



SAFETY DATA SHEET BORIC ACID SOLUTION

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

1.1. Product identifier

Product name	BORIC ACID SOLUTION
Product number	12435
Synonyms; trade names	BORIC ACID 2.5%, BORIC ACID 3.0%

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

Identified uses	Chemical
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1.3. Details of the supplier of the safety data sheet

Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com
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1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
Sds No.	12435

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Not Classified
Environmental hazards	Not Classified

Environmental	The product is not expected to be hazardous to the environment.
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2.2. Label elements

Hazard statements	NC Not Classified
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2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

BORIC ACID SOLUTION

ORTHOBORIC ACID		1-5%
CAS number: 10043-35-3	EC number: 233-139-2	REACH registration number: 01-2119486683-25-XXXX
Classification Repr. 1B - H360FD		

The full text for all hazard statements is displayed in Section 16.

Composition comments The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move affected person to fresh air at once. Rinse nose and mouth with water. Get medical attention if any discomfort continues.
Ingestion	Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention if any discomfort continues.
Skin contact	Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention if any discomfort continues.
Eye contact	Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

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

Eye contact	May cause temporary eye irritation.
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4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	No specific recommendations. If in doubt, get medical attention promptly.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	The product is not flammable. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Protection against nuisance dust must be used when the airborne concentration exceeds 10 mg/m ³ . Carbon monoxide (CO). Carbon dioxide (CO ₂).
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5.3. Advice for firefighters

Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet. Avoid contact with skin and eyes. Provide adequate ventilation.
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6.2. Environmental precautions

Environmental precautions	Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.
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6.3. Methods and material for containment and cleaning up

Methods for cleaning up Stop leak if possible without risk. Absorb in vermiculite, dry sand or earth and place into containers. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid spilling. Avoid contact with skin and eyes. Provide adequate ventilation.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

ORTHOBORIC ACID

8hr TWA, Manuf. data: 1 mg B/m³

Ingredient comments No exposure limits known for ingredient(s).

ORTHOBORIC ACID (CAS: 10043-35-3)

Ingredient comments	SUP = Supplier's recommendation.
DNEL	Workers - Inhalation; Long term systemic effects: 8.28 mg/m ³ Workers - Dermal; Long term systemic effects: 392 mg/kg/day Consumer - Oral; Short term systemic effects: 0.98 mg/kg/day Consumer - Oral; Long term systemic effects: 0.98 mg/kg/day Consumer - Inhalation; Long term systemic effects: 4.15 mg/m ³ Consumer - Dermal; Long term systemic effects: 196 mg/kg/day
PNEC	- Fresh water; 2.02 mg B/L - marine water; 2.02 mg B/L - Intermittent release, Water; 13.7 mg B/L - Soil; 5.4 mg B/kg - STP; 10 mg B/L

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Avoid inhalation of vapours. Observe any occupational exposure limits for the product or ingredients.

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Eye/face protection	Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Chemical splash goggles or face shield. Personal protective equipment for eye and face protection should comply with European Standard EN166.
Hand protection	The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from chemicals, gloves should comply with European Standard EN374.
Other skin and body protection	Wear appropriate clothing to prevent any possibility of skin contact.
Hygiene measures	Do not smoke in work area. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.
Respiratory protection	If ventilation is inadequate, suitable respiratory protection must be worn. Organic vapour + dust and mist filter. EN 136/140/141/145/143/149

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Clear liquid.
Odour threshold	No information available.
pH	pH (concentrated solution): 4.6
Melting point	< 3°C
Pour Point	No information available.
Freezing Point	No information available.
Initial boiling point and range	No information available.
Flash point	No information available.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	No information available.
Vapour density	No information available.
Relative density	1.011 @ @ 25°C
Bulk density	No information available.
Solubility(ies)	Soluble in water.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.

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Decomposition Temperature No information available.

Viscosity No information available.

Explosive properties No information available.

Explosive under the influence of a flame No information available.

Oxidising properties No information available.

9.2. Other information

Other information Not determined.

Refractive index No information available.

Particle size No information available.

Molecular weight No information available.

Volatility No information available.

Saturation concentration No information available.

Critical temperature No information available.

Volatile organic compound No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Not determined.

10.4. Conditions to avoid

Conditions to avoid Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

Materials to avoid Not determined.

10.6. Hazardous decomposition products

Hazardous decomposition products Fire creates: Carbon monoxide (CO). Carbon dioxide (CO₂).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Skin corrosion/irritation

Skin corrosion/irritation No information available.

Serious eye damage/irritation

Serious eye damage/irritation No information available.

Respiratory sensitisation

Respiratory sensitisation No information available.

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Skin sensitisation

Skin sensitisation No information available.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

Inhalation May cause respiratory system irritation.

Ingestion May cause discomfort if swallowed.

Skin contact Liquid may irritate skin.

Eye contact Vapour or spray in the eyes may cause irritation and smarting.

Toxicological information on ingredients.

ORTHOBORIC ACID

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ 2000 - 5000 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ > 2000 mg/kg, Dermal, Rabbit

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ (4h) >2 mg/l, Inhalation, Vapour, Rat

Skin corrosion/irritation

Skin corrosion/irritation Not irritating. Rabbit

Serious eye damage/irritation

Serious eye damage/irritation Not irritating. Fully reversible within 7 days. Rabbit

Respiratory sensitisation

Respiratory sensitisation Guinea pig: Not sensitising.

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative.

