

Safety Data Sheet



Hazardous Chemical, NON-Dangerous Goods

1. MATERIAL AND SUPPLY COMPANY IDENTIFICATION

Product name: **BORIC ACID**

Synonyms

3-Aminophenylboronic acid
Polymer-bound
APS TECH00005138
BP00004219
AR00000101
B(OH)₃
B-H3-O3
Boorzuur
Borofax
Borsaure
Homberg's salt
NCI-C56417
Optibor
Redox BOACID70
Sassolite
UL00000942
UL00000102
TECH00000934
Boracic acid
Boron hydroxide
Boron trihydroxide
Component of Aci-Jel
Hydrogen borate
Orthoboric acid
Trihydroxidoboron
Trihydroxyborane
Trioxoboric (III) acid

Product Code

Recommended use: Used for weatherproofing and fireproofing fabrics; as a preservative; manufacture of cements, crockery, porcelain, enamels, glass, borates, leather, carpets, hats, soaps, artificial gems; in nickel plating baths. The primary industrial use of boric acid is in the manufacture of monofilament fiberglass usually referred to as textile fiberglass. Textile fiberglass is used to reinforce plastics in applications that range from boats, to industrial piping to computer circuit boards. Also used in the manufacture of cosmetics; ointments and eye washes; printing and dyeing, photography; for impregnating wicks; hardening steel; in welding flux and copper brazing. Insecticide for cockroaches and carpet beetles; fungus control for citrus fruits. Boric acid also prevents and destroys existing wet and dry rot in timbers. It can be used in combination with an ethylene glycol carrier to treat external wood against fungal and insect attack. It is possible to buy borate impregnated rods for insertion into wood via drill holes where dampness and moisture is known to collect and sit. It is available in a gel form and injectable paste form for treating rot affected wood without the need to replace the timber. Boric acid is added to salt in the curing of cattle hides, calfskins, and sheepskins. This helps to control bacteria development, and helps to control insects. Colloidal suspensions of nanoparticles of boric acid dissolved in petroleum or vegetable oil can form a lubricant on ceramic or metal surfaces with a coefficient of sliding friction that decreases with increasing pressure to a value ranging from 0.10 to 0.02. Self-lubricating H₃BO₃ films result from a spontaneous chemical reaction between water molecules and B₂O₃ coatings in a humid environment. In bulk-scale, an inverse relationship exists between friction coefficient and Hertzian contact pressure induced by applied load. Boron is used in pyrotechnics to prevent the amide-forming reaction between aluminum and nitrates. A small amount of boric acid is added to the composition to neutralize alkaline amides that can react with the aluminum. Boric acid is used in nuclear power plants as a neutron poison to slow down the rate at which fission is occurring. Natural boron is 20%boron-10 and about 80%boron-11. Boron-10 has a high cross-section for absorption of low energy (thermal) neutrons. By adding more boric acid to the reactor coolant which circulates through the reactor, the probability that a neutron can survive to cause fission is reduced.

Safety Data Sheet



Supplier: Clark Products
Company No.:
Street Address: 75 Niven Street Onekawa
Napier 4110 New Zealand
Telephone: 06 8433163
Facsimile: 06 8432958
Email: orders@clarkproducts.co.nz

Emergency Telephone number: 0800 CHEMCALL (0800 243 6225)

2. HAZARDS IDENTIFICATION

This material is hazardous according to criteria of EPA New Zealand.

HSNO Approval Code: HSR002995



Signal Word

Warning

Hazard Classifications

- 6.1E - Substances that are acutely toxic - Oral
- 6.3B - Substances that are mildly irritating to the skin
- 6.4A - Substances that are irritating to the eye
- 6.8B - Substances that are suspected human reproductive or developmental toxicants
- 9.1D - Substances that are slightly harmful to the aquatic environment or are otherwise designed for biocidal action (H401)

Hazard Statements

- H303 May be harmful if swallowed.
- H316 Causes mild skin irritation.
- H319 Causes serious eye irritation.
- H361 Suspected of damaging fertility or the unborn child .
- H401 Toxic to aquatic life.

Prevention Precautionary Statements

- P102 Keep out of reach of children.
- P103 Read label before use.
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P264 Wash hands, face and all exposed skin thoroughly after handling.
- P273 Avoid release to the environment.
- P281 Use personal protective equipment as required.

Response Precautionary Statements

- P101 If medical advice is needed, have product container or label at hand.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P312 Call a POISON CENTRE or doctor/physician if you feel unwell.

Safety Data Sheet



P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.

Storage Precautionary Statement

P405 Store locked up.

Disposal Precautionary Statement

P501 Dispose of contents/container in accordance with local, regional, national and international regulations.

DANGEROUS GOOD CLASSIFICATION

Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

3. COMPOSITION INFORMATION

CHEMICAL ENTITY	CAS NO	PROPORTION
Boric acid (H3BO3)	10043-35-3	>99 % (w/w)
		100%

4. FIRST AID MEASURES

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).

Inhalation: Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.

Skin Contact: If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. If swelling, redness, blistering or irritation occurs seek medical assistance.

Eye contact: If in eyes, hold eyelids apart and flush the eyes continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a Doctor; or for at least 15 minutes and transport to Doctor or Hospital.

Ingestion: Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water to drink. Never give anything by the mouth to an unconscious patient. If vomiting occurs give further water. Seek medical advice.

PPE for First Aiders: Wear safety shoes, overalls, gloves, apron, chemical goggles, respirator. Use with adequate ventilation. If inhalation risk exists wear organic vapour/particulate respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Available information suggests that gloves made from nitrile rubber should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Notes to physician: Treat symptomatically.

5. FIRE FIGHTING MEASURES

Hazchem Code: Not applicable.

Safety Data Sheet



Suitable extinguishing media: If material is involved in a fire use water fog (or if unavailable fine water spray), alcohol resistant foam, standard foam, dry agent (carbon dioxide, dry chemical powder).

Specific hazards: Non-combustible material.

Fire fighting further advice: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILLS

Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours or dust. Wipe up with absorbent (clean rag or paper towels). Collect and seal in properly labelled containers or drums for disposal.

LARGE SPILLS

Clear area of all unprotected personnel. Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of dust. Work up wind or increase ventilation. Cover with damp absorbent (inert material, sand or soil). Sweep or vacuum up, but avoid generating dust. Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.

Dangerous Goods - Initial Emergency Response Guide No: Not applicable

7. HANDLING AND STORAGE

Handling: Avoid eye contact and skin contact. Avoid inhalation of dust.

Storage: Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Store away from sources of heat and/or ignition. Store locked up. Keep container standing upright. Keep containers closed when not in use - check regularly for spills.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National occupational exposure limits: No value assigned for this specific material by WorkSafe New Zealand.

Biological Limit Values: As per the WorkSafe New Zealand the ingredients in this material do not have a Biological Limit Allocated.

Engineering Measures: Natural ventilation should be adequate under normal use conditions..

Personal Protection Equipment: SAFETY SHOES, OVERALLS, GLOVES, APRON, CHEMICAL GOGGLES, RESPIRATOR.

Personal protective equipment (PPE) must be suitable for the nature of the work and any hazard associated with the work as identified by the risk assessment conducted.

Wear safety shoes, overalls, gloves, apron, chemical goggles, respirator. Use with adequate ventilation. If inhalation risk exists wear organic vapour/particulate respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Available information suggests that gloves made from nitrile rubber should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Safety Data Sheet



Hygiene measures: Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid contact with clothing. Avoid eye contact and skin contact. Avoid inhalation of dust. Ensure that eyewash stations and safety showers are close to the workstation location.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form: Solid
Colour: Colourless
Odour: Odourless

Solubility: Solubility in water@30 deg.C: 6.35 g/100 cc;@100 deg.C: 27.6 g/100 cc. Mixes with glycerol, ether, alcohol, methanol, liquid ammonia; slightly soluble in acetone.

Specific Gravity: N Av
Density: 1.44-1.5128
Relative Vapour Density (air=1): N App
Vapour Pressure (20 °C): N App
Flash Point (°C): N App
Flammability Limits (%): N App
Autoignition Temperature (°C): N App
Melting Point/Range (°C): 169 (decomposes)
Boiling Point/Range (°C): N App
Decomposition Point (°C): 169
pH: 5.2@20 C
Viscosity: N App
Total VOC (g/Litre): N Av
Molecular Weight: 61.83

(Typical values only - consult specification sheet)
N Av = Not available, N App = Not applicable

10. STABILITY AND REACTIVITY

Chemical stability: This material is thermally stable when stored and used as directed.

Conditions to avoid: Elevated temperatures and sources of ignition.

Incompatible materials: Oxidising agents.

Hazardous decomposition products: Oxides of carbon and nitrogen, smoke and other toxic fumes.

Hazardous reactions: No known hazardous reactions.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Acute Effects

Inhalation: Material may be an irritant to mucous membranes and respiratory tract.

Skin contact: Contact with skin may result in irritation.

Safety Data Sheet



Ingestion: Swallowing can result in nausea, vomiting and irritation of the gastrointestinal tract.

Eye contact: An eye irritant. Exposure to the dust may cause discomfort due to particulate nature. May cause physical irritation to the eyes.

Acute toxicity

Inhalation: This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): LC50 > 5.0 mg/L

Skin contact: This material has been classified as non-hazardous. Acute toxicity estimate (based on ingredients): >5,000 mg/Kg bw

Ingestion: This material has been classified as a 6.1E - Substances that are acutely toxic. Acute toxicity estimate (based on ingredients): 2,000 - 5,000 mg/Kg bw

Corrosion/Irritancy: Eye: this material has been classified as a 6.4A - Substances that are irritating to the eye. Skin: this material has been classified as a 6.3B - Substances that are mildly irritating to the skin.

Sensitisation: Inhalation: this material has been classified as not a respiratory sensitiser. Skin: this material has been classified as not a skin sensitiser.

Aspiration hazard: This material has been classified as non-hazardous.

Specific target organ toxicity (single exposure): This material has been classified as non-hazardous.

Chronic Toxicity

Mutagenicity: This material has been classified as non-hazardous.

Carcinogenicity: This material has been classified as non-hazardous.

Reproductive toxicity (including via lactation):

This material has been classified as a 6.8B - Substances that are suspected human reproductive or developmental toxicants.

Specific target organ toxicity (repeat exposure): This material has been classified as non-hazardous.

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.

Acute aquatic hazard: 9.1D - Substances that are slightly harmful to the aquatic environment or are otherwise designed for biocidal action. Acute toxicity estimate (based on ingredients): 1 - 10 mg/L

Long-term aquatic hazard: This material has been classified as non-hazardous. Non-rapidly or rapidly degradable substance for which there are adequate chronic toxicity data available OR in the absence of chronic toxicity data, Acute toxicity estimate (based on ingredients): >100 mg/L, where the substance is not rapidly degradable and/or BCF < 500 and/or log K_{ow} < 4.

Ecotoxicity in the soil environment: This material has been classified as non-hazardous.

Ecotoxicity to terrestrial vertebrates: This material has been classified as non-hazardous.

Ecotoxicity to terrestrial invertebrates: This material has been classified as non-hazardous.

Ecotoxicity: No information available.

Safety Data Sheet



Persistence and degradability: No information available.

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS.

If possible material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national and international Regulations.

14. TRANSPORT INFORMATION

ROAD AND RAIL TRANSPORT

Not classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

MARINE TRANSPORT

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

AIR TRANSPORT

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

15. REGULATORY INFORMATION

This material is not subject to the following international agreements:

Montreal Protocol (Ozone depleting substances)
The Stockholm Convention (Persistent Organic Pollutants)
The Rotterdam Convention (Prior Informed Consent)
Basel Convention (Hazardous Waste)
International Convention for the Prevention of Pollution from Ships (MARPOL)

• All components of this product are listed on or exempt from the New Zealand Inventory of Chemical (NZIoC).

HSNO Approval Code: HSR002995

Approved handler	No
Location test certificate	No
Fire extinguishers	No
Signage	No
Emergency response	No
Hazardous atmosphere zone	No

16. OTHER INFORMATION

Reason for issue: Minor Text Changes

Safety Data Sheet



This information was prepared in good faith from the best information available at the time of issue. It is based on the present level of research and to this extent we believe it is accurate. However, no guarantee of accuracy is made or implied and since conditions of use are beyond our control, all information relevant to usage is offered without warranty. The manufacturer will not be held responsible for any unauthorised use of this information or for any modified or altered versions.

If you are an employer it is your duty to tell your employees, and any others that may be affected, of any hazards described in this sheet and of any precautions that should be taken.

Safety Data Sheets are updated frequently. Please ensure you have a current copy.