


Section 1: Identification

Common Name/Trade Name	BORIC ACID NF	
Supplier Information	Letco Medical, LLC 1316 Commerce Drive NW Decatur, AL 35601 1 (800) 239-5288 +1 (734) 843-4693	IN CASE OF EMERGENCY: Chemtrec 1 (800) 424-9300 (24 hours)
Distributor Name	Bella Corp Trading Pty Ltd 6/34 Dominions Road, Ashmore QLD 4214, Australia Telephone: 07 5597 4169 Email: bellacorp@bellacorp.com.au	
Product Synonym(s)	Boric acid, Orthoboric acid, Boracic acid	
Relevant Use(s) of Product	Manufacture or Compounding of Substances	

Section 2: Hazards Identification

Classification of Substance or Mixture	Reproductive toxicity (Category 2)	
Signal Word	Warning	
Hazard Statement(s)	H361 Suspected of damaging fertility or the unborn child	
Pictogram(s)		
Precautionary Statement(s)	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 Get medical advice/attention. P405 Store locked up. P501 Dispose of contents/container to an approved waste disposal plant.	
Hazards Not Otherwise Classified	No data available	
Ingredient(s) with Unknown Toxicity	No data available	

Section 3: Composition/Information on Ingredients

Chemical Name	N/A
Common Name	Boric acid
CAS Number	10043-35-3
Impurities and/or Stabilizing Additives	No data available

Section 4: First Aid Measures

General Advice	No data available.
If Inhaled	If symptoms such as nose or throat irritation are observed, remove to fresh air
In Case of Skin Contact	No treatment necessary.
In Case of Eye Contact	Use eye wash fountain or fresh water to cleanse eye. If irritation persists for more than 30 minutes, seek medical attention.
If Swallowed	Swallowing small quantities (one teaspoon) will cause no harm to healthy adults. If larger amounts are swallowed, give two glasses of water to drink and seek medical attention.
Most Important Symptoms and Effects	Symptoms of accidental over-exposure to high doses of inorganic borate salts have been associated with ingestion or absorption through large areas of severely damaged skin. These may include nausea, vomiting, and diarrhea, with delayed effects of skin redness and peeling (see Section 11). Indication of any immediate medical attention and special treatment needed: Note to physicians: Supportive care only is required for adult ingestion of less than a few grams of the product. For ingestion of larger amounts, maintain fluid and electrolyte balance and maintain adequate kidney function. Gastric lavage is only recommended for heavily exposed, symptomatic patients in whom emesis has not emptied the stomach. Hemodialysis should be reserved for patients with massive acute absorption, especially for patients with compromised renal function. Boron analyses of urine or blood are only useful for verifying exposure and are not useful for evaluating severity of poisoning or as a guide in treatment.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Use extinguishing media that are appropriate to local circumstances and the surrounding environment.
Special Hazards Arising From the Substance/Mixture	None. The product is not flammable, combustible or explosive.
Special PPE and/or Precautions for Firefighters	Not applicable. The product is itself a flame retardant.

Section 6: Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures	For emergency responders: Eye goggles and gloves are not required for normal industrial exposures, but eye protection according to ANSI Z.87.1 or other national standard. Respirators should be considered if environment is excessively dusty.
Methods and Materials Used for Containment	The product is a water-soluble white powder that may cause damage to trees or vegetation by root absorption. Avoid contamination of water bodies during clean up and disposal. Advise local water authority that none of the affected water should be used for irrigation or for the abstraction of potable water until natural dilution returns the boron value to its normal environmental background level or meets local water quality standards.
Cleanup Procedures	Avoid spillage into water and cover drains. Land spill: Vacuum, shovel or sweep up and place in containers for disposal in accordance with applicable local regulations. Spillage into water: Where possible, remove any intact containers from the water.

Section 7: Handling and Storage

Precautions for Safe Handling	Good housekeeping procedures should be followed to minimise dