Safety Data Sheet

For Compliance with OSHA 29 CFR 1910.1200 and ANSI Z400.1-1998

Section 1: Identification

Product Name Boric Acid NF Powder
Commercial Name Not available
Product Use Not available
Restrictions On Use Not available

Product Code 30-2010

Company
PCCA
9901 South Wilcrest
Houston, TX 77099
Phone: 1-800-331-2498
Fax: 1-800-874-5760

In case of emergency contact:
CHEMTREC (24hr) 1-800-424-9300

Section 2: Hazard(s) Identification

OSHA Haz Com: CFR 1910.1200 Reproductive Toxicity Category 2

Signal Word DANGER

Hazard Statement(s) Suspected of damaging fertility or unborn child.

Pictogram(s) or Symbol(s)

Precautionary Statement(s):

Prevention P202: Do not handle until all safety precautions have been read and understood.
Response P308+P313: IF exposed or concerned: Get medical advice/attention.
Storage Not available.
Disposal P501: Dispose of contents/container in accordance with local regulation

Section 3: Composition/Information on Ingredients

Substance/Mixture Substance
Components Boric Acid
% By Weight 100
CAS# 10043-35-3
Molecular Weight 61.83 g/mole
Chemical Formula H3BO3
Synonym(s) BORIC ACID * ORTHOBORIC ACID * BORACIC ACID Borofa, trihydroxyborant, boron trihydroxide, Boron Trioxide Trihydrate, Hydrogen borate

Mixtures

Name	CAS#	% by Weight	TLV/PEL	LC50/LD50
Boric Acid	10043-35-3	100		Oral (LD50): Acute: 2660 mg/kg (Rat). 3450 mg/kg (Mouse)

Section 4: First-Aid Measures

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

Skin Contact No treatment necessary.

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

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

Symptoms/Effects

Acute 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 diarrhoea, with delayed effects of skin redness and peeling

Delayed 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 diarrhoea, with delayed effects of skin redness and peeling

Immediate Medical Attention

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

Suitable Extinguishing Media

Use extinguishing media that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

Not available.

Products of Combustion

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

Firefighters Special Equipment and Precautions

Not applicable. The product is itself a flame retardant.

Section 6: Accidental Release Measures

Personal precaution, protective equipment and emergency procedures: For non-emergency personnel: Eye goggles and gloves are not required for normal industrial exposures, but eye protection according to ANSI Z.87.1 or other national standard. Respirators should be considered if environment is excessively dusty. For emergency responders: Eye goggles and gloves are not required for normal industrial exposures, but eye protection according to ANSI Z.87.1 or other national standard. Respirators should be considered if environment is excessively dusty. 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. Methods and material for containment and cleaning up Appropriate containment: Avoid spillage into water and cover drains. Land spill: Vacuum, shovel or sweep up and place in containers for disposal in accordance with applicable local regulations. Spillage into water: Where possible, remove any intact containers from the water.

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. Storage temperature: Ambient Storage pressure: Atmospheric Special sensitivity: Moisture (Caking)

Section 8: Exposure Controls/Personal Protection

Exposure Limits In the absence of a national OEL, Rio Tinto Borax recommends and applies internally an Occupational Exposure Limit (OEL) of 1 mg B/m3. To convert product into equivalent boron (B) content, multiply by 0.175. ACGIH, which is not a regulatory agency, has established a Threshold Limit Value (TLV) for borates. Occupational Exposure Limits: ACGIH 2 mg/m3 8-hr TWA OEL (mg/m3) inhalable fraction – Borate Compounds, inorganic ACGIH 6 mg/m3 15 min STEL (mg/m3) inhalable fraction – Borate Compounds, inorganic OSHA/PEL (total dust) 15 mg/m3 Particulate Not Otherwise Classified or Nuisance Dust OSHA/PEL (respirable dust) 5 mg/m3 Particulate Not Otherwise Classified or Nuisance Dust Cal OSHA/PEL 5 mg/m3 Particulate Not Otherwise Classified or Nuisance Dust

Engineering Controls Use local exhaust ventilation to keep airborne concentrations of dust below permissible exposure limits.

