

# SAFETY DATA SHEET



Conforms to regulation (EC) no. EU 453/2010

## SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product Identifier

Product Name: Boric Acid

Product Number: EC-609

### 1.2 Relevant Identified Uses of the Substance/Mixture and Uses Advised Against

Investigational research by professional users

### 1.3 Details of the Supplier of the Safety Data Sheet

#### Manufacturer

National Diagnostics  
305 Patton Drive  
Atlanta, GA 30036  
(404) 699-2121  
(800) 526-3867  
info@nationaldiagnostics.com

### 1.4 Emergency Telephone Number

#### ChemTel Inc.

Contract number MIS8894340  
1-800 255-3924 (United States, Canada, Puerto Rico & US Virgin Islands)  
01-800-099-0731 (Mexico)  
400-120-0751 (China)  
000-800-100-4086 (India)  
1-300-954-583 (Australia)  
0-800-591-6042 (Brazil)  
+1-813-255-3924 (All other regions)

## SECTION 2 - HAZARDS IDENTIFICATION

### 2.1 Classification of the Substance or Mixture

Classification according to Regulation (EC) No. 1272/2008 [EU-GHS/CLP]

H360 - Toxic to Reproduction (Category 1B)

### 2.2 Label Elements

#### GHS LABEL ELEMENTS AND CLASSIFICATION

##### GHS Label Elements



#### DANGER

H360 - May damage fertility or the unborn child.  
P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P281 - Use personal protective equipment as required.  
P308+P313 - IF exposed or concerned: Call a POISON CENTER or doctor/physician.

### 2.3 Other Hazards

None found.

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substance

#### Chemical Names/Description

ortho-Boric acid, boracic acid, Borofax (H<sub>3</sub>BO<sub>3</sub>)

#### Chemical Formula

H<sub>3</sub>BO<sub>3</sub>

#### Component List

Component	% Comp.	CAS #	EC #
Boric Acid	100	10043-35-3	233-139-2

## SECTION 4 - FIRST AID MEASURES

### 4.1 Description of First Aid Measures

**Inhalation**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**Ingestion**

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician.

**Skin**

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eyes**

Immediately flush eyes with plenty of water for at least fifteen minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

**4.2 Most Important Symptoms and Effects, Both Acute and Delayed****Inhalation**

May be absorbed from the mucous membranes of the respiratory tract, and depending on the amount of exposure could result in symptoms paralleling ingestion.

**Ingestion**

Depending on the amount of exposure, ingestion could result in the development of nausea, vomiting, diarrhea, drowsiness, rash, headache, fall in body temperature, low blood pressure, renal injury, cyanosis, coma, and death. Adult fatal dose reported at 5 to > 30 grams.

**Skin**

Symptoms of skin absorption parallel inhalation and ingestion.

**Eyes**

Redness, itching and pain.

**4.3 Indication of Any Immediate Medical Attention and Special Treatment Needed**

Unknown/not applicable

**SECTION 5 - FIRE FIGHTING MEASURES****5.1 Extinguishing media**

Use media appropriate to the primary cause of fire.

**5.2 Special Hazards Arising from the Substance/Mixture****Hazardous Combustion Products**

N.A.

**Hazardous Decomposition Products**

Loses chemically combined water upon heating, forming metaboric acid (HBO<sub>2</sub>) at 212-221 F, then pyroboric acid (H<sub>2</sub>B<sub>4</sub>O<sub>7</sub>) at 285 - 320 F, and Boric anhydride at higher temperature.

**Hazardous Polymerization**

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

**5.3 Advice for Firefighters**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

**5.4 Further Information**

No data available.

**SECTION 6 - ACCIDENTAL RELEASE MEASURES****6.1 Personal Precautions**

Wear appropriate protective equipment as specified in Section 8.

**6.2 Environmental Precautions**

Prevent discharge into the environment. Dike spills and stop leakage where practical. Do not allow material to enter drains.

**6.3 Methods and Materials for Containment and Cleaning Up**

Ventilate area of leak or spill. Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

**6.4 References to Other Sections**

For disposal information, see Section 13. For protective clothing and equipment, see Section 8.

**SECTION 7 - HANDLING AND STORAGE****7.1 Precautions for Safe Handling**

Avoid contact and inhalation. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling.

## 7.2 Conditions for Safe Storage (including any incompatibles)

Keep in a tightly closed container, stored in a cooled, dry, ventilated area.

### Incompatibles

Potassium, acetic anhydride, alkalis, carbonates, and hydroxides.

## 7.3 Specific End Uses

Investigational research by professional users

## SECTION 8 - EXPOSURE CONTROLS/PERSONAL PRECAUTIONS

### 8.1 Control Parameters

ACGIH Threshold Limit Value (TLV): 10 mg/m<sup>3</sup> total dust

OSHA Permissible Exposure Limit (PEL): 15 mg/m<sup>3</sup> total dust

### 8.2 Exposure Controls

#### Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source.

#### Respiratory Protection

For conditions of use where exposure to the dust or mist is apparent, a full-face dust/mist respirator may be worn. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator.

#### Eye Protection

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

#### Skin Protection

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on Basic Physical & Chemical Properties

a. Appearance	White powder or granules	b. Odor	None
c. Odor Threshold	N.A.	d. pH	5.1 in 0.1 M soln.
e. Melting/Freezing Point (°C)	169 C	f. Boiling point (°C)	Decomposes
g. Flash Point (°C)	N.A.	h. Evaporation Rate	N.A.
i. Flammability	N.A.	j. Upper/Lower Flammability or Explosive Limits	N.A.
k. Vapor Pressure	2.6 @ 20 C (68 F)	l. Vapor Density (Air = 1)	N.A.
m. Relative Density	1.43	n. Water Solubility	1g/18mL in cold H <sub>2</sub> O
o. Partition Coefficient n-octanol/water	log Kow -1.09	p. Autoignition Temperature (°C)	N.A.
q. Decomposition Temperature (°C)	N.A.	r. Viscosity	No data available.
s. Explosive Properties	N.A.	t. Oxidizing Properties	Not an Oxidizer

## SECTION 10 - STABILITY AND REACTIVITY

### 10.1 Reactivity

May release hydrogen gas on reaction with strong reductants.

### 10.2 Chemical Stability

Stable under ordinary conditions of use and storage. If moisture is present, boric acid can be corrosive to iron.

### 10.3 Possibility of Hazardous Reactions

Will not occur under normal conditions of use (See Sections 10.4 & 10.5).

### 10.4 Conditions to Avoid

No information found.

### 10.5 Incompatible Materials

Potassium, acetic anhydride, alkalis, carbonates, and hydroxides.

### 10.6 Hazardous Decomposition Products

Loses chemically combined water upon heating, forming metaboric acid (HBO<sub>2</sub>) at 212-221 F, then pyroboric acid (H<sub>2</sub>B<sub>4</sub>O<sub>7</sub>) at 285 - 320 F, and Boric anhydride at higher temperature.

## SECTION 11 - TOXICOLOGICAL INFORMATION

### Product LD50 Values

#### Oral Rat LD50 (mg/kg)

2660

#### Dermal Rabbit LD50 (mg/kg)

no information found

### Component Cancer List Status

	NTP Carcinogen		IARC Category
	Known	Anticipated	
Boric Acid	No	No	None

### Potential Health Effects

#### Inhalation

Causes irritation to the mucous membranes of the respiratory tract.

#### Ingestion

Harmful or fatal if ingested in sufficient volume.

#### Skin

Causes irritation to the skin.

#### Eyes

Causes irritation to the eyes.

### Carcinogenicity

Not listed as a carcinogen by NTP or IARC.

### Mutagenicity

No information found.

### Reproductive Toxicity

Studies of dogs and rats have shown that infertility and damage to testes can result from acute or chronic ingestion of boric acid. Evidence of toxic effects on the human reproductive system is inadequate.

### Teratogenic Effects

No information found.

### Routes of Entry

Ingestion and inhalation. Not significantly absorbed through the intact skin. Readily absorbed through damaged or burned skin.

### Target Organ Statement

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of this substance.

## SECTION 12 - ECOLOGICAL INFORMATION

### 12.1 Toxicity

	Vertebrates	Invertebrates	Algae	Microorganisms
Aquatic Toxicity (ppm unless otherwise noted)	LC50 (Limanda limanda, 72hrs) 75mg/L	LC50 (48hr, Daphnia) 133mg/L	NOEC 50mg/L	EC50:(3hr) 175mg/L
	Birds	Arthropods	Plants	Microorganisms
Terrestrial Environment Toxicity (ppm unless otherwise noted)	No data	NOEC (21day, mortality) 175mg/kg soil	No data	EC50 24-250mg/L

### 12.2 Persistence and Degradability

No data

### 12.3 Bioaccumulative Potential

No data

### 12.4 Mobility in Soil

logKp 0.34L/kg

### 12.5 Results of PBT and vPvB Assessment

Does not apply (inorganic)

## 12.6 Other Adverse Effects

None

## SECTION 13 - DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods

Offer surplus or non-recyclable product to licensed disposal company. Disposal is subject to user compliance with applicable law and product characteristics at time of disposal. Dispose of packaging as product.

## SECTION 14 - TRANSPORT INFORMATION

	ADR/RID	IATA	IMO	DOT
14.1 UN Number	N.A.	N.A.	N.A.	N.A.
14.2 Shipping Name	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.3 Hazard Class	N.A.	N.A.	N.A.	N.A.
14.4 Packing Group	N.A.	N.A.	N.A.	N.A.
14.5 Environmental Hazards	N.A.	N.A.	N.A.	N.A.
14.6 Special Precautions	N.A.	N.A.	N.A.	N.A.

## SECTION 15 - REGULATORY INFORMATION

### 15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture

#### United States

##### TSCA Regulatory Statement

All intentional ingredients are listed on the TSCA Inventory.

##### SARA 311/312 Hazard Categories

Component	Fire	Pressure	Reactivity	Acute	Chronic
Boric Acid	No	No	No	Yes	Yes

#### Europe

##### EEC Regulatory

All intentional ingredients are listed on the European EINECS Inventory.

## SECTION 16 - OTHER INFORMATION

### Revisional Updates

4/26/2019 - Updated Section 1.4

5/29/2015 - Updated Sections 2.1 and 3.1

8/9/2013 - Released Version 1.0

### NFPA Codes

Health 1 Flammability 0 Reactivity 0

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