



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

- **Date of compilation:** 20.03.2006
- **1.1 Product identifier**
 - **Trade name:** Borsäure
 - **CAS Number:**
10043-35-3
 - **EC number:**
233-139-2
 - **Index number:**
005-007-00-2
- **1.2 Relevant identified uses of the substance or mixture and uses advised against** no data available
- **Application of the substance / the preparation:**
Chemicals for various applications
Additive for cosmetic preparations
Glass processing
Fire retarding agent
Additive for:
Detergent
Ceramics
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer / Supplier:**
BERGHEMIE J.C. Bröcking & Co. GmbH
Rudolfstrasse 14
D-42285 Wuppertal
Germany
Phone: ++49 202 / 45 60 60
Fax: ++49 202 / 44 79 32
- **E-mail address of the competent person responsible for the Safety Data Sheet:** sdb@csb-online.de
- **Informing department:** Environment & Safety Department
- **1.4 Emergency telephone number:**
For Germany: Giftinformationszentrum Universitätsklinik Mainz
Phone: +49 6131 / 19 24 0

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**
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GHS08 health hazard

Repr. 1B H360FD May damage fertility. May damage the unborn child.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.
- **Hazard pictograms**
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GHS08
- **Signal word** Danger
- **Hazard-determining components of labelling:**
Boric acid
- **Hazard statements**
H360FD May damage fertility. May damage the unborn child.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.

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- 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**
 - **Results of PBT and vPvB assessment**
 - **PBT:** Not applicable.
 - **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterisation: Substances**
- **CAS No. Designation:**
10043-35-3 Boric acid
- **Identification number(s):**
- **EC number:** 233-139-2
- **Index number:** 005-007-00-2

· SVHC

10043-35-3	Boric acid
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SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
- **After skin contact:** Wash with plenty of soap and water.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult doctor.
- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Seek immediate medical advice.
- **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed** symptomatic treatment

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents**
Product does not burn - take extinguishing measures according to fire conditions.
- **For safety reasons unsuitable extinguishing agents** not applicable
- **5.2 Special hazards arising from the substance or mixture** Oxides of boron
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation.

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- Avoid causing dust.
- Do not breathe dust.
- Use breathing protection against the effects of fumes/dust/aerosol.
- **6.2 Environmental precautions:**
 - Do not allow to enter drainage system, surface or ground water.
 - Damp down dust with water spray jet.
 - Inform respective authorities in case product reaches water or sewage system.
- **6.3 Methods and material for containment and cleaning up:**
 - Ensure adequate ventilation.
 - Collect mechanically.
 - Send for recovery or disposal in suitable containers.
 - Dispose of the material collected according to regulations.
- **6.4 Reference to other sections**
 - See Section 8 for information on personal protection equipment.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
 - Ensure good ventilation/exhaustion at the workplace.
 - Prevent formation of dust.
 - Any deposit of dust which cannot be avoided must be removed regularly.
 - Do not breathe dust.
 - Avoid contact with eyes.
 - Avoid long or repeated skin contact.
 - Make sure that all applicable workplace limits are observed.
- **Information about protection against explosions and fires:** The product is not flammable.
- **7.2 Conditions for safe storage, including any incompatibilities**
 - **Storage**
 - **Requirements to be met by storerooms and containers:**
 - Observe all local and national regulations for storage of water polluting products.
 - **Information about storage in one common storage facility:**
 - Store away from foodstuffs.
 - Store away from reducing agents.
 - **Further information about storage conditions:**
 - Store container in a well ventilated position.
 - Store in cool, dry conditions in well sealed containers.
 - Store in a locked cabinet or with access restricted to specifically instructed persons.
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **8.1 Control parameters**
- **Components with critical values that require monitoring at the workplace:** Not required.

· DNELs

10043-35-3 Boric acid

Oral	DNEL acute / short-term exposure - systemic effect	0.98 mg/kg bw/d (general population)
	DNEL long-term exposure - systemic effects	0.98 mg/kg bw/d (general population)
Dermal	DNEL long-term exposure - systemic effects	196 mg/kg bw/d (general population)
		392 mg/kg bw/d (worker)
Inhalative	DNEL long-term exposure - systemic effects	4.15 mg/m ³ (general population)
		8.3 mg/m ³ (worker)

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· **PNECs**

10043-35-3 Boric acid

PNEC	2.90 mg/l (aqua (freshwater))
	13.7 mg/l (aqua (intermittent releases))
	2.90 mg/l (aqua (marine water))
	5.7 mg/kg (soil)
	10 mg/l (STP (sewage treatment plant))

· **Additional information:** The lists that were valid during the compilation were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment**

· **General protective and hygienic measures**

Keep away from foodstuffs, beverages and food.

Do not eat, drink or smoke while working.

Avoid contact with the eyes.

Avoid close or long term contact with the skin.

Do not breathe dust.

Pregnant women must strictly avoid inhalation or contact with the skin.

Wash hands during breaks and at the end of the work.

Use skin protection cream for preventive skin protection.

· **Breathing equipment:** Use breathing protection in case of dust formation.

· **Recommended filter device for short term use:** Partikelfilter EN 143 Type P2 or P3

· **Protection of hands:**

Protective gloves

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

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Check the permeability prior to each renewed use of the glove.

To avoid skin problems reduce the wearing of gloves to the required minimum.

