H314 Causes severe skin burns and eye damage.

Precautionary statement(s) P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire. P231 + P232 Handle under inert gas. Protect from moisture. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor. P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. P422 Store contents under inert gas.

Supplemental Hazard Statements none 2.3 Other hazards This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances Synonyms : Deuterated sodium borohydride

Formula : D4BNa Molecular weight : 41,82 g/mol CAS-No. : 15681-89-7 EC-No. : 239-764-7

Component: Sodium [2H4]tetrahydroborate(1-)

Classification: Water-react. 1; Acute Tox. 3; Skin Corr. 1B; H260, H301, H311, H314

Concentration: <= 100 %

3.1.1. Formula

BD4Na

3.1.2. Molecular Weight (g/mol)

41.86

3.1.3. CAS-No.

15681-89-7

4. FIRST AID MEASURES

4.1 Description of first aid measures General advice Consult a physician. Show this safety data sheet to the doctor in attendance. If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. In case of skin contact Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician. In case of eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. If swallowed Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. 4.2 Most important symptoms and effects, both acute and delayed The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11 4.3 Indication of any immediate medical attention and special treatment needed No data available

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media Suitable extinguishing media Dry powder Dry sand Unsuitable extinguishing media Do NOT use water jet. 5.2 Special hazards arising from the substance or mixture Borane/boron oxides, Sodium oxides 5.3 Advice for firefighters Wear self-contained breathing apparatus for firefighting if necessary. 5.4 Further information No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8. 6.2 Environmental precautions Prevent further leakage or spillage if safe to do so. Do not let product enter drains. 6.3 Methods and materials for containment and cleaning up Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal. 6.4 Reference to other sections For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. For precautions see section 2.2. 7.2 Conditions for safe storage, including any incompatibilities Keep container tightly closed in a dry and well-ventilated place. Store in cool place. Never allow product to get in contact with water during storage. Moisture sensitive. 7.3 Specific end use(s) Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters Components with workplace control parameters 8.2 Exposure controls Appropriate engineering controls Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Personal protective equipment Eye/face protection Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Skin protection Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it. If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection Complete suit protecting against chemicals, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Respiratory protection Where risk assessment shows air-purifying respirators are appropriate use a fullface particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Control of environmental exposure Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties a) Appearance Form: powder Colour: white b) Odour No data available c) Odour Threshold No data available d) pH No data available e) Melting point/freezing point Melting point/range: > 300 °C f) Initial boiling point and boiling range No data available g) Flash point Not applicable h) Evaporation rate No data available i) Flammability (solid, gas) No data available j) Upper/lower flammability or explosive limits No data available k) Vapour pressure No data available l) Vapour density No data available m) Relative density 1,187 g/mL n) Water solubility No data available o) Partition coefficient: n-octanol/water No data available p) Auto-ignition temperature No data available
q) Decomposition temperature
No data available
r) Viscosity No data available s) Explosive properties No data available t) Oxidizing properties No data available 9.2 Other safety information No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity No data available 10.2 Chemical stability Stable under recommended storage conditions. 10.3 Possibility of hazardous reactions Reacts violently with water. 10.4 Conditions to avoid Exposure to moisture 10.5 Incompatible materials Strong oxidizing agents, acids, Alcohols, Violent chemical reaction; water reactive 10.6 Hazardous decomposition products Hazardous decomposition products formed under fire conditions. - Borane/boron oxides, Sodium oxides Other decomposition products - No data available In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects Acute toxicity No data available Skin corrosion/irritation No data available Serious eye damage/eye irritation No data available Respiratory or skin sensitisation No data available Germ cell mutagenicity No data available Carcinogenicity IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. Reproductive toxicity No data available Specific target organ toxicity - single exposure No data available Specific target organ toxicity - repeated exposure No data available Aspiration hazard No data available Additional Information RTECS: Not available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity No data available 12.2 Persistence and degradability No data available 12.3 Bioaccumulative potential No data available 12.4 Mobility in soil No data available 12.5 Results of PBT and vPvB assessment This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. 12.6 Other adverse effects No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods Product Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. Contaminated packaging Dispose of as unused product.

14. TRANSPORT INFORMATION

14.1 UN number ADR/RID: 1426 IMDG: 1426 IATA: 1426 14.2 UN proper shipping name ADR/RID: SODIUM BOROHYDRIDE IMDG: SODIUM BOROHYDRIDE IATA: Sodium borohydride Passenger Aircraft: Not permitted for transport 14.3 Transport hazard class(es) ADR/RID: 4.3 IMDG: 4.3 IATA: 4.3 14.4 Packaging group ADR/RID: I IMDG: I IATA: I 14.5 Environmental hazards ADR/RID: no IMDG Marine pollutant: no IATA: no 14.6 Special precautions for user No data available

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006. REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) :

15.2 Chemical safety assessment For this product a chemical safety assessment was not carried out

16. OTHER INFORMATION

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. For lab use only!