

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### AAS concentrate boron 5.000 g B/l H<sub>3</sub>BO<sub>3</sub> in water traceable to NIST

Revision date: 17.02.2022

Product code: 03651

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

##### 1.1. Product identifier

AAS concentrate boron 5.000 g B/l H<sub>3</sub>BO<sub>3</sub> in water traceable to NIST

UFI: NF3A-20SD-K00U-XH1R

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

###### Use of the substance/mixture

Laboratory chemicals

Industrial uses: Uses of substances as such or in preparations at industrial sites

Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

###### Uses advised against

Do not use for private purposes (household).

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

Company name:	Fa. Bernd Kraft GmbH	
Street:	Stempelstraße 6	
Place:	D-47167 Duisburg	
Telephone:	0203/5194-0	Telefax: 0203/5194-290
e-mail:	info@berndkraft.de	
Contact person:	Abteilung Produktsicherheit	Telephone: 0203/5194-107/117
e-mail:	produktsicherheit@berndkraft.de	
Internet:	www.berndkraft.de	
Responsible Department:	Abteilung Produktsicherheit	

##### 1.4. Emergency telephone number:

For Hazardous Materials [or Dangerous Goods] Incidents Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)

##### Further Information

This product is a mixture. REACH Registration Number see section 3.

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### Regulation (EC) No 1272/2008

Repr. 1B; H360FD

Full text of hazard statements: see SECTION 16.

##### 2.2. Label elements

###### Regulation (EC) No 1272/2008

###### Hazard components for labelling

boric acid

Signal word: Danger

Pictograms:



###### Hazard statements

H360FD May damage fertility. May damage the unborn child.

###### Precautionary statements

P201 Obtain special instructions before use.

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P202	Do not handle until all safety precautions have been read and understood.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P405	Store locked up.
P501	Dispose of contents/container to Dispose of contents/container in accordance with local/regional/national/international regulations..

**Special labelling of certain mixtures**

Restricted to professional users.

**2.3. Other hazards**

No data available

**SECTION 3: Composition/information on ingredients**

**3.2. Mixtures**

**Chemical characterization**

Mixtures in aqueous solution

**Hazardous components**

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
10043-35-3	boric acid			< 1 %
	233-139-2	005-007-00-2	01-2119486683-25	
	Repr. 1B; H360FD			

Full text of H and EUH statements: see section 16.

**Specific Conc. Limits, M-factors and ATE**

CAS No	EC No	Chemical name	Quantity
	Specific Conc. Limits, M-factors and ATE		
10043-35-3	233-139-2	boric acid	< 1 %
	inhalation: LC50 = > 2,12 mg/l (dusts or mists); dermal: LD50 = > 2000 mg/kg; oral: LD50 = 3450 mg/kg		

**Further Information**

No data available

**SECTION 4: First aid measures**

**4.1. Description of first aid measures**

**General information**

No data available

**After inhalation**

Provide fresh air.

**After contact with skin**

Take off immediately all contaminated clothing and wash it before reuse.

Wash immediately with: Water

**After contact with eyes**

Rinse immediately carefully and thoroughly with eye-bath or water.

**After ingestion**

Rinse mouth immediately and drink plenty of water.

Call a doctor if you feel unwell.

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

No data available

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

No data available

**SECTION 5: Firefighting measures**

**5.1. Extinguishing media**

**Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings.

**Unsuitable extinguishing media**

no restriction

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

Non-combustible liquids

**5.3. Advice for firefighters**

In case of fire: Wear self-contained breathing apparatus.

**Additional information**

Use water spray jet to protect personnel and to cool endangered containers.

**SECTION 6: Accidental release measures**

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

**General advice**

Do not breathe vapour/aerosol.

**For non-emergency personnel**

Provide adequate ventilation.

Use personal protection equipment.

Avoid contact with skin, eyes and clothes.

Remove persons to safety.

Emergency procedures

Do not breathe dust/fume/gas/mist/vapours/spray.

**For emergency responders**

Precautionary statements For emergency responders : Personal protection equipment: see section 8

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains.

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

**For containment**

Cover drains. Prevent spread over a wide area (e.g. by containment or oil barriers). Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Collect in closed and suitable containers for disposal.

**For cleaning up**

Clean contaminated articles and floor according to the environmental legislation.

**Other information**

Provide adequate ventilation.

Do not breathe dust/fume/gas/mist/vapours/spray.

Wear breathing apparatus if exposed to vapours/dusts/aerosols.

**6.4. Reference to other sections**

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

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**SECTION 7: Handling and storage**

**7.1. Precautions for safe handling**

**Advice on safe handling**

- Handle and open container with care.
- Keep container tightly closed.
- Do not breathe vapour/aerosol.
- Avoid contact with skin, eyes and clothes.

**Advice on protection against fire and explosion**

- Usual measures for fire prevention.

**Advice on general occupational hygiene**

- Wash contaminated clothing prior to re-use.
- Do not breathe vapour/aerosol.
- Avoid contact with skin, eyes and clothes.

**Further information on handling**

- Wash contaminated clothing before reuse.
- Wash hands before breaks and after work.

