

## Material Safety Data Sheet

### Sodium tetraborate decahydrate

#### Section 1 – PRODUCT AND COMPANY IDENTIFICATION

<b>1. Product Identifier</b>	Sodium tetraborate decahydrate; Sodium borate decahydrate
<b>2. Recommended Use &amp; Uses advised against</b>	Uses for Laboratory and R&D only
<b>3. Information of Supplier</b>	SAMCHUN PURE CHEMICAL CO.,LTD ADDRESS; (Mogok-dong) 117, Sandan-ro 16Beon-gil, Pyeongtaek-si, Gyeonggi-do, Korea Emergency Phone; 82-31-668-0700/3 Department; Safety & Environment dep. Web site; <a href="http://www.samchun.com">http://www.samchun.com</a>

#### Section 2 – HAZARDS and DANGER IDENTIFICATION

<b>1.GHS Classification· Identification</b>	Reproductive toxic	Category2
<b>2. Label and Mark including Precautionary Statement</b>		

◦Label elements



◦Signal word

Warning

◦Hazard · Danger statement H361 Suspected of damaging fertility or the unborn child

◦Precautionary statement

<b>Precaution</b>	P201 Obtain special instructions before use P202 Do not handle until all safety precautions have been read and understood. P280 Wear protective gloves/protective clothing/eye protection/face protection
<b>Measures</b>	P308+P313 IF exposed: Call a POISON CENTER or doctor/physician
<b>Storage</b>	P405 Store locked up
<b>Dispose</b>	P501 Dispose of contents/container under related law and regulations

**3. Other Hazard-Risk which are not included in the classification criteria**

NFPA index(0~4steps) : Health=1, Fire=0, Reaction=0

#### Section 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Name	Other Name	CAS No.	Content (%)
Sodium tetraborate decahydrate	Sodium borate decahydrate	1303-96-4	100

#### Section 4 – FIRST AID MEASURES

<b>1. Eye Contact</b>	Rinse with plenty of water for at least 15minutes and get medical attention immediately.
<b>2. Skin Contact</b>	Take off contaminated cloths and shoes immediately, wash with plenty of water and soap for at least 15minutes.
<b>3. Inhalation</b>	Move victim to fresh air. If breathing is difficult, give artificial respiration and get medical attention immediately.
<b>4. Ingestion</b>	Do not induce vomiting. Get medical advice/attention immediately.
<b>5. Immediate medical attention and Notes for physician</b>	Keep the medical personnel aware of the materials involved and take protective action.

## Section 5 – FIRE-FIGHT MEASURES

- 1. Suitable extinguish media** Powder, carbon dioxide, water, foam Extinguishing media  
Inappropriate extinguishing media: N/A
- 2. Special hazards arising from the substance** Thermal decomposition products : boron oxide, sodium oxide
- 3. Special protective equipment and Precautions for fire-fighters** Move containers from fire area if you can do it without risk. When extinguishing a fire, be sure to wear personal protective equipment. If it is not possible to extinguish the fire, withdraw immediately. Keep containers cool by spraying with water for a long time, even after the fire is out. Isolate hazardous areas and deny access to people.

## Section 6 – ACCIDENTAL RELEASE MEASURES

- 1. Personal precautions and Emergency procedures** Do not touch spilled material. Avoid inhalation and skin contact. In case of confined space, wear air respirator and ventilate and remove all sources of ignition.
- 2. Environmental precautions** Minimize leak/spill, collect and keep leak/spill in container
- 3. Methods and material for containment and cleaning up** Remove residue with high-efficient cleaner

## Section 7 – HANDLING AND STORAGE

- 1. Precautions for safe Handling** Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. All containers should be grounded. Use a method that minimizes dust generation.
- 2. Conditions for safe storage** Keep container tightly closed in a dry, cool and well-ventilated place. Keep away from incompatible materials.

## Section 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

### 1. Occupational exposure limit, biological exposure limit

#### National law of Safety management of

Occupational Health and Safety Act

TWA - 1 mg/m<sup>3</sup> Sodium borosilicate (anhydrous)

TWA - 1 mg/m<sup>3</sup> Sodium borosilicate (pentahydrate)

TWA - 5 mg/m<sup>3</sup> Sodium boronate (decahydrate)

- 2. Appropriate Engineering controls** Ensure compliance with applicable exposure limits and operate local exhaust ventilation when working.

### 3. Personal protective equipment

- Respiratory protection** Because it is concerned about the harmfulness of human body due to chemical substances, it is recommended to wear respiratory protective equipment with dust mask or dust filter in consideration of physical and chemical characteristics when handling.

Respiratory protection should be certified by the Health and Safety Authority.

