Safety Data Sheet

REACH regulation (EC) No 1907/2006 – No 2015/830

SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1. Product identifier

Suspension Boron Nitride

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

Anti-seize agent. lubricant. For use in industrial installations only.

<table>
<thead>
<tr>
<th>Recommended use</th>
<th>Main user group</th>
<th>Article categories [AC]</th>
<th>Environmental release categories [ERC]</th>
<th>Process categories [PROC]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear and Corrosion Resistant Components, Anti-seize agent, For use in industrial installations only</td>
<td>worker</td>
<td>AC2 - Machinery, mechanical appliances, electrical/electronic articles AC4 - Stone, plaster, cement, glass and ceramic articles</td>
<td>ERC2 - Formulation of preparations (mixtures)</td>
<td>PROC1 - Use in closed process, no likelihood of exposure PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelletization PROC5 - Mixing or blending in batch processes for formulation of mixtures and articles (multistage and/or significant contact)</td>
</tr>
<tr>
<td>Industrial use, Professional use, For use in industrial installations only</td>
<td>worker</td>
<td>AC2 - Machinery, mechanical appliances, electrical/electronic articles</td>
<td>ERC2 - Formulation of preparations (mixtures) ERC8a - Wide dispersive indoor use of processing aids in open systems</td>
<td>PROC10 - Roller application or brushing PROC7 - Industrial spraying</td>
</tr>
<tr>
<td>Service life, For use in industrial installations only</td>
<td>worker</td>
<td>AC2 - Machinery, mechanical appliances, electrical/electronic articles</td>
<td>ERC10a - Wide dispersive outdoor use of long-life articles and materials with low release ERC11a - Wide dispersive indoor use of long-life articles and materials with low release</td>
<td>PROC24 - High (mechanical) energy work-up of substances bound in materials and/or articles PROC7 - Industrial spraying</td>
</tr>
</tbody>
</table>

1.3. Details of the supplier of the safety data sheet

FINAL ADVANCED MATERIALS
4 Avenue de Strasbourg
68350 Didenheim – France
Tél : +33 (0)3 67 78 78 78 www.final-materials.com info@final-materials.com

1.4. Emergency telephone number

INRS France : +33 (0)1 45 42 59 59
Belgium : +32 070/245 245
Switzerland : 145
SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of substance or mixture


2.2. Label elements

Not applicable.

2.3. Other hazards

Boron compounds react on elevated temperature, smaller particle size and when adding mechanical energy (e.g., milling) under an oxygen atmosphere to boron oxide and/or to boron acid. Both are classified as reproductive toxicants.

Chemical Name | EU - REACH (1907/2006) - Article 59(1) – Candidate List of Substances for Eventual Inclusion in Annex XIV
--- | ---
Borontrioxide | Toxic for reproduction, Article 57c

SVHC Statement This product contains a SVHC, Diborontrioxide, B2O3 with more than 0.1 %.

