ESSENTIAL CHEMISTRY. INNOVATIVE SOLUTIONS.

# SAFETY DATA SHEET

**Print Date:** September 8, 2025

## Section 1: Product & Company Information

**Product Identifier:** **Borax, 5 mol**

**Other Means of Identification**
Product Number: 131001

**Recommended Use and Restrictions on Use**
Recommended Use: Ceramics, Detergent, Borosilicate glass, Insulation fiberglass
Restrictions on Use: No data available.

**Manufacturer / Importer / Supplier / Distributor Information**
**Company Name:** CORECHEM Inc.
**Address:** 4320 Greenway Drive
Knoxville, TN 37918 USA

**Information Telephone Number:** 1-865-524-4239
**Fax Number:** 1-865-524-3375
**Website:** www.corecheminc.com
**Contact Person:** Regulatory Manager
**E-mail:** regulatory@corecheminc.com

**Emergency Phone Number:** Chemtrec® 1-800-424-9300 / Outside USA 1-703-527-3887 *(monitored 24 hours/day)*

## Section 2: Hazards Identification

**GHS Hazard Classification(s)**
In accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

**Physical Hazard(s)**
Not classified.

**Health Hazard(s)**
(Corrosion)Damage/Irritation, Eye - 2A
Toxic to Reproduction - 2

**Environmental Hazard(s)**
Not classified.

**Label Elements**
**Signal Word**
**Warning**

**Hazard Symbol(s)**

**Hazard Statement(s)**
H319: Causes serious eye Irritation.
H361: Suspected of damaging fertility or the unborn child.

**Precautionary Statements**
**General**
Not applicable.

**Prevention**
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P264: Wash face, hands and any exposed skin thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P281: Use personal protective equipment as required.

**Response**

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

**Storage**

P405: Store locked up.

**Disposal**

P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Hazard(s) not otherwise classified (HNOC)**

None known.

## Section 3: Composition/Information on Ingredients

**Substance**

| Chemical Identity [2] | Common Name/Synonym(s) | CAS # [3] | Weight % | Impurity or Stabilizing Additive |
|---|---|---|---|---|
| Disodium Tetraborate Decahydrate | Borax, Borax decahydrate, Sodium Borate decahydrate, Sodium Tetraborate | 12179-04-3 | ≤ 100 % | No |

1. Information regarding the composition and the percentage ranges of the mixtures ingredients are not presented as it Confidential Business Information (CBI). Where a medical emergency exists (as determined by medical professional), timely disclosure of CBI is assured. The information omitted pertains to only the names of the substances and the concentration in the mixture (product) and can only be requested by a doctor/physician or Local/State/Provincial or Federal Authority.
2. Non-hazardous ingredients are not presented as to protect the proprietary formula of the product.
3. "— "Indicates ingredient is a mixture and contains multiple ingredients or may have no identifying CAS number.

## Section 4: First-Aid Measures

**General Information**

Move out of dangerous area. Seek medical attention. Show this safety data sheet to the doctor in attendance.

**Inhalation**

If symptoms such as nose or throat irritation are observed, remove person to fresh air. If not breathing, give artificial respiration. Seek medical attention.

**Skin Contact**

Wash with soap and water. Seek medical attention.

**Eye Contact**

As with any chemical exposure to the eye, flush your eyes with water for at least 20 minutes. Seek medical attention.

**Ingestion**

If large amounts are swallowed (i.e., more than one teaspoon), give two glasses of water or milk to drink and seek medical attention. Never give anything by mouth to an unconscious person

**Most important symptoms/effects, acute and delayed**

**Symptoms**

Symptoms of accidental over-exposure to high doses of inorganic borate salts have been associated with ingestion or absorption through large areas of severely damaged skin. These may include nausea, vomiting, and diarrhea, with delayed effects of skin redness and peeling.

**Indication of immediate medical attention and special treatment needed**

**Hazards**

No data available.

**Treatment**

Note to physicians: Supportive care only is required for adult ingestion of less than a few grams of the product. For ingestion of larger amounts, maintain fluid and electrolyte balance and maintain adequate kidney function. Gastric lavage is only recommended for heavily exposed, symptomatic patients in whom emesis has not emptied the stomach. Hemodialysis should be reserved for patients with massive acute absorption, especially for patients with compromised renal function. Boron analyses of urine or blood are only useful for verifying exposure and are not useful for evaluating severity of poisoning or as a guide in treatment.

## Section 5: Fire-Fighting Measures

**General Fire Hazards**

No data available.

**Suitable (and Unsuitable) Extinguishing Media**

**Suitable Extinguishing Media**

Extinguishing powder, alcohol resistant foam, carbon dioxide, water fog

**Unsuitable Extinguishing Media**

No data available.

**Specific Hazards Arising from the Chemical**

None. The product is not flammable, combustible or explosive.

**Special Protective Equipment and Precautions for Firefighters**

**Special Fire-Fighting Equipment Procedures**

Not applicable. The product is itself a flame retardant.

**Special Protective Equipment for Fire-Fighters**

As in any fire, wear self-contained breathing apparatus pressure-demand (OSHA/NIOSH approved or equivalent) and full protective gear.

## Section 6: Accidental Release Measures

**Personal Precautions, Protective Equipment and Emergency Procedures**

Avoid dust formation. In case of exposure to prolonged or high level of airborne dust, wear a personal respirator in compliance with national legislation.

**Methods and Materials for Containment and Clean-Up**

Land spill- Vacuum, shovel or sweep up borax pentahydrate and place in containers for disposal in accordance with applicable local regulations. Avoid contamination of water bodies during clean up and disposal. No personal protective equipment is needed to clean up land spills.
Spillage into water- Where possible, 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 dilution returns the boron value to its normal environmental background level

**Notification Procedures**

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

**Environmental Precautions**

The product is a water-soluble white powder that may cause damage to trees or vegetation by root absorption. Avoid contamination of water bodies during clean up and disposal. Advise local water authority that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilution returns the boron value to its normal environmental background level or meets local water quality standards.

## Section 7: Handling and Storage

**Precautions for Safe Handling**

Good housekeeping procedures should be followed to minimise dust generation and accumulation. Avoid spills. Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

**Conditions for Safe Storage, including any Incompatibilities**

No special handling precautions are required, but dry, indoor storage is recommended. To maintain package integrity and to minimise caking of the product, bags should be handled on a first-in first-out basis.

## Section 8: Exposure Controls/Personal Protection

**Control Parameters**

**Occupational Exposure Limits**

| Chemical Identity | Type | Value | Source |
|---|---|---|---|
| Disodium Tetraborate Decahydrate | TLV | 2 mg/m$^3$ | US. ACGIH Threshold Limit Values |
| Disodium Tetraborate Decahydrate | STEL | 6 mg/m$^3$ | US. ACGIH Threshold Limit Values |
| Disodium Tetraborate Decahydrate | PEL | 15 mg/m$^3$ | US OSHA Table Z-1 |

**Biological Limit Values**

The product does not contain any relevant quantities of hazardous materials with assigned biological limit values.

**Appropriate Engineering Controls**

Maintain air concentrations below occupational exposure standards. Use local exhaust ventilation to keep airborne concentrations of boric acid dust below permissible exposure levels. Wash hands before breaks and at the end of the workday. Remove and wash soiled clothing.

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

**General Information**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

**Eye/Face Protection**

Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

**Skin Protection**

**Hand Protection**

Wear appropriate chemical resistant gloves.

**Other**

Wear appropriate chemical resistant clothing.

**Respiratory Protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hygiene Measures**

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated footwear that cannot be cleaned. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Avoid contact with eyes, skin, and clothing.

## Section 9: Physical and Chemical Properties

| | |
|---|---|
| **Appearance:** | |
| Physical State: | Solid, Powder or Crystalline |
| Color: | White |
| **Odor:** | Odorless |
| **Odor Threshold:** | No data available. |
| **pH:** | 9.23 at 10 g/l |
| **Melting Point/Freezing Point:** | >300 °C (144 °F) |
| **Initial Boiling Point and Boiling Range:** | 1575°C |
| **Flash Point:** | Not applicable |
| **Evaporation Rate** (butyl acetate=1)**:** | Not applicable |
| **Flammability (solid, gas):** | Not flammable |
| **Upper/Lower Limit on Flammability or Explosive Limits** | |
| Flammability Limit – Upper: | Not applicable |
| Flammability Limit – Lower: | Not applicable |
| Explosive Limit – Upper: | Not applicable |
| Explosive Limit – Lower: | Not applicable |
| **Vapor Pressure:** | Not applicable: melting point >300°C |
| **Vapor Density** (air =1)**:** | Not applicable: melting point >300°C |
| **Relative Density** (water=1)**:** | 1.81@ 20°C |
| **Solubility(ies):** | |
| Solubility in water: | 3.7% @ 20°C; 27.5% @ 100°C |
| Solubility (other): | No data available. |
| **Partition coefficient (n-octanol/water):** | No data available. |
| **Auto-Ignition Temperature:** | not applicable |
| **Decomposition Temperature:** | dehydration at 120°C |
| **Viscosity:** | not applicable |

**Other Information:**

| | |
|---|---|
| Molecular Weight: | 291.35 |
| Formula: | $Na_2B_4O_7 . 5H_2O$ |

## Section 10: Stability and Reactivity

**Reactivity**

No data available.

**Chemical Stability**

Under normal ambient temperatures (-40°C to +40°C), the product is stable. When heated it loses water, eventually forming anhydrous borax (Na2B4O7).

**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.

**Conditions to Avoid**

Avoid contact with strong reducing agents by storing according to good industrial practice.

**Incompatible Materials**
Avoid contact with strong reducing agents such as metal hydrides, acetic anhydride or alkali metals.

**Hazardous Decomposition Products**
Boranes, hydrogen, boron oxides.

## Section 11: Toxicological Information

**Information on routes of exposure**
**Ingestion:** Low oral toxicity.
**Inhalation:** Low inhalation toxicity.
**Skin Contact:** Non-irritant.
**Eye Contact:** Mild irritant.

**Information on Toxicological Effects**
**Acute Toxicity (List all possible routes of exposure)**
**Oral**
Sodium Tetraborate: LD50 (Rat): 3,200 – 3,400 mg/kg

**Dermal**
Sodium Tetraborate: LD50 (Rabbit): 2,000 mg/kg

**Inhalation**
Sodium Tetraborate: LC50 (Rat): 2.12 mg/L

**Repeated Dose Toxicity**
No data available.

**Skin Corrosion/Irritation**
Non-irritant.

**Serious Eye Damage/Eye Irritation**
A serious eye irritant.

**Respiratory/Skin Sensitization**
Not a skin sensitizer.

**Carcinogenicity**
**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans**
No component of this product present at levels greater than or equal to 0.1% is identified as probable or confirmed human carcinogen by IARC.
**US. National Toxicology Program (NTP) Report on Carcinogens**
No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)**
No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Germ Cell Mutagenicity**
**In Vitro**
No data available.
**In Vivo**
No data available.

**Reproductive Toxicity**
**Method:** Prenatal Developmental Toxicity Study - OECD Guideline 414
**Species:** Rat
**Dose:** 0; 19 (3.3); 36 (6.3); 55 (9.6); 76 (13.3) and 143 (25) mg boric acid (mg B)/kg bw.
**Routes of Exposure:** Oral feeding study
**Results:** NOAEL in rats for developmental effects on the foetus including foetal weight loss and minor skeletal variations is 55 mg boric acid/kg bw or 9.6 mg B/kg; equivalent to 64.7 mg disodium tetraborate pentahydrate/kg bw.
Classification: Reproductive Toxicity Category 2 (Hazard statement: H361: Suspected of damaging fertility or the unborn child.)

**Specific Target Organ Toxicity – Single Exposure**
No adverse effects noted.

**Specific Target Organ Toxicity – Repeated Exposure**
No adverse effects noted.

**Aspiration Hazard**
Physical form of solid powder indicates no aspiration hazard potential.

**Other Effects**

Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid and sodium borate dust. Human epidemiological studies indicate no effect on fertility in occupational populations with chronic exposures to borate dust and indicate no effect to a general population with high exposures to borates in the environment.

## Section 12: Ecological Information

**Ecotoxicity**

**Acute Hazards to the Aquatic Environment**

**Fish**

Fish, Fathered minnow, Pimephales promelas (Soucek et al., 2010) 96-hr LC50 = 79.7 mg B/L or 456 mg boric acid/L or 370 mg disodium tetraborate, anhydrous

**Aquatic Invertebrates**

Daphnia, Daphnids, Daphnia magna (Gersich, 1984a) 48-hr LC50 = 133 mg B/L or 760 mg boric acid/L or 619 mg disodium tetraborate, anhydrous/L

**Toxicity to Aquatic Plants**

Green algae, Pseudokirchneriella subcapitata (Hansveit and Oldersma, 2000) 72-hr EC50 –biomass = 40 mg B/L, or 229 mg boric acid/L.

**Chronic Hazards to the Aquatic Environment**

**Fish**

No data available.

**Aquatic Invertebrates**

No data available.

**Toxicity to Aquatic Plants**

No data available.

**Persistence and Degradability**

**Biodegradation**

There are no data on the degradability of this product.

**BOD/COD Ratio**

No data available.

**Bioaccumulative Potential**

**Bioconcentration Factor (BCF)**

No data available on bioaccumulation.