Personal Protection Eye and face protection: Eye protection according to ANSI Z.87.1 or other national standards may be warranted if environment is excessively dusty. Skin protection: Standard work gloves (cotton, canvas or leather) may be warranted if environment is excessively dusty. Respiratory protection: Where airborne concentrations are expected to exceed exposure limits, respirators should be used.

Section 9: Physical and Chemical Properties

Appearance	White, crystalline solid
Odor	Odorless
Odor Threshold	Not available

Melting Point	171°C	**pH**	6.1 (0.1% solution); 5.1 (1.0% solut
Freezing Point	Not available	**Vapor Pressure**	Not applicable
Boiling Point/Range	Not available.	**Vapor Density**	Not available
Decomposition temperature	If heated above 100oC water	**Viscosity**	Not available.
Partition Coefficient: n-octanol/water	Log Pow = -1.09 @ 22°C	**Evaporation Rate**	Not available
Flash Point	Not available	**Autoignition temperature**	Not applicable
Flammability	Non flammable	**Flammability or Explosive Limits:**	
		Lower	Not applicable
		Upper	Not applicable

Solubility(ies)	Water: 49.2 g/L @ 20oC
Other	Not available.

Section 10: Stability and Reactivity

Reactivity	Not available
Chemical Stability	Under normal ambient temperatures (-40 °C to +40°C), the product is stable product. When heated it loses water, first forming metaboric acid (HBO2), and on further heating it is converted into boric oxide (B2O3).
Hazardous Polymerization	Boric acid is a weak acid that may cause corrosion of base metals. Reaction with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could create an explosive
Conditions to Avoid	Avoid contact with strong reducing agents by storing according to good industrial practice.
Incompatible Materials	Strong reducing agents.
Hazardous Decomposition Products	None.

Section 11: Toxicological Information

RTECS Not available

Acute Toxicity

(a) Acute toxicity Method: Acute Oral Toxicity Study – OECD Guideline 401 Species: Rat Dose: 2000 – 5000 mg/kg body weight Routes of Exposure: Oral Results: Low acute oral toxicity. The oral LD50 value in male rats is 3,450 mg/kg bw, and in female rats is 4080 mg/kg bw. Classification: Acute Toxicity (Oral) Category 5 (Hazard statement: H303: May be harmful if swallowed) Method: Acute Dermal Toxicity Study – U.S. EPA FIFRA Guidelines Species: Rabbit Dose: 2,000 mg/kg bw Routes of Exposure: Dermal Results: Low acute dermal toxicity; LD50 in rabbits is > 2,000 mg/kg of body weight. Poorly absorbed through intact skin. Based on the available data, the classification criteria are not met. Method: Acute Inhalation Toxicity Study – OECD Guideline 403 Species: Rat Dose: 2.12 mg/L Routes of Exposure: Inhalation Results: Low acute inhalation toxicity; LC50 in rats is > 2.0 mg/l (or g/m3). Based on the available data, the classification criteria are not met. (b) Skin corrosion / irritation: Method: Primary Dermal Irritation Study – U.S. EPA FIFRA Guidelines Species: New Zealand White Rabbit Dose: 0.5 g moistened with saline Routes of Exposure: Dermal Results: No skin irritation. Mean Primary Irritation Score: 0.1. Based on the available data, the classification criteria are not met. (c) Serious eye damage / irritation: Method: Eye Irritation Study – similar to OECD Guideline 405 Species: New Zealand White Rabbit Dose: 0.1 g Routes of Exposure: Eye Results: Not irritating, corneal involvement or irritation clearing in 7 days. Classification: Based on mean scores < 1, and the effects were fully reversible within 7 days, the classification criteria are not met. Many years of occupational exposure indicate no adverse effects on human eye. (d) Respiratory or skin sensitisation: Method: Buehler Test – OECD Guideline 406 Species: Guinea Pig Dose: 0.4 g 95 % w/w/boric acid Routes of Exposure: Dermal

Skin Corrosion/Irritation
No skin irritation.

Serious Eye Damage/Irritation
Not irritating, corneal involvement or irritation clearing in 7 days.

Respiratory or Skin Sensitization
Not a skin sensitiser.

Germ Cell Mutagenicity
Not mutagenic

Carcinogenicity
No evidence of carcinogenicity.

