

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

1.1. Product identifier

Chemical name : Boric Acid

EC No : 233-139-2

CAS No. : 10043-35-3

REACH registration No. : 01-2119486683-25

REACH Registration notes : This is a substance of very high concern (SHVC) and is on the REACH Regulation (EC 1907/2006) Candidate List.

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

1.2.1. Relevant identified uses

Construction products, Fertilisers, Printing ink, Water Treatment, Abrasives, Autocausticising, Brake Fluid, Carburizing Pastes, Ceramic glazes and frits, Cosmetics & Pharmaceuticals, Detergents and cleaners, Engine Coolants, Flame retardants, Glass, Intumescent Paints, Metallurgical flux, Nuclear applications, pH Buffers, Polymer production, Reagent chemicals, Refractory Products, Wallboard, Lubricant, Grease, Catalyst, Adhesive.

1.2.2. Uses advised against

- This product is/contains a substance that is included in REGULATION (EC) No 1907/2006 (REACH) ANNEX XVII – RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES.

1.3. Details of the supplier of the safety data sheet

Industrial Mineral Services Ltd.

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T +44 (0)1630 673611 - F +44 (0)1630 674374

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1.4. Emergency telephone number

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SECTION 2: Hazards identification.

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Physical hazards	Not classified
Health hazards	Repr. 1B – H360FD
Environmental hazards	Not classified

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 (CLP)

EC Number – 233-139-2

Hazard pictograms (CLP):

GHS08



Signal word (CLP): DANGER

GHS08

Hazard statements (CLP) :

H360FD – May damage fertility. May damage the unborn child

Precautionary statements (CLP):

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

P308 + P313 – If exposed or concerned GET MEDICAL ADVICE/ATTENTION.

P405 – Store locked up.

P501 – Dispose of contents/container in accordance with national regulations.

Supplemental label information:

RCH002a Restricted to professional users

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current criteria

SECTION 3: Composition/information on ingredients.

3.1. Substances

Product name : Boric Acid

REACH Registration number	01-2119486683-25-XXXX
REACH Registration notes	This is a substance of very high concern (SHVC) and is on the REACH Regulation (EC 1907/2006) Candidate List.
EU index number	005-007-00-2
EC No.	233-139-2
CAS No.	10043-35-3
Ingredient notes	Substance of very high concern (SVHC)
Composition Comments	Purity >90, <100% w/w

SECTION 4: First aid measures.

4.1. Description of first aid measures

Inhalation: Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention.

Skin contact: Wash skin thoroughly with soap and water. Continue to rinse for at least 15 minutes. Get medical attention promptly if symptoms occur after washing.

Eye contact : Remove affected person from source of contamination. Rinse with water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes and get medical attention.

Ingestion: Rinse mouth. Never give anything by mouth to an unconscious person. Do not induce vomiting. Get medical attention.

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

General information: Prolonged or repeated exposure may cause the following adverse effects: Nausea, vomiting. Convulsions. Anaemia. Allergic rash.

Inhalation: Coughing. Sore throat.

Ingestion: Nausea, vomiting. Diarrhoea. Stomach pain. Allergic rash. Drowsiness.

Eye contact: Redness. Pain.

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

Observation only is required for adult ingestion of less than 6 grams of boric acid. For ingestion in excess of 6 grams, maintain adequate kidney function and force fluids.

SECTION 5: Firefighting measures.

5.1. Extinguishing media

Use fire-extinguishing media suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

The product is non-combustible.

5.3. Advice for firefighters

Special Fire Fighting Procedures: Cool containers exposed to flames with water until well after the fire is out. Move containers from fire area if it can be done without risk. Contain and collect extinguishing water.

Protective equipment for fire-fighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures.

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Keep unnecessary and unprotected personnel away from the spillage. Provide adequate ventilation. Avoid inhalation of dust and contact with skin and eyes. Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or watercourses or onto the ground. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up: Avoid generation and spreading of dust. Reduce airborne dust and prevent scattering by moistening with water. Collect and place in suitable waste disposal containers and seal securely. Label the containers containing waste and contaminated materials and remove from the area as soon as possible.

