Safety Data Sheet

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

Section 1: Identification

Product Name Boric Acid NF Granular
Commercial Name Optibor
Product Use Industrial manufacturing
Restrictions On Use Micronutrient fertilizer

Product Code 30-1004

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 Serious eye damage/eye irritation Category 2B Reproductive toxicity Category 2

Signal Word WARNING

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

Pictogram(s) or Symbol(s)

Precautionary Statement(s):

Prevention Obtain special instructions before use Do not handle until all safety precautions have been read and understood Wash face, hands and any exposed skin thoroughly after handling Wear protective gloves/protective clothing/eye protection/face protection

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

Storage Store locked up

Disposal Dispose of contents/container to an approved waste disposal plant

Section 3: Composition/Information on Ingredients

Substance/Mixture Substance
Components Boric Acid
% By Weight 99
CAS# 10043-35-3
Molecular Weight 61.84 g/mole
Chemical Formula H3BO3
Synonym(s) Boric acid, orthoboric acid, boracic acid

Mixtures

Name	CAS#	% by Weight	TLV/PEL	LC50/LD50
Boric Acid	10043-35-3	99%	N/A	N/A

Section 4: First-Aid Measures

Inhalation Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Skin Contact Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

Eye Contact Flush eyes with water for 15 minutes. Get medical attention.

Ingestion Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Symptoms/Effects

Acute Causes eye irritation It may cause "Borism" which is characterized by dry skin, skin eruptions, eczema, and gastric disturbances such as nausea, vomiting, hypermotility, diarrhea, and anorexia and weight loss, central nervous system effects

Delayed Causes eye irritation It may cause "Borism" which is characterized by dry skin, skin eruptions, eczema, and gastric disturbances such as nausea, vomiting, hypermotility, diarrhea, and anorexia and weight loss, central nervous system effects

Immediate Medical Attention

Treat symptomatically First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

Section 5: Fire-Fighting Measures

Suitable Extinguishing Media

The product is not flammable. If it is involved in a fire, extinguish the fire using an agent suitable for the type of surrounding fire.

Unsuitable Extinguishing Media

Not available.

Products of Combustion

None. The product is not flammable, combustible or explosive. A mixture of potassium and boric acid may explode on impact. A mixture of boric acid and acetic anhydride will explode when heated to 58-60 °C.

Firefighters Special Equipment and Precautions

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

Section 6: Accidental Release Measures

Personal Precautions: Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment. Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas. Methods for containment: Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading. Methods for cleaning up: Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

Section 7: Handling and Storage

Technical Measures/Precautions: Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials. Safe Handling Advice: Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe dust. Handle in accordance with good industrial hygiene and safety practice. Technical Measures/Storage Conditions: Hygroscopic. Protect from moisture. Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials. Incompatible Materials: Potassium Acetic anhydride Alkalis

Section 8: Exposure Controls/Personal Protection

Exposure Limits ACGIH: 6 mg/m3 STEL inhalable particulate matter 2 mg/m3 TWA inhalable particulate matter

Engineering Controls Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection	Eye protection: Goggles or Safety glasses with side-shields. Skin and body protection: Long sleeved clothing, Gloves, Chemical resistant apron Respiratory protection: Effective dust mask. or. Wear respirator with dust filter. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent. Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands and face before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

Section 9: Physical and Chemical Properties

Appearance	White powder solid. (Powdered solid.)
Odor	Odorless.
Odor Threshold	Not available.

Melting Point	169-17°C (336.2-339.8°F)	**pH**	5.2
Freezing Point	Not available.	**Vapor Pressure**	Not available
Boiling Point/Range	300°C (572°F)	**Vapor Density**	Not available
Decomposition temperature	If heated above 100 °C wate	**Viscosity**	Solid substance
Partition Coefficient: n-octanol/water	0.175	**Evaporation Rate**	Not available.
Flash Point	Not applicable.	**Autoignition temperature**	Not available.
Flammability	Not available.	**Flammability or Explosive Limits:**	
		Lower	Not available.
		Upper	Not available.

Solubility(ies)	Soluble in hot water. Soluble in Methanol. Partially soluble in cold water. Very slightly soluble in Acetone
Other	Not available.

Section 10: Stability and Reactivity

Reactivity	Reactive with alkalis. Mixture of potassium and boric acid may explode on impact.Mixture of boric acid and acetic anyhdride will explode when heated to 58-60°C. Reacts with basic materials to form borate salts.
Chemical Stability	Hygroscopic. Stable under recommended storage conditions.
Hazardous Polymerization	Hazardous polymerization will not occur.
Conditions to Avoid	Exposure to moist air. Exposure to moisture
Incompatible Materials	Potassium, Acetic anhydride, Alkalis
Hazardous Decomposition Products	None

Section 11: Toxicological Information

RTECS ED4550000

Acute Toxicity

LD50/oral/rat = 2660 mg/kg Oral LD50 Rat LD50/oral/mouse = 3450 mg/kg Oral LD50 Mouse LD50/dermal/rabbit = >2000 mg/kg Dermal LD50Rabbit LD50/dermal/rat = No information available LC50/inhalation/rat = >0.16 mg/L Inhalation LC50 Rat 4 h >2.03 mg/L Inhalation LC50 Rat 4 h LC50/inhalation/mouse = No information available Other LD50 or LC50information = No information available It can cause borism. Borism is a sign of systemic uptake of boron-containing compounds and is characterized by dry skin, skin eruptions, eczema, and gastric disturbances such as nausea, hypermotility, vomiting, and anorexia and weight loss. Prolonged or repeated dermal application and chronic ingestion may also cause other symptoms similar to acute ingestion, and skin absorption. Chronic ingestion of Boric acid may also cause red tongue, patchy alopecia, cracked lips, conjunctivitis.Prolonged or repeated skin contact may also cause dermatitis.Prolonged or repeated inhalation may cause an increase in phlegm production and chronic bronchitis.

Skin Corrosion/Irritation

May cause skin irritation. It can be absorbed through damaged (broken) or abraded skin. It may be harmful if absorbed through skin. If absorbed through skin, it may cause system effects similar to acute ingestion and affect behavior/central nervous system, the gastrointestinal tract, and respiraton (respiratory depression)

Serious Eye Damage/Irritation

Causes eye irritation

Respiratory or Skin Sensitization
Inhalation of dust can cause respiratory tract and mucous membrane irritation. Symptoms may include, nasal and throat irritation, dryness of throat, dry or productive cough, nose bleeds, shortness of breath, chest pain/chesttightness.

Germ Cell Mutagenicity
Not available.

Carcinogenicity
Not considered carcinogenic

Reproductive Toxicity
Not available.

Routes of Entry
Inhalation. Ingestion. Eyes.

Symptoms Related to Exposure
Symptoms may include, nasal and throat irritation, dryness of throat, dry or productive cough, nose bleeds, shortness of breath, chest pain/chest tightness.

Potential Health Effects
Not available.

Target Organ(s) Not available.

Section 12: Ecological Information

Ecotoxicity
Aquatic environment Freshwater Fish Species Data: 1020 mg/L LC50 Carassius auratus 72 h flow-through 1 Water Flea Data: 115 - 153 mg/L EC50 Daphnia magna 48 h

Persistance and Degradability
Not available

Bioaccumulative Potential
Not available.

Mobility in Soil
Not available.

Other Adverse Effects
Not available.

Section 13: Disposal Considerations

Waste Disposal
Waste must be disposed of in accordance with Federal, State and Local regulation.

Disposal of Container
Empty containers should be taken for local recycling, recovery or waste disposal

Other Considerations
Not available.

Section 14: Transport Information

DOT Classification
DOT UN-No: Not Regulated Proper Shipping Name: No information available Hazard Class: No information available Subsidiary Class No information available Packing group: No information available Emergency Response Guide Number No information available Marine Pollutant No data available DOT RQ (lbs): No information available Special Provisions No Information available Symbol(s): No information available Description: No information available

Section 15: Regulatory Information

Regulations

FDA - 21 CFR - Total Food Additives 175.105, 176.180, 178.2010, 181.30 California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986. Chemicals Known to the State of California to Cause Cancer: This product does not contain a chemical requiring a warning under California Prop. 65. Chemicals Known to the State of California to Cause Reproductive Toxicity: This product does not contain a chemical requiring a warning under California Prop. 65. WHIMIS 2015 - GHS Classifications WHMIS 2015 Hazard Classification Information: . Component WHMIS 2015 Hazard Classification Boric Acid 10043-35-3 (100) Reproductive Toxicity - Category 1: H360 May damage fertility or the unborn child. Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR WHMIS 1988 Hazard Class D2A Very toxic materials Components WHMIS 1988 Boric Acid D2A

Other
Not available.

Section 16: Other Information

Not available.