

**Boric acid**

Revision: 03.11.2025

Product code: AC12.00382

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Boric acid

REACH Registration Number: 01-2119486683-25-XXXX  
CAS No: 10043-35-3  
Index No: 005-007-00-2  
EC No: 233-139-2

**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Reagents and laboratory chemicals  
Only for laboratory and analysis purposes.

**Uses advised against**

Do not use for private purposes (household).

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

Company name: AnalytiChem Services, Unipessoal, Lda  
Street: Rua de Júlio Dinis 676 7º  
Place: N-4050-320 Porto  
Telephone: +351 226002917  
E-mail: info@analytichem.com  
Contact person: SDS service department  
E-mail: SDS@analytichem.com  
Internet: www.analytichem.com  
Responsible Department: SDS service department

**Supplier or manufacturer details**

Company name: AnalytiChem Belgium NV  
Street: Industriezone "De Arend" 2  
Place: B-8210 Zedelgem  
Telephone: +32 50 28 83 20  
E-mail: info.be@analytichem.com  
Contact person: SDS service department  
E-mail: SDS@analytichem.com  
Responsible Department: AnalytiChem:  
EU-Belgium: AnalytiChem Belgium, Industriezone "De Arend" 2, 8210 Zedelgem, Belgium, +32 50 28 83 20  
EU-Germany: AnalytiChem Germany, Stempelstrasse 6, 47167 Duisburg, Germany, +49 203 51 94 – 200  
EU-Netherlands: AnalytiChem Netherlands, Communicatieweg 7, 3641 SG Mijdrecht, The Netherlands, +31 297 286848  
UK: AnalytiChem UK, Unit 7 Launton Business Center, Murdock Road, Bicester, OX26 4XB, England, +44 1869 355 500  
USA: AnalytiChem USA, 227 China Road, Winslow, Maine, 04901, United States, +1 800-244-8378  
Canada: AnalytiChem Canada, 21800 Clark Graham Avenue, Baie d'Urfe, H9X 4B6, Canada, +1 514-457-0701  
Australia: ORE Research & Exploration Pty Ltd, 37A Hosie Street, Bayswater North, 3153, Australia, +61 3 9729 0333  
+44 20 3807 3798 (CHEMTREC)

**1.4. Emergency telephone number:**

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**Further Information**

No data available

**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****Signal word:** Danger**Pictograms:****Hazard statements**

H360FD May damage fertility. May damage the unborn child.

**Precautionary statements**

P201 Obtain special instructions before use.  
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.

**Special labelling**

Restricted to professional users.

**SECTION 3: Composition/information on ingredients****3.1. Substances**

Sum formula: H<sub>3</sub>BO<sub>3</sub>  
Molecular weight: 61,83 g/mol

**Relevant ingredients**

| CAS No     | Chemical name                                 |              |                       | Quantity |
|------------|---|--------------|-----------------------|----------|
|            | EC No   | Index No     | REACH No              |          |
|            | Classification (Regulation (EC) No 1272/2008) |              |                       |          |
| 10043-35-3 | boric acid                                    |              |                       | 100 %    |
|            | 233-139-2                                     | 005-007-00-2 | 01-2119486683-25-XXXX |          |
|            | 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    | 100 %    |
|            | inhalation: LC <sub>50</sub> = > 2,12 mg/l (dusts or mists); dermal: LD <sub>50</sub> = > 2000 mg/kg; oral: LD <sub>50</sub> = 3450 mg/kg |               |          |

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**Further Information**

This substance has been listed as SVHC (substance of very high concern) in the Candidate List according to Article 59 of REACH.

**SECTION 4: First aid measures****4.1. Description of first aid measures****General information**

Take off immediately all contaminated clothing.  
Self-protection of the first aider

**After inhalation**

Provide fresh air.  
Call a physician immediately.

**After contact with skin**

Wash immediately with: Water  
Take off immediately all contaminated clothing and wash it before reuse.  
Call a physician immediately.

