## 1 PRODUCT AND COMPANY IDENTIFICATION

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|---|---|
| **Product Name:** | Borax 5 MOL |
| **Revision Date:** | 12/8/2014 |
| **Version:** | 1.1 |
| **MSDS Number:** | rm-Brx5 |
| **Common Name:** | Sodium Tetraborate Pentahydrate |
| **CAS Number:** | 1303-96-4, 11130-12-4 |
| **Chemical Family:** | Inorganic Salt |
| **Chemical Formula:** | Na2B4O7:5H2O |
| **Synonyms:** | borax, Borax 5 mol |

Sodium Tetraborate Pentahydrate is chemically and toxicologically related to Boric Acid.; the majority of the Borate chronic toxicology studies were conducted using Boric Acid. Sodium Tetraborate Pentahydrate is converted to Boric Acid in biological systems. The Boric Acid data discussed in this section can be converted to Sodium Tetraborate Pentahydrate equivalent data by dividing by a factor of 0.6486.

Supplier:

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## 2 HAZARDS IDENTIFICATION

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|---|---|
| **Route of Entry:** | Eyes; Mild eye irritant. Inhalation: Occasional mild irritation effects to nose and throat may occur from inhalation of dust levels greater than 10m/m3. |
| **Target Organs:** | No target organs have been determined in humans. High dose animal ingestion studies indicate the testes are the target organ. |
| **Inhalation:** | Mild irritation to nose and throat may occur when the PEL or TLV are exceeded. |
| **Skin Contact:** | Non-irritating. |
| **Eye Contact:** | Does not cause eye irritation in normal industrial use. |
| **Ingestion:** | Not intended for digestion. Amounts greater than one teaspoonful, when ingested, may cause gastrointestinal problems. |

GHS Signal Word:
DANGER

GHS Hazard Pictograms:

GHS Classifications:

Health, Reproductive toxicity, 1
Health, Serious Eye Damage/Eye Irritation, 2 B

GHS Phrases:
H360 - May damage fertility or the unborn child
H320 - Causes eye irritation

GHS Precautionary Statements:
P304+340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P332+313 - If skin irritation occurs: Get medical advice/attention.

Sodium Tetraborate Pentahydrate is a white odorless, powdered substance that is not flammable, combustible, or explosive and it presents no unuusal hazard if involved in a fire. It presents little or not hazard (to humans) and has low acute oral and dermal toxicities. Care should be taken to minimize the amount released to the environment to avoice ecological effects.

## 3 COMPOSITION/INFORMATION ON INGREDIENTS

**Ingredients:**

| Cas # | Percentage | Chemical Name |
|---|---|---|
| 1303-96-4 | >99 | Borax (B4Na2O7.10H2O) |
| 1303-96-4 | >99 | Borates, tetra, sodium salts (decahydrate) |

## 4 FIRST AID MEASURES

**Inhalation:** If symptoms develop, move victim to fresh air. If symptoms persist, obtain medical attention.
**Skin Contact:** Non-irritating. Wash with soap and water.
**Eye Contact:** Flush with large amounts of water or saline solution, occasionally lifting upper and lower lids, until no evidence of powder remains (approx 15-20mins). Get medical attention if aggravation persists.
**Ingestion:** If amounts greater than one teaspoon are swallowed, give two glasses of water to drink and seek medical attention.

## 5 FIRE FIGHTING MEASURES

**Flammability:** Not flammable
**Flash Point:** Not applicable

Any fire extinguishing media may be used on nearby fires.

## 6 ACCIDENTAL RELEASE MEASURES

Borates may damage trees and vegetation. For dry spills, sweep, vacuum, or shovel and place in containers for disposal in accordance with applicable regulations. Avoid contamination of bodies of water during cleanup. Can cause localized contamination of surrounding waters depending on amount dissolved in these waters. Some damage to local vegetation, fish, and other aquatic life may be expected. Under usual conditions, no protective equipment is required.

## 7 HANDLING AND STORAGE

**Handling Precautions:** To maintain package integrity and to minimize caking of the product, bags should be handled on a "first-in-first-out" basis.

**Storage Requirements:** Dry, indoor storage under normal atmospheric conditions is recommended. Good housekeeping should be maintained to minimize dust accumulation and generation.

## 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering Controls:** All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94).

**Personal Protective Equip:** Use goggles or vented safety glasses in excessively dusty contitions. In poorly ventilated areas you must wear a supplied air respirator.

Symptoms of accidental overexposure to Borates have been associated with ingestion or absorption through large areas of damaged skin. These may include nausea, vomiiting, and diarrhea, with delayed effects of skin redness and peeling.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

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|---|---|---|---|
| **Appearance:** | White odorless powder | | |
| **Physical State:** | solid | **Odor:** | odorless |
| **Spec Grav./Density:** | 1.82 | **Molecular Formula:** | Na2B4O7;5H2O |
| **Boiling Point:** | not applicable | **Solubility:** | 3.7% at 20C; 50.6% @100C |
| **Vapor Pressure:** | Not applicable | **Bulk Density:** | 52.2 lbs/ft3 |
| **pH:** | At 20C 1% solution- 9.23 | | |
| **Molecular weight:** | 291.29 | | |

## 10 STABILITY AND REACTIVITY

**Stability:** Product is stable under normal conditions.

**Materials to Avoid:** Strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas that could creat an explosive hazard.

**Hazardous Decomposition:** none known

**Hazardous Polymerization:** will not occur

## 11 TOXICOLOGICAL INFORMATION

**Acute Toxicity:**

Oral ( LD 50): Low acute oral toxicity. LLD50 in rats is 4,500 to 5,000 mg/kg of body weight.

Inhalation ( LC 50): Low acute inhalation toxicity. LC50 ini rats is greater than 2.0 mg/L

Skin irritation: Low acute dermal toxicity; LD50 in rabbits is greater than 10,000 mg/kg of body weight. Poorly absorobed thorugh intact skin. Non irritant.

Eye irritation: Draize test in rabbits produced eye irritation effects. Fifty years of occupational exposure to borax 5 mol indicates no adverse effects on human eye. Not considered to be a human eye irritant in normal industrial use.

Sensitation: Not a skin sensitizer.

Reproductive/developmental toxicity: Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes. Doses administered were many times in excess of those to which humans would normally be exposed.

Carcinogenicity/mutagenicity: No evidence of carcinogenicity in mice. No mutagenic activity was observed for boric acid in a mattery of short term mutagenicity assays.

Human data: 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.

## 12 ECOLOGICAL INFORMATION

General: Boron is the element in borax 5 mol which is used by convention to report borate product ecological effects. It occurs naturally in seawater at an average concentration of 5 mg B/L and generally occurs in fresh water at concentration up to 1 mg B/L. In dilute aqueous solutions the predominant boron species present is undissociated boric acid.
Phytotoxicity: boron is an essential micronutrient for healthy growht of plants;however, it can be harmful to boron sesitive plants in large quantities. Care should be taken to minimize the amount of boron released to the environment.
Algal toxicity: Green algae. Scenedesmus subspicatus 96hr EC10 = 24 mg B/L
Invertebrate toxicity:Daphnids, Daphnia magna straus 24hr EC50= 242 mg B/L
Fish toxicity:sea water9: Dab, Limanda limanda 96hr LC50= 74mg B/L
Fresh water10: Rainbow trout, S. gairdneri(embryo-larbal stage)
24-day LC50 = 88 mg B/L
32-day LC50 = 54 mg B/L
Goldfish, Carassius auratus (embryo-larval stage)
7-day LC50 = 65 mg B/L
3-day LC50 = 71 mh B/L
Test substance: sodium tetraborate
Environmental Fate Data:
Persistence/Degredation:Boron is naturally occurring and ubiquitous in the environment.
Octanol/Ware partition coeffecient:No value. In aqueous solution anhydrous borax is converted substantially into undisassociated boric acid.
Soil Mobility:The product is soluable in water and is leachable through normal soil.

## 13 DISPOSAL CONSIDERATIONS

Small quantities can usually be disposed of at landfill sites. No special disposal treatment is required, but local authorities should be consulted about any specific local requirements. Tonnage quantities of product are not recommended to be sent to landfills. Such product should, if possible, be used for an appropriate application.

## 14 TRANSPORT INFORMATION

Non-hazardous for air, sea and road freight.

## 15 REGULATORY INFORMATION

COMPONENT / (CAS/PERC) / CODES

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*Borax (B4Na2O7.10H2O) (1303964 n/a%) MASS, OSHAWAC, PA, TSCA, TXAIR

*Borates, tetra, sodium salts (decahydrate) (1303964 n/a%) MASS, OSHAWAC, PA, TSCA, TXAIR

*Borates, tetra, sodium salts (decahydrate) (1303964 n/a%) MASS, OSHAWAC, PA, TSCA, TXAIR

REGULATORY KEY DESCRIPTIONS

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MASS = MA Massachusetts Hazardous Substances List
OSHAWAC = OSHA Workplace Air Contaminants
PA = PA Right-To-Know List of Hazardous Substances
TSCA = Toxic Substances Control Act
TXAIR = TX Air Contaminants with Health Effects Screening Level

## 16 OTHER INFORMATION

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