

**SECTION 1: PRODUCT IDENTIFICATION**

<b>PRODUCT NAME</b>	<b>BORIC ACID, NF (Powder)</b>
<b>PRODUCT CODE</b>	<b>0064</b>
<b>SUPPLIER</b>	<b>MEDISCA Inc.</b> Tel.: 1.800.932.1039   Fax.: 1.855.850.5855 661 Route 3, Unit C, Plattsburgh, NY, 12901 3955 W. Mesa Vista Ave., Unit A-10, Las Vegas, NV, 89118 6641 N. Belt Line Road, Suite 130, Irving, TX, 75063 <b>MEDISCA Pharmaceutique Inc.</b> Tel.: 1.800.665.6334   Fax.: 514.338.1693 4509 Rue Dobrin, St. Laurent, QC, H4R 2L8 21300 Gordon Way, Unit 153/158, Richmond, BC V6W 1M2 <b>MEDISCA Australia PTY LTD</b> Tel.: 1.300.786.392   Fax.: 61.2.9700.9047 Unit 7, Heritage Business Park 5-9 Ricketty Street, Mascot, NSW 2020
<b>EMERGENCY PHONE</b>	CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 NSW Poisons Information Centre: 131 126
<b>USES</b>	Buffering Agent

**SECTION 2: HAZARDS IDENTIFICATION**

<b>GHS CLASSIFICATION</b>	Acute Toxicity - Oral (Category 5) Acute Toxicity - Dermal (Category 5) Acute Toxicity - Inhalation (Category 5) Toxic to Reproduction (Category 1B)			
<b>PICTOGRAM</b>				
<b>SIGNAL WORD</b>	Danger			
<b>HAZARD STATEMENT(S)</b>	May be harmful if swallowed, inhaled or absorbed through skin. May damage fertility or the unborn child.			
<b>AUSTRALIA-ONLY HAZARDS</b>	Not Applicable.			
<b>PRECAUTIONARY STATEMENT(S)</b>	<b>Prevention</b> <b>Response</b> <b>Storage</b> <b>Disposal</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing, eye protection, face protection. IF EXPOSED OR CONCERNED: Get medical advice/attention. Store locked up. Dispose of contents and/or container in accordance with local regulations.		
<b>HMS CLASSIFICATION</b>	<b>Health Hazard</b> <b>Reactivity</b>	1 0	<b>Flammability</b> <b>Personal Protection</b>	0 E

**SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS**

CHEMICAL NAME	Orthoboric acid						
BOTANICAL NAME	Not applicable						
SYNONYM	Boron Trihydroxide						
CHEMICAL FORMULA	H <sub>3</sub> BO <sub>3</sub>						
CAS NUMBER	10043-35-3						
ALTERNATE CAS NUMBER	Not applicable						
MOLECULAR WEIGHT	61.8317						
COMPOSITION	<table border="1"> <thead> <tr> <th>CHEMICAL NAME</th> <th>CAS NUMBER</th> <th>% BY WEIGHT</th> </tr> </thead> <tbody> <tr> <td>BORIC ACID</td> <td>10043-35-3</td> <td>100</td> </tr> </tbody> </table>	CHEMICAL NAME	CAS NUMBER	% BY WEIGHT	BORIC ACID	10043-35-3	100
CHEMICAL NAME	CAS NUMBER	% BY WEIGHT					
BORIC ACID	10043-35-3	100					
NOTES	<p>There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as health hazards and hence require reporting in this section.</p> <p>Chemical family: Borate.</p>						

## SECTION 4: FIRST-AID MEASURES

IN CASE OF EYE CONTACT	Flush with copious amounts of water for 15 minutes, separating eyelids with fingers. If irritation persists seek medical aid.
IN CASE OF SKIN CONTACT	Wash with soap & water for 15 minutes. If irritation persists seek medical aid.
IF SWALLOWED	Call a physician. Wash out mouth with water. Do not induce vomiting without medical advice.
IF INHALED	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician
SYMPTOMS AND EFFECTS	Not expected to present a significant hazard under anticipated conditions of normal use.

## SECTION 5: FIREFIGHTING MEASURES

SPECIFIC HAZARDS ARISING FROM THE CHEMICAL	Chemical dangers: Decomposes above 100°C. This produces water and irritant boric anhydride. The solution in water is a weak acid. Attacks metals. This produces hydrogen. This generates fire and explosion hazard.
FLAMMABLE PROPERTIES	Non-flammable or combustible
HAZARDOUS COMBUSTION PRODUCTS	Under fire conditions, hazardous fumes will be present.
EXTINGUISHING MEDIA	<b>Small fire:</b> dry chemical, CO <sub>2</sub> or water spray. <b>Large fire:</b> dry chemical, CO <sub>2</sub> , alcohol resistant foam or water spray. Do not get water inside containers.
PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIREFIGHTERS	Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS	Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
METHODS & MATERIAL FOR CONTAINMENT	On land, sweep or shovel into suitable containers. Minimize generation of dust.

**CLEANUP PROCEDURE**

Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves. Stop leak if you can do it without risk. Prevent entry into waterways, sewers, basements or confined areas. Shut off all sources of ignition. Evacuate the area. If necessary, employ water fog to disperse the vapors. Absorb the matter with compatible vermiculite or other absorbing material. Place in a suitable container and retain for disposal. Ventilate and clean the affected area. Do not flush into sewerage system or to drains.

**NOTES**

Chemical dangers: Decomposes above 100°C. This produces water and irritant boric anhydride. The solution in water is a weak acid. Attacks metals. This produces hydrogen. This generates fire and explosion hazard.

**SECTION 7: HANDLING AND STORAGE**
**PRECAUTIONS FOR SAFE HANDLING**

Do not inhale. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling. Store away from incompatible materials, in a well-ventilated area. Eliminate all sources of ignition. Store in accordance with local regulations. Do not store in unlabelled containers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Use appropriate containment to avoid environmental contamination.

**STORAGE CONDITIONS**

Store in original container, tightly sealed, protected from direct sunlight and moisture. Preserve in well-closed containers.

**SECTION 8: EXPOSURE CONTROLS/ PERSONAL PROTECTION**

Chemical Name: BORIC ACID CAS #: 10043-35-3

	TWA	Ceiling	STEL	REL	IDLH	Remarks
OSHA PEL	N/L	N/L	-	-	-	-
ACGIH TLV	2 mg/m <sup>3</sup>	N/L	6 mg/m <sup>3</sup>	-	-	Inhalable fraction
NIOSH	N/L	N/L	N/L	N/L	N/L	-
AIHA WEEL	N/L	N/L	N/L	-	-	-
Safe Work Australia HSIS	N/L	N/L	N/L	-	-	-
HSE	N/L	N/L	N/L	-	-	-

N/L = Not Listed

**EXPOSURE GUIDELINES**

Consult local authorities for provincial or state exposure limits. Particulates not otherwise regulated, respirable fraction: 5 mg/m<sup>3</sup>

**PERSONAL PROTECTIVE EQUIPMENT**

**Eyes:** Wear appropriate protective eyeglasses or chemical safety goggles as described by WHMIS or OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. **Skin:** Wear appropriate gloves to prevent skin exposure. **Clothing:** Wear appropriate protective clothing to minimize contact with skin. **Respirators:** Follow WHMIS or 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.

**SPECIFIC ENGINEERING CONTROLS**

Adequate mechanical ventilation. Fumehood, eye wash station, and safety shower.

**NOTES**

OEL: 1 mg/m<sup>3</sup>

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**
**PHYSICAL STATE**

Solid

**DESCRIPTION**

Colorless, odorless scales of a somewhat pearly luster, or crystals, or white powder that is slightly unctuous to the touch. Is stable in air.

**SOLUBILITY**

Freely soluble in glycerin, in boiling water, and in boiling alcohol; soluble in water and in alcohol.

<b>ODOR</b>	Odorless				
<b>FLAMMABILITY</b>	Non-flammable or combustible (used as a flame retardant)				
<b>ODOR THRESHOLD</b>	Not available	<b>pH</b>	6.1 (0.1%) / 5.1 (1.0%) / 3.7 (4.7%)	<b>MELTING POINT</b>	171°C, 339.8°F
<b>BOILING POINT</b>	300°C, 572°F	<b>FREEZING POINT</b>	171°C, 339.8°F	<b>FLASH POINT</b>	Not available
<b>SPECIFIC GRAVITY</b>	1.435 (15°C)	<b>EVAPORATION RATE</b>	Non-volatile	<b>EXPLOSIVE LIMIT</b>	Not available
<b>UPPER FLAMMABLE/EXPLOSIVE LIMIT(S)</b>	Non-flammable	<b>LOWER FLAMMABLE/EXPLOSIVE LIMIT(S)</b>	Non-flammable	<b>VAPOR PRESSURE</b>	Negligible (20°C)
<b>VAPOR DENSITY (AIR = 1)</b>	Not available	<b>RELATIVE DENSITY (WATER = 1)</b>	1.49 (23°C)	<b>log P (OCTANOL-WATER)</b>	-0.757 (25°C)
<b>AUTO-IGNITION TEMPERATURE</b>	Not available	<b>DECOMPOSITION TEMPERATURE</b>	>100°C, >212°F	<b>VISCOSITY</b>	Not available

## SECTION 10: STABILITY AND REACTIVITY

<b>REACTIVITY</b>	Boric Acid is a stable product, but when heated it loses water, first forming Metaboric Acid, and on further heating it is converted into Boric Oxide
<b>STABILITY</b>	Stable under recommended storage conditions. Under normal ambient temperatures (-40°C to +40°C), the product is stable product. When heated it loses water, first forming metaboric acid (HBO <sub>2</sub> ), and on further heating it is converted into boric oxide (B <sub>2</sub> O <sub>3</sub> ).
<b>MATERIALS TO AVOID</b>	Strong Oxidants. Weak acids. Bases. Acetic anhydride. Carbonates. Reaction with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas, which could create an explosive hazard.
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b>	Toxic fumes of carbon monoxide, carbon dioxide, nitrogen oxides and other gases may occur
<b>HAZARDOUS POLYMERIZATION</b>	Will not occur
<b>POSSIBILITY OF HAZARDOUS REACTION</b>	Not established
<b>CONDITIONS TO AVOID</b>	Moisture, sunlight and extreme temperatures

## SECTION 11: TOXICOLOGICAL INFORMATION

<b>ACUTE TOXICITY</b>	Oral: Rat: LD50: (mg/kg): 2660 Dermal: Rabbit LD50: (mg/kg): > 2000 Inhalation: Rat: LD50: (mg/L/4hr): > 0.002
<b>SKIN CORROSION/IRRITATION</b>	Based on available data, the classification criteria are not met. Skin human: 15 mg/3 day- intermittent, mild Local effects: 15 mg Skin irritation (Draize) Result: Mild irritation. Species: Human Test Duration: 3 days. 5 ml Skin irritation (10% solution) Result: Mild irritation. Species: Rabbit Test Duration: 24 hours 5 ml Skin irritation (10% solution) Result: Moderate irritation. Species: Guinea pig Test Duration: 24 hours

**SERIOUS EYE DAMAGE/EYE IRRITATION**

Local effects: 100 mg Eye irritation (Draize); Result: Mild irritation; Species: Rabbit; Test Duration: 24 hours

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.

Based on available data, the classification criteria are not met.

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.

**RESPIRATORY OR SKIN SENSITIZATION**

Based on available data, the classification criteria are not met.

Method: Buehler Test – OECD Guideline 406

Species: Guinea Pig

Dose: 0.4 g 95 % w/w/boric acid

Routes of Exposure: Dermal

Results: Not a skin sensitizer. No respiratory sensitisation studies have been conducted. There are no data to suggest that boric acid is a respiratory sensitizer.

**GERM CELL MUTAGENICITY**

Based on available data, the classification criteria are not met.

Method: Several in vitro mutagenicity studies have been carried out on boric acid including gene mutation in mammalian cells, unscheduled DNA synthesis, chromosomal aberration and sister chromatid exchange in mammalian cells.

Species: L5178Y mouse lymphoma, V79 Chinese hamster cells, C3H/10T1/2 cells, hepatocytes, Chinese hamster ovary (CHO cells).

Dose: 1.0 - 10.0 mg/ml (1000 -10000 ppm) boric acid

Routes of Exposure: in vitro

Results: Not mutagenic (based on boric acid).

**CARCINOGENICITY**

**OSHA** BORIC ACID is not listed.

**NTP** BORIC ACID is not listed.

**IARC** BORIC ACID is not evaluated.

**California Proposition 65** This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**ADDITIONAL CARCINOGENICITY INFORMATION**

Based on the available data, the classification criteria are not met.

Method: OECD 451 equivalent.