**Partition Coefficient n-octanol / water (log Kow)**

No data available.

**Mobility in Soil**

The product is soluble in water and is leachable through normal soil.

**Other Adverse Effects**

No data available.

## Section 13: Disposal Considerations

**Disposal Instructions**

Dispose of it in accordance with all local, state, and federal regulations. Contact a licensed waste disposal service to dispose of this material. Surplus product should, if possible, be used for an appropriate application.

**Contaminated Packaging**

Handle contaminated packages in the same way as the substance itself. Emptied containers may retain hazardous residue and explosive vapors. Keep away from heat, sparks, and flames. Do not cut, puncture, or weld on or near this container. Follow label warnings until container is thoroughly cleaned or destroyed.

## Section 14: Transportation Information

**US Department of Transportation (DOT)**

This material is not regulated as a hazardous material for transport by the U.S. Department of Transportation in accordance with 49 CFR 172.101.

## Section 15: Regulatory Information

**US Federal Regulations**

**Toxic Substance Control Act (TSCA), Chemical Substance Inventory, Section 8(b)**

This product or ingredient(s) are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

**Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substance List (40 CFR 302.4)**

No chemical(s) in this material are subject to the reporting requirements of CERCLA.

**Clean Air Act (CAA), Section 112(r)**

No chemical(s) in this material are subject to the reporting requirements of CAA.

**Emergency Planning and Community Right-To-Know Act (EPCRA)**

**EPCRA 302 Extremely Hazardous Substance**

No chemical(s) in this material are subject to the reporting requirements of SARA Title III, Section 302.

**EPCRA 304 Emergency Response Notification**

No chemical(s) in this material are subject to the reporting requirements of SARA Title III, Section 304.

**EPCRA 311/312 Emergency and Hazardous Materials Reporting**

| | |
|---|---|
| Fire Hazard: | No |
| Sudden Release of Pressure: | No |
| Reactive: | No |
| Acute (Immediate) Health Hazard: | No |
| Chronic (Delayed) Health Hazard: | Yes |

**EPCRA 313 Toxic Chemical Release Inventory (TRI) Reporting**

This material does not contain any chemical(s) with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**US State Regulations**

**California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)**

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

*Important Note: Due to the changing nature of regulatory requirements, the information in this document should NOT be considered all-inclusive or authoritative. Users should make their own investigations to determine the suitability of the information for their particular purposes. International, Federal, State and Local regulations should be consulted to determine compliance with all required reporting requirements.*

## Section 16: Other Information

**Hazardous Materials Identification System (HMIS®) Classification**

| | |
|---|---|
| **Health Hazard:** | **1** |
| **Chronic Health Hazard:** | ***** |
| **Flammability:** | **0** |
| **Physical Hazard:** | **0** |

(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

**National Fire Protection Association (NFPA 704) Rating**

| | |
|---|---|
| **Health Hazard:** | **1** |
| **Fire Hazard:** | **0** |
| **Reactivity Hazard:** | **0** |
| **Special:** | **N/A** |

(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

| | |
|---|---|
| Prepared By: | Regulatory Manager |
| Version #: | 001 |
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| Last Revision Date: | 10/1/2021 |
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| Sections Revised: | 2, 4-11 |

**Key to Abbreviations and Acronyms**

ATE - Acute Toxicity Estimate
BCF - Bioconcentration Factor
EC50 - Effective concentration, 50%
IDHL – Immediately Dangerous to Life and Health
Kg – Kilogram
l – Liter
lb. – Pound
LC50 - Lethal Concentration, 50%
LD50 - Lethal Dose, 50%
mg - milligram
ACGIH - American Conference of Industrial Hygienists
AIHA – American Industrial Hygiene Association
BEI - Biological Exposure Indices
CAS – Chemical Abstracts Service
DOT – US Department of Transportation
EPA – US Environmental Protection Agency
GHS - Globally Harmonized System of Classification and Labelling of Chemicals
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
IBC - Intermediate Bulk Container

ml – milliliter
N/A – Not Applicable
N/D – Not Determined
PEL – Permissible Exposure Limit
REL – Recommended Exposure Limit
STEL – Short-term Exposure Limit
TWA - Time weighted average
IMDG - International Maritime Dangerous Goods
NIOSH – National Institute for Occupational Safety and Health
NTP – National Toxicology Program
OSHA – US Occupational Health and Safety Administration
SARA – US EPA Superfund Amendments and Reauthorization Act
TSCA – US EPA Toxic Substances Control Act
UN - United Nations

**References**

HSDB® - Hazardous Substances Data Bank

**Disclaimer**

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