**After contact with eyes**

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.  
Remove contact lenses, if present and easy to do. Continue rinsing.  
Protect uninjured eye.

**After ingestion**

Rinse mouth immediately and drink plenty of water.  
Call a physician immediately.

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

Agitation  
Spasms  
Gastrointestinal complaints  
Vomiting

**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 solids  
Hazardous combustion products  
In case of fire may be liberated:  
boron

**5.3. Advice for firefighters**

Do not inhale explosion and combustion gases.  
Avoid contact with skin, eyes and clothes.  
In case of fire: Wear self-contained breathing apparatus.

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**Additional information**

- Suppress gases/vapours/mists with water spray jet.
- Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.
- Move undamaged containers from immediate hazard area if it can be done safely.
- 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****For non-emergency personnel**

- Provide adequate ventilation.
- Use personal protection equipment.
- Avoid contact with skin, eyes and clothes.
- Remove persons to safety.
- Emergency procedures
- Consult an expert
- 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).
- Collect in closed and suitable containers for disposal.
- Take up carefully when dry. Take up dust-free and set down dust-free.

**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

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

- Read label before use. Handle and open container with care.
- Avoid dust formation. Do not breathe dust.
- When using do not eat, drink, smoke, sniff. Keep container tightly closed.
- Use personal protection equipment. Use extractor hood (laboratory).
- Provide adequate ventilation. Avoid contact with skin, eyes and clothes.

**Advice on protection against fire and explosion**

- Usual measures for fire prevention.

**Advice on general occupational hygiene**

- Keep away from food, drink and animal feedingstuffs. Make available sufficient washing facilities

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Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

**Further information on handling**

Draw up and observe skin protection programme.

Wash hands and face before breaks and after work and take a shower if necessary.

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

If handled uncovered, arrangements with local exhaust ventilation have to be used.

**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.

**Hints on joint storage**

TRGS 510

**Further information on storage conditions**

Store in a dry place.

storage temperature +5°C - +30°C.

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

Laboratory chemicals

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters****DNEL/DMEL values**

| CAS No                   | Substance  |                |          |                        |
|--------------------------|------------|----------------|----------|------------------------|
| DNEL type                |            | 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      |

**PNEC values**

| CAS No   | Substance  |           |
|--|------------|-----------|
| Environmental compartment                        |            | Value     |
| 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

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equipment.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Avoid dust formation. Do not breathe dust.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

goggles

Wear eye protection/face protection.

**Hand protection**

Suitable examples are gloves of KCL GmbH, D-36124 Eichenzell, e-mail: [vertrieb@kcl.de](mailto:vertrieb@kcl.de) with the following specification (test according to EN 374):

By long-term hand contact

Trade name/designation: KCL 741 Dermatril® L

Suitable material: NBR (Nitrile rubber) 0,11 mm

Wearing time with permanent contact: > 480 min

By short-term hand contact

Trade name/designation: KCL 741 Dermatril® L

Suitable material: NBR (Nitrile rubber) 0,11 mm

Wearing time with occasional contact (splashes): > 480 min

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.

Take off immediately all contaminated clothing.

Wash hands before breaks and after work.

The choice of body protection depends on the concentration and quantity of hazardous substances. The chemical resistance of protective agents must be clarified with their suppliers.

**Respiratory protection**

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

Filtering device with filter or ventilator filtering device of type: P3

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**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:   | solid             |                   |
| Colour:   | white             |                   |
| Odour:  | odourless         |                   |
| Odour threshold:  | No data available |                   |
| Melting point/freezing point:                             |                   | 171 °C            |
| Boiling point or initial boiling point and boiling range: |                   | No data available |
| Flammability:   |                   | No data available |

