

### SECTION 1: Identification

#### 1.1. Identification

Product form : Substance  
 Substance name : boric acid  
 CAS No : 10043-35-3  
 Formula : H3BO3  
 Synonyms : basilit B / boracic acid / boric acid (H3BO3) / borofax / boron trihydroxide / dr.'s 1 flea terminator DF / dr.'s 1 flea terminator DFPBO / dr.'s 1 flea terminator DT / dr.'s 1 flea terminator DTPBO / E 284 / epa pesticide code 011001 / flea prufe / LUCHEM AT / OPTIBOR NF / OPTIBOR SP / OPTIBOR SQ / OPTIBOR TG / OPTIBOR TP / ortho-boric acid / sassolite / super flea eliminator / three elephant / trihydroxyborone  
 BIG no : 10595

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Wood: preservative  
 Chemical raw material  
 Industrial use

#### 1.3. Details of the supplier of the safety data sheet

MarVista Resources  
 745 North Ave.  
 Corcoran, Ca. 93212 - USA  
 T 559-992-4535

#### 1.4. Emergency telephone number

Emergency number : 24 Hour Emergency Response Chemtrec: 1-800-424-9300

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### Classification (GHS-US)

Reproductive toxicity Category 1B H360

Full text of H statements : see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS08

Signal word (GHS-US) : Danger  
 Hazard statements (GHS-US) : H360 - May damage fertility or the unborn child  
 Precautionary statements (GHS-US) : P201 - Obtain special instructions before use  
 P202 - Do not handle until all safety precautions have been read and understood  
 P280 - Wear eye protection, protective gloves, Approved dust respirator  
 P308+P313 - If exposed or concerned: Get medical advice/attention  
 P405 - Store locked up  
 P501 - Dispose of contents/container to an approved waste disposal plant

#### 2.3. Other hazards

No additional information available

#### 2.4. Unknown acute toxicity (GHS US)

Not applicable

### SECTION 3: Composition/information on ingredients

#### 3.1. Substance

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Name	Product identifier	%	Classification (GHS-US)
boric acid (Main constituent)	(CAS No) 10043-35-3	100	Repr. 1B, H360

Full text of H-phrases: see section 16

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general	: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
First-aid measures after inhalation	: Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
First-aid measures after skin contact	: Rinse with water. Soap may be used. Take victim to a doctor if irritation persists.
First-aid measures after eye contact	: Rinse with water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.
First-aid measures after ingestion	: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Victim is fully conscious: immediately induce vomiting. Call Poison Information Centre ( <a href="http://www.big.be/antigif.htm">www.big.be/antigif.htm</a> ). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: Slight irritation. EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract. Dry/sore throat. Coughing. Respiratory difficulties. Vomiting. Headache.
Symptoms/injuries after skin contact	: Slight irritation. Red skin.
Symptoms/injuries after eye contact	: Redness of the eye tissue. Slight irritation. Visual disturbances.
Symptoms/injuries after ingestion	: Nausea. Vomiting. Diarrhoea. Feeling of weakness. AFTER ABSORPTION OF HIGH QUANTITIES: Accelerated heart action. Change in the haemogramme/blood composition. Enlargement/affection of the liver. Affection of the renal tissue.
Symptoms/injuries upon intravenous administration	: No effects known.
Chronic symptoms	: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Skin rash/inflammation. Central nervous system depression. Feeling of weakness. Mental confusion. Sleeplessness. Headache. Muscular pain. Respiratory difficulties. Irritation of the respiratory tract. Gastrointestinal complaints. Loss of appetite. Visual disturbances.

### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media	: Adapt extinguishing media to the environment.
Unsuitable extinguishing media	: No unsuitable extinguishing media known.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard	: DIRECT FIRE HAZARD. Non combustible. INDIRECT FIRE HAZARD. Reactions involving a fire hazard: see "Reactivity Hazard".
Explosion hazard	: DIRECT EXPLOSION HAZARD. No data available on direct explosion hazard. INDIRECT EXPLOSION HAZARD. Reactions with explosion hazards: see "Reactivity Hazard".
Reactivity	: Decomposes on exposure to temperature rise. Reacts on exposure to temperature rise with (some) compounds: (increased) risk of fire/explosion. Reacts with (some) metal powders: release of highly flammable gases/vapours (hydrogen).

### 5.3. Advice for firefighters

Firefighting instructions	: Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.

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### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### 6.1.1. For non-emergency personnel

- Protective equipment : Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. See "Material-Handling" to select protective clothing.
- Emergency procedures : Mark the danger area. Prevent dust cloud formation. No naked flames. Wash contaminated clothes. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.
- Measures in case of dust release : In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows.

##### 6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8 Exposure controls/personal protection".

#### 6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

#### 6.3. Methods and material for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. Hazardous reaction: measure explosive gas-air mixture. Reaction: dilute combustible gas/vapour with water curtain.
- Methods for cleaning up : Stop dust cloud by covering with sand/earth. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Carefully collect the spill/leftovers. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.
- Other information : Dispose of materials or solid residues at an authorized site.

#### 6.4. Reference to other sections

For further information refer to section 8 : Exposure-controls/personal protection".

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Precautions for safe handling : Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Avoid raising dust. Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Store in a well-ventilated place. Keep cool.
- Incompatible products : Strong bases.
- Storage temperature : 20 °C
- Heat-ignition : KEEP SUBSTANCE AWAY FROM: heat sources.
- Prohibitions on mixed storage : KEEP SUBSTANCE AWAY FROM: (strong) bases. water/moisture.
- Storage area : Store at ambient temperature. Store in a dry area. Keep container in a well-ventilated place. Keep only in the original container. Keep locked up. Unauthorized persons are not admitted. Meet the legal requirements.
- Special rules on packaging : SPECIAL REQUIREMENTS: closing, watertight, dry, clean, correctly labelled, meet the legal requirements. Secure fragile packagings in solid containers.
- Packaging materials : SUITABLE MATERIAL: polypropylene, glass, plastics, paper, cardboard, wood. MATERIAL TO AVOID: No data available.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

boric acid (10043-35-3)		
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	2 mg/m <sup>3</sup>
ACGIH	ACGIH STEL (mg/m <sup>3</sup> )	6 mg/m <sup>3</sup>

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### 8.2. Exposure controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Materials for protective clothing	: GIVE EXCELLENT RESISTANCE: No data available. GIVE GOOD RESISTANCE: butyl rubber. neoprene. nitrile rubber. PVC. viton. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: No data available.
Hand protection	: Gloves.
Eye protection	: Safety glasses. In case of dust production: protective goggles.
Skin and body protection	: Protective clothing.
Respiratory protection	: Dust production: dust mask with filter type P3. High dust production: self-contained breathing apparatus.
Environmental exposure controls	: Avoid release to the environment.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Powder. Grains. Little spheres.
Color	: Colourless or white
Odor	: Odourless
Odor threshold	: No data available
pH	: 4 (5 %)
pH solution	: 5 %
Melting point	: 171 °C
Freezing point	: Not applicable
Boiling point	: Not applicable
Flash point	: Not applicable
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: Not applicable
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: 2.7 hPa
Vapor pressure at 50 °C	: 10.5 hPa
Relative density	: Not applicable
Relative vapor density at 20 °C	: 2.1
Molecular mass	: 61.83 g/mol
Solubility	: Moderately soluble in water. Substance sinks in water. Soluble in ethanol. Soluble in methanol. Soluble in isobutanol. Soluble in glycerol. Soluble in sulfuric acid. Soluble in oils/fats. Water: 4.8 g/100ml Ethanol: 16.7 g/100ml
Log Pow	: -1.09 (Experimental value; EU Method A.8: Partition Coefficient; 22 °C)
Auto-ignition temperature	: Not applicable
Decomposition temperature	: 171 °C
Viscosity	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: No data available

### 9.2. Other information

VOC content	: 0 %
Other properties	: Translucent. Hygroscopic. Substance has acid reaction.

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Decomposes on exposure to temperature rise. Reacts on exposure to temperature rise with (some) compounds: (increased) risk of fire/explosion. Reacts with (some) metal powders: release of highly flammable gases/vapours (hydrogen).

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### 10.2. Chemical stability

Hygroscopic.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

Strong bases.

### 10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. Boron oxides.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Likely routes of exposure : Inhalation  
Acute toxicity : Not classified

<b>boric acid (10043-35-3)</b>	
LD50 oral rat	2660 mg/kg (Rat; OECD 401: Acute Oral Toxicity; Literature study; >2600 mg/kg bodyweight; Rat; Experimental value)
LD50 dermal rabbit	> 2000 mg/kg Rabbit; Experimental value; FIFRA (40 CFR)
ATE US (oral)	2660.000 mg/kg body weight

Skin corrosion/irritation : Not classified  
pH: 4 (5 %)

Serious eye damage/irritation : Not classified  
pH: 4 (5 %)

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : May damage fertility or the unborn child.

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : Slight irritation. EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract. Dry/sore throat. Coughing. Respiratory difficulties. Vomiting. Headache.

Symptoms/injuries after skin contact : Slight irritation. Red skin.

Symptoms/injuries after eye contact : Redness of the eye tissue. Slight irritation. Visual disturbances.

Symptoms/injuries after ingestion : Nausea. Vomiting. Diarrhoea. Feeling of weakness. AFTER ABSORPTION OF HIGH QUANTITIES: Accelerated heart action. Change in the haemogramme/blood composition. Enlargement/affection of the liver. Affection of the renal tissue.

Symptoms/injuries upon intravenous administration : No effects known.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Dry skin. Skin rash/inflammation. Central nervous system depression. Feeling of weakness. Mental confusion. Sleeplessness. Headache. Muscular pain. Respiratory difficulties. Irritation of the respiratory tract. Gastrointestinal complaints. Loss of appetite. Visual disturbances.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Classification concerning the environment: not applicable.

Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 842/2006). TA-Luft Klasse 5.2.1.

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Ecology - water : Ground water pollutant. Maximum concentration in drinking water: 1.0 mg/l (boron) (Directive 98/83/EC). Harmful to fishes. Slightly harmful to invertebrates (Daphnia) (EC50 (48h): 100 - 1000 mg/l). Harmful to algae. pH shift.

<b>boric acid (10043-35-3)</b>	
LC50 fish 1	100 ppm (96 h; Salmo gairdneri (Oncorhynchus mykiss); Soft water)
EC50 Daphnia 1	658 - 875 mg/l (48 h; Daphnia magna)
LC50 fish 2	79 ppm (96 h; Salmo gairdneri (Oncorhynchus mykiss); Hard water)
EC50 Daphnia 2	19.7 mg/l (336 h; Daphnia magna)
TLM fish 1	1800 ppm (24 h; Gambusia affinis)
Threshold limit algae 1	5 mg/l (672 h; Elodea sp.)
Threshold limit algae 2	0.4 - 0.8, 336 h; Chlorella sp.; Growth

### 12.2. Persistence and degradability

<b>boric acid (10043-35-3)</b>	
Persistence and degradability	Biodegradability: not applicable. Biodegradability in soil: not applicable. No (test) data on mobility of the substance available.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

### 12.3. Bioaccumulative potential

<b>boric acid (10043-35-3)</b>	
BCF fish 1	0 (Salmo gairdneri (Oncorhynchus mykiss); Chronic)
BCF fish 2	< 0.1 (60 days; Oncorhynchus tshawytscha; Fresh weight)
Log Pow	-1.09 (Experimental value; EU Method A.8: Partition Coefficient; 22 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

### 12.4. Mobility in soil

<b>boric acid (10043-35-3)</b>	
Ecology - soil	May be harmful to plant growth, blooming and fruit formation.

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Detoxicate. Remove to an authorized dump (Class I).

Additional information : LWCA (the Netherlands): KGA category 05. Hazardous waste according to Directive 2008/98/EC.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT  
Not regulated for transport

### TDG

No additional information available

### Transport by sea

No additional information available

### Air transport

No additional information available

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### SECTION 15: Regulatory information

#### 15.1. US Federal regulations

##### boric acid (10043-35-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

##### CANADA

No additional information available

##### EU-Regulations

No additional information available

##### National regulations

No additional information available

#### 15.3. US State regulations

No additional information available

### SECTION 16: Other information

Full text of H-phrases:

H360

May damage fertility or the unborn child

NFPA health hazard

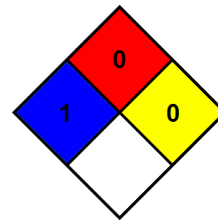
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 0 - Materials that will not burn.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



SDS US (GHS HazCom 2012)

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