2.4. More information

**Potential Health Effects**

**Inhalation** May cause irritation of respiratory tract. May be harmful if inhaled.

**Eye contact** Severely irritating to eyes.

**Ingestion** May be harmful if swallowed irritation Severe eye irritation.

**Chronic Effects** Avoid repeated exposure. Contains a known or suspected reproductive toxin. oral. Exposure.

**Aggravated Medical Conditions** Preexisting eye disorders, Skin disorders, Respiratory disorders

SECTION 3: COMPOSITION/INFORMATION OF INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Formula</th>
<th>EINECS/E LINCS</th>
<th>CAS-No.</th>
<th>Weight-%</th>
<th>GHS Classification</th>
<th>REACH Reg. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>H2O</td>
<td>231-791-2</td>
<td>7732-18-5</td>
<td>&gt; 50</td>
<td>Not classified</td>
<td>no data available</td>
</tr>
<tr>
<td>Boron nitride</td>
<td>BN</td>
<td>233-136-6</td>
<td>10043-11-5</td>
<td>10 - 25</td>
<td>Not classified</td>
<td>01-2119947399-20-0014</td>
</tr>
<tr>
<td>Bentonite</td>
<td></td>
<td></td>
<td>1302-78-9</td>
<td>5 - 10</td>
<td>Not classified</td>
<td>no data available</td>
</tr>
<tr>
<td>Borontrioxide</td>
<td>B2O3</td>
<td>215-125-8</td>
<td>1303-86-2</td>
<td>0.1 - 1</td>
<td>Repr. 1B (H360FD)</td>
<td>no data available</td>
</tr>
</tbody>
</table>

**Full text of H-Statements referred to under sections 2 and 3:** H360FD - May damage fertility. May damage the unborn child.

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

**General:** In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**In the event of inhalation:** Move to fresh air. If symptoms persist, call a physician. Immediate medical attention is not required. Move to fresh air in case of accidental inhalation of vapors.

**In the event of contact with skin:** Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician. Immediate medical attention is not required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
In the event of contact with eyes: Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. If symptoms persist, call a physician. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Keep eye wide open while rinsing.

In the event of ingestion: Immediate medical attention is not required. Rinse mouth. Drink plenty of water. Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.


4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation: Repeated inhalation of product dust, over a long period of time, like any general dust, may increase the risk of irritation to throat and respiratory system.

Symptoms/effects after skin contact: Rubbing may cause abrasion of skin. May cause skin irritation.

Symptoms/effects after eye contact: Rubbing may cause abrasion of cornea. Dust may cause slight irritation to the ocular mucous membranes due to mechanical action.

Symptoms/effects after ingestion: Burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Symptoms/effects after cutting: Bleeding and local irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

5.1. Specific hazards

Fire hazards: The product is not flammable
Auto Ignition Temperature: Not-flammable
Flash Point: N/A.

5.2. Extinguishing media

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

Unsuitable extinguishing media: No information available.

5.3. Protection of fire-fighters

Protection during firefighting: Use personal protective equipment as required.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment, and emergency procedures

Ensure adequate ventilation. Avoid contact with skin and eyes. Use personal protective equipment as required.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Prevent further leakage or spillage if safe to do so.

6.4. Reference to other sections

Concerning disposal elimination after leaning, see section 13.
### SECTION 7: HANDLING AND STORAGE

#### 7.1. Precautions for safe handling

**Personal protection:** Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Use only with adequate ventilation. Wear suitable protective clothing.

#### 7.2. Conditions for safe storage, including any incompatibilities

**Storage Conditions:** Keep container tightly closed. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

#### 7.3. Specific end use(s)

### SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1. Control parameters

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Austria</th>
<th>Belgium</th>
<th>Czech Republic</th>
<th>Denmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bentonite</td>
<td>-</td>
<td>-</td>
<td>6.0 mg/m³ TWA</td>
<td>-</td>
</tr>
<tr>
<td>Borontrioxide</td>
<td>75 mg/m³ STEL [KZW] (inhalable fraction, 2 X 30 min)</td>
<td>10 mg/m³ TWA</td>
<td>10 mg/m³ TWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>15 mg/m³ STEL [TMW] (inhalable fraction)</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>France</th>
<th>Germany OEL (TWA)</th>
<th>Hungary</th>
<th>Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borontrioxide</td>
<td>10 mg/m³ TWA [VME]</td>
<td>-</td>
<td>-</td>
<td>10 mg/m³ TWA</td>
</tr>
<tr>
<td>Bentonite</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Borontrioxide</td>
<td>10 mg/m³ TWA</td>
<td>-</td>
<td>-</td>
<td>10 mg/m³ TWA (respirable dust)</td>
</tr>
<tr>
<td></td>
<td>20 mg/m³ STEL</td>
<td>-</td>
<td>-</td>
<td>10 mg/m³ TWA (nuisance dust)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Norway</th>
<th>Poland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borontrioxide</td>
<td>-</td>
<td>10 mg/m³ TWA (inhalable fraction)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Spain</th>
<th>Switzerland</th>
<th>Sweden</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borontrioxide</td>
<td>10 mg/m³ TWA [VLE-MP]</td>
<td>10 mg/m³ TWA [VLA-ED]</td>
<td>10 mg/m³ TWA [MAK] (inhalable dust)</td>
<td>20 mg/m³ TWA</td>
</tr>
<tr>
<td>Bentonite</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Borontrioxide</td>
<td>10 mg/m³ TWA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>1 mg/m³ TWA (respirable fraction)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>10 mg/m³ TWA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Russia</th>
<th>South Africa</th>
<th>Turkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boron tricarbide</td>
<td>TWA: 6 mg/m³</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bentonite</td>
<td>1 mg/m³ TWA (respirable fraction)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Borontrioxide</td>
<td>MAC: 5 mg/m³</td>
<td>10 mg/m³ TWA</td>
<td>20 mg/m³ STEL</td>
</tr>
<tr>
<td></td>
<td>-</td>
<td>20 mg/m³ TWA</td>
<td>Ceiling</td>
</tr>
</tbody>
</table>