It is concerned about the harmfulness of the human body depending on the working environment, it should wear respirator, air-purifying respirator

- Eye-protection** Wear safety glasses when handling as they may cause human health hazards due to chemicals. Install eye wash facilities and emergency eyewash stations near chemical handling sites

- Hand protection** Wear safety gloves when handling, as it is likely to harm human health due to chemicals

- Skin and body protection** Wear chemical protective clothing when handling, as it is likely to harm human health due to chemicals

## Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

**1. Physical state and color** Solid(White)

**2. Odor**

Odorless

<b>3.threshold</b>	N/A	<b>4. pH</b>	9(5% aq.sol. 20°C)
<b>5.Melting/Freezing point</b>	75°C	<b>6.Boiling point/range</b>	320°C
<b>7. Flashing point</b>	N/A	<b>8. Evaporation speed</b>	N/A
<b>9. Flammability(solid,gas)</b>	N/A	<b>10. Flash or Explosion limit upper / lower</b>	N/A
<b>11. Vapor pressure</b>	N/A	<b>12. Solubility</b>	60g/l(20°C)
<b>13. Vapor density</b>	N/A	<b>14.Gravity</b>	1.73
<b>15. n-octanol-water Partition coefficient</b>	N/A	<b>16. Self ignition temp(°C)</b>	N/A
<b>17. Cracking temp(°C)</b>	N/A	<b>18. Viscosity</b>	N/A
<b>19. Molecular Weight</b>	381.36		

#### Section 10 – STABILITY AND REACTIVITY

<b>1.Chemical stability and Possibility of Hazardous Reactions</b>	Stable under normal temp. and pressure
<b>2. Conditions to Avoid</b>	Contact with air
<b>3. Incompatible Materials</b>	Strong oxidizing agent, metal, strong acid
<b>4. Hazardous Decomposition Products</b>	Thermal decomposition products: boron oxide, sodium oxide

#### Section 11 – TOXICOLOGICAL INFORMATION

##### 1. Information on the likely routes of exposure.

Skin disorder, fever, nausea, vomiting, diarrhea, stomach pain, dyspnea, irregular heartbeat, headache, drowsiness, dizziness, disorientation, tremors, loss of coordination, ear damage, lung congestion, internal bleeding, blood disorders, heart failure, kidney disorders, convulsions, coma irritation

##### 2. Health hazard information

◦Acute toxic	Oral : LD50 2000mg/kg Mouse Skin : LD50 > 2000mg/kg Rabbit Inhalation : N/A
◦Serious skin corrosive / irritation	May cause skin irritation
◦Serious eye damage / irritation	Causes mild eye irritation
◦Respiratory sensitization	N/A
◦Skin sensitization	N/A
◦Carcinogenicity	N/A
◦Germ cell Mutagenicity	N/A
◦Reproductive toxic	Suspected of damaging the fetus or fertility
◦Specific target organ toxicity (single exposure )	N/A
◦Specific target organ toxicity (repeated exposure )	N/A
◦Aspiration hazard	N/A

#### Section 12 – ECOLOGICAL INFORMATION

<b>1.Acquatic and Terrestrial eco toxicity</b>	Fish toxicity : N/A Invertebrate toxicity : N/A Sea algae : N/A
<b>2.Persistence and degradability</b>	Persistence : N/A Degradability : N/A
<b>3.Bioaccumulative potential</b>	Concentrations : N/A Bioaccumulative : N/A

4.Mobility in soil	N/A
5.Other adverse effects	N/A

### Section 13 – Disposable considerations

1.Waste methods	Dispose in accordance with local regulations.
2.Waste warning	Dispose prohibited substances and waste separately from others.

### Section 14 – TRANSPORT INFORMATION

1. UN No.	Non-described
2.Proper shipping Name	Non-described
3.Hazard class	Non-described
4.Packing group	Non-described
5.Marine pollutant	N/A
6.Particular safety Measures for transportation	Non-described

### Section 15 – REGULATORY INFORMATION

1.Occupation safety and health acts	Standard material of exposure
2. Chemical Substances Control Act	Non-described
3. National law of Safety management of hazardous material	Non-described
4.National law of management of Wastes	Designated Waste
5.Other domestic and foreign law	EU classification information (confirmed classification result): Repr. 1B EU classification information (hazard phrases): H360FD EU classification information (Safety phrases): S53, S45

### Section 16 – OTHER INFORMATION

1. Material source	A chemical information MSDS Safety and Health Agency National Institute of Environmental Research Chemical Information Systems Korea Industrial Technology National Fire Hazardous Materials Information System
1. The 1 <sup>st</sup> edition	2002.07.30
2. Revision and The final revision	6 / 2019.01.03
. Other references	

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