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Genotoxicity - in vivo	Based on available data the classification criteria are not met.
<u>Carcinogenicity</u>	
Carcinogenicity	Based on available data the classification criteria are not met. Negative., Dose level: 446 - 1150 mg/kg/day, Oral, Mouse
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	May damage fertility. Fertility, Multi-generation study - NOAEL 17.5 mg B/kg , Oral, Rat, Male
Reproductive toxicity - development	May damage the unborn child. Developmental toxicity: - NOAEL: 9.6 mg B/kg , Oral, Rat Maternal toxicity: - NOAEL: 13.3 mg B/kg , Oral, Rat
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Based on available data the classification criteria are not met. Chronic, NOAEL (2yr) 17.5 mg B/kg/day , Oral, Rat, Male reproductive organs
<u>Aspiration hazard</u>	
Aspiration hazard	Based on available data the classification criteria are not met.
Inhalation	No significant hazard at normal ambient temperatures. Dust in high concentrations may irritate the respiratory system.
Ingestion	No harmful effects expected from quantities likely to be ingested by accident. May cause discomfort if swallowed. Symptoms following overexposure may include the following: Nausea, vomiting. Diarrhoea. Effects may be delayed. Skin irritation. Redness. Dryness and/or cracking.
Skin contact	Symptoms following overexposure may include the following: Nausea, vomiting. Diarrhoea. Effects may be delayed. Skin irritation. Redness. Dryness and/or cracking.
Eye contact	Particles in the eyes may cause irritation and smarting.
Acute and chronic health hazards	May damage fertility. May damage the unborn child.

SECTION 12: Ecological information

Ecotoxicity	The product components are not classified as environmentally hazardous. However, large or frequent spills may have hazardous effects on the environment.
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Ecological information on ingredients.

ORTHOBORIC ACID

Ecotoxicity	Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.
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12.1. Toxicity

Toxicity	Not considered toxic to fish.
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Ecological information on ingredients.

ORTHOBORIC ACID

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Acute aquatic toxicity

Acute toxicity - fish

Acute, LC₅₀, : 79.7 mg/l, Pimephales promelas (Fat-head Minnow)
Read-across data.
Boron.
Chronic, NOEC, : 6.4 mg/l, Brachydanio rerio (Zebra Fish)
Read-across data.
Boron.

Acute toxicity - aquatic invertebrates

NOEC, : 14.2 mg/l, Daphnia magna
Read-across data.
Boron.
LC₅₀, : 91 mg/l,
Ceriodaphnia dubia
Read-across data.
Boron.

Acute toxicity - aquatic plants

Acute, EC₅₀, : 52.4 mg/l, Pseudokirchneriella subcapitata
Read-across data.
Boron.
Chronic, NOEC, : 17.5 mg/l, Pseudokirchneriella subcapitata
Read-across data.
Boron.

12.2. Persistence and degradability

Persistence and degradability There are no data on the degradability of this product.

Ecological information on ingredients.

ORTHOBORIC ACID

Persistence and degradability

Not applicable. Substance is inorganic.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient No information available.

Ecological information on ingredients.

ORTHOBORIC ACID

Bioaccumulative potential

Bioaccumulation is unlikely.

Partition coefficient

log Pow: -0.757

12.4. Mobility in soil

Mobility

The product is soluble in water.

Ecological information on ingredients.

ORTHOBORIC ACID

Mobility

The product is soluble in water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment

This product does not contain any substances classified as PBT or vPvB.

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Ecological information on ingredients.

ORTHOBORIC ACID

Results of PBT and vPvB assessment Not applicable. Substance is inorganic.

12.6. Other adverse effects

Other adverse effects Not determined.

Ecological information on ingredients.

ORTHOBORIC ACID

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Do not puncture or incinerate, even when empty. Waste should be treated as controlled waste.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

Not applicable.

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

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EU legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

Commission Regulation (EU) No 2015/830 of 28 May 2015.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
CAS: Chemical Abstracts Service.
DNEL: Derived No Effect Level.
IATA: International Air Transport Association.
IMDG: International Maritime Dangerous Goods.
Kow: Octanol-water partition coefficient.
LC₅₀: Lethal Concentration to 50 % of a test population.
LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
PBT: Persistent, Bioaccumulative and Toxic substance.
PNEC: Predicted No Effect Concentration.
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
vPvB: Very Persistent and Very Bioaccumulative.
IARC: International Agency for Research on Cancer.
MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
cATpE: Converted Acute Toxicity Point Estimate.
BCF: Bioconcentration Factor.
BOD: Biochemical Oxygen Demand.
EC₅₀: 50% of maximal Effective Concentration.
LOAEC: Lowest Observed Adverse Effect Concentration.
LOAEL: Lowest Observed Adverse Effect Level.
NOAEC: No Observed Adverse Effect Concentration.
NOAEL: No Observed Adverse Effect Level.
NOEC: No Observed Effect Concentration.
LOEC: Lowest Observed Effect Concentration.
DMEL: Derived Minimal Effect Level.
EL50: Exposure Limit 50
hPa: Hectopascal
LL50: Lethal Loading fifty
OECD: Organisation for Economic Co-operation and Development
POW: Octanol-water partition coefficient
SCBA: self-contained breathing apparatus
STP: Sewage Treatment Plant
VOC: Volatile Organic Compounds

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Classification abbreviations and acronyms	Acute Tox. = Acute toxicity Aquatic Acute = Hazardous to the aquatic environment (acute) Aquatic Chronic = Hazardous to the aquatic environment (chronic)
Key literature references and sources for data	Supplier's information.
Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	26/04/2021
Version number	1.001
Supersedes date	27/08/2015
SDS number	12435
SDS status	Approved.
Hazard statements in full	H360FD May damage fertility. May damage the unborn child.
Signature	Jitendra Panchal

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