Reproductive Toxicity
NOAEL in rats for effects on fertility in males is 100 mg boric acid/kg bw equivalent to 17.5 mg B/kg bw.

Routes of Entry
Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because product is poorly absorbed through intact skin. Product is not intended for ingestion.

Symptoms Related to Exposure
Products are not intended for ingestion. Small amounts (e.g. a teaspoonful) swallowed accidentally are not likely to cause effects. 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 diarrhoea, with delayed effects of skin redness and peeling.

Potential Health Effects
Not avaialble.

Target Organ(s) Not available.

Section 12: Ecological Information

Ecotoxicity
Based on the acute data for freshwater species, this substance is not classified as hazardous to the environment.

Persistance and Degradability
Biodegradation is not an applicable endpoint since the product is an inorganic substance.

Bioaccumulative Potential
This product will undergo hydrolysis in water to form undissociated boric acid. Boric acid will not biomagnify through the foodchain.
Octanol/Water partition coefficient: Log Pow = -0.7570 @ 25°C (based on boric acid)

Mobility in Soil
The product is soluble in water and is leachable through normal soil. Adsorption to soils or sediments is insignificant.

Other Adverse Effects
Not available

Section 13: Disposal Considerations

Waste Disposal
Product packaging should be recycled where possible. Local authorities should be consulted about any specific local requirements
Such product should, if possible, be used for an appropriate application.

Disposal of Container
Not available

Other Considerations
Not available

Section 14: Transport Information

DOT Classification
DOT Not a DOT controlled material

Section 15: Regulatory Information

Regulations

Safety, health and environmental regulations/legislation specific for the substance or mixture Clean Air Act (Montreal Protocol) - Substances that deplete the ozone layer: Not manufactured with and does not contain any Class I or Class II ozone depleting substances. NPRI (Canada): Boric acid is not listed on the Canadian National Pollutant Release Inventory. Regulation (EC) No 689/2008 - Export and Import of Dangerous Chemicals: Not listed. National Regulations: Ensure all national/local regulations are observed. U.S. EPA RCRA: This product is not listed as a hazardous waste under any sections of the Resource Conservation and Recovery Act (RCRA) or regulations (40 CFR 261 et seq). Superfund: CERCLA/SARA. This product is not listed under CERCLA (Comprehensive Environmental Response Compensation and Liability Act) or its 1986 amendments, SARA (Superfund Amendments and Reauthorization Act), including substances listed under Section 313 of SARA, Toxic Chemicals, 42 USC 11023, 40 CFR 372.65, Section 302 of SARA, Extremely Hazardous Substances, 42 USC 11002, 40 CFR 355, or the CERCLA Hazardous Substances list, 42 USC 9604, 40 CFR 302. Safe Drinking Water Act (SDWA): This product is not regulated under the SDWA, 42 USC 300g-1, 40 CFR 141 et seq. Consult state and local regulations for possible water quality advisories regarding boron compounds. Clean Water Act (CWA) (Federal Water Pollution Control Act): 33 USC 1251 et seq. a) This product is not itself a discharge covered by any water quality criteria of Section 304 of the CWA, 33 USC 1314. b) It is not on the Section 307 List of Priority Pollutants, 33 USC 1317, 40 CFR 129. c) It is not on the Section 311 List of Hazardous Substances, 33 USC 1321, 40 CFR 116. IARC: The International Agency for Research on Cancer (IARC) (a unit of the World Health Organization) does not list or categorize this product as a carcinogen. NTP Biennial Report on Carcinogens: This product is not listed. OSHA carcinogen: This product is not listed. California Proposition 65: This product is not listed on the Proposition 65 list of carcinogens or reproductive toxicants. Chemical inventory listing: The listing is sometimes under the Inventory number of the anhydrous form of this inorganic salt. U.S. EPA TSCA Active Inventory: 10043-35-3 Canada DSL: 10043-35-3 EINECS: 233-139-2 Australia AICS: 10043-35-3 China IECSC: 10043-35-3 Japanese METI & ISHL: (1)-63 New Zealand NZIoC: 10043-35-3 Philippines PICCS: 10043-35-3 South Korea KECI: KE-03499

Other

Not available.

Section 16: Other Information

Not available.