



SAFETY DATA SHEET

PRODUCT NAME: Borax Pentahydrate

Issue Date: August 22

IDENTIFICATION

Product Name: Borax
Other Names: Borax Pentahydrate, Sodium Tetraborate Pentahydrate, Disodium Tetraborate Pentahydrate
Product Code: CB25
Uses: The product is used in industrial manufacturing, in particular ceramics, detergent, borosilicate glass and insulation fibreglass.
Supplier: HamChem Hamilton Chemicals Ltd, 75 Ruffell Rd, Hamilton
Phone: 079744971 Web: www.hamchem.nz Email: info@hamchem.nz

- In emergency dial 111, and then ask for Fire, Ambulance or Police as necessary.
- In case of poisoning phone National Poisons Centre – 0800 764 766

HAZARD IDENTIFICATION



GHS Classifications

Eye Irritation – Category 2

Reproductive Toxicity – Category 2

Signal Word: WARNING

Hazard Statements

H319 – Causes serious eye irritation

H361 – Suspected of damaging fertility or the unborn child

Prevention

P201 – Obtain special instructions before use

P264 – Wash hands thoroughly after handling

P280 – Wear protective gloves/protective clothing, eye protection/face protection

P202 – Do not handle until all safety precautions have been read and understood.

Response

P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.

P337 + P313 – If eye irritation persists: Get medical advice/attention

P308 + P313 – IF exposed or concerned: Get medical advice/attention

Storage

P405 – Store locked up

Disposal

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

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HamChem Ltd, 75 Ruffell Road, Hamilton, New Zealand. Phone: 07-974-4971 Email: info@hamchem.nz Web: www.hamchem.nz

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COMPOSITION & INFORMATION ON INGREDIENTS
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Chemical Entity Borax Pentahydrate	CAS No. 12179-04-3	Proportion (%) >99.9%
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FIRST AID MEASURES

Swallowed: If swallowed, rinse mouth. If large amounts are swallowed (i.e., more than one teaspoon), contact a Doctor or Poisons Centre immediately.

Eye: If in eye(s), use eye wash fountain or fresh water to cleanse eye(s) for several minutes, holding eyelids open. If irritation persists for more than 30 minutes, seek medical attention.

Skin: If on skin, wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. No treatment necessary, because non-irritating. If skin irritation occurs, get medical advice/attention.

Inhaled: If inhaled and symptoms such as nose or throat irritation are observed, remove to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Centre or Doctor/Physician if you feel unwell.

Advice to Doctor: Observation only is required for adult ingestion of less than 7 grams of borax pentahydrate. For ingestion in excess of 7 grams, maintain adequate kidney function and force fluids. Gastric lavage is recommended for symptomatic patients only. Haemodialysis 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.

Medical Conditions Aggravated by Exposure: No information available.

FIRE FIGHTING MEASURES

General Measures: Move containers from fire area if you can do so without risk. Runoff from fire control may cause pollution. Dike fire-control water for later disposal.

Flammability Conditions: No Data Available.

Extinguishing Media: Any fire extinguishing media may be used on nearby fires. Dry chemical, CO₂, water spray or regular foam.

Fire and Explosion Hazard: Borax pentahydrate is not flammable, combustible or explosive. The product itself is a flame retardant.

Hazardous Products of Combustion: Fire may produce irritating and/or toxic gases.

Personal Protective Equipment: Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters protective clothing will only provide limited protection.

ACCIDENTAL RELEASE MEASURES

General Response Procedure: Increase ventilation. Avoid inhalation of dust. Do not walk through spilled material.

Clean Up Procedures: Vacuum, shovel or sweep up borax pentahydrate and place in containers for disposal in accordance with applicable local regulations.

Containment: Stop leak if you can do so without risk. Prevent dust cloud.

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Environmental Precautionary Measures: Borax pentahydrate is a water-soluble white powder that may, at high concentrations cause damage to trees or vegetation by root absorption. Avoid release to the environment.

Evacuation Criteria: Keep unauthorised personnel away. Stay upwind.

Personal Precautionary Measures: In case of exposure to high level of airborne dust, wear a personal respirator in compliance with national legislation.

HANDLING & STORAGE

Handling: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Ensure a safety shower and eye wash station are available for use. Provide appropriate ventilation. Avoid dust formation. Avoid breathing dust. Wear protective gloves/clothing/eye protection/face protection. Wash eyes and skin thoroughly after handling. Do not eat, drink or smoke while using this product.

Storage: Dry, indoor storage is recommended. Provide appropriate ventilation and store bags such as to prevent any accidental damage. Good housekeeping procedures should be followed to minimise dust generation and accumulation. The product should be kept away from strong reducing agents.

Container: Store in original packaging and approved by manufacturer.

EXPOSURE CONTROLS & PERSONAL PROTECTION

Exposure Standards: No exposure standard for this substance. However, WES for Borates: TWA 1mg/m³

Exposure Limits: No data available.

Biological Limits: No data available.

Engineering controls: Use local exhaust ventilation to keep airborne concentrations of borax dust below permissible exposure levels.

Personal Protection Equipment: Respiratory protection: In case of prolonged exposure to dust, wear a personal respirator in compliance with national legislation. Where airborne concentrations are expected to exceed exposure limits, respirators should be used. Eye and Hand protection: Goggles and gloves are not required for normal industrial exposures, but may be warranted if environment is excessively dusty.

Special Hazards Precautions: May damage fertility or the unborn child – obtain special instructions before use. Do not handle until all safety directions have been read and understood. Use personal protective equipment as required. Causes serious eye irritation – wash eyes thoroughly after handling.