Species: B6C3F1 mice

Dose: 446 ; 1150 mg boric acid/kg bw/day

Routes of Exposure: Oral feeding study

Results: No evidence of carcinogenicity.

**REPRODUCTIVE TOXICITY**

May damage fertility or the unborn child.

Method: Three-generation feeding study, similar to OECD 416 Two-Generation Study

Species: Rat

Dose: 0; 34 (5.9); 100 (17.5) and 336 (58.5) mg boric acid (mg B)/kg bw/day

Routes of Exposure: Oral feeding study

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

Method: Prenatal Developmental Toxicity Study of Boric Acid – OECD Guideline 414

Species: Rat

Dose: 0; 19 (3.3); 36 (6.3); 55 (9.6); 76 (13.3) and 143 (25) mg boric acid (mg B)/kg bw.

Routes of Exposure: Oral feeding study

Results: NOAEL in rats for developmental effects on the foetus including foetal weight loss and minor skeletal variations is

55 mg boric acid/kg bw or 9.6 mg B/kg.

Classification: Reproductive Toxicity Category 2 (Hazard statement: H361: Suspected of damaging fertility or the unborn child.)

Method: Occupational studies of evaluating sensitive sperm parameters in highly exposed borate workers.

Epidemiological studies evaluating high environmental exposures to boron and developmental effects in humans have been conducted.

Species: Human

Dose: A subset of workers was exposed to 125 mg B/day.

Routes of Exposure: Combined oral ingestion and inhalation

Results: No adverse fertility effects in male workers. Epidemiological studies of human developmental effects have shown an absence of effects in exposed borate workers and populations living in areas with high environmental levels of boron.

**SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE**

Based on the available data, the classification criteria are not met.

Method: Standard Test Method for Estimating Sensory Irritancy of Airborne Chemicals – ASTM E981-04 (2004)

Species: Mouse

Dose: 221 - 1096 mg boric acid/m<sup>3</sup>

Routes of Exposure: Inhalation

Results: The highest concentration of boric acid that was achievable with acceptable control of the aerosol concentration was 1096 mg/m<sup>3</sup> with a % RD of 19%. The lowest exposure tested of 221 mg/m<sup>3</sup> boric acid resulted in a reduced respiration rate of 9%, graded as no irritation.

Method: Sensory irritation in human volunteers

Species: Human

Dose: 2.5, 5, 10 mg boric acid/m<sup>3</sup>

Routes of Exposure: Inhalation

Results: No irritation from boric acid was observed at exposures up to 10 mg/m<sup>3</sup> among male and female human volunteers under controlled laboratory conditions.

**SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE**

Based on available data, the classification criteria are not met.

Method: Chronic toxicity study of boric acid, similar to OECD 452

Species: Rat

Dose: 0; 33 (5.9); 100 (17.5); 334 (58.5) mg boric acid (B)/kg bw per day (nominal in diet)

Routes of Exposure: oral: feed

Results: A NOAEL of 17.5 mg B/kg bw/day equivalent to 100 mg boric acid/kg bw/day was determined in a chronic feeding study (2 years) in rats and is based on testes effects. Other effects (kidney, haemopoietic system) are regarded only at even higher dose levels.

**ASPIRATION HAZARDS**

Based on available data, the classification criteria are not met.

Physical form of solid powder indicates no aspiration hazard potential.

**SIGNS AND SYMPTOMS OF EXPOSURE**

Not expected to present a significant hazard under anticipated conditions of normal use.

Symptoms related to the physical, chemical, and toxicological characteristics

Nausea. Vomiting. Diarrhea. Red, scaly skin. Abdominal pain. Excitement. Depression. Lethargy. Seizures. Blue or blue-green discoloration of skin, urine, and stools.

Delayed and immediate effects of exposure

Dehydration. Kidney failure. Arrhythmias. Shock. Cyanosis. Hypotension. Metabolic acidosis. Central nervous system depression. Circulatory collapse.

**POTENTIAL HEALTH EFFECTS**

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation. Cough. Sore throat.

**Ingestion** Not intended for ingestion. May be harmful if swallowed. Nausea. Vomiting. Diarrhoea. Abdominal pain. Headache. Drowsiness. Convulsions. Boric acid has a relatively low acute toxicity. Small amounts (teaspoonful) swallowed accidentally are not relatively likely to cause effects; swallowing larger than that may cause gastrointestinal symptoms. May also cause nausea, vomiting and diarrhoea, with delayed effects of skin redness and peeling.

**Skin** May be harmful if absorbed through skin. May cause skin irritation. Skin rash. No acute symptoms expected.

**Eyes** May cause eye irritation. Redness. Pain.

**SECTION 12: ECOLOGICAL INFORMATION****TOXICITY**

EC50: 48 Hr: Crustacea: (mg/L): Not available  
LC50: 96 Hr: Fish: *Gila elegans*: (mg/L): >100  
IC50: 72 Hr: Algae: (mg/L): Not available

**PERSISTENCE AND DEGRADABILITY**

Not biodegradable

**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°) (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.

Water solubility: 5.6 g/100mL (20°C)

**OTHER ADVERSE EFFECTS**

Phytotoxicity: Boron is an essential micronutrient for healthy growth of plants. It can be harmful to boron sensitive plants in higher quantities. Care should be taken to minimise the amount of borate product released to the environment.

This product is not intended to be released into the environment

**SECTION 13: DISPOSAL CONSIDERATIONS****WASTE DISPOSAL**

Dispose of in accordance with federal / local laws and regulations. Avoid release into the environment.

**SECTION 14: TRANSPORT INFORMATION****UNITED STATES & CANADA****UN PROPER SHIPPING NAME**

Not dangerous good

**UN NUMBER**

Not applicable

**CLASS**

Not applicable

**PACKING GROUP**

Not applicable

**AUSTRALIA**

UN PROPER SHIPPING NAME	Not dangerous good
UN NUMBER	Not applicable
CLASS	Not applicable
PACKING GROUP	Not applicable
HAZCHEM	Not applicable

ENVIRONMENTAL HAZARDS Not available

SPECIAL SHIPPING INFORMATION Not applicable

**SECTION 15: REGULATORY INFORMATION**

Chemical Name & CAS	CERCLA 40 CFR Part 302.4	SARA (Title III) 40 CFR Part 372.65	EPA 40 CFR Part 355		Right-to-know			California Prop 65
			Appendix A	Appendix B	Pennsylvania	New Jersey	Massachusetts	
BORIC ACID, 10043-35-3	N/L	N/L	N/L	N/L	N/L	N/L	N/L	N/L

N/L = Not Listed; X = Listed

**AUSTRALIAN REGULATIONS**

Chemical Name & CAS	Poisons and Therapeutic Goods Regulation	Therapeutic Goods Act	Code of Practices - Illicit Drug Precursors
BORIC ACID, 10043-35-3	N/L	Listed as Schedule 5	N/L

**SECTION 16: OTHER INFORMATION**
**REFERENCES**

Available upon request

**ABBREVIATIONS AND ACRONYMS**

**CAS** – Chemical Abstract Service; **GHS** – Global Harmonized System; **OSHA PEL** – Occupational Safety & Health Administration Permissible Exposure Limits; **TWA** – Time Weighted Average; **HSIS** – Hazardous Substances Information System; **STEL** – Short Term Exposure Limit; **AIHA WEEL** – American Industrial Hygiene Association Workplace Environment Exposure Levels; **LD50** – Lethal Dose, 50%; **IARC** – International Agency for Research on Cancer; **NTP** – National Toxicology Program; **WHMIS** – Workplace Hazardous Materials Information System; **SARA** – Superfund Amendments and Reauthorization Act; **EPA** – Environmental Protection Agency; **CERCLA** – Comprehensive Environmental Response, Compensation, and Liability Act; **HMIS** – Hazardous Materials Information System; **NIOSH** – National Institute for Occupational Safety and Health; **MSHA** – Mine Safety and Health Administration; **ACGIH** – American Conference of Governmental Industrial Hygienists; **IDHL** – Immediately Dangerous to Health or Life; **TLV** – Threshold Limit Value; **HSE** – Health and Safety Executive; **REL** – Recommended Exposure Limit

**LAST REVISION**

01/2018

**SUPERSEDES**

06/2015



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# SAFETY DATA SHEET

## DISCLAIMER

This document was created in accordance with OSHA, Safe Work Australia and WHMIS regulations. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. MEDISCA® shall not be held liable for any damage resulting from handling or from contact with the above product. Recipients of the product must take responsibility for observing existing laws and regulations.