Infosafe No™ 1CH6U Issue Date :February 2013 RE-ISSUED by CHEMSUPP

Product Name **SODIUM TETRABORATE**

Classified as hazardous

1. Identification

GHS Product Identifier	SODIUM TETRABORATE
Company Name	CHEM-SUPPLY PTY LTD (ABN 19 008 264 211)
Address	50 Bedford Street GILLMAN SA 5013 Australia
Telephone/Fax Number	Tel: (08) 8440-2000 Fax: (08) 8440-2001
Recommended use of the chemical and restrictions on use	Heat resistant glass, porcelain enamel, ceramics, detergents, herbicides, insecticides, fertilisers, rust inhibitors, pharmaceuticals, antiseptics, leather, photography, bleaches, paint, boron compounds, flux for smelting, flame-retardant, fungicide for wood, soldering flux, cleaning preparations, and laboratory reagent.

Other Names

Name	Product Code
SODIUM TETRABORATE Decahydrate Granular AR	SA037
SODIUM TETRABORATE Decahydrate Powder LR	SL038
SODIUM TETRABORATE Decahydrate Granular LR	SL037
Sodium borate	
Sodium pyroborate	
Borax	
Pyrobor	

Other Information

EMERGENCY CONTACT NUMBER: +61 08 8440 2000
Business hours: 8:30am to 5:00pm, Monday to Friday.

Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

GHS classification of the substance/mixture	Toxic to Reproduction: Category 1B
Signal Word (s)	DANGER
Hazard Statement (s)	H360 May damage fertility. May damage the unborn child.
Pictogram (s)	Health hazard

Precautionary statement – Prevention	P201 Obtain special instructions before use. P281 Use personal protective equipment as required.
Precautionary statement – Response	P308+P313 IF exposed or concerned: Get medical advice/attention.

3. Composition/information on ingredients

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Chemical Characterization Solid

Ingredients

Name	CAS	Proportion	Hazard Symbol	Risk Phrase
Sodium Tetraborate Decahydrate	1303-96-4	100 %		

4. First-aid measures

Inhalation Remove from exposure, rest and keep warm. If breathing has stopped, apply artificial respiration. If breathing is difficult, give oxygen. Seek medical attention in severe cases, if symptoms develop, or if breathing is difficult.

Ingestion Rinse mouth thoroughly with water immediately. Give plenty of water to drink. Never give anything by mouth to an unconscious person. If swallowed, do NOT induce vomiting. Seek medical advice.

Skin Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. Seek medical attention in severe cases, or if irritation develops.

Eye contact If contact with the eye(s) occurs, wash with copious amounts of water for approximately 15 minutes holding eyelid(s) open. Take care not to rinse contaminated water into the non-affected eye. Seek medical attention if irritation, pain, swelling, lacrimation, or photophobia persists.

First Aid Facilities Maintain eyewash fountain and drench facilities in work area.

Other Information For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Hazards from Combustion Products Not combustible. Toxic and/or irritating gases, vapours and fumes of sodium oxide and borane/boron oxides.

Specific Methods Use extinguishing media most appropriate for the surrounding fire.

Decomposition Temp. Loses water of crystallization, first forming the pentahydrate above about 62 °C and then anhydrous sodium tetraborate at about 320 °C. Anhydrous sodium tetraborate decomposes at 1575 °C.

Other Information Prevent fire-fighting water from entering surface water or groundwater.

6. Accidental release measures

Personal Precautions Avoid raising a dust cloud. Avoid inhalation and ingestion. Avoid contact with skin, eyes and clothing. Evacuate the area of all non-essential personnel.

Personal Protection Wear protective clothing specified for normal operations (see Section 8)

Clean-up Methods - Small Spillages Sweep up and place in a labelled container for subsequent safe disposal. Aviod generating dust.

7. Handling and storage

Precautions for Safe Handling Avoid ingestion and inhalation of dust. Avoid contact with eyes, skin, and clothing. If ingested, seek medical advice immediately and show the container or the label. Minimize dust generation and accumulation. Keep containers closed when not in use. Ensure good ventilation at the workplace. Use with adequate ventilation. Wear suitable protective clothing. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Practice good personal hygiene, that is, always wash hands before eating, drinking smoking or using the toilet facilities. When using do not eat, drink or smoke. Keep away from incompatibles such as oxidizing agents.

Conditions for safe storage, including any incompatabilities Store in tightly closed containers, in order to minimise contamination, in a cool, dry, well-ventilated area away from incompatible substances.

Storage Temperatures Store at room temperature (15 to 25 °C recommended).

8. Exposure controls/personal protection

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Occupational exposure limit values

Name	STEL		TWA		
	mg/m3	ppm	mg/m3	ppm	Footnote
Sodium Tetraborate Decahydrate			5		Borates, tetra, sodium salts (decahydrate)

Other Exposure Information A time weighted average (TWA) has been established for Borates, tetra, sodium salts (decahydrate) (Worksafe Aust) of 5 mg/m³. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.

Appropriate engineering controls In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.

Respiratory Protection Where ventilation is not adequate, respiratory protection may be required. Avoid breathing dust, vapours or mists. Respiratory protection should comply with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. Filter capacity and respirator type depends on exposure levels. In event of emergency or planned entry into unknown concentrations a positive pressure, full-facepiece SCBA should be used. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

Eye Protection The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Hand Protection Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Excellent: NR latex, vinyl. Good: Neoprene or nitrile rubber gloves.

Footwear Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.

Body Protection Clean clothing or protective clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

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

9. Physical and chemical properties

Form Solid

Appearance Colourless to white, grey, bluish or greenish white streak, vitreous or dull lustre crystals, granules or crystalline powder; efflorescent in dry air, the crystals often being coated with white powder.

Odour Odourless.

Decomposition Temperature Loses water of crystallization, first forming the pentahydrate above about 62 °C and then anhydrous sodium tetraborate at about 320 °C. Anhydrous sodium tetraborate decomposes at 1575 °C.

Melting Point 62 °C (heated in closed space); 75 °C (decomposes).

Boiling Point Decomposes. Loses water at 320 °C; 1575 °C (anhydrous).

Solubility in Water Soluble (38.1 g/l at 20 °C).

Solubility in Organic Solvents Soluble in glycerol; slightly soluble in acetone; insoluble in alcohol (methanol, ethanol) and acid.

Specific Gravity 1.73.

pH 9.5 (5% aq soln). Aqueous solution is alkaline to litmus and phenolphthalein.

Vapour Pressure 0.213 hPa (20 °C).

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

Flammability	Non combustible material. Fire retardent. It will not participate in a fire.
Explosion Properties	Not considered to be an explosion hazard. A mixture of hydrated borax and zirconium explodes when heated.
Molecular Weight	381.37.
Other Information	Index of refraction: 1.447 (alpha); 1.469 (beta); 1.472 (gamma). Taste: Alkaline. Moh's hardness: 2.3. Bulk density: 810 kg/m³.

10. Stability and reactivity

Chemical Stability	Stable at room temperature in closed containers under ordinary conditions of use and storage. When heated above about 62 °C, borax loses water of crystallization, first forming the pentahydrate and eventually anhydrous sodium tetraborate.
Conditions to Avoid	Strong heating, dust generation and incompatible materials.
Incompatible Materials	Strong oxidizing agents, strong reducing agents, such as metal hydrides or alkali metals, acids, mineral acids, alkalis, acid anhydrides, alkaloids, alkaloidal salts, metals, metals in powder form, zirconium, mercuric chloride, zinc sulfate, and other metallic salts, and gums.
Hazardous Decomposition Products	Toxic and/or irritating gases, vapours and fumes of sodium oxide and borane/boron oxides.
Possibility of hazardous reactions	Reaction with strong reducing agents, such as metal hydrides or alkali metals, will generate hydrogen gas, which could create an explosive hazard. Produces a mild exothermic reaction in contact with water. Reacts violently with elemental zirconium - explodes when heated. Reactive with oxidizing agents, metals, and acids.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Acute Toxicity - Oral	LD50 (rat): 2660 mg/kg.
Acute Toxicity - Dermal	LD50 (rabbit): > 2000 mg/kg.
Ingestion	Harmful if swallowed. May cause irritation of the digestive tract, gastric upset, headache, nausea, vomiting, diarrhoea, abdominal pain, muscular spasms, dullness, weakness, fatigue, lethargy, cardiovascular disorders, circulatory depression, central nervous system depression, shock, convulsions, kidney and liver damage, coma, and death. The effects may be delayed. Rapidly absorbed via the gastrointestinal tract and mucous membranes. Ingestion of 5-10 grams has produced severe vomiting, diarrhoea, shock and death.
Inhalation	Inhalation of dust may cause mild irritation to nose, throat and respiratory system. Symptoms may include minor discomfort to throat and lungs and/or coughing, shortness of breath, sore throat and nose bleeds.
Skin	May cause mild irritation in contact with skin. Symptoms include mild transient discomfort, redness, itching, pain and dry skin. Unlikely to cause any lasting effects. Borax is poorly absorbed through intact skin. May be harmful if absorbed through the skin, possibly producing systemic effects.
Eye	May cause mild eye irritation. Symptoms may include redness, tearing, mild transient discomfort, pain, stinging and blurred vision. Unlikely to cause any lasting effects.
Carcinogenicity	Not listed in the IARC Monographs.
Reproductive Toxicity	Studies with the chemically related boric acid in the 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 to which humans would normally be exposed.
Chronic Effects	Prolonged or repeated ingestion or skin absorption may cause anorexia, weight loss, vomiting, mild diarrhoea, skin rash, convulsions, and anaemia. Repeated or prolonged contact with skin may cause dermatitis. Boron effects the central nervous system. Boron poisoning causes depression of the circulation, persistent vomiting and diarrhoea, followed by profound shock and coma. The

	temperature may become subnormal and a scarlatina form rash may cover the entire body.
Serious eye damage/irritation	Draize test in rabbits produced mild eye irritation effects. Fifty years of occupational exposure history indicates no adverse effects on human eye from exposure to Borax decahydrate.

12. Ecological information

Ecotoxicity	Herbicidal effect. Trace element. Fertilizing effect possible. No ecological problems are to be expected when the product is handled and used with due care and attention.
Persistence and degradability	Methods for the determination of biodegradability are not applicable to inorganic substances.
Bioaccumulative Potential	Concentration in organisms is not to be expected.
Biological Properties	Herbicidal effect.
Acute Toxicity - Fish	C. auratus LC50: 630 mg/l /72 h; After hydrolysis: Gambusia affinis LC50: 5600 mg/l /96 h (calculated on the free acid).
Acute Toxicity - Daphnia	Daphnia magna EC50: 1085-1402 mg/l /48 h.
Acute Toxicity - Algae	Desmodesmus subspicatus IC50: 158 mg/l /96 h (anhydrous substance).
Acute Toxicity - Bacteria	Ps. putida EC0: 15.8 mg/l /16 h (anhydrous substance).
Acute Toxicity - Other Organisms	E. sulcatum EC5: 1.3 mg/l /72 h (anhydrous substance).

13. Disposal considerations

Disposal Considerations	Dispose of according to relevant local, state and federal government regulations.

14. Transport information

Transport Information	Not classified as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

15. Regulatory information

Poisons Schedule	S5

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons No. 3', Commonwealth of Australia, June 2012. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. 'Labelling of Hazardous Workplace Chemicals, Code of Proctice' Safe Work Australia. Standards Australia 'AS 1940-2004 The Storage and Handling of Flammable and Combustible Liquids. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Worksafe Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(2004)]'. Worksafe Australia, 'Hazardous Substances Information System, 2005'. Worksafe Australia, 'National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]'. Worksafe Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]'.
Contact Person/Point	Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change

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Empirical Formula & Structural Formula

Na2B4O7.10H2O.

User Codes

User Field Title	User Code
CAS No.	1303-96-4
First Aid Phrases	A

Other Information

Previously labelled as:
R36 Irritating to eyes.
S24/25 Avoid contact with skin and eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
...End Of MSDS...