SAFETY DATA SHEET
according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 06/02/2016 Version 2.0

SECTION 1. Identification

Product identifier

Product number       SX0355
Product name         Sodium Borate Decahydrate Crystals GR ACS
CAS-No.              1303-96-4

Relevant identified uses of the substance or mixture and uses advised against

Identified uses       Reagent for analysis

Details of the supplier of the safety data sheet

Company
EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

Emergency telephone
800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification
Eye irritation, Category 2A, H319
Reproductive toxicity, Category 1B, H360

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms

Signal Word
Danger

Hazard Statements
H360 May damage fertility or the unborn child.
H319 Causes serious eye irritation.

Precautionary Statements
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Formula</th>
<th>Na₂B₄O₇·10H₂O</th>
<th>B₄Na₂O₇·10H₂O (Hill)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molar mass</td>
<td>381.32 g/mol</td>
<td></td>
</tr>
</tbody>
</table>

Hazardous ingredients

Chemical Name (Concentration)
CAS-No.
disodium tetraborate decahydrate (>= 90 % - <= 100 %)
1303-96-4

 Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation
After inhalation: fresh air. Call in physician.

Skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Consult a physician.

Eye contact
After eye contact: rinse out with plenty of water. Call in ophthalmologist.

Ingestion
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects
The following applies to boron compounds in general: resorption is followed by nausea and vomiting, agitation, spasms, CNS disorders, cardiovascular disorders.

Indication of any immediate medical attention and special treatment needed
No information available.
**SECTION 5. Fire-fighting measures**

**Extinguishing media**

*Suitable extinguishing media*

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

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

**Special hazards arising from the substance or mixture**

Not combustible.

Ambient fire may liberate hazardous vapors.

**Advice for firefighters**

*Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Prevent fire extinguishing water from contaminating surface water or the ground water system.

---

**SECTION 6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

**Environmental precautions**

Do not empty into drains.

**Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

---

**SECTION 7. Handling and storage**

**Precautions for safe handling**

Work under hood. Do not inhale substance/mixture.

Observe label precautions.

**Conditions for safe storage, including any incompatibilities**

Tightly closed. Dry. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store at room temperature.
SECTION 8. Exposure controls/personal protection

**Exposure limit(s)**

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Basis</th>
<th>Value</th>
<th>Threshold limits</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>disodium tetraborate decahydrate 1303-96-4</strong></td>
<td>ACGIH</td>
<td>Time Weighted Average (TWA):</td>
<td>2 mg/m³</td>
<td>Form of exposure: Inhalable fraction.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Short Term Exposure Limit (STEL):</td>
<td>6 mg/m³</td>
<td>Form of exposure: Inhalable fraction.</td>
</tr>
<tr>
<td></td>
<td>NIOSH/GUIDE</td>
<td>Recommended exposure limit (REL):</td>
<td>5 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Z1A</td>
<td>Time Weighted Average (TWA):</td>
<td>10 mg/m³</td>
<td></td>
</tr>
</tbody>
</table>

**Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**Individual protection measures**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

**Hygiene measures**

Immediately change contaminated clothing. Apply skin-protective barrier cream. Wash hands and face after working with substance.

**Eye/face protection**

Safety glasses

**Hand protection**

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Other protective equipment:**

- protective clothing

**Respiratory protection**

required when dusts are generated.

SECTION 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Physical state</th>
<th>crystals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>white</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Property</td>
<td>Value</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>pH</td>
<td>9.2</td>
</tr>
<tr>
<td></td>
<td>at 47 g/l</td>
</tr>
<tr>
<td></td>
<td>20 °C (20 °C)</td>
</tr>
<tr>
<td>Melting point</td>
<td>75 °C</td>
</tr>
<tr>
<td></td>
<td>Elimination of water of crystallization</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No information available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>The product is not flammable.</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>0.213 hPa</td>
</tr>
<tr>
<td></td>
<td>at 20 °C (20 °C)</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>No information available.</td>
</tr>
<tr>
<td>Density</td>
<td>1.72 g/cm³</td>
</tr>
<tr>
<td></td>
<td>at 20 °C (20 °C)</td>
</tr>
<tr>
<td>Relative density</td>
<td>No information available.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>49.74 g/l</td>
</tr>
<tr>
<td></td>
<td>at 20 °C (20 °C)</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available.</td>
</tr>
<tr>
<td>Viscosity, dynamic</td>
<td>No information available.</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not classified as explosive.</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>none</td>
</tr>
<tr>
<td>Ignition temperature</td>
<td>not combustible</td>
</tr>
<tr>
<td>Bulk density</td>
<td>ca.750 kg/m³</td>
</tr>
</tbody>
</table>
SECTION 10. Stability and reactivity

Reactivity

See below

Chemical stability

releases water of crystallization when heated.

Possibility of hazardous reactions

Violent reactions possible with:

strong oxidizing agents, Acids, metallic salts

Conditions to avoid

Strong heating.

Incompatible materials

no information available

Hazardous decomposition products

no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Eye contact, Skin contact, Ingestion

Target Organs

Eyes

Skin

Respiratory system

Acute oral toxicity

LD50 Rat: > 2,500 mg/kg

OECD Test Guideline 401The value is given in analogy to the following substances: di-Sodium tetraborate

Acute inhalation toxicity

Symptoms: Irritation symptoms in the respiratory tract.

LC50 Rat: > 2.04 mg/l; 4 h ; dust/mist

OECD Test Guideline 403

The value is given in analogy to the following substances: disodium tetraborate pentahydrate

Acute dermal toxicity

LD50 Rabbit: > 2,000 mg/kg

(ECHA) The value is given in analogy to the following substances:
Skin irritation
Rabbit
Result: No irritation
(ECHA) The value is given in analogy to the following substances: disodium tetraborate pentahydrate

Eye irritation
Rabbit
Result: Causes serious eye irritation.
OECD Test Guideline 405 disodium tetraborate pentahydrate
Causes serious eye irritation.

Sensitization
Buehler Test Guinea pig
Result: negative
Method: OECD Test Guideline 406
The value is given in analogy to the following substances: disodium tetraborate pentahydrate

CMR effects
Teratogenicity:
May damage the unborn child.
Reproductive toxicity:
May damage fertility.

Specific target organ systemic toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity
IARC
No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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

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

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

Further information
Absorption via:
- Gastrointestinal tract, Mucous membranes
The following applies to boron compounds in general: resorption is followed by nausea and vomiting, agitation, spasms, CNS disorders, cardiovascular disorders.
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish
LC50 Carassius auratus (goldfish): 630 mg/l; 72 h (IUCLID)

Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): 1,085 - 1,402 mg/l; 48 h (IUCLID)

Toxicity to algae
IC50 Desmodesmus subspicatus (green algae): 158 mg/l; 96 h (anhydrous substance) (IUCLID)

Toxicity to bacteria
EC0 Pseudomonas putida: 15.8 mg/l; 16 h (anhydrous substance) (IUCLID)

Persistence and degradability

Biodegradability
The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential

Partition coefficient: n-octanol/water
Not applicable

Mobility in soil
No information available.

Additional ecological information
Herbicide
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations
The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)
Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)
Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)
SECTION 15. Regulatory information

United States of America

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

Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

DEA List I
Not listed

DEA List II
Not listed

US State Regulations

Massachusetts Right To Know
Ingredients
disodium tetraborate decahydrate

Pennsylvania Right To Know
Ingredients
disodium tetraborate decahydrate

New Jersey Right To Know
Ingredients
disodium tetraborate decahydrate

California Prop 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status
TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL
SECTION 16. Other information

Training advice
Provide adequate information, instruction and training for operators.

Labeling
Hazard pictograms

Signal Word
Danger

Hazard Statements
H319 Causes serious eye irritation.
H360 May damage fertility or the unborn child.

Precautionary Statements
Prevention
P201 Obtain special instructions before use.
Response
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/attention.

Restricted to professional users.

Full text of H-Statements referred to under sections 2 and 3.
H319 Causes serious eye irritation.
H360 May damage fertility or the unborn child.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 06/02/2016

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

All rights reserved. Millipore and the "M"Mark are registered trademarks of Merck KGaA, Darmstadt, Germany.