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## 1 PRODUCT AND COMPANY IDENTIFICATION

- 1.1 **Product name** : Boron nitride nanotubes (Purity 90%)  
1.2 **Issue date** : 04-01-2016  
1.3 **Revision date** : 10-13-2020  
1.4 **Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Manufacture of substances

### 1.5 Details of the supplier of the safety data sheet

Manufacturer name : Naieel Technology  
Address : (34104) 6-2 Yuseong-daero 1205, 2<sup>nd</sup> floor, Yuseong-gu, Daejeon, Republic of Korea  
Emergency : +82-42-716-3012

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## 2 HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Acute toxicity, Oral (Category 4), H302

### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H302

Harmful if swallowed.

Precautionary statement(s)

P264

Wash skin thoroughly after handling.

P270

Do not eat, drink or smoke when using this product.

P301 + P312 + P330

IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

Rinse mouth.

P501

Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

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## 3 COMPOSITION/INFORMATION ON INGREDIENTS

### 3.2 Components

Boron nitride

CAS# 10043-11-5

Percent > 99%

Magnesium

CAS# 7439-95-4

Percent < 0.5%

Iron

CAS# 7439-89-6

Percent < 0.5%

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## 4 FIRST AID MEASURES

### 4.1 Description of first aid measures

#### In case of eye contact

Flush eyes with water as a precaution.

#### In case of skin contact

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

#### If inhaled

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

#### If swallowed

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

#### General advice

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

### 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

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## 5 FIREFIGHTING MEASURES

### 5.1 Flammable properties

The product is non-combustible.

### 5.2 Extinguishing media

#### Suitable extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.3 Special hazards arising from the substance or mixture

Nitrogen oxides (NO<sub>x</sub>), Borane/boron oxides

### 5.4 Firefighting equipment/instructions

Use standard firefighting procedures and consider the hazards of other involved materials.

### 5.5 Protection of firefighters

#### Protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

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## 6 ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Avoid breathing dust. See section 8 of the MSDS for personal protective equipment.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 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.

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## 7 HANDLING AND STORAGE

### 7.1 Handling

Use work methods which minimize dust production. Local exhaust is recommended. Avoid inhalation of dust and contact with skin and eyes. Wear appropriate personal protective equipment. Wash hands after handling. Observe good industrial hygiene practices.

### 7.2 Storage

Store in tightly closed original container in a well-ventilated place. Read and follow manufacturer's recommendations.

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## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Occupational exposure limits

No exposure limits noted for ingredient(s).

### 8.2 Appropriate engineering controls

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

#### Personal protective equipment

##### Respiratory protection

Use respirators and components tested and approved under appropriate government standards.

##### Eye/face 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 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.

##### Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Control of environmental exposure

Do not let product enter drains.

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## 9 PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance:	Form: solid (powder)
Color:	White
Odor:	No data available.
Odor Threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	Melting point/range: >2,973 °C (5,383 °F)
Initial boiling point and boiling range:	No data available.
Flash point:	No data available.
Evaporation rate:	No data available.
Flammability:	No data available.
Upper/lower flammability of	
Explosive limits:	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	2.29 g/cm <sup>3</sup>
Water solubility:	Insoluble
Partition coefficient n-octanol/water:	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.
Molecular weight:	24.82 g/mol

### 9.2 Other safety information

No data available

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## 10 CEMICALSTABILITY AND REACTIVITY

### 10.1 Chemical stability

Stable at normal conditions.

#### **10.2 Possibility of hazardous reactions**

Will not occur.

#### **10.3 Conditions to avoid**

Avoid dust formation.

#### **10.4 Incompatible materials**

Strong oxidizing agents.

#### **10.5 Hazardous decomposition products**

Other decomposition products - No data available

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### **11 TOXICOLOGICAL INFORMATION**

#### **11.1 Information on toxicological effects**

##### **Acute toxicity**

Inhalation: No data available

Dermal: 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**

No data available

##### **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

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### **12 ECOLOGICAL INFORMATION**

#### **12.1 Ecotoxicity**

The product is not classified as environmentally hazardous. However, as the BNNT component is a nanomaterial, use of Hazardous Materials Remediation companies are recommended for waste management, and this does not exclude the possibility that large of frequent spills can have a harmful of damaging effect on the environment.

#### **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 Other adverse effects**

No data available

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### **13 DISPOSAL CONSIDERATIONS**

#### **13.1 Waste treatment methods**

Avoid discharge into water courses or onto the ground. Dispose in accordance with all applicable regulations..

##### **Contaminated packaging**

Dispose in accordance with local regulations.

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## 14 TRANSPORT INFORMATION

### DOT (US)

Not dangerous goods

### IMDG

Not dangerous goods

### IATA

Not dangerous goods

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## 15 REGULATORY INFORMATION

### SARA 302 Components

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

### SARA 313 Components

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

Acute Health Hazard, Chronic Health Hazard

### Massachusetts Right To Know Components

Not regulated.

### Pennsylvania Right To Know Components

Not regulated.

### New Jersey Right To Know Components

Listed. Boron (CAS# 7440-42-8)

### State regulations

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

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## 16 OTHER INFORMATION

Acute Tox. Acute toxicity  
H302 Harmful if swallowed.

### HMIS Rating

Health hazard:	1
Flammability:	0
Physical Hazard	0

### NFPA Rating

Health hazard:	1
Fire Hazard:	0
Reactivity Hazard	0

### Disclaimer

The information in this MSDS was obtained from sources which we believe are reliable, but no warranty of representation as to its accuracy of completeness is hereby given. Users should consider the information herein only as a supplement to other information gathered by them. Naieel Technology is not responsible for the occurred damages with contact and handling.