



Twin Plaza Metals

SAFETY DATA SHEET

BORAX

Infosafe No.: LQ7IK

Issued Date: 24/01/2017

Issued by: TWIN PLAZA METALS PTY LTD

1. IDENTIFICATION

GHS Product Identifier

BORAX

Company Name

TWIN PLAZA METALS PTY LTD

Address

Level 1, 155 Castlereagh Street Sydney
New South Wales 2000 Australia

Telephone/Fax Number

Tel: 02 9264 1667 (Mon-Fri; 9.00am - 4.45 pm)

Fax: 02 9264 2653

Emergency phone number

Poison Information Centre 13 11 26

E-mail Address

sales@twinplaza.com

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.

2. HAZARD IDENTIFICATION

GHS classification of the substance/mixture

Classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia

Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail. (7th edition)

Toxic to Reproduction: Category 1B

Signal Word (s)

DANGER

Hazard Statement (s)

H360 May damage fertility or the unborn child.

Pictogram (s)

Health hazard



Precautionary statement – Prevention

P201 Obtain special instructions before use.

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

P281 Use personal protective equipment as required.

Precautionary statement – Response

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

Precautionary statement – Storage

P405 Store locked up.

Precautionary statement – Disposal

P501 Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Name	CAS	Proportion
Sodium tetraborate decahydrate	1303-96-4	100 %

4. FIRST-AID MEASURES

Inhalation

If inhaled, remove affected person from contaminated area. Keep at rest until recovered. If symptoms develop and/or persist seek medical attention.

Ingestion

If ingested, do not induce vomiting. Wash out mouth thoroughly with water. If symptoms develop seek medical attention.

Skin

Wash affected area thoroughly with soap and water. If symptoms develop seek medical attention.

Eye contact

If in eyes, hold eyelids apart and flush the eyes continuously with running water. Remove contact lenses. Continue flushing for several minutes until all contaminants are washed out completely. If symptoms develop and/or persist seek medical attention.

First Aid Facilities

Eyewash and normal washroom facilities.

Advice to Doctor

Treat symptomatically.

Other Information

For advice in an emergency, contact a Poisons Information Centre (Phone Australia 131 126) or a doctor at once.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use appropriate fire extinguisher for surrounding environment.

Hazards from Combustion Products

Under fire conditions this product may emit toxic and/or irritating fumes and gases: sodium oxide and borane/boron oxides.

Specific Hazards Arising From The Chemical

This product is non combustible. However heating can cause expansion or decomposition leading to violent rupture of containers.

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.

Precautions in connection with Fire

Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Increase ventilation. Evacuate all unprotected personnel. Wear sufficient respiratory protection and full protective clothing to prevent exposure. Sweep up material avoiding dust generation or dampen spilled material with water to avoid airborne dust, then transfer material to a suitable container. Wash surfaces well with soap and water. Seal all wastes in labelled containers for subsequent recycling or disposal. Dispose of waste according to the applicable local and national regulations. If contamination of sewers or waterways occurs inform the local water and waste management authorities in accordance with local regulations.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Avoid inhalation of dust, and skin or eye contact. Use only in a well ventilated area. Keep containers sealed when not in use. Avoid contact with moisture. Prevent the build up of dust in the work atmosphere. Maintain high standards of personal hygiene i.e. Washing hands prior to eating, drinking, smoking or using toilet facilities. Avoid exposure. Do not handle until all safety precautions have been read and understood. It is recommended that pregnant or breastfeeding women should not handle this product unless adequate exposure protection can be assured at all times. Female personnel planning pregnancy should be made aware of the potential risks.

Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well-ventilated area, out of direct sunlight and moisture. Store in suitable, labelled containers. Keep containers tightly closed. Store away from incompatible materials. Ensure that storage conditions comply with applicable local and national regulations.

Storage Temperatures

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure limit values

TWA: 5 mg/m³

TWA (Time Weighted Average): The average airborne concentration of a particular substance when calculated over a normal eight-hour working day, for a five-day week.

Biological Limit Values

No biological limits allocated.

Appropriate Engineering Controls

This substance is hazardous and should be used with a local exhaust ventilation system, drawing solid/dust away from workers' breathing zone. If the engineering controls are not sufficient to maintain concentrations of particulates below the exposure standards, suitable respiratory protection must be worn.

Respiratory Protection

If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable dust/particulate filter should be used. Reference should be made to Australian/New Zealand Standards AS/NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

Eye Protection

Safety glasses with side shields, chemical goggles or full-face shield as appropriate should be used. Final choice of appropriate eye/face protection will vary according to individual circumstances. Eye protection devices should conform to relevant regulations. Eye protection should conform with Australian/New Zealand Standard AS/NZS 1337 - Eye Protectors for Industrial Applications.

Hand Protection

Wear gloves of impervious material. Final choice of appropriate gloves will vary according to individual circumstances i.e. methods of handling or according to risk assessments undertaken. Occupational protective gloves should conform to relevant regulations. Reference should be made to AS/NZS 2161.1: Occupational protective gloves - Selection, use and maintenance.

