

MATERIAL SAFETY DATA SHEET

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Not classified as hazardous according to the criteria of NOHSC Australia.

I IDENTIFICATION

Product Name: Borax Decahydrate

Other Names: Sodium tetraborate decahydrate

Product Code: None.

UN No: None allocated

Hazchem Code: None allocated

Dangerous Goods Class: None allocated

Sub Risk Class: None allocated

Packaging Group: None allocated

Poison Schedule: S5

Chemical Family: Inorganic salt.

Uses: Chemical intermediate

Physical Appearance & Properties

Appearance & Odour: White crystalline solid. No odour.

Melting/softening point: 61°C

Boiling point and vapour pressure: Decomposes about 1575°C without melting.

Volatile materials: No specific data. Expected to be low at 100°C.

Flashpoint: Does not burn.

Specific gravity: 1.7

Solubility in water: Soluble.

Corrosiveness: Not corrosive.

Ingredients

Chemical Entity	CAS No	Proportion, %	Worksafe Exposure Limits	
			TWA, mg/m ³	STEL, mg/m ³
Sodium tetraborate decahydrate	1303-96-4	pure *	1	not set

* Commercially pure.

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

II HEALTH HAZARD DATA

Health Effects:

Note: Sodium tetraborate and its hydrates are chemically and toxicologically related to boric acid. The majority of the borate chronic toxicity studies were conducted using boric acid. Sodium tetraborate is converted to boric acid in biological systems. The boric acid data discussed in this section can be converted to sodium tetraborate pentahydrate equivalent by dividing by a factor of 0.849. Other factors apply to different levels of hydration.

A human study of occupationally exposed borate workers showed no adverse reproductive effects. Animal studies indicate that boric acid reduces or inhibits sperm production, causes testicular atrophy and when given to pregnant animals during gestation, may cause developmental changes. These feed studies were conducted under chronic exposure conditions leading to doses many times in excess of those that could occur through inhalation of dust in the occupational setting.

Dietary levels of boric acid of 8,700ppm (0.87%) in chronic feeding studies in rats and dogs produced testicular changes (Weir, Fisher, 1972). In chronic feeding studies in mice on diets containing 5,000ppm (0.5%) boric acid, testicular atrophy was present while mice fed 2,500ppm showed no significant testicular atrophy. In another chronic boric acid study, degeneration of seminiferous tubules was present together with a reduction in germ cells in mice fed 4,500ppm boric acid. In a reproduction study on rats, 2,000ppm of dietary boric acid had no adverse effect on lactation, litter size, weight or appearance (Weir, Fisher, 1972). In a continuous breeding study in mice there was a reduction in fertility rates in males receiving 4,500ppm boric acid but not in females receiving 4,500ppm boric acid (Fail et al, 1992). The product is not listed as carcinogenic in Worksafe's document "Exposure Standards for Atmospheric Contaminants in the Occupational Environment" (May 1995) and studies indicate that the product is not carcinogenic or mutagenic.

Acute Effects:

Swallowed: Data suggests that the product should not be considered as not harmful by ingestion.

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Eye: Data suggests that this product should be classified as a transient eye irritant. However, permanent eye damage should not be expected.

Skin: Data suggests that product presents low hazard via skin contact.

Inhalation: Inhalation may cause irritation of the nose and throat and cause coughing and chest discomfort.

Primary route of exposure is inhalation and skin and eye contact.

LD₅₀ Oral (Rat) 4500-6000mg/kg

First Aid:

Swallowed: If swallowed, more than 15 minutes from a hospital, and victim is conscious, induce vomiting, preferably using Ipecac syrup APF. Give a glass of water and transport to hospital. If swallowed and victim is unconscious or convulsing, keep victim warm, and transport to hospital or doctor.

Eye: If this product comes into contact with eyes, hold eyes open and wash continuously for 15 minutes with running water. Ensure irrigation under eyelids by occasionally lifting eyelids. Do not attempt to remove contact lenses unless trained. Transport to hospital or doctor immediately.

Skin: If this product comes into contact with skin, wash skin with soap and water for 15 minutes. Remove contaminated clothing and footwear. Ensure contaminated clothing is thoroughly washed before using again. Transport to hospital or doctor immediately.

Inhalation: If fumes or combustion products are inhaled, remove to fresh air. Lay victim down & keep warm and rested. If breathing is shallow, or has stopped, ensure clear airway and apply resuscitation or oxygen if available. Transport to hospital or doctor immediately.

Eye wash stations or baths and deluge showers should be available where product is being used.

Advice to doctor: Treat symptomatically. Note the nature of this product.

III PRECAUTIONS FOR USE

Exposure Standards:

This material has a TWA value of 5 and STEL value not set. Value expressed as mg/m³. Exposure values at the STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. Exposure values at the TWA (Time Weighted Average) means the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. See ingredients section on page 1 of this data sheet.

Engineering Controls:

Ventilation must be adequate to ensure that the working environment is below the TWA value. Otherwise, use respiratory protection. Some materials should only be used when respiratory protection is being worn. For information on respiratory protection, consult AS1716. See below for further information.

Personal Protection:

Respiratory Protection: A face mask or respirator should be used when this material is being used. For help in selecting suitable equipment consult AS/NZS 1715.

Protective Gloves: Rubber or PVC gloves are advised. For help in selecting suitable gloves consult AS 2161.

Eye Protection: Full face mask, safety glasses or goggles are advised. Consult AS 1336 and AS/NZS 1337 for information about eye protection.

Clothing: Clean overalls should to be worn, preferably with an apron. All skin areas should be covered. Consult AS 2919 for advice on Industrial Clothing.

Safety Boots: Wearing safety boots would be advisory. Consult AS/NZS 2210 for advice on Occupational Protective Footwear.

Flammability Limits: Does not burn.

Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

IV SAFE HANDLING INFORMATION

Storage & Transport:

This product does not have a UN classification. Being a scheduled poison, the product must be stored, maintained and used in accord with relevant state poisons act. Containers should be kept closed in order to minimise contamination. Keep from extreme heat and open flames, and make sure the material does not come into contact with water or acids.

Spills and disposals:

In event of a major spill, clear area of personnel. Alert fire brigade and advise of nature & location of spill. Wear protective clothing. Prevent spillage from entering drains or water courses. Stop leak if safe to do so, and contain spill.

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Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage. Recycle containers wherever possible. After spills, wash area, preventing runoff from entering drains. If material enters drains, advise emergency services. This material may be suitable for approved incineration or landfill. Dispose of only in compliance with local, state and federal regulations. Launder all contaminated clothing before re-use.

Fire/Explosion Hazard:

There is no explosion hazard from this material under normal circumstances.

Flashpoint: Does not burn.

Extinguishing Media: Use media suited to burning material.

Special Fire fighting procedures: Wear full protective clothing including face mask, face shield and gauntlets.

Unusual fire & Explosion hazards: Decomposition products not known to be hazardous. There is little or no chance of an explosion from this product if involved in a fire.

Stability: Stable.

Polymerisation: Will not polymerise.

Decomposition Products: water.

Materials to avoid: Reactions with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could create an explosion hazard.

V OTHER INFORMATION

This MSDS is prepared in accord with the Worksafe Australia document "National Code of Practice for the Preparation of Material Safety Data Sheets".

Contact Points:

Police and Fire Brigade:

Dial

AUSTRALIA

000

If ineffective:

Dial

1100 (Exchange)

National Poisons Information Centre:

Dial

13 1126 (from anywhere in Australia)

THIS MSDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER SHOULD READ THIS MSDS AND CONSIDER THE INFORMATION IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE INCLUDING IN CONJUNCTION WITH OTHER PRODUCTS. IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY. THE RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.