· **Material of gloves**

Nitrile rubber - NBR

Recommended thickness of the material: ≥ 0.11 mm

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.

· **Penetration time of glove material**

Penetration time: ≥ 8 hours

Protective gloves should be replaced at first signs of wear.

· **Eye protection:** Safety glasses recommended during refilling.

· **Body protection:**

Light weight protective clothing

Body protection must be chosen depending on activity and possible exposure.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form:	solid crystalline
Colour:	white
· Smell:	odourless
· Odour threshold:	not applicable

· **pH-value (10 g/l) at 20 °C:** 5.1

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· Change in condition	
Melting point/Melting range:	171 °C
Boiling point/Boiling range:	not determined
· Flash point:	not applicable
· Inflammability (solid, gaseous)	Product is not inflammable.
· Ignition temperature:	not applicable
· Decomposition temperature:	169 °C
· Self-inflammability:	Product is not selfigniting.
· Danger of explosion:	Product is not explosive.
· Critical values for explosion:	
Lower:	Not determined.
Upper:	Not determined.
· Oxidising properties	not classified as oxidising
· Vapor pressure at 20 °C:	0 hPa
· Density at 20 °C:	1.51 g/cm ³
· Bulk density:	500 ~ 815 kg/m ³
· Relative density	Not determined.
· Vapour density (AIR = 1):	not applicable
· Evaporation rate	not applicable
· Solubility in / Miscibility with	
Water at 20 °C:	47 g/l
· Organic solvents:	no data available
· Partition coefficient (n-octanol/water) at 25 °C:	0.757 log POW
· Viscosity:	
dynamic:	Not applicable.
kinematic:	Not applicable.
· 9.2 Other information	Further informations please refer to technical data sheet.

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SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
To avoid thermal decomposition do not overheat.
Temperature over 280 °C.
- **10.3 Possibility of hazardous reactions** Reacts with base metals forming hydrogen.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:**
Reducing agents
Base metals
- **10.6 Hazardous decomposition products:**
Oxides of boron
Hydrogen

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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD/LC50 values that are relevant for classification:

10043-35-3 Boric acid

Oral	LD50	3450 mg/kg (mouse) 2660 mg/kg (rat)
Inhalative	LC50/4 h	2 mg/l (rat)

Primary irritant effect:

• **Skin corrosion/irritation** Dust particles may mechanically irritate the skin.

• **Serious eye damage/irritation** Dust particles may mechanically irritate the eye.

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

• **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)** Repr. 1B

• **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:

10043-35-3 Boric acid

LC50	46 mg/l (carassius auratus) (7 d) 150 mg/l (rainbow trout (oncorhynchus mykiss)) (24 d)
LC50/48 h	115 - 153 mg/l (water flea (daphnia magna))

• **12.2 Persistence and degradability** No further relevant information available.

Other information:

Methods for the determination of biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulative potential

log P(o/w): 0.757

An accumulation in organisms is not expected (log P(o/w) < 1).

• **12.4 Mobility in soil** No further relevant information available.

Additional ecological information:

• **Chemical Oxygen Demand (COD-value):** no data available

• **Biochemical Oxygen Demand (BOD5-value):** no data available

• **General notes:** Water hazard class 1 (Assessment by list): slightly hazardous for water

12.5 Results of PBT and vPvB assessment

• **PBT:** Not applicable.

• **vPvB:** Not applicable.

• **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

• **Recommendation** Disposal must be made according to official regulations.

European waste catalogue:

Waste disposal key numbers from EWC have to be assigned depending on origin and processing.

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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

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| · 14.1 UN-Number | Void |
| · ADR, IMDG, IATA | Void |
| · 14.2 UN proper shipping name | Void |
| · ADR | Void |
| · IMDG, IATA | Void |
| · 14.3 Transport hazard class(es) | Void |
| · ADR, IMDG, IATA | Void |
| · Class | Void |
| · 14.4 Packing group | Void |
| · ADR, IMDG, IATA | Void |
| · 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. |
| · Transport/Additional information: | Not dangerous according to the above specifications. |
| · UN "Model Regulation": | - |

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:**
 - Employment restrictions concerning pregnant and lactating women must be observed.
 - Employment restrictions concerning young persons must be observed.
 - Employment restrictions concerning women of child-bearing age must be observed.
- **Decree to be applied in case of technical fault:**
 - Quantity limits according to "EC Seveso directive" should be observed.
- **Water hazard class:**
 - Water hazard class 1 (Assessment by list): slightly hazardous for water
 - ID-Number: 315
- **Other regulations, limitations and prohibitive regulations**
 - Observe restrictions on the marketing and use according to Annex XVII of Regulation (EC) No 1907/2006.
- **Substances of very high concern (SVHC) according to REACH, Article 57**

10043-35-3	Boric acid
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- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

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· **Reasons for changes:**

The Material Safety Data Sheet has been revised. Changes in the respective chapters are characterized in the left side edge by *.

· **Recommended restriction of use: Industrial use**

· **Department issuing MSDS:**

C.S.B. GmbH Phone: +49 - 2151 - 652086-0
Düsseldorfer Str. 113 Fax: +49 - 2151 - 652086-9
47809 Krefeld / Germany

· **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
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
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
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:** These data are based on information submitted by pre-suppliers.

· *** Data compared to the previous version altered.**