6.4. Reference to other sections

Reference to other sections: Wear protective clothing as described in Section 8 of this safety data sheet. See Section 11 for additional information on health hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage.

7.1. Precautions for safe handling

Usage precautions: Obtain special instructions before use. Good personal hygiene procedures should be implemented. Pregnant or breastfeeding women should not work with this product if there is any risk of exposure. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site. Avoid contact with skin and eyes. Provide adequate ventilation. Mechanical ventilation or local exhaust ventilation may be required. For further information, see attached Exposure Scenario.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions: Keep away from food, drink and animal feeding stuffs. Store in tightly-closed, original container in a dry, cool and well-ventilated place. Store at temperatures between 2°C and 40°C.

7.3. Specific end use(s)

Specific end use(s): The identified uses for this product are detailed in Section 1.2. For further information, see attached exposure scenario.

SECTION 8: Exposure controls/personal protection.

8.1. Control parameters

Occupational exposure limits:

Long-term exposure limit (8-hour TWA): OEL 10mg/m³

OEL = Occupational Exposure Limit.

DNEL				
Workers	Dermal	Long Term	Systemic Effects	392 mg/kg/day
Workers	Inhalation	Long Term	Systemic Effects	8.3 mg/m ³
Consumer	Oral	Long Term	Systemic Effects	0.98 mg/kg/day
Consumer	Inhalation	Long Term	Systemic Effects	4.15 mg/m ³
Consumer	Oral	Long Term	Systemic Effects	0.198mg/kg/day
Consumer	Dermal	Long Term	Systemic Effects	196 mg/kg/day
PNEC				
Fresh water	2.9 mg/l			
Marine water	2.9 mg/l			
Soil	5.7mg/kg			
STP	10 m/l			
Intermittent	13.7mg/µg of Boron			

8.2. Exposure controls

Appropriate engineering controls: Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients. Use mechanical ventilation if there is a risk of handling causing formation of airborne dust. For further information, see attached Exposure Scenario.

Personal protection: Protective equipment must be selected in accordance with current CEN standards.

Eye/face protection: Wear eye protection. Dust-resistant, chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection: Wear protective gloves. To protect hands from chemicals, gloves should comply with European Standard EN374. It is recommended that gloves are made of the following material: Butyl rubber. Nitrile rubber. Rubber (natural, latex). 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.

Other skin and body protection: Provide eyewash station and safety shower. Wear appropriate clothing to prevent skin contamination.

Hygiene measures: Do not smoke in work area. Wash hands 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. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. When using do not eat, drink or smoke.

Respiratory protection: Use a EN149 approved respirator when necessary. Wear a respirator fitted with the following cartridge: Particulate filter, type P2.

Environmental exposure controls: The risk management measures that adequately control exposure of the environment are set out in the exposure scenarios in the annex to this Safety Data Sheet.

SECTION 9: Physical and chemical; properties.

Physical state	Crystalline powder.
Colour	white.
Odour	odourless.
Odour threshold	Not applicable
pH value (diluted solution)	5.1 @ 0.1M
Melting point	>1,000 °C
Initial boiling point and range	Endpoint waived according to REACH Annex VII, IX or XI
Flash point	Endpoint waived according to REACH Annex VII, IX or XI
Evaporation rate	Not applicable
Decomposition temperature	Not applicable
Flammability (solid, gas)	This product is not flammable. EU A.10
Vapour pressure	0.000099 Pa @ 25°C
Vapour density	Not applicable
Relative density	1.49 @ 23°C
Solubility (ies)	49.2 g/l water @ 20°C. Very soluble in the following materials: water
Partition Coefficient	Log Pow: -1.09 (22°C)
Auto-ignition temperature	Not classified
Viscosity	Not applicable
Oxidising properties	Does not meet the criteria for classification as oxidising
Explosive properties	There are no chemical groups in the product that are associated with explosive properties.

