

# Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 22.02.2016

Version number 1

Revision: 22.02.2016

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## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1. Product identifier

Trade name: **Boron Nitride Solid**

Article codes: Grade A

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

Application of the substance / the mixture: Industrial applications

Uses advised against: Not intended for food and drug use.

### 1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier:  
Saint-Gobain Advanced Ceramics LLC Boron Nitride  
168 Creekside Drive  
USA - Amherst, NY 14228-2027  
Tel.: +1-716-691-2000  
Fax: +1-716-691-2090  
E-mail: [BNsales@saint-gobain.com](mailto:BNsales@saint-gobain.com)

Only Representative:  
Saint-Gobain Coating Solutions  
50 Rue du Mourelet, BP 90966  
FR - Avignon 84093  
Tel.: +33 670765010  
Fax: +33 490867370

Further information obtainable from: [qualité-ehs.coating-solutions@saint-gobain.com](mailto:qualité-ehs.coating-solutions@saint-gobain.com)

### 1.4. Emergency telephone number CHEMTREC, Tel.: +1-800-424-9300

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## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008:



GHS08 health hazard

Repr. 1B H360FD May damage fertility. May damage the unborn child.

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## 2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008:

The product is classified and labelled according to the CLP regulation.

Hazard pictograms:



GHS08

Signal word: Danger

Hazard-determining components of labelling:  
diboron trioxide

Hazard statements:

H360FD May damage fertility. May damage the unborn child.

Precautionary statements:

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Additional information:

Restricted to professional users.

## 2.3. Other hazards

Physical hazards:

Dust may form flammable/explosive mixtures with air.

Results of PBT and vPvB assessment:

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

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## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

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Dangerous components:			
CAS: 1303-86-2 EINECS: 215-125-8	diboron trioxide	Repr. 1B, H360FD	3-8%
Nonhazardous components:			
CAS: 10043-11-5 EINECS: 233-136-6 Reg.no.:01-2119947399-20-0003	boron nitride		92-97%
SVHC			
1303-86-2	diboron trioxide		

Additional information: For the wording of the listed hazard phrases refer to section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

General information:

In all cases of doubt, or when symptoms persist, seek medical advice.

Personal protection for the First Aider.

After inhalation:

Supply fresh air.

In case of breathing difficulties administer oxygen.

In case of irregular breathing or respiratory arrest provide artificial respiration.

Call a doctor immediately.

After skin contact:

Take off all contaminated clothing.

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact:

Rinse opened eye for several minutes under running water.

Remove contact lenses, if present and easy to do. Continue rinsing.

Seek medical attention in case of problems or if problems persist.

After swallowing:

Rinse mouth.

Do not induce vomiting; call for medical help immediately.

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

Dust may cause mechanical eye and skin irritation.

Inhalation of dust may cause irritation of the respiratory system.

After swallowing:

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Nausea  
Vomiting  
Diarrhea  
Gastric or intestinal disorders

Hazards: May damage fertility. May damage the unborn child.

4.3. Indication of any immediate medical attention and special treatment needed  
First Aid, decontamination, treatment of symptoms.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.

For safety reasons unsuitable extinguishing agents: Water with full jet

### 5.2. Special hazards arising from the substance or mixture

The product itself is not combustible.

In certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:

Nitrogen oxides (NO<sub>x</sub>)

Boron oxides

### 5.3. Advice for firefighters

Protective equipment: Wear a self-contained breathing apparatus and chemical resistant suit.

Additional information:

Do not inhale explosion gases or combustion gases.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

Move undamaged containers from immediate hazard area if it can be done safely.

## SECTION 6: Accidental release measures

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

Avoid formation of dust.

Avoid any contact with eyes or skin.

Do not inhale dust / smoke / mist.

Wear personal protection equipment.

Keep unprotected persons away.

Keep people at a distance and stay on the windward side.

### 6.2. Environmental precautions

Dumping into the environment must be prevented.

Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

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### 6.3. Methods and material for containment and cleaning up

In case of inadequate ventilation wear respiratory protection.  
Remove mechanically, placing in appropriate containers for disposal.  
Use approved industrial vacuum cleaner for removal.  
Dispose of the material collected according to regulations.

### 6.4. Reference to other sections

See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Avoid contact with skin and eyes.  
Do not breathe dust/fume/gas/mist/vapours/spray.  
Wear personal protective equipment. See section 8.  
Wash hands before breaks and at the end of work.  
Ensure that washing facilities are available at the work place.  
Prevent formation of dust.  
Avoid dust deposits.  
Ensure adequate ventilation.

### Information about fire - and explosion protection:

Keep respiratory protective device available.  
Usual measures for fire prevention.

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

#### Storage:

Requirements to be met by storerooms and receptacles:  
Store only in the original container.  
Keep tightly closed in a cool, dry and well ventilated place.

#### Information about storage in one common storage facility:

Keep away from food, drink and animal feeding stuffs.  
See also Section 10.5.

#### Further information about storage conditions:

Store under lock and key and with access restricted to technical experts or their assistants only.  
Keep the packaging dry and well sealed to prevent contamination and adsorption of dampness.  
Ensure that local, federal and national legislation on storage conditions are observed.

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Storage class: 13 Incombustible solids

7.3. Specific end use(s) See section 1.

### SECTION 8: Exposure controls/personal protection

Additional information about design of technical facilities:

Technical measures and the application of adequate working methods take priority over the use of personal protection equipment.

#### 8.1. Control parameters

Ingredients with limit values that require monitoring at the workplace:

##### **1303-86-2 diboron trioxide**

WEL (Great Britain)	Short-term value: 20 mg/m <sup>3</sup> Long-term value: 10 mg/m <sup>3</sup>
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Regulatory information: WEL (Great Britain): EH40/2011

#### DNELs

##### **1303-86-2 diboron trioxide**

Oral	DNEL - long term - systemic	0.55 mg/kg (consumer)
Dermal	DNEL - long term - systemic	110.3 mg/kg (consumer)
		220.6 mg/kg (worker)
Inhalative	DNEL - long term - systemic	2.34 mg/m <sup>3</sup> (consumer)
		4.66 mg/m <sup>3</sup> (worker)

#### PNECs

##### **1303-86-2 diboron trioxide**

PNEC	2.9 mg/L (fresh water)
	13.7 mg/L (intermittent release)
	2.9 mg/L (marine water)
	5.7 mg/kg (soil)
	10 mg/L (sewage treatment plant)

Additional information: The lists valid during the making were used as basis.

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## 8.2. Exposure controls

Personal protective equipment:

General protective and hygienic measures:

Ensure adequate ventilation.

Be sure to clean skin thoroughly after work and before breaks.

After cleaning apply high-fat content skin care cream.

Ensure that washing facilities are available at the work place.

Wash contaminated clothing prior to re-use.

Contaminated work clothing should not be allowed outside the workplace.

Store protective clothing separately.

Do not eat, drink, smoke or sniff while working.

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Respiratory protection:

If technical suction or ventilation measures are not possible or are insufficient, protective breathing apparatus must be worn.

The filter class must be suitable for the maximum contaminant concentration (gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, a self-contained breathing apparatus must be used!

Suitable respiratory protective equipment:

Particulate filter device

Filter P3

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Protection of hands:

Tested protective gloves are to be worn. When handling chemical substances, chemical protective gloves must be worn with CE label including a four digit code. Type of chemical protective gloves to choose depends on the concentration and quantity of dangerous substances as well as on work place specifications. In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Material of gloves:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material:

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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Eye protection: Safety glasses with side shields

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Body protection:

Only wear fitting, comfortable and clean protective clothing.

Recommendation:

Protective work clothing

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Safety shoes

Limitation and supervision of exposure into the environment: Dumping into the environment must be prevented.

**SECTION 9: Physical and chemical properties**

9.1. Information on basic physical and chemical properties

General Information

Appearance:

Form: Solid  
Powder

Colour: White  
Whitish  
Grey

Odour: Odourless

Odour threshold: No data available.

pH-value: Not applicable.

Change in condition

Melting point/Melting range: No data available.

Boiling point/Boiling range: No data available.

Flash point: No data available.

Flammability (solid, gaseous): Non flammable.

Ignition temperature: No data available.

