

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Sodium tetraborate decahydrate

Product Number : S9640

Brand : Sigma-Aldrich

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832

Fax : +1 800-325-5052

Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Teratogen, Reproductive hazard

GHS Classification

Acute toxicity, Oral (Category 5)
Reproductive toxicity (Category 1B)

GHS Label elements, including precautionary statements

Pictogram



Signal word : Danger

Hazard statement(s)

H303 : May be harmful if swallowed.
H360 : May damage fertility or the unborn child.

Precautionary statement(s)

P201 : Obtain special instructions before use.
P308 + P313 : IF exposed or concerned: Get medical advice/ attention.

HMIS Classification

Health hazard: 1
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

NFPA Rating

Health hazard: 0
Fire: 0
Reactivity Hazard: 0

Potential Health Effects

Inhalation : May be harmful if inhaled. May cause respiratory tract irritation.

Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.
Ingestion May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Boraxdecahydrate
Sodium boratedecahydrate

Formula : $B_4Na_2O_7 \cdot 10H_2O$

Molecular Weight : 381.37 g/mol

| Component | Concentration |
|---|-----------------------|
| Disodium tetraborate decahydrate | |
| CAS-No. | 1303-96-4 |
| EC-No. | 215-540-4 |
| Index-No. | 005-011-01-1 |
| Registration number | 01-2119490790-32-XXXX |

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability

Not flammable or combustible.

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

Hazardous decomposition products formed under fire conditions. - Borane/boron oxides, Sodium oxides

Further information

The product itself does not burn.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

| Components | CAS-No. | Value | Control parameters | Basis |
|----------------------------------|--|-------|----------------------|---|
| Disodium tetraborate decahydrate | 1303-96-4 | TWA | 2 mg/m ³ | USA. ACGIH Threshold Limit Values (TLV) |
| Remarks | Not classifiable as a human carcinogen | | | |
| | | STEL | 6 mg/m ³ | USA. ACGIH Threshold Limit Values (TLV) |
| | Not classifiable as a human carcinogen | | | |
| | | TWA | 1 mg/m ³ | USA. NIOSH Recommended Exposure Limits |
| | | TWA | 10 mg/m ³ | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000 |
| | | TWA | 2 mg/m ³ | USA. ACGIH Threshold Limit Values (TLV) |
| | Upper Respiratory Tract irritation Not classifiable as a human carcinogen varies | | | |
| | | STEL | 6 mg/m ³ | USA. ACGIH Threshold Limit Values (TLV) |
| | Upper Respiratory Tract irritation Not classifiable as a human carcinogen varies | | | |

Personal protective equipment**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face 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).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's 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.

Immersion protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 480 min

Material tested: Dermatril® (Aldrich Z677272, Size M)

Splash protection

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: > 30 min

Material tested: Dermatril® (Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 873000, e-mail sales@kcl.de, test method: EN374

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 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.

Eye protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

| | |
|--------|-------------|
| Form | crystalline |
| Colour | white |

Safety data

| | |
|--|--|
| pH | 9.2 at 10 g/l |
| Melting point/freezing point | 62 °C (144 °F) |
| Boiling point | no data available |
| Flash point | no data available |
| Ignition temperature | no data available |
| Autoignition temperature | no data available |
| Lower explosion limit | no data available |
| Upper explosion limit | no data available |
| Vapour pressure | no data available |
| Density | 1.73 g/cm ³ at 25 °C (77 °F) |
| Water solubility | 38.1 g/l at 20 °C (68 °F) - completely soluble |
| Partition coefficient: n-octanol/water | no data available |
| Relative vapour density | no data available |
| Odour | no data available |
| Odour Threshold | no data available |
| Evaporation rate | no data available |

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available

Materials to avoid

Strong oxidizing agents, Strong reducing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Borane/boron oxides, Sodium oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION**Acute toxicity****Oral LD50**

LD50 Oral - rat - 4,500 - 5,000 mg/kg

Inhalation LC50

no data available

Dermal LD50

LD50 Dermal - rabbit - 10,000 mg/kg

Other information on acute toxicity

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

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.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Presumed human reproductive toxicant

Teratogenicity

fetotoxicity

Presumed human reproductive toxicant

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects

| | |
|-------------------|---|
| Inhalation | May be harmful if inhaled. May cause respiratory tract irritation. |
| Ingestion | May be harmful if swallowed. |
| Skin | May be harmful if absorbed through skin. May cause skin irritation. |
| Eyes | May cause eye irritation. |

Signs and Symptoms of Exposure

Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes. Studies with the chemically related boric acid in the rat, mouse and rabbit, at high doses, demonstrate developmental effects on the fetus, including fetal weight loss and minor skeletal variations. The doses administered were many times in excess of those to which humans would normally be exposed. Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid dust and sodium borate dust. A recent epidemiological study under the conditions of normal occupational exposure to borate dusts indicated no effect on fertility.

Synergistic effects

no data available

Additional Information

RTECS: VZ2275000

12. ECOLOGICAL INFORMATION

Toxicity

| | |
|---|--|
| Toxicity to fish | LC50 - Carassius auratus (goldfish) - 178 mg/l - 72 h |
| Toxicity to daphnia and other aquatic invertebrates | EC50 - Daphnia magna (Water flea) - 1,085 - 1,402 mg/l - 48 h |
| Toxicity to algae | IC50 - Desmodesmus subspicatus (green algae) - 158 mg/l - 96 h |

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards

Teratogen, Reproductive hazard

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Chronic Health Hazard

Massachusetts Right To Know Components

| | CAS-No. | Revision Date |
|----------------------------------|-----------|---------------|
| Disodium tetraborate decahydrate | 1303-96-4 | 1993-04-24 |

Pennsylvania Right To Know Components

| | CAS-No. | Revision Date |
|----------------------------------|-----------|---------------|
| Disodium tetraborate decahydrate | 1303-96-4 | 1993-04-24 |

New Jersey Right To Know Components

| | CAS-No. | Revision Date |
|----------------------------------|-----------|---------------|
| Disodium tetraborate decahydrate | 1303-96-4 | 1993-04-24 |

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION**Further information**

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