#### 8.2. Exposure controls

**Personal Precautions** Use personal protective equipment as required. Avoid contact with eyes, skin and clothing. Wash hands before eating, drinking or smoking. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product.

**Engineering Controls** Ensure adequate ventilation, especially in confined areas.

**Eye protection** Wear safety glasses with side shields (or goggles).

**Skin protection** Long sleeved clothing. Wear impervious gloves and/or clothing if needed to prevent
contact with the material.

**Hand protection** Protective gloves.

**Respiratory Protection** If exposure limits are likely to be exceeded or if irritation or other symptoms are experienced, NIOSH/MSHA or EN 136 approved respiratory protection should be worn.

**Hygiene Measures** Do not eat, drink or smoke when using this product. Regular cleaning of equipment, work area and clothing is recommended. Keep away from food, drink and animal feeding stuffs.

**Biological standards**

**Environmental Exposure Controls** Do not allow to enter into soil/subsoil. In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Suspension liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>White/grey</td>
</tr>
<tr>
<td>Odour</td>
<td>None</td>
</tr>
<tr>
<td>Boiling temperature/range</td>
<td>&gt; 100 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

9.2. Other information

VOC content (%) Not applicable.

**Component information**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>18.01 g/mol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100 °C</td>
</tr>
<tr>
<td>Boron nitride</td>
<td>24.81 g/mol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Borontrioxide</td>
<td>61.83 g/mol</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water</td>
<td></td>
<td>Solub.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boronitride</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Borontrioxide</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Density VALUE</th>
<th>Melt. Temp.</th>
<th>flash point</th>
<th>Water Sol.</th>
<th>Bulk Dens.</th>
<th>Odor</th>
<th>State</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>0.99821 g/cm3</td>
<td>0.0 °C</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bentonite</td>
<td>2.5 - 2.6 g/cm3</td>
<td>&gt;1200 °C</td>
<td>-</td>
<td>insoluble</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Borontrioxide</td>
<td>1.84 g/cm3 at 20 °C</td>
<td>325 - 450 °C</td>
<td>soluble</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**SECTION 10: STABILITY AND REACTIVITY**

10.1. Stability

Stable under normal conditions.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Boron compounds react on elevated temperature, smaller particle size and when adding mechanical energy (e.g., milling) under an oxygen atmosphere to boron oxide and/or to boron acid. Both are classified as reproductive toxicants.
10.4. Conditions to be avoided
None known based on information supplied.

10.5. Materials to be avoid
No information available.

10.6. Hazardous decomposition
None under normal use conditions.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information

Acute Toxicity
Eye contact Severely irritating to eyes.
Skin Contact Avoid contact with skin and clothing.
Reproductive, developmental and teratogenic effects Contains a known or suspected reproductive toxin.