Body Protection

Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

9. PHYSICAL AND CHEMICAL PROPERTIES

Properties	Description	Properties	Description
Form	Powder	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.
Colour	Colourless to white	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)
Vapour Density (Air=1)	Not available	Evaporation Rate	Not available
Odour Threshold	Not available	Viscosity	Not available
Volatile Component	No specific data. Expected to be low at 100°C.	Partition Coefficient: n-octanol/water	Not available
Flash Point	Not applicable	Flammability	Non-combustible. Fire retardant. It will not participate in a fire.
Auto-Ignition Temperature	Not applicable	Explosion Limit - Upper	Not applicable
Explosion Limit - Lower	Not applicable	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 under normal conditions of storage and handling. When heated above about 62°C, borax loses water of crystallization, first forming the pentahydrate and eventually anhydrous sodium tetraborate.

Reactivity and Stability

Not available

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

Toxicology Information

Toxicity data available for this product is given below

Acute Toxicity - Oral

LD50 (rat): 2660mg/kg

Acute Toxicity - Dermal

LD50 (rabbit): > 2000 mg/kg

Ingestion

Ingestion of product dusts may irritate the gastric tract causing nausea and vomiting. 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 dusts may irritate the respiratory system. Chronic exposure to this material may aggravate existing respiratory disorders and lung disorders such as bronchitis, emphysema and asthma. Onset and progression are related to dust concentrations and duration of exposure.

Skin

Skin contact may cause mechanical irritation resulting in redness and itching. Borax is poorly absorbed through intact skin. May be harmful if absorbed through the skin, possibly producing systemic effects.

Eye

Eye contact may cause mechanical irritation. May result in mild abrasion.

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.

Respiratory sensitisation

Not expected to be a respiratory sensitiser.

Skin Sensitisation

Not expected to be a skin sensitiser.

Germ cell mutagenicity

Not considered to be a mutagenic hazard.

Carcinogenicity

Not considered to be a carcinogenic hazard.

Reproductive Toxicity

May damage fertility or the unborn child. Classified as a Known or presumed human reproductive or developmental toxicant. 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.

STOT-single exposure

Not expected to cause toxicity to a specific target organ.

STOT-repeated exposure

Not expected to cause toxicity to a specific target organ.

Aspiration Hazard

Not expected to be an aspiration hazard.

Other Information

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 affects 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.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity data available for this product is given below. Herbicidal effect. Trace element. Fertilizing effect possible.

Persistence and degradability

Methods for the determination of biodegradability are not applicable to inorganic substances.

Mobility

Not available

Bioaccumulative Potential

Concentration in organisms is not to be expected.

Other Adverse Effects

Not available

Biological Properties

Herbicidal effect.

Environmental Protection

Prevent this material entering waterways, drains and sewers.

Acute Toxicity - Fish

LC50(*C. auratus*): 630 mg/l/72 h

After hydrolysis: LC50(*Gambusia affinis*): 5600 mg/l/96 h (calculated on the free acid)

Acute Toxicity - Daphnia

EC50(*Daphnia magna*): 1085-1402 mg/l/48 h

Acute Toxicity - Algae

IC50(*Desmodesmus subspicatus*): 158 mg/l/96 h (anhydrous substance)

Acute Toxicity - Bacteria

EC0(*Ps. putida*): 15.8 mg/l/16 h (anhydrous substance)

13. DISPOSAL CONSIDERATIONS

Disposal considerations

The disposal of the spilled or waste material must be done in accordance with applicable local and national regulations.

14. TRANSPORT INFORMATION

Transport Information

Road and Rail Transport (ADG Code):

Not classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) (7th edition).

Marine Transport (IMO/IMDG):

Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

Air Transport (ICAO/IATA):

Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

U.N. Number

None Allocated

UN proper shipping name

None Allocated

Transport hazard class(es)

None Allocated

Special Precautions for User

Not available

IMDG Marine pollutant

No

Transport in Bulk

Not available

15. REGULATORY INFORMATION

Regulatory information

Not classified as Hazardous according to the Globally Harmonised System of Classification and labelling of Chemicals (GHS) including Work, Health and Safety regulations, Australia.

Classified as a Scheduled Poison according to the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Poisons Schedule

S5

Australia (AICS)

All components of this product are listed on the Inventory or exempted.

16. OTHER INFORMATION

Date of preparation or last revision of SDS

SDS created: January 2017

References

Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.

Standard for the Uniform Scheduling of Medicines and Poisons.

Australian Code for the Transport of Dangerous Goods by Road & Rail.

Model Work Health and Safety Regulations, Schedule 10: Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

Workplace exposure standards for airborne contaminants.

Adopted biological exposure determinants, American Conference of Industrial Hygienists (ACGIH).

Globally Harmonised System of classification and labelling of chemicals.

Empirical Formula & Structural Formula

Na₂B₄O₇·10H₂O

END OF SDS

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