Material Safety Data Sheet

Creation Date 07-Apr-2009 **Revision Date** 20-Oct-2009 **Revision Number** 2

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name **Boric acid**

Cat No. **A73-1; A73-3; A73-10; A73-10LC; A73-50; A73-50LC; A73-325LB; A73-500; A74-1; A74-3; A74-10; A74-500; A77-10; A78-10; A78-500; A79-12; A79-212; BP168-1; BP168-500**

Synonyms Orthoboric acid; Borofax; (Powder/Crystalline/Ceritified ACS/Laboratory/NF/EP/BP/JP/Electrophoresis)

Recommended Use Laboratory chemicals

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 703-527-3887

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

May impair fertility. May cause harm to the unborn child. Irritating to eyes and skin. May cause irritation of respiratory tract. May cause central nervous system effects. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Appearance White **Physical State** Powder **Odor** odorless

Target Organs Liver, Kidney, Eyes, Skin, Central nervous system (CNS), Blood, Gastrointestinal tract (GI), Reproductive System

Potential Health Effects

Acute Effects
Principle Routes of Exposure

Eyes Irritating to eyes.
Skin Irritating to skin. May be harmful in contact with skin. Chronic exposure may cause dermatitis.
Inhalation May cause irritation of respiratory tract. May be harmful if inhaled. Inhalation may cause central nervous system effects.

Ingestion May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects Adverse reproductive effects have occurred in humans.. May impair fertility. May cause harm to the unborn child. May cause adverse liver effects. May cause adverse kidney effects.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Boric acid (H3BO3)	10043-35-3	>95

4. FIRST AID MEASURES

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Get medical attention immediately if symptoms occur.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately.

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point No information available.
Method No information available.

Autoignition Temperature No information available.

Explosion Limits
Upper No data available
Lower No data available

Suitable Extinguishing Media Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..

Unsuitable Extinguishing Media No information available.

Hazardous Combustion Products No information available.

Sensitivity to mechanical impact No information available.
Sensitivity to static discharge No information available.

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors.

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

NFPA **Health** 2 **Flammability** 0 **Instability** 1 **Physical hazards** N/A

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not get in eyes, on skin, or on clothing.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. HANDLING AND STORAGE

Handling Use only under a chemical fume hood. Wear personal protective equipment. Avoid dust formation. Do not get in eyes, on skin, or on clothing. Do not breathe dust.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Boric acid (H3BO3)	TWA: 2 mg/m^3 STEL: 6 mg/m^3		

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Boric acid (H3BO3)			TWA: 2 mg/m^3 STEL: 6 mg/m^3

NIOSH IDLH: *Immediately Dangerous to Life or Health*

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Powder
Appearance White
Odor odorless

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor Threshold	No information available.
pH	3.8-4.8 33 g/l aq.sol.
Vapor Pressure	2.7 mbar @ 20 °C
Vapor Density	No information available.
Viscosity	No information available.
Boiling Point/Range	No information available.
Melting Point/Range	169°C / 336.2°F
Decomposition temperature °C	100
Flash Point	No information available.
Evaporation Rate	No information available.
Specific Gravity	No information available.
Solubility	Partly soluble in water
log Pow	No data available
Molecular Weight	61.83
Molecular Formula	H3 B O3

10. STABILITY AND REACTIVITY

Stability	Moisture sensitive.
Conditions to Avoid	Incompatible products. Excess heat. Avoid dust formation. Exposure to moisture.
Incompatible Materials	Strong oxidizing agents, Strong bases
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO_2), Oxides of boron
Hazardous Polymerization	Hazardous polymerization does not occur
Hazardous Reactions .	None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Boric acid (H3BO3)	2660 mg/kg (Rat)	2000 mg/kg (Rabbit)	0.16 mg/L (Rat) 4 h

Irritation	Irritating to eyes and skin
Toxicologically Synergistic Products	No information available.

Chronic Toxicity

Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

ACGIH: (American Conference of Governmental Industrial Hygienists)
A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

Sensitization No information available.

Mutagenic Effects Mutatagenic effects have occured in microorganisms.

Reproductive Effects Adverse reproductive effects have occurred in humans..

Developmental Effects May cause harm to the unborn child. Developmental effects have occurred in experimental animals.

Teratogenicity Teratogenic effects have occurred in experimental animals..

Other Adverse Effects The toxicological properties have not been fully investigated.. See actual entry in RTECS for complete information.

Endocrine Disruptor Information No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Boric acid (H3BO3)	Not listed	Gambusia affinis: LC50: 5600 mg/L/96h	Not listed	EC50 48 h 115.0 mg/L EC50 48 h 658 - 875 mg/L EC50 48 h 115.0 mg/L

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility .

Component	log Pow
Boric acid (H3BO3)	-0.757

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

DOT Not regulated

14. TRANSPORT INFORMATION

TDG Not regulated

IATA Not regulated

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Boric acid (H3BO3)	X	X	-	233-139-2	-		X	X	X	X	KE-03499 X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313
Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act
Not applicable

Clean Air Act
Not applicable

OSHA
Not applicable

CERCLA
Not Applicable

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
D2A Very toxic materials

16. OTHER INFORMATION

Prepared By
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Tel: (412) 490-8929

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Revision Summary "***", and red text indicates revision

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS