

Material Safety Data Sheet

Boron oxide

Revision Date: 02/04/2009

Date Issued: 01/03/2007

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY / UNDERTAKING

Product name	Boron oxide, Nanopowder
Product code	NO-0015-HP
Supplier	IoLiTec Ionic Liquids Technologies GmbH Ferdinand-Porsche-Straße 5/1 D-79211 Denzlingen Germany
Telephone	+49 (0)7666 - 9129572
Fax	+49 (0)7666 - 9129345
Emergency telephone	+49 (0)179-5322578
Email	msds@iolitec.de

2 HAZARDS IDENTIFICATION

Xi irritant

3 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient name	Boron oxide, 99.9%
CAS No.	1303-86-2
Empirical Formula	B ₂ O ₃
Molecular weight	68.02 amu

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4 FIRST AID MEASURES

General	Contaminated clothing should be removed and washed before being reused.
Inhalation	Move the exposed person to fresh air at once. If respiratory problems, artificial respiration/oxygen.
Ingestion	Immediately rinse mouth and provide fresh air. Do not induce vomiting. Get medical attention immediately.
Skin	Wash the skin immediately with soap and water.
Eyes	Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

5 FIRE FIGHTING MEASURES

Extinguishing media	Use fire fighting measures appropriate to the surrounding fire.
Special fire fighting procedures	No special procedures required.
Unusual fire & explosion hazards	N/A
Protective measures in fire	Wear self-contained breathing apparatus as combustion may produce hazardous fumes.

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6 ACCIDENTAL RELEASE MEASURES

Personal precautions during spill Wear protective clothing and mask. Avoid inhalation of powder, fume and vapor as well as skin or eye contact.

Precautions to protect environment

Avoid washing into water courses. Avoid contaminating public drains or water supply.

Spill cleanup methods

Avoid contact with skin or inhalation of spillage, dust or vapor, Avoid dust formation. Collect and reclaim or dispose in sealed containers in license waste. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate.

7 HANDLING AND STORAGE

Handling precautions

Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage precautions

Keep container closed. Store in a cool, dry place.

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8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Protective equipment	Safety goggles. Chemical resistant gloves. Protective clothing. Protective mask when high concentrations are present.
Process control measures	Provide eyewash station and safety shower. Use engineering controls to reduce air contamination to permissible exposure levels.
Ventilation	Provide adequate general and local exhaust ventilation.
Respirators	Use high efficiency particulate respirator with appropriate filter.

Exposure limits

<u>B₂O₃</u>	<u>mg/m³</u>
ACGIH TLV	10
Austria MAK	15
Denmark TWA	10
France VME	10
Germany MAK	15
Netherlands MAK-TGG	10
Norway TWA	10
Poland TWA	10
Switzerland MAK-W	10
United Kingdom TWA	10; 20-STEL
USA PEL	15 (total dust) ; 5 (respirable fraction)

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9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Solid
Odor/taste	No characteristic odor.
PH	N/A
Boiling Point	1860 °C
Melting Point	450 °C
Flash Point	N/A
Flammability	N/A
Autoignition Temp	N/A
Oxidizing Properties	N/A
Explosive Properties	N/A
Explosion Limits	N/A
Vapor Pressure	N/A
SG/Density	2.46 g/cm ³ at 20 °C
Partition Coefficient	N/A
Viscosity	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
Evaporation Rate	N/A
Bulk Density	N/A
Decomposition Temp.	N/A
Solvent Content	N/A
Water Content	N/A
Surface Tension	N/A
Conductivity	N/A
Solubility	N/A

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10 STABILITY AND REACTIVITY

Stability	This product is hygroscopic.
Conditions/materials to avoid	Water/moisture, acids.
Hazardous Decomposition	No dangerous decomposition known.

11 TOXICOLOGICAL INFORMATION

Ingestion	Harmful if swallowed.
Inhalation	Harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.
Skin	Causes irritation
Eyes	Causes irritation
Sensitization	No effect known
Acute toxicity	LD50, oral, 3163 mg/kg (mus)

12 ECOLOGICAL INFORMATION

Do not allow material to be released to the environment without proper governmental permits.

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13 DISPOSAL CONSIDERATIONS

Disposal method Contact specialist disposal companies. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose of in accordance with Local Authority requirements. Recover and reclaim or recycle, if practical.

14 TRANSPORT INFORMATION

General	Not classified as dangerous for transport purposes.
UN No.	0
Road transport notes	Not classified as dangerous for road transport.
Rail transport notes	Not classified as dangerous for rail transport.
Sea transport notes	Not classified as dangerous for sea transport.
Air transport notes	Not classified as dangerous for air transport.

15 REGULATORY INFORMATION

Label for supply	Xi irritant
R-Phrases	
36/37/38	Irritating to eyes, respiratory system and skin
S-Phrases	
S26	In case of contact with eyes, rinse immediately
S37	Wear appropriate gloves

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16 OTHER INFORMATION

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