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

**Requirements for storage rooms and vessels**

- Store in a well-ventilated place. Keep container tightly closed.
- Store in a place accessible by authorized persons only.

**Further information on storage conditions**

- Store in a dry place.

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

- Laboratory chemicals

**SECTION 8: Exposure controls/personal protection**

**8.1. Control parameters**

**Occupational exposure limits**

CAS No	Substance	ppm	mg/m <sup>3</sup>	fib/cm <sup>3</sup>	Category	Origin
10043-35-3	Borate compounds inorganic: boric acid	-	2		TWA (8 h)	

**DNEL/DMEL values**

CAS No	Substance	Exposure route	Effect	Value
10043-35-3	boric acid			
	Worker DNEL, long-term	inhalation	systemic	8,3 mg/m <sup>3</sup>
	Worker DNEL, long-term	dermal	systemic	392 mg/kg bw/day
	Consumer DNEL, long-term	inhalation	systemic	4,15 mg/m <sup>3</sup>
	Consumer DNEL, long-term	dermal	systemic	196 mg/kg bw/day
	Consumer DNEL, long-term	oral	systemic	0,98 mg/kg bw/day
	Consumer DNEL, acute	oral	systemic	0,98 mg/kg bw/day

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**PNEC values**

CAS No	Substance	Value
Environmental compartment		
10043-35-3	boric acid	
Freshwater		2,9 mg/l
Freshwater (intermittent releases)		13,7 mg/l
Marine water		2,9 mg/l
Micro-organisms in sewage treatment plants (STP)		10 mg/l
Soil		5,7 mg/kg

**8.2. Exposure controls**

**Appropriate engineering controls**

Technical measures and the application of suitable work processes have priority over personal protection equipment.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection**

goggles

**Hand protection**

Protective gloves are recommended Company KCL GmbH, D-36124 Eichenzell, email: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) With specification (test according to EN374):

By long-term hand contact

Recommended glove articles: KCL 741 Dermatril® L  
Recommended material: NBR (Nitrile rubber) 0,11mm  
Wearing time with permanent contact: >480min

By short-term hand contact

Recommended glove articles: KCL 741 Dermatril® L  
Recommended material: NBR (Nitrile rubber) 0,11mm  
Wearing time with occasional contact (splashes): >480min

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: [www.kcl.de](http://www.kcl.de)).

**Skin protection**

Wear suitable protective clothing.  
Wash hands before breaks and after work.

**Respiratory protection**

Respiratory protection necessary at: aerosol or mist formation

**Thermal hazards**

No data available

**Environmental exposure controls**

Do not allow to enter into surface water or drains.

**SECTION 9: Physical and chemical properties**

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

Physical state: Liquid  
Colour: clear

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Odour: odourless  
Odour threshold: No data available

**Changes in the physical state**

Melting point/freezing point: No data available  
Boiling point or initial boiling point and boiling range: No data available  
Sublimation point: No data available  
Softening point: No data available  
Pour point: No data available  
No data available:  
Flash point: No data available

**Flammability**

Solid/liquid: No data available  
Gas: No data available

**Explosive properties**

No data available

Lower explosion limits: No data available  
Upper explosion limits: No data available  
Auto-ignition temperature: No data available

**Self-ignition temperature**

Solid: No data available  
Gas: No data available

Decomposition temperature: No data available  
pH-Value: No data available  
Viscosity / dynamic: No data available  
Viscosity / kinematic: No data available  
Flow time: No data available  
Water solubility: No data available

**Solubility in other solvents**

No data available

Dissolution rate: No data available  
Partition coefficient n-octanol/water: No data available  
Dispersion stability: No data available  
Vapour pressure: No data available  
Vapour pressure: No data available  
Density: ~1 g/cm<sup>3</sup>  
Relative density: No data available  
Bulk density: No data available  
Relative vapour density: No data available  
Particle characteristics: No data available

**9.2. Other information**

**Information with regard to physical hazard classes**

Sustaining combustion: No data available  
Oxidizing properties  
No data available

**Other safety characteristics**

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Solvent separation test: No data available  
 Solvent content: 0  
 Solid content: 0  
 Evaporation rate: No data available

**Further Information**

No data available

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No data available

**10.2. Chemical stability**

No data available

**10.3. Possibility of hazardous reactions**

No data available

**10.4. Conditions to avoid**

No data available

**10.5. Incompatible materials**

No data available

**10.6. Hazardous decomposition products**

No data available

**Further information**

No data available

**SECTION 11: Toxicological information**

**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

**Toxicokinetics, metabolism and distribution**

There are no data available on the mixture itself.

**Acute toxicity**

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

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
10043-35-3	boric acid				
	oral	LD50 mg/kg 3450	Rat	Toxicology and Applied Pharmacology 23:	other: No data
	dermal	LD50 mg/kg > 2000	Rabbit	Study report (1982)	other: FIFRA
	inhalation (4 h) dust/mist	LC50 mg/l > 2,12	Rat	Study report (1997)	OECD Guideline 403

**Irritation and corrosivity**

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

**Sensitising effects**

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

**Carcinogenic/mutagenic/toxic effects for reproduction**

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May damage fertility. May damage the unborn child. (boric acid)  
Germ cell mutagenicity: Based on available data, the classification criteria are not met.  
Carcinogenicity: Based on available data, the classification criteria are not met.

**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.

**Information on likely routes of exposure**

There are no data available on the mixture itself.

**Specific effects in experiment on an animal**

There are no data available on the mixture itself.

**Additional information on tests**

There are no data available on the mixture itself.

**Practical experience**

There are no data available on the mixture itself.

**11.2. Information on other hazards**

**Endocrine disrupting properties**

There are no data available on the mixture itself.

**Other information**

There are no data available on the mixture itself.

**Further information**

There are no data available on the mixture itself.

**SECTION 12: Ecological information**

**12.1. Toxicity**

There are no data available on the mixture itself.

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
10043-35-3	boric acid					
	Acute fish toxicity	LC50 mg/l	79,7	96 h	Pimephales promelas	Study report (2010) other: ASTM E729-95 Standard Guide for C
	Acute algae toxicity	ErC50	66 mg/l	72 h	Phaeodactylum tricornutum	Study report (2011) ISO 10253
	Acute crustacea toxicity	EC50	109 mg/l	48 h	Ceriodaphnia dubia	Study report (2010) other: ASTM E729-95 Standard Guide for C
	Fish toxicity	NOEC mg/l	11,2	32 d	Pimephales promelas	Study report (2010) other: ASTM E1241-05 Standard Guide for
	Algae toxicity	NOEC mg/l	17,5	3 d	Pseudokirchneriella subcapitata	Study report (2000) OECD Guideline 201
	Crustacea toxicity	NOEC mg/l	25,9	42 d	other aquatic crustacea: Hyalella azteca	Study report (2010) other: US EPA 2000 Methods for assessing
	Acute bacteria toxicity	(EC50 mg/l)	> 10000	3 h	activated sludge of a predominantly domestic sewage	Study report (2001) OECD Guideline 209



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**12.2. Persistence and degradability**

There are no data available on the mixture itself.

**12.3. Bioaccumulative potential**

There are no data available on the mixture itself.

**Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
10043-35-3	boric acid	-1,09

**BCF**

CAS No	Chemical name	BCF	Species	Source
10043-35-3	boric acid	0,558	Oncorhynchus nerka	Water Research Vol.

**12.4. Mobility in soil**

There are no data available on the mixture itself.

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

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

**12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

**12.7. Other adverse effects**

Discharge into the environment must be avoided.

**Further information**

Do not allow to enter into surface water or drains.

**SECTION 13: Disposal considerations**

**13.1. Waste treatment methods**

**Disposal recommendations**

Waste disposal according to directive 2008/98/EC, covering waste and dangerous waste.  
Send to a physico-chemical treatment facility under observation of official regulations. Do not empty into drains.

**Contaminated packaging**

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

**SECTION 14: Transport information**

**Land transport (ADR/RID)**

- 14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.
- 14.2. UN proper shipping name:** No dangerous good in sense of this transport regulation.
- 14.3. Transport hazard class(es):** No dangerous good in sense of this transport regulation.
- 14.4. Packing group:** No dangerous good in sense of this transport regulation.

**Inland waterways transport (ADN)**

- 14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.
- 14.2. UN proper shipping name:** No dangerous good in sense of this transport regulation.
- 14.3. Transport hazard class(es):** No dangerous good in sense of this transport regulation.
- 14.4. Packing group:** No dangerous good in sense of this transport regulation.

**Marine transport (IMDG)**

- 14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.
- 14.2. UN proper shipping name:** No dangerous good in sense of this transport regulation.
- 14.3. Transport hazard class(es):** No dangerous good in sense of this transport regulation.
- 14.4. Packing group:** No dangerous good in sense of this transport regulation.

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**Air transport (ICAO-TI/IATA-DGR)**

- 14.1. UN number or ID number:** No dangerous good in sense of this transport regulation.
- 14.2. UN proper shipping name:** No dangerous good in sense of this transport regulation.
- 14.3. Transport hazard class(es):** No dangerous good in sense of this transport regulation.
- 14.4. Packing group:** No dangerous good in sense of this transport regulation.

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

No dangerous good in sense of this transport regulation.

**14.7. Maritime transport in bulk according to IMO instruments**

No dangerous good in sense of this transport regulation.

**SECTION 15: Regulatory information**

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

**EU regulatory information**

Authorisations (REACH, annex XIV):

Substances of very high concern, SVHC (REACH, article 59):  
boric acid

Restrictions on use (REACH, annex XVII):

Entry 3, Entry 30

**National regulatory information**

Employment restrictions:

Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe employment restrictions for women of child-bearing age.

Water hazard class (D):

-- non-hazardous to water

**Additional information**

No data available

**SECTION 16: Other information**

**Changes**

This data sheet contains changes from the previous version in section(s): 1,2,3,6,7,8,9,11,12,13,15.

**Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]**

Classification	Classification procedure
Repr. 1B; H360FD	Calculation method

**Relevant H and EUH statements (number and full text)**

H360FD May damage fertility. May damage the unborn child.

**Further 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. The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

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*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*