INGESTION May be harmful if swallowed
Irritation Severe eye irritation.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Oral LD50 (mg/kg) (Rat)</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>&gt; 90 mL/kg (Rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bentonite</td>
<td>&gt; 5000 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Borontrioxide</td>
<td>= 3150 mg/kg (Rat)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chronic Toxicity
Avoid repeated exposure. Contains a known or suspected reproductive toxin. oral. Exposure.

Target Organ Effects EYES, Respiratory system, skin

11.2. Other information

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity
Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants.

12.2. Persistence and degradability
Product/Substance is inorganic.

12.3. Bioaccumulation potential
No data available.

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB
The components in this formulation do not meet the criteria for classification as PBT or vPvB.

12.6. Other adverse effects
No information available.
SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Disposal considerations 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.

Waste from Residues/Unused Products Dispose of in accordance with local regulations.

13.2. Packaging treatment

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other information Waste codes should be assigned by the user based on the application for which the product was used.

SECTION 14: TRANSPORT INFORMATION

NOT REGULATED.

14.1. Packaging information

14.2. International transport classification

SECTION 15: REGULATORY INFORMATION

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

The preparation is classified as dangerous in accordance with Directive 1999/45/EC.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Germany - Water Classification (VwVwS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boron nitride</td>
<td>ID Number 8577, not considered hazardous to water</td>
</tr>
<tr>
<td>Borontrioxide</td>
<td>ID Number 2613, hazard class 1 - low hazard to waters</td>
</tr>
</tbody>
</table>

International Inventories

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>EINECS/E LINCS</th>
<th>AICS</th>
<th>NZIoC</th>
<th>TESI</th>
<th>RCSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>231-791-2</td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Boron nitride</td>
<td>233-136-6</td>
<td>Present</td>
<td>May be used as a single component chemical under an appropriate group standard</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bentonite</td>
<td>215-108-5</td>
<td>Present</td>
<td>May be used as a single component chemical under an appropriate group standard</td>
<td>Present; EC No. 215-108-5</td>
<td>-</td>
</tr>
<tr>
<td>Borontrioxide</td>
<td>215-125-8</td>
<td>Present</td>
<td>May be used as a single component chemical under an appropriate group standard</td>
<td>Present 215-125-8</td>
<td>Present</td>
</tr>
</tbody>
</table>

Legend

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals
TESI - Turkey Inventory of existing Chemicals
RCSI - Russia Substances that Passed State Registration Before July 2010
### Chemical Name

**Water**
November 30, 2010

**Boron nitride**
November 30, 2010
2011-09-01

**Bentonite**
November 30, 2010

**Borontrioxide**
November 30, 2010
2011-03-18

### EU REACH Pre-registered Substances

Water
Boron nitride
Bentonite
Borontrioxide

### EU REACH Registered Substances

November 30, 2010
2011-09-01

### EU RoHS Substances Restricted or Prohibited in Electrical Equipment

- 
- 
- 

### EU - REACH (1907/2006) - Article 59(1) - Candidate List of Substances for Eventual Inclusion in Annex XIV

- 
- 
Toxic for reproduction, Article 57c

### EU REACH Restrictions on Certain Dangerous Substances

Use restricted. See item 30.

### Russia Dangerous Substances

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boron nitride</td>
<td>Present</td>
</tr>
<tr>
<td>Borontrioxide</td>
<td>Present</td>
</tr>
</tbody>
</table>

#### 15.2. Classifications

- 

#### 15.3. Labelling

- 

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### SECTION 16: OTHER INFORMATION

#### Global Automotive Declarable Substance List Classifications

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Global Automotive Declarable Substance List Classifications</th>
<th>Global Automotive Declarable Substance List Thresholds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Borontrioxide</td>
<td>Declarable Substance (LR)</td>
<td>0.0 %</td>
</tr>
</tbody>
</table>

The information presented here in is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However safe as provided by law, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by the vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product (however, this shall not act to restrict the vendor’s potential liability for negligence or under statute).