Decomposition temperature: 2204 °C (BN)

Self-igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.  
In use, dust may form flammable/explosive mixtures with air.

Explosion limits:

Lower: No data available.

Upper: No data available.

Vapour pressure: Not applicable.

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Trade name: **Boron Nitride PDS**

Density: 1.8-3.0 g/cm<sup>3</sup>

Vapour density: Not applicable.

Evaporation rate: Not applicable.

Solubility in / Miscibility with water: Insoluble

Partition coefficient (n-octanol/water): Not applicable.

Viscosity:  
Dynamic: Not applicable.  
Kinematic: Not applicable.

9.2. Other information No further relevant information available.

## SECTION 10: Stability and reactivity

10.1. Reactivity The product is stable under standard conditions (temperature, pressure) of storage and handling.

10.2. Chemical stability  
The product is stable under standard conditions (temperature, pressure) of storage and handling.

10.3. Possibility of hazardous reactions  
Dust may form flammable/explosive mixtures with air.  
Reacts with strong acids and oxidising agents.

10.4. Conditions to avoid Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

10.5. Incompatible materials  
Strong acids  
Oxidizing agents

10.6. Hazardous decomposition products  
In certain fire conditions, traces of other toxic gases cannot be excluded, e.g.:  
Nitrogen oxides (NO<sub>x</sub>)  
Boron oxides

## SECTION 11: Toxicological information

11.1. Information on toxicological effects  
Acute toxicity: Based on available data, the classification criteria are not met.

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LD/LC50 values:		
<b>1303-86-2 diboron trioxide</b>		
Oral	LD50	> 2600 mg/kg (rat)

Primary irritant effect:

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity:

May damage fertility. May damage the unborn child.

STOT-single exposure: Based on available data, the classification criteria are not met.

STOT-repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

### SECTION 12: Ecological information

#### 12.1. Toxicity

Aquatic toxicity: No further relevant information available.

12.2. Persistence and degradability No further relevant information available.

12.3. Bioaccumulative potential No further relevant information available.

12.4. Mobility in soil No further relevant information available.

General notes:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

#### 12.5. Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6. Other adverse effects No further relevant information available.

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### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

Recommendation:

Hand over to officially registered waste disposal company.

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

Waste disposal according to official state regulations.

Dumping into the environment must be prevented.

Uncleaned packaging:

Recommendation:

Disposal must be made according to official regulations.

Empty contaminated packagings thoroughly. They may be recycled after thorough and proper cleaning.

Packagings that may not be cleansed are to be disposed of in the same manner as the product.

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### SECTION 14: Transport information

#### 14.1. UN-Number

ADR, ADN, IMDG, IATA Void.

#### 14.2. UN proper shipping name

ADR, ADN, IMDG, IATA Void.

#### 14.3. Transport hazard class(es)

ADR, ADN, IMDG, IATA

Class Void.

#### 14.4. Packing group

ADR, IMDG, IATA Void.

#### 14.5. Environmental hazards

Not applicable.

#### 14.6. Special precautions for user

Not applicable.

#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable.

UN "Model Regulation":

Void.

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## SECTION 15: Regulatory information

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

EU-Regulations

Regulation (EC) No 1907/2006 (REACH)

Regulation (EC) No 1272/2008 (CLP)

Regulation 98/24/EC (employee health protection)

Directive 2012/18/EU

Named dangerous substances - ANNEX I: None of the ingredients is listed.

National regulations: National legislation has to be observed!

Information about limitation of use:

Employment restrictions concerning juveniles must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

Employment restrictions concerning women of child-bearing age must be observed.

Other regulations, limitations and prohibitive regulations: Storage class: 13

Substances of very high concern (SVHC) according to REACH, Article 57	
1303-86-2	diboron trioxide

15.2. Chemical safety assessment    A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

Relevant phrases:

H360FD May damage fertility. May damage the unborn child.

Training hints:

The product should only be handled by persons, who were informed sufficiently about the nature of the product and about the necessary safety precautions.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

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GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

VOC: Volatile Organic Compounds (USA, EU)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Repr. 1B: Reproductive toxicity, Hazard Category 1B

Sources: Data arise from reference works and literature.