Work Hygienic Practices: Wash hands before breaks and at the end of the workday. Remove and wash soiled clothing.

PHYSICAL & CHEMICAL PROPERTIES

Physical State	Solid
Appearance	Granular/powder
Odour	Odourless
Colour	White
pH	9.3% (3% solution)
Vapour Pressure	Negligible (@20°C)
Relative Vapour Density	No data available
Boiling Point	No data available

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Melting Point	741°C
Freezing Point	No data available
Solubility	3.7% @ 20°C – 51.2% @ 100°C
Specific Gravity	1.81
Flash Point	No data available
Auto Ignition Temperature	No data available
Evaporation Rate	No data available
Bulk Density	No data available
Corrosion Rate	No data available
Decomposition Temperature	120°C
Density	No data available
Specific Heat	No data available
Molecular Weight	291.35
Net Propellant Weight	No data available
Octanol Water Coefficient	No data available
Particle Size	No data available
Partition Coefficient	No data available
Saturated Vapour Concentration	No data available
Vapour Temperature	No data available
Viscosity	No data available
Volatile Percent	No data available
VOC Volume	No data available
Additional Characteristics	Borax pentahydrate is not flammable, combustible or explosive
Potential for Dust Explosion	No information available
Fast or Intensely Burning Characteristics	No information available
Flame Propagation of Burning Rate of Solid Materials	No information available
Non-Flammables that could contribute unusual hazards to a fire	No information available
Properties that may initiate or Contribute to Fire Intensity	No information available
Reactions that Release Gases or Vapours	No information available
Release of Invisible Flammable Vapours and Gases	No information available

STABILITY & REACTIVITY

Stability: Borax pentahydrate is a stable product, but when heated it loses water eventually forming anhydrous borax ($\text{Na}_2\text{B}_4\text{O}_7$)

Hazardous decomposition products: When involved in a fire, this product may generate irritating and toxic gases and fumes. Reaction with strong reducing agents such as metal hydrides, acetic anhydride or alkali metals will generate hydrogen gas which could create an explosive hazard.

Incompatibles: Incompatible with oxidising agents, strong reducing agents such as metal hydrides, acetic anhydride, alkali metals, and sources of ignition.

Conditions to avoid: Avoid excessive heat, direct sunlight, static discharges, generating dust, moisture and high temperatures.

TOXICOLOGICAL INFORMATION

General Information: ROUTES OF EXPOSURE: Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because borax pentahydrate is poorly absorbed through intact skin. Borax pentahydrate does not cause irritation to intact skin.

INHALATION: Occasional mild irritation effects to nose and throat may occur from inhalation from borax pentahydrate dusts at levels higher than $10\text{mg}/\text{m}^3$. EYE CONTACT: Borax pentahydrate is a serious eye irritant. INGESTION: Products containing borax pentahydrate are not intended for ingestion. Borax

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pentahydrate has a low acute toxicity. Small amounts (e.g. a teaspoonful) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.

SYMPTOMS OF EXPOSURE: Symptoms of accidental over-exposure to borax pentahydrate have been associated with ingestion or absorption through large areas of damaged skin. These may include nausea, vomiting, and diarrhoea, with delayed effects of skin redness and peeling.

Acute

Other: Acute Toxicity: Dermal – Rabbit LD50 > 2,000mg/kg bw

Ingestion: Acute Toxicity: Oral – Rat LD50 > 2,500mg/kg bw

Reproduction: Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes. Studies with the chemically related boric acid in rat, mouse and rabbit, at high doses, demonstrate developmental effects on the foetus including foetal weight loss and minor skeletal variations. Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to sodium borate dust. A recent epidemiology study under the conditions of normal occupational exposure to borate dusts indicated no effect on fertility.

Carcinogenicity/mutagenicity: Not a carcinogen. Not a mutagen.

ECOLOGICAL INFORMATION

Ecotoxicity: Algal Toxicity: Green Algae, *Pseudokirchneriella subcapitata* (Hansveit and Oldersma, 2000)
72hr EC50 – biomass = 40mg B/L or 270mg disodium tetraborate pentahydrate/L
Invertebrate Toxicity: *Daphnia*, *Daphnids*, *Daphnia Magna* (Gersich, 1984a)
48hr LC50 = 133mg B/L or 896mg disodium tetraborate pentahydrate/L
Fish Toxicity: Fish, *Fathered minor*, *Pimephales promelas* (Soucek et al., 2010)
96hr LC50 = 79.7 mg B/L or 537mg disodium tetraborate pentahydrate/L

Persistence/Degradability: Boron is naturally occurring and ubiquitous in the environment. Borax pentahydrate decomposes in the environment to natural borate.

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

Environmental Fate: Boron naturally occurs in sea water, and 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 minimise the amount of borate product released to the environment.

Bioaccumulation Potential: Not significantly bio accumulative.

Environmental Impact: No data available.

DISPOSAL CONSIDERATIONS

General Information: Dispose of contents/container in accordance with local/regional/national regulations. Contact a specialist disposal company or the local waste regulator for advice.

Special Precautions for Landfill: Small quantities of borax pentahydrate can usually be disposed of at landfill sites. Tonnage quantities of product are not recommended to be sent to landfills. Such product should, if possible, be used for an appropriate application.

TRANSPORT INFORMATION

Not classified as Dangerous Goods for Transport (NZS 5433:2020)

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REGULATORY INFORMATION

HSNO Classifications: 6.4A, 6.8B
EPA Approval #: HSR003998

OTHER INFORMATION

End of SDS.