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Material Safety Data Sheet

BORAX ANHYDROUS

Section 1 - Product Identification

Synonyms : Disodium tetraborate anhydrous, dehydrated borax
Molecular Weight : 201.22 g/mol
Chemical Formula : $Na_2B_4O_7$
Company Identification : Tradeasia International Pte. Limited
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Recommended use of the chemical and restrictions on use
The product is used in industrial manufacturing, in particular in:
-Glasses industry

Section 2 – Composition/Information on Ingredients

Chemical Name	EC No/CAS No	Purity, %
Borax anhydrous	1330-43-4	max. 99.9

Section 3 – Hazards Identification

3.1 Classification
This chemical is considered hazardous according to 2012 OSHA Hazard Communication Standard (29 CFR 1910.12100)

3.2 Label elements
3.2.1 Hazard Pictogram :

3.2.2 Signal Word : Danger
3.2.3 Hazard Statement : causes serious eye irritation; may damage fertility or the unborn child

Section 4 – Composition/ information on ingredients

4.1 Composition comments
Component Borax anhydrous
CAS No. 1330-43-4

Weight >95

Section 5 – First-Aid Measures

5.1. Description of first aid measures

Skin contact

Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Inhalation

If symptoms such as nose or throat irritation are observed, remove to fresh air. Get medical attention if any symptoms occur

Ingestion

Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

5.2. Most important symptoms and effects, both acute and delayed

Ingestion

May cause gastrointestinal irritation, nausea, vomiting, diarrhea

Eye contact

Causes serious eye irritation

5.3. Indication of any immediate medical attention and special treatment needed

Observation only is required for adult ingestion of less than 5 grams. For ingestion in excess of 5 grams, maintain adequate kidney function and force fluids

Section 6 – Fire Fighting Measures

6.1. Suitable Extinguishing media

Use fire-extinguisher media appropriate for surrounding materials. The product is non-combustible

6.2. Specific hazards arising from the chemical

If heated, harmful vapors may be formed

6.3. Special protective actions for fire-fighters

Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Section 7 – Accidental Release Measures

7.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing. Provide ventilation. Avoid inhalation of dust and vapors. Avoid dust formation

7.2. Environmental precautions

Do not allow to enter drains, sewers, or watercourses. Remove any intact containers from the water. Advise local water authority that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilutions returns the boron level to its normal environmental background level

7.3. Methods and material for containment and cleaning up

Wear necessary protective equipment. Stop leak, if possible, without risk. Do not touch the spilled material. Remove spillage with vacuum cleaner. If not possible, collect spillage with shovel, broom or the like. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Section 8 – Handling and Storage

8.1. Precautions for safe Handling

Wear personal protective equipment/face protection. Keep away from open flames, hot surfaces and sources of ignition. Use spark-proof tools and explosion-proof equipment. T Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation.

8.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Protect from direct sunlight.

Section 9 – Exposure Controls/Personal Protection

9.1. Appropriate engineering controls

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

9.2. Individual protection measures, such as personal protective equipment (PPE)

Respiratory protection

In case of prolonged exposure to dust wear a personal respirator in compliance with national legislation (make reference to the appropriate CEN standard)

Eyes and hands protection

Goggles and gloves are not required for normal industrial exposures, but may be warranted if environment is excessively dusty.

Section 10 – Physical and Chemical Properties

10.1. Information on basic physical and chemical properties

Appearance : white crystals
Odour : odourless
Odour threshold : N.A.
pH @ 20°C : 9.25 1% aq solution
Melting point : 741 °C
Boiling point : N.A.
Flash point : N.A.
Evaporation rate : N.A.
Flammability : Not Flammable
Upper/lower flammability or explosive limits : N.A.
Vapour pressure : N.A.
Vapour density : N.A.
Relative density : N.A.
Solubility in water : slightly soluble in water

Partition coefficient: n-octanol/water : N.A
Auto-ignition temperature : N.A
Decomposition temperature : N.A.
Viscosity : N.A.

10.2. Other information
Molecular weight : 201.22 g/mol
Specific gravity : no information available

Section 11 – Stability and Reactivity

11.1. Reactivity
Reaction with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could create an explosive hazard

11.2. Chemical stability
The substance is hygroscopic and will absorb water by contact with the moisture in the air

11.3. 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

11.4. Conditions to avoid:
Water, moisture, avoid heat

11.5. Incompatible materials
Strong reducing agents, acetic anhydride, alkali metals, inorganic hydrides, potassium, acetic acid, alkalis, carbonates and hydroxides, carbonated, hydroxen

11.6. Hazardous decomposition products
No information available

Section 12 – Toxicological Information

12.1 Health effects associated with ingredients
LD50 Oral >2000 mg/kg rat
LD50 Dermal >2000 mg/kg rabbit

12.2 Health effects associated with compounds formed during processing
No information available

12.3 Information on likely routes of exposure
No information available

Section 13 – Ecological Information

13.1.Toxicity
Freshwater fish LC50 250.0 mg/B/L 24-day Rainbow Trout (*S. gairdneri*)
Water Fleas EC50 48 hours 133 mg/L (*Daphnia magna*)

13.2.3. Bioaccumulative potential
Will not be bioaccumulative

13.4. Mobility in soil
Will likely be mobile in the environment due to its water solubility

13.5. Other adverse effects
No Data Available

Section 14 – Disposal Considerations

14.1. Disposal methods
Chemical waste generators must determine whether a discarded material is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Section 15 – Transport Information

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15.1. UN number : N.A
15.2. UN proper shipping name : N.A
15.3. Transport of hazard classes : N.A
15.4. Packing group : N.A
15.5. Environmental hazards : N.A.
15.6. Special precautions for user : N.A
15.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: N.A.

Section 16 – Regulatory Information

15.1. Safety, health and environmental regulations
It should be noted that the product is safe under conditions of normal handling and use, besides, they are essential nutrients to plants, and research shows that they play a beneficial role in human health. CLP classification has been solely based on animal tests where animals were exposed to high doses of boric acid over long periods of time. These doses were many times higher than humans are exposed to under conditions of normal handling and use. Consequently, a precautionary decision was taken by the European Commission. Although we will comply with the body of legislation triggered by that decision, we are in process of all possible legal actions.

Ensure all national/local regulations are observed.

Section 16 : Additional Information

16.1. Mainly changes made to the previous version of this Material Safety Data Sheet (MSDS):
• This MSDS complies with ISO 11014; the requirements of UN-GHS

Revision No	Revision content
05	• This SDS is updated in accordance with the GHS (Rev.6) (2015)-Guidance on the Compilation of Safety data Sheets. • This SDS is updated in line with Eti Maden Corporate identity.

16.2. List of abbreviation and acronyms used in this MSDS

SDS : Safety Data Sheets
Index N° : atomic number of the element most characteristic of the properties of the substance
CAS No : Chemical Abstracts Service number
EC No : EINECS Number : European Inventory of Existing Commercial Substances
Repr. Cat. 2 : Substance presumed human reproductive toxicant
Acute Oral Cat. 5 : Substance which is of relatively low acute oral toxicity.
GHS : Globally Harmonised System of Classification and Labelling
LD_{50} : Median Lethal Dose
LC_{50} : Lethal Concentration, 50%
N.A. : Not Applicable
OSHA : Occupational Safety & Health Administration
Cal OSHA : The State of California Division of Occupational Safety and Health (DOSH)
PEL : Permissible Exposure Limits
ACGIH : American Conference of Governmental Industrial Hygienists
TLV : Threshold Limit Value
Japanese MITI : Japanese Ministry of International Trade and Industry
EC_{50} : Half maximal effective concentration
UN : United Nations
U.S. EPA TSCA Inventory: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the autority of the Environmental Protection Agency
Canadian DSL: Canadian Domestic Substances List

16.3. List of relevant hazard statements and precautionary statements used in this MSDS

Hazard Statement

H361 d: Suspected of damaging the unborn child
H319: Causes serious eye irritation
H303: May be harmful if swallowed

Precautionary Statements

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.
P264: Wash eyes thoroughly after handling.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response

P308 + P313: If exposed or concerned: get medical advice/attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical advice/attention.

Storage

P405: Store locked up.

Disposal

P501: Dispose of contents/container to in accordance with local regulations.

16.4. References

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2. Denton SM (1996). Acute oral toxicity study in the rat: anhydrous boric acid. Final report. Report no.: 1341/7-1032.
3. National Toxicology Program (NTP) – Technical Report Series No. TR324, NIH Publication No. 88 2580 (1987), PB88 213475/XAB
4. Fail et al., Fund. Appl. Toxicol. (1991) 17, 225-239
5. Heindel et al., Fund. Appl. Toxicol. (1992) 18, 266-277
6. Birge W J, Black J A, EPA-560/-76-008 (April 1977) PB 267 085
7. Scialli AR, Bonde JP, Brüske-Hohlfeld I, Culver D, Li Y, Sullivan FM; ELSEVIER 2009
8. Robbins WA, Xun L, Jia J, Kennedy N, Elashoff DA, Ping L. ;ELSEVIER 2009;(Reproductive Toxicology)
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10. Gersich, FM (1984a). Environ.Toxicol.Chem., 3 #1, 89-94 (1984)
11. Soucek et al., 2010. Illinois Natural History Survey, University of Illinois.

For general information on the toxicology of borates see ECETOC Technical Report No. 63 (1995); Patty's Industrial Hygiene and Toxicology, 4th Edition Vol. II, (1994) Chap. 42, 'Boron'.

16.5. Disclaimer of Liability

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