20 MULE TEAM®

Borax Decahydrate

Material Safety Data Sheet
DATE OF ISSUE May 2000
Supersedes November 1999 Version

1 Chemical product and company identification

Product name: Borax
Grade: Technical, NF, SQ
Product use: Industrial manufacturing
Chemical formula: $Na_2B_4O_7 \cdot 10H_2O$
Chemical name/synonyms: Sodium tetraborate decahydrate, disodium tetraborate decahydrate, borax decahydrate, Borax 10 Mol
Chemical family: Inorganic borates
CAS registry number: 1303-96-4

(Refer to Section 15 for TSCA/DSL Chemical inventory listing)

MANUFACTURER:
U.S. Borax Inc.
26877 Tourney Road
Valencia, CA 91355-1847

EMERGENCY PHONE NUMBERS:
24 Hr. Medical Info. Service . . . (661) 284-5200
Chemtrec (Spills): . . . . . (800) 424-9300

2 Composition/information on ingredients

This product contains greater than 99 percent (%) Sodium tetraborate decahydrate, $Na_2B_4O_7 \cdot 10H_2O$, which is hazardous under the OSHA Hazard Communication Standard and under the Canadian Controlled Products Regulations of the Hazardous Products Act (WHMIS), based on animal chronic toxicity studies. Refer to Sections 3 and 11 for details on hazards.

3 Hazard identification

Emergency overview

Borax is a white, odorless, powder substance that is not flammable, combustible, or explosive and has low acute oral and dermal toxicity.

Potential ecological effects

Large amounts of Borax can be harmful to plants and other species. Therefore, releases to the environment should be minimized.

Potential health effects

Routes of exposure: Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because Borax is poorly absorbed through intact skin.

Inhalation: Occasional mild irritation effects to the nose and throat may occur from inhalation of Borax dust at levels greater than 10 mg/m^3.

Eye contact: Borax is non-irritating to the eyes in normal industrial use.

Skin contact: Borax does not cause irritation to intact skin.

Ingestion: Products containing Borax are <u>not</u> intended for ingestion. Borax has a low acute toxicity. Small amounts (e.g., a teaspoon) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.

Cancer: Borax is not a known carcinogen.

Reproductive/developmental: Animal ingestion studies in several species, at high doses, indicate that borates cause reproductive and developmental effects. A human study of occupational exposure to borate dust showed no adverse effect on reproduction.

Target organs: No target organ has been identified in humans. High dose, animal ingestion studies indicate the testes are the target organs in male animals.

Signs and symptoms of exposure: Symptoms of accidental over-exposure to Borax might include nausea, vomiting and diarrhea, with delayed effects of skin redness and peeling. These symptoms have been associated with the accidental over-exposure to the chemically related substance boric acid. Refer to Section 11 for details on Toxicological data.

4 First aid measures

Inhalation: If symptoms such as nose or throat irritation are observed, remove person to fresh air.

Eye contact: Use eye wash fountain or fresh water to cleanse the eye. If irritation persists for more than 30 minutes, seek medical attention.

Skin contact: No treatment necessary because non-irritating.

Ingestion: Swallowing small quantities (one teaspoon) will cause no harm to healthy adults. If larger amounts are swallowed, give two glasses of water to drink and seek medical attention.

Note to physicians: Observation only is required for adult ingestion in the range of 4-8 grams of Borax. For ingestion of larger amounts, maintain adequate kidney function and force fluids. Gastric lavage is recommended for symptomatic patients only. Hemodialysis should be reserved for massive acute ingestion or patients with renal failure. Boron analyses of urine or blood are only useful for documenting exposure and should not be used to evaluate severity of poisoning or to guide treatment[1]. Refer to Section 11 for details.

5 Firefighting measures

General hazard: None, because Borax is not flammable, combustible or explosive. The product is itself a flame retardant.

Extinguishing media: Any fire extinguishing media may be used on nearby fires.

Flammability classification (29 CFR 1910.1200): Non-flammable solid.

6 Accidental release measures

General: Borax is a water-soluble white powder that may, at high concentrations, cause damage to trees or vegetation by root absorption. (Refer to Ecological information, Section 12, for specific information.)

Land spill: Vacuum, shovel or sweep up Borax and place in containers for disposal in accordance with applicable local regulations. Avoid contamination of water bodies during cleanup and disposal. Personal protective equipment is not needed to cleanup 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. (Refer to Sections 12, 13 and 15 for additional information.) Borax is a non-hazardous waste when spilled or disposed of, as defined in the Resource Conservation and Recovery Act (RCRA) regulations (40 CFR 261). (Refer to Regulatory information, Section 15, for additional references.)

7 Handling and storage

General: No special handling precautions are required, but dry, indoor storage is recommended. To maintain package integrity and to minimize caking of the product, bags should be handled on a first-in, first-out basis. Good housekeeping procedures should be followed to minimize dust generation and accumulation.

Storage temperature:	Ambient
Storage pressure:	Atmospheric
Special sensitivity:	Moisture (caking)

8 Exposure controls/personal protection

Engineering controls: Use local exhaust ventilation to keep airborne concentrations of Borax dust below permissible exposure levels.

Personal protection: Where airborne concentrations are expected to exceed exposure limits, NIOSH/MSHA certified respirators should be used. Eye goggles and gloves are not required for normal industrial exposures, but may be warranted if environment is excessively dusty.

Occupational exposure limits: Sodium tetraborate decahydrate (Borax) is regulated by OSHA, Cal OSHA and ACGIH.

ACGIH/TLV:	5 mg/m^3
Cal OSHA/PEL:	5 mg/m^3
OSHA/PEL (total dust):	10 mg/m^3

9 Physical and chemical properties

Appearance:	White, odorless, crystalline solid
Specific gravity:	1.71
Vapor pressure:	Negligible @ 20°C
Solubility in water:	4.71% @ 20°C; 65.64% @ 100°C
Melting point:	62°C (144°F) (heated in closed space)
pH @ 20°C:	9.3 (0.1% solution); 9.2 (1.0% solution); 9.3 (4.7% solution)
Molecular weight:	381.37

10 Stability and reactivity

General: Borax is a stable product, but when heated it loses water, eventually forming anhydrous borax ($Na_2B_4O_7$).

Incompatible materials and conditions to avoid: Reaction with strong reducing agents, such as metal hydrides or alkali metals, will generate hydrogen gas, which could create an explosive hazard.

Hazardous decomposition: None.