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|  |                   |
|--|-------------------|
| Lower explosion limits:                | No data available |
| Upper explosion limits:                | No data available |
| Flash point:                           | No data available |
| Auto-ignition temperature:             | No data available |
| Decomposition temperature:             | 70 °C             |
| pH-Value (at 20 °C):                   | 3,8-4,8 (33 g/l)  |
| Viscosity / kinematic:                 | No data available |
| Water solubility:                      | 49,2 g/l          |
| (at 20 °C)                             |                   |
| 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:                       | 0 hPa             |
| (at 20 °C)                             |                   |
| Vapour pressure:                       | No data available |
| Density (at 23 °C):                    | 1,489 g/cm³       |
| Relative density:                      | No data available |
| Bulk density:                          | 400-600 kg/m³     |
| Relative vapour density:               | No data available |
| Particle characteristics:              | No data available |

**9.2. Other information**

**Information with regard to physical hazard classes**

|                           |                   |
|---------------------------|-------------------|
| Explosive properties      |                   |
| No data available         |                   |
| Sustained combustibility: | No data available |
| Self-ignition temperature |                   |
| Solid:                    | No data available |
| Gas:                      | No data available |
| Oxidizing properties      |                   |
| No data available         |                   |

**Other safety characteristics**

|                          |                   |
|--------------------------|-------------------|
| Evaporation rate:        | No data available |
| Solvent separation test: | No data available |
| Solvent content:         | 0                 |
| Solid content:           | 0                 |
| Sublimation point:       | No data available |
| Softening point:         | No data available |
| Pour point:              | No data available |
| No data available:       |                   |
| Viscosity / dynamic:     | No data available |
| Flow time:               | No data available |

**Further Information**

No data available

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

No data available

**10.2. Chemical stability**

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Protect against: Humidity

**10.3. Possibility of hazardous reactions**

Acetic anhydride

Oxidising agent

Alkali (lye)

**10.4. Conditions to avoid**

Humidity

**10.5. Incompatible materials**

No data available

**10.6. Hazardous decomposition products**

In case of fire may be liberated:

SECTION 5: Firefighting measures

**Further information**

No data available

**SECTION 11: Toxicological information****11.1. Information on hazard classes****Toxicokinetics, metabolism and distribution**

No data available

**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 3450 mg/kg   | Rat     | Toxicology and Applied Pharmacology 23: | other: No data     |
|            | dermal                     | LD50 > 2000 mg/kg | Rabbit  | Study report (1982)                     | other: FIFRA       |
|            | inhalation (4 h) dust/mist | LC50 > 2,12 mg/l  | Rat     | Study report (1997)                     | OECD Guideline 403 |

**Irritation and corrosivity**

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

Serious eye damage/eye irritation: 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**

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.



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**Information on likely routes of exposure**

No data available

**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

No data available

**Practical experience**

No data available

**11.2. Information on other hazards****Endocrine disrupting properties**

No data available

**Other information**

No data available

**Further information**

Agitation

Spasms

Gastrointestinal complaints

Vomiting

**SECTION 12: Ecological information****12.1. Toxicity**

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

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

**12.2. Persistence and degradability**

The methods for determining the biological degradability are not applicable to inorganic substances.

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**12.3. Bioaccumulative potential**

No indication of bioaccumulation potential.

**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**

No data available

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

This substance does not meet the PBT/vPvB criteria of UK REACH.

**12.6. Endocrine disrupting properties**

This substance does not have endocrine disrupting properties with respect to non-target organisms.

**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 allow to enter into surface water or 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.

Handle contaminated packages in the same way as the substance itself.

**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.

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

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- 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):

This substance has been listed as SVHC (substance of very high concern) in the Candidate List according to Article 59 of REACH.

Restrictions on use (REACH, annex XVII):

Entry 30, Entry 75

**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):

1 - slightly hazardous to water

**SECTION 16: Other information****Changes**

This data sheet contains changes from the previous version in section(s): 1,12.

**Abbreviations and acronyms**

Repr. 1B: Reproductive toxicity, hazard category 1B

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

H360FD May damage fertility. May damage the unborn child.

**Further Information**

Provide appropriate information, instructions and training to users

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.