9.2. Other information

Molecular Weight

61.833

SECTION 10: Stability and reactivity.

10.1. Reactivity

Reactivity: If moisture is present boric acid can be corrosive to iron.

10.2. Chemical stability

Stability: Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions: Reactions with the following materials may cause explosions: Strong reducing agents. Alkali metals. Will not polymerise.

10.4. Conditions to avoid

Conditions to avoid: Avoid heat, flames and other sources of ignition. Water, moisture.

10.5. Incompatible materials

Materials to avoid: Potassium, Alkalis, Acetic anhydride.

10.6. Hazardous decomposition products

Hazardous decomposition products: Will decompose at temperatures exceeding 100°C. Thermal decomposition or combustion products may include the following substances: Metaboric acid. Diboron trioxide.

SECTION 11: Toxicological information.

11.1. Information on toxicological effects

<u>Acute toxicity - oral</u> Notes (oral LD ₅₀)	LD ₅₀ >2,600 mg/kg, Oral, Rat. Test method (s): OECD 401. Based on available data the classification criteria are not met.
<u>Acute toxicity - dermal</u> Notes (dermal LD ₅₀)	LD ₅₀ >2,000 mg/kg, Dermal, Rabbit. Test method (s): FIFRA (40 CFR 163). Based on available data the classification criteria are not met.
<u>Acute toxicity - inhalation</u> Notes (inhalation LC ₅₀)	LC ₅₀ (5h) >2.03 mg/l, Inhalation, Rat. Test method (s): OECD 403. Based on available data the classification criteria are not met.
<u>Skin corrosion/irritation</u> Animal data	Primary dermal irritation index: 0.1 (72h) Erythema/eschar score: Very slight erythema - barely perceptible (1). Oedema score: No oedema (0). Test method(s): FIFRA (40 CFR 163) . Based on available data the classification criteria are not met.
<u>Serious eye damage/irritation</u> Serious eye damage/irritation	Not irritating. Test method(s): equivalent or similar to OECD 405. Based on available data the classification criteria are not met.
<u>Skin sensitisation</u> Skin sensitisation	Buehler test: - Guinea pig: Not sensitising. Test method(s): OECD 406. Based on available data the classification criteria are not met.

<p><u>Germ cell mutagenicity</u> Genotoxicity - in vitro Genotoxicity - in vivo</p>	<p>Gene mutation: Negative. Test method OECD 471 Based on available data the classification criteria are not met. Chromosome aberration: Negative. Test method(s): equivalent or similar to OECD 474 Based on available data the classification criteria are not met.</p>
<p><u>Carconogenicity</u> Carconogenicity</p>	<p>NOEL>1,150 mg/kg, Oral, Mouse . There is no evidence that the product can cause cancer. Test method(s): equivalent or similar to OECD 451. Based on available data the classification criteria are not met.</p>
<p><u>Reproductive toxicity</u> Reproductive toxicity - fertility Reproductive toxicity - development</p>	<p>Three-generation study - NOAEL 17.5 mg/kg, Oral, Rat P . The units are expressed in 'mg/μg' of: Boron. Test method(s): Toxicology and Applied Pharmacology 23: 351 - 364. Known reproductive toxicant based on animal evidence. May damage fertility. Developmental toxicity: - NOAEL: 9.6 mg/kg, Oral, Rabbit . The units are expressed in 'mg/μg' of: Boron. Test method(s): equivalent or similar to OECD 414. May damage the unborn child.</p>
<p><u>Specific target organ toxicity - single exposure</u> STOT - single exposure</p>	<p>No information available.</p>
<p><u>Specific target organ toxicity - repeated exposure</u> STOT - repeated exposure</p>	<p>NOAEL 100 mg/kg, Oral, Rat . Test method(s): Toxicology and Applied Pharmacology 23: 351 - 364. Based on available data the classification criteria are not met.</p>
<p><u>Aspiration hazard</u> Aspiration hazard</p>	<p>No data available.</p>

General information

Inhalation	Dust may irritate the respiratory system. Symptoms following overexposure may include the following: Coughing.
Ingestion	Irritating. Symptoms following overexposure may include the following: Nausea, vomiting. Stomach pain.
Eye contact	May be slightly irritating to eyes. Symptoms following overexposure may include the following: Redness. Pain.

SECTION 12: Ecological information.

Ecotoxicity: Not regarded as dangerous for the environment

12.1. Toxicity

Toxicity	REACH dossier information. The units are expressed in 'mg/μg' of: Boron. Based on available data the classification criteria are not met.
Acute toxicity - fish	LC ₅₀ , 96 hours: 79.7 mg/l, Pimephales promelas (Fat-head Minnow) EPA OPPTS 850.1075
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 133 mg/l, Daphnia magna ASTM Standard E 729-80
Acute toxicity - aquatic plants -	EC ₅₀ , 72 hours: 52.5 mg/l, Selenastrum capricornutum OECD 201.
Chronic toxicity - fish early life stage	NOEC, 34 day: 5.6 mg/l, Brachydanio rerio (Zebra Fish) OECD 210.
Chronic toxicity - aquatic invertebrates	NOEC, 21 day: 32 mg/l, Daphnia magna OECD 211.

12.2. Persistence and degradability

Persistence and degradability: Not applicable. Substance is inorganic

Biodegradation: Endpoint waived according to REACH Annex VII, IX or XI

12.3. Bioaccumulative potential

Bioaccumulative potential: None

Partition coefficient: log Pow: -1.09 (22⁰C)

12.4. Mobility in soil

Mobility: The product is soluble in water. Mobile.

Adsorption/desorption Coefficient: Soil. K_d = 1.5 L/kg

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment: This substance is not classified as PBT or vPvB according to current EU criteria.

12.6. Other adverse effects

None known.

SECTION 13: Disposal considerations.

13.1. Waste treatment methods

General information: Reuse or recycle products wherever possible.

Disposal methods: Waste should be treated as controlled waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

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 classified as dangerous according to Transport Regulations

14.3. Transport hazard class(es)

Not applicable

14.4. Packing group

Not applicable

14.5. Environmental hazards

Environmentally Hazard substance/Marine Pollutant - No

14.6. Special precautions for user

Not applicable

14.7. 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

EU-Legislation:

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). 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).

Guidance:

Introduction to Local Exhaust Ventilation HS(G)37.

Workplace Exposure Limits EH40.

Restrictions (Title VIII Regulation 1907/2006):

This product is/contains a substance that is included in REGULATION (EC) No 1907/2006 (REACH) ANNEX XVII – RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES. Entry number 30, Restricted to professional users.

15.2 Chemical Safety Assessment

A chemical safety assessment has been carried out

SECTION 16: Other information.

General information:

The following information is provided to conform with article 13 of the EC Directive on Packaging and Packaging Waste 94/62/EC:

- Wherever possible we use returnable packaging and pallets. Details of these are on our Sales Contracts
- For any non-returnable packaging the cost of disposal is at your expense, but we do have a list of re-processors available
- In most cases, but not all, we are able to supply products in returnable packaging but the additional cost of this will be for the customer's expense. Please ask for details with your specific requirements
- Any products supplied in returnable packaging is clearly marked to this effect.

Key literature references and sources for data:

Chemical safety report. International Chemical Safety Card, www.inchem.org.

Revision comments:

NOTE: There are significant changes from the previous revision contained within this document. These are under headings 1.2, 4.1, 4.2, 5.1, 6.1, 6.2, 6.3, 7.1, 7.2, 8.1, 8.2, 9.1, 11.1, 12.1, 12.2, 12.4& 15.1

Revision date:

22-06-2016

Revision No:

2

Supersedes date:

26-05-2011

Hazard & precautionary statements in full:

H360FD	May damage fertility or the unborn child .
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.
P308 + P313	IF exposed or concerned: Get medical advice/attention
P405	Store locked up
P501	Dispose of contents/containers in accordance with national regulations

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable