

Material Safety Data Sheet

(This document conforms to ISO 11014-1)

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Supplier / Manufacturer:



Kimleigh Chemicals SA (Pty) Ltd
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Potchefstroom, North West Province, 2531, South Africa.
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Chemical Name:

Boric Acid

Synonyms:

Boracic acid, Orthoboric acid.

Product Range:

Fertion.

Chemical Family:

Inorganic borates.

Material Uses:

Weatherproofing of wood, Fireproofing fabrics, Preservative, Manufacturing cements, Crockery, Porcelain, Enamels, Glass, Borates, Leather, Carpets, Hats, Soaps, Artificial gems, Nickeling baths, Cosmetics, Printing and dyeing, Painting, Photography, Impregnating wicks, Electric condensers, Hardening steel. Insecticide.

2. COMPOSITION / INFORMATION ON INGREDIENTS

Substance Name:

Boric Acid.

Assay % by Weight:

97 %.

Appearance:

Colourless / White granules or powder.

Molecular Formula:

H_3BO_3

Molar Mass:

61.83 g/mol

CAS Number:

10043-35-3

EC Number:

233-139-2

3. HAZARD IDENTIFICATION

Physical State and Appearance:

Colourless / White granules or powder.

Emergency Overview:

Danger!
May damage fertility or the unborn child.

The product should be handled with care usual when dealing with chemicals.

Reproductive toxicity, Category 1B.

GHS Classification:

H360 May damage fertility or the unborn child.

Pictogram:



Signal word:

Danger

Routes of Entry:

Eye Contact. Inhalation. Ingestion. Absorbed through skin.

Potential Health Effects:

Eyes May cause eye irritation and local inflammation. Symptoms may include stinging, tearing and redness.

Skin May be harmful if absorbed through skin. May cause skin irritation.

Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Other symptoms can include irritation of nasal passages, sore throat, shortness of breath and coughing.

Ingestion May be harmful if swallowed. May cause irritation and/or a burning sensation in the mouth, pharynx, oesophagus and gastrointestinal tract. Other symptoms may include abdominal cramps / pain, nausea, vomiting and diarrhoea, erythematous lesions on skin and mucous membranes, circulatory collapse, tachycardia, cyanosis, delirium, convulsions and coma.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS:

No component of this product presented at levels greater than or equal to 0.1 % is identified as probable, possible or confirmed human carcinogen.

MUTAGENIC EFFECTS: Not reported.

TERATOGENIC EFFECTS: Not reported.

Chronic use may cause borism (dry skin, eruptions, gastric disturbances).

4. FIRST AID MEASURES

General Advice:

Consult a physician. Show this material safety data sheet to the doctor in attendance.

Eye Contact:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Remove contact lenses if present and easy to do so. Continue rinsing. Get medical attention immediately.

Skin Contact:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash off with soap and plenty of water. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Inhalation:	If inhaled, move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Ingestion:	If swallowed, do not induce vomiting unless directed to do so by medical personnel. Rinse mouth with water. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

5. FIRE-FIGHTING MEASURES

Flammability of Product:	Not combustible.
Auto-ignition Temperature:	Not applicable.
Flash Points:	Not applicable.
Flammable Limits:	Not applicable.
Product of Combustion:	Boron oxides.
Fire Hazards in Presence of Various Substances:	Not reported.
Explosion Hazards in Presence of Various Substances:	Risks of explosion of the product in presence of static discharge: No. Risks of explosion of the product in presence of mechanical impact: No.
Fire Fighting Media and Instructions:	Small fire: Use dry chemicals, CO ₂ , alcohol-resistant foam or water spray. Large fire: Water spray or fog, alcohol-resistant foam.
Protective Clothing (Fire):	Wear NIOSH approved self-contained breathing apparatus or equivalent and full protective gear.
Special Remarks on Fire Hazards:	Prevent fire-fighting water from entering surface water or groundwater.
Special Remarks on Explosion Hazards:	A mixture of potassium and boric acid may explode on impact. A mixture of boric acid and acetic anhydride will explode when heated to 58 – 60 °C.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Use personal protective equipment. Avoid dust formation. Avoid substance contact and inhalation. Ensure adequate ventilation.
Environmental Protection Measures:	Do not allow to enter sewerage system.
Small Spill:	Use appropriate tools and personal protective equipment. Take up spillage limiting generation of dust. Dispose of in a waste disposal container. Do not allow to enter sewerage system.

Large Spill:

Use appropriate tools and personal protective equipment. Contain material. Take up spillage limiting generation of dust.

Dispose of in a waste disposal container. Do not allow to enter sewerage system.

7. HANDLING AND STORAGE**Handling:**

Handle with care in accordance with good industrial hygiene and safety practices. Minimise dust generation. Avoid inhalation of dust. Avoid contact with eyes and skin and any form of ingestion. Wear suitable protective clothing such as overalls, boots, rubber gloves, goggles, nose and mouth protection and wash contaminated clothing daily. Wash thoroughly with soap and water after use or accidental skin contact. Do not eat, drink or smoke during use. Avoid contamination of food, foodstuffs, eating utensils and drinking water. Do not discharge product or residues into rivers, dams and canals.

Storage:

Keep container tightly closed. Store in a cool, dry and well ventilated place away from food, foodstuffs, combustible materials and incompatible substances. Store under lock and key and keep out of reach of children, uninformed persons and animals. Access to water and eye wash facility should be available.

8. EXPOSURE CONTROL / PERSONAL PROTECTION**Engineering controls:**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Protective clothing should be selected specifically for the working place, depending on concentration and quantity of the substance handled.

<i>Eyes</i>	Safety glasses with side shields / face shield.
<i>Body</i>	Body-covering clothing / full suit.
<i>Respiratory</i>	Dust respirator / dust mask. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
<i>Hands</i>	Gloves, nitrile rubber gloves.
<i>Feet</i>	Boots.

Hygiene Measures:

Handle in accordance with good industrial hygiene and safety practices. Remove and wash contaminated clothing. Wash hands after use and before eating or smoking. Wash promptly

if skin becomes contaminated.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance:	Colourless / White granules or powder.
Odour:	Odourless.
pH (20 °):	5.1 (1 % solution).
Boiling Point:	Not available.
Melting Point:	171 °C.
Thermal Decomposition:	Decomposition at 185 °C.
Density:	1,44 g / cm ³
Bulk density (not compacted) (20°C):	ca. 400 – 600 kg / m ³
Vapour Pressure:	Not available.
Vapour Density:	Not available.
Volatility:	Not available.
Odour Threshold:	Not available.
Evaporation Rate:	Not available.
VOC:	Not available.
Log K_{ow}	Not available.
Ionicity (in water)	Not available.
Dispersion Properties	Not available.
Solubility in water	50 g/l (21 °C) Solubility in water is increased by HCl, citric acid or tartaric acid.

10. STABILITY AND REACTIVITY

Stability and Reactivity:	The product is stable under recommended conditions of storage and use.
Conditions of Instability:	Store away from moisture.
Incompatibility with Various Substances:	Acetic anhydride, potassium, alkali carbonates and hydroxides, weak acids, strong reducing agents.
Hazardous Decomposition Products:	Boron oxides.
Hazardous Polymerization:	Will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicity:	Acute oral (LD ₅₀): 2660 mg/kg [RAT] Acute Dermal (LD ₅₀) >2000 mg/kg [RABBIT]
Chronic Effects on Humans:	<u>CARCINOGENIC EFFECTS:</u> No component of this product presented at levels greater than or equal to 0.1 % is identified as probable, possible or confirmed human carcinogen. <u>MUTAGENIC EFFECTS:</u> Not reported. <u>TERATOGENIC EFFECTS:</u> Not reported.
Acute Effects on Humans:	May cause eye irritation. Inflammation of the eye is characterized by redness, watering and itching. May be harmful if absorbed through skin. Skin irritant. Skin inflammation is characterized by itching, scaling, reddening or, occasionally blistering. May be harmful if inhaled. Inhalation may cause damage or irritation of respiratory tract. Symptoms can include irritation of nasal passages, sore throat, shortness of breath and coughing. May cause irritation and/or a burning sensation in the mouth, pharynx, oesophagus and gastrointestinal tract. Other symptoms may include abdominal cramps / pain, nausea, vomiting and diarrhoea, erythematous lesions on skin and mucous membranes, circulatory collapse, tachycardia, cyanosis, delirium, convulsions and coma. After absorption of large quantities: Agitation, spasms, tiredness, ataxia (impaired locomotor coordination), drop in temperature.
Synergetic Products: (Toxicologically)	Not available.
Irritancy:	Draize Test: Not available.
Sensitization:	Sensitization test (Guinea pig) – negative Method: OECD Test guideline 406
Toxicity to Reproductive System:	May damage fertility. May damage the unborn child.

12. ECOLOGICAL INFORMATION

Ecotoxicity:	Fish: Oncorhynchus mykiss (LG ₅₀) 50 – 100 mg / L / 96h Daphnia: Daphnia magna (EC ₅₀): 133 mg / l / 48h
Biodegradable/OECD:	Not available.
Mobility:	Do not allow to enter water or soil.
Toxicity of the Products of Biodegradation:	Not available.

13. DISPOSAL CONSIDERATIONS

Treatment: Consultation with a permitted waste disposal site (TSD) should be accomplished. Always contact a permitted waste disposal site (TSD) to assure compliance with all current, local, national, and Governmental regulations.

14. TRANSPORT INFORMATION

Land Transport: *ADR / RID* Not classified as dangerous in the meaning of transport regulations.
Packing group: Not specified.
UN Number: Not listed.

Marine Transport: *IMDG* Not classified as dangerous in the meaning of transport regulations.
Packing group: Not specified.
UN Number: Not listed.

Air Transport: *IATA* Not classified as dangerous in the meaning of transport regulations.
Packing group: Not specified.
UN Number: Not listed.

15. REGULATORY INFORMATION

Republic of South Africa Regulations: National Water Act 36 of 1998.
Occupational Health and Safety Act, 1993.
Environmental Conservation Act 73 of 1989.
Hazardous Substances Act, 1973.
Provincial Ordinances and Local By-laws.

GHS Classification:

Pictograms:



Signal Word: Danger

Hazard Statements: H360: May damage fertility or the unborn child.

Precautionary Statements: P201: Obtain special instructions before use.
P308 + P313: If exposed or concerned: Get medical advice / attention.

Restricted to professional users.

16. OTHER INFORMATION

References: O'Neil, M.J. (editor). 2006. The Merck Index: An Encyclopedia of Chemicals, Drugs and Biologicals. 14ed. Merck & Co., Inc. Whitehouse Station, NJ, 1333p.

Hazardous Substance Data Bank (HSDB) – Boric acid.

Label Requirements: Keep away from food and foodstuffs.

Emergency Contact:

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