

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Borax

Recommended Use: Cleaning

Supplier: Midland Chemicals
ABN: 91 622 018 986

Street Address: 18 Elliott Street
Midvale
Western Australia

Telephone Number: +61 08 9274 1992

Facsimile: +61 08 9250 1710

Emergency Telephone: 1 800 033 111 (ALL HOURS)

2. HAZARDS IDENTIFICATION

Road and Rail; Non Dangerous Goods according to the criteria of the Australian Dangerous Goods Code (ADG Code).

Globally Harmonised System

Hazard Classification

Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS).

Hazard Categories

Acute Toxicity (Oral) - Category 5
Serious Eye Damage/Irritation - Category 2A
Toxic To Reproduction - Category 1B

Pictograms



Signal Word

Product Name: Borax

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Danger

Hazard Statements

H303 May be harmful if Swallowed

H319 Causes serious eye irritation.

H360FD May damage fertility. May damage the unborn child.

Precautionary Statement

Prevention

P270 Do not eat, drink or smoke when using this product

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response

P312 Call a POISON CENTER or doctor/physician if you feel unwell

P330 Rinse mouth.

P363 Wash contaminated clothing before reuse

P305 + P351 + P338 + P331 + PP313 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage:

Store locked up

Disposal

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

Poisons Schedule: 5

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion
Borax Decahydrate	1303-96-4	>99.9%

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4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor at once.

Inhalation:

Remove victim to fresh air and keep at rest in a position comfortable for breathing until recovered. Get medical advice/attention if respiratory symptoms persist or if you feel unwell.

Skin Contact:

Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.

Eye Contact:

Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.

Ingestion:

Rinse mouth, then drink plenty of water. Call a Poison Centre or doctor/physician for advice if large amounts are swallowed (i.e. more than one teaspoon) or if you feel unwell (see Note to Physician).

Medical attention and special treatment:

If exposed or concerned, get medical advice/attention. Observation only is required for adult ingestion of less than 9 grams. For ingestion in excess of 9 grams, maintain adequate kidney function and force fluids. Gastric lavage is recommended for symptomatic patients only. Hemodialysis should be reserved for massive acute ingestion or patients with renal failure. Boron analyses of urine or blood are only useful for documenting exposure and should not be used to evaluate severity of poisoning or to guide treatment.

5. FIRE FIGHTING MEASURES

Hazards from combustion products:

Non-combustible; the product is itself a flame retardant. Not flammable, combustible or explosive. Decomposes on heating, emitting toxic fumes. Fire or heat will produce irritating, toxic and/or corrosive gases, including oxides of Sodium and oxides of Boron

Precautions for fire fighters and special protective equipment:

Wear self-contained breathing apparatus (SCBA) in combination with normal firefighting clothing (full fire kit).

If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.

Contain runoff from fire control or dilution water - Runoff may pollute waterways.

Suitable Extinguishing Media:

If material is involved in a fire, use extinguishing media appropriate to surrounding fire conditions.

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6. ACCIDENTAL RELEASE MEASURES

General Response Procedure:

Ensure adequate ventilation. Do not touch or walk through spilled material. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing

Clean up Procedure:

Collect material (vacuum, shovel or sweep up) and place it into suitable containers for disposal (see SECTION 13); if appropriate, moisten first or cover with damp absorbent to avoid generating dust.

Containment:

Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas.

Decontamination:

No information available.

Environmental Precautionary Measures:

Prevent entry into soils, drains and waterways.

Evacuation Criteria:

Spill or leak area should be isolated immediately. Keep unauthorised personnel away.

Personnel Precautionary Measures:

Use personal protective equipment as required (see SECTION 8); Wear respiratory protection in case of prolonged or high level exposure to airborne dust.

7. HANDLING AND STORAGE

This material must be stored, maintained and used in accordance with the relevant regulations.

Conditions for safe storage:

Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers tightly closed; store bags such as to prevent any accidental damage. Keep away from foodstuffs and incompatible materials (see SECTION 10). Store locked up. - To maintain package integrity and to minimize caking of the product, bags should be handled on a first-in first-out basis. Keep in the original container.

Precautions for safe handling:

Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Obtain special instructions before use - Do not handle until all safety precautions have been read and understood. Good housekeeping and dust prevention procedures should be followed to minimise dust generation and accumulation. Avoid breathing dust and contact with eyes, skin and clothing. Use personal protective equipment as required (see SECTION 8).

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits:

No Data Available

General:

SUBSTANCE: Disodium tetraborate, decahydrate/Borax (CAS No. 1303-96-4): - Safe Work Australia Exposure Standard for Borates, tetra, sodium salts (decahydrate): TWA = 5 mg/m³. - New Zealand WES for Borates, tetra, sodium salts - Decahydrate: TWA = 5 mg/m³

Biological Limits:

No information available.

Engineering Measures:

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Maintain air concentrations below occupational exposure standards.

Personal Protective Equipment:

- Respiratory protection: Wear respiratory protection in case of prolonged or high level exposure to airborne dust. Recommended: Dust mask/respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to avoid eye contact. Recommended: Chemical goggles may be warranted if environment is excessively dusty. - Hand protection: Handle with gloves. Recommended: Impervious gloves may be warranted if environment is excessively dusty. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes.

Special Hazards Precautions:

No information available.

Work Hygiene Practices:

Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling. Remove contaminated clothing and shoes immediately and wash before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid Granular Powder

Colour: white

Solubility: 4.7% in water @ 20°C - 65.6% in water @ 100°C

Specific Gravity: 1.71

Relative Vapour Density (air=1): No Data Available

Vapour Pressure (20 °C): Negligible (@ 20 °C)

Flash Point (°C): No Data Available

Flammability Limits (%): Not flammable, combustible or explosive.

Auto Ignition Temperature (°C): No Data Available

Boiling Point: 1,575 °C

Melting Point (°C): 741 °C

pH: 9.2 (1% soln.)

Decomposition Temperature: 60 °C (8H₂O) - 320 °C (10H₂O)

Molecular Weight: 381.37 g/mol

Reactions That Release Gases or Vapours: Decomposes on heating, emitting toxic fumes.

Release of Invisible Flammable Vapours and Gases: Reaction with strong reducing agents, such as metal hydrides, acetic anhydride or alkali metals, will generate hydrogen gas which could create an explosive hazard.

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10. STABILITY AND REACTIVITY

Chemical stability:	Borax decahydrate is a stable product, but when heated it loses water, eventually forming anhydrous borax ($\text{Na}_2\text{B}_4\text{O}_7$). Reaction with strong reducing agents, such as metal hydrides, acetic anhydride or alkali metals, will generate hydrogen gas which could create an explosive hazard.
Conditions to avoid:	Minimise dust generation and accumulation.
Incompatible materials:	Incompatible/reactive with strong reducing agents, alkali metals.
Hazardous decomposition products:	Fire or heat will produce irritating, toxic and/or corrosive gases, including oxides of Sodium and oxides of Boron.
Hazardous reactions:	Reaction with strong reducing agents or alkali metals will generate hydrogen gas.
Hazardous Polymerisation:	Will not occur.

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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:

- Ingestion:** May be harmful if swallowed; Not intended for ingestion. Small amounts (e.g. one teaspoonful) swallowed accidentally are not likely to cause effects; swallowing larger amounts may cause gastrointestinal symptoms; These may include nausea, vomiting and diarrhoea
Acute toxicity (Oral):
TEST MATERIAL: Disodium tetraborate, anhydrous:
- LD50, Rats: >2,500 mg/kg bw.
- Eye contact:** Causes serious eye irritation.
- Skin contact:** Disodium tetraborate, decahydrate has no respiratory or skin sensitization.
Acute toxicity (Dermal):
- LD50, Rabbits: >2,000 mg/kg bw.
- Inhalation:** Disodium tetraborate, decahydrate has no respiratory or skin sensitization.
- Long Term Effects:** No information available for the product.
- Toxicological Data:** May be harmful if swallowed; Not intended for ingestion. Small amounts (e.g. one teaspoonful) swallowed accidentally are not likely to cause effects; swallowing larger amounts may cause gastrointestinal symptoms; These may include nausea, vomiting and diarrhoea. Low acute dermal toxicity; Disodium tetraborate, decahydrate is poorly absorbed through intact skin.
Germ cell mutagenicity: Disodium tetraborate, decahydrate is not mutagenic.
Carcinogenicity: Disodium tetraborate, decahydrate is not carcinogenic.
Reproductive toxicity: Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes. Studies in rat, mouse and rabbit, at high doses, demonstrate developmental effects on the foetus including foetal weight loss and minor skeletal variations. The doses administered were many times in excess of those which humans would normally be exposed to. While boron has been shown to adversely affect male reproduction in laboratory animals, there is no clear evidence of male reproductive effects attributable to boron in studies of highly exposed workers. An epidemiology study under the conditions of normal occupational exposure to borate dusts indicated no effect on fertility. Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to borate dusts. A study conducted in Turkey with boron exposed mine workers showed that mean blood concentrations of the high exposure group is ~6 times and ~9 times lower than those of the highest no effect level of boron in blood with regard to developmental and reprotoxic effects (respectively) in rats. With those findings, no unfavourable effects of boron exposure on reproductive indicators are observed in humans.
STOT (single exposure): Occasional mild irritation effects to nose and throat may occur from inhalation of dusts at levels higher than 10 mg/m³.
STOT (repeated exposure): No information available.
Aspiration toxicity: Disodium tetraborate, decahydrate has no aspiration hazard.

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12. ECOLOGICAL INFORMATION

Ecotoxicity Aquatic toxicity:
- LC50, Fish (*Pimephales promelas* (Fathead minnow)): 79.7 mg B/L or 703 mg Disodium tetraborate, decahydrate/L (96 h).
- LC50, Invertebrate (*Daphnia/Daphnids* (*Daphnia magna*)): 133 mg B/L or 1,173 mg Disodium tetraborate, decahydrate/L (48 h).
- EC50, Algae (*Pseudokirchneriella subcapitata* (Green algae)), Biomass: 40 mg B/L or 353 mg Disodium tetraborate, decahydrate/L (72 h).

Persistence and Degradability

Boron is naturally occurring and ubiquitous in the environment. Boron occurs naturally in sea water at an average concentration of 5 mg B/L and fresh water at 1 mg B/L or less. Disodium tetraborate, decahydrate decomposes in the environment to natural borate. In dilute aqueous solutions, the predominant boron species present is undissociated boric acid.

Mobility: The product is soluble in water and is leachable through normal soil.

Environmental fate: Boron is an essential micronutrient for healthy growth of plants; however, it can be harmful to boron sensitive plants in higher quantities. Care should be taken to minimize the amount of borate product released to the environment.

Bioaccumulation: Not bioaccumulative.

Environmental Impact: No Data Available

13. DISPOSAL CONSIDERATIONS

Disposal methods: Dispose of contents/container in accordance with local/regional/national regulations.
Small quantities can usually be disposed of at landfill sites. No special disposal treatment is required, but local authorities should be consulted with regards to any specific local requirements. Tonnage quantities of product are not recommended to be sent to landfills. Such product should, if possible, be used for an appropriate application.

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14. TRANSPORT INFORMATION

Road and Rail Transport

Classified as Non Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for transport by Road and Rail; NON DANGEROUS GOODS.

UN No: N/A

Class-Primary: N/A

Packing Group: N/A

Proper Shipping Name: Borax decahydrate

Hazchem Code: N/A

Marine Transport

Classified as Non- Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; Non DANGEROUS GOODS.

UN No: N/A

Class-Primary: N/A

Packing Group: N/A

Proper Shipping Name: Borax decahydrate

Hazchem Code: N/A

Air Transport

Classified as Non-Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN No: N/A

Class-Primary: N/A

Packing Group: N/A

Proper Shipping Name: Borax decahydrate

Hazchem Code: N/A

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15. REGULATORY INFORMATION

Globally Harmonised System

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Poisons Schedule: 5

BORIC ACID (excluding its salts) and BORAX are listed in Schedule 5 of the SUSMP

16. OTHER INFORMATION

This material safety data sheet has been prepared by Midland Chemicals

This MSDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. No liability is accepted whether direct or indirect from its application since the conditions of final use are outside Midland Chemicals control. The end user is obliged to conform to relevant government regulations and/or patent laws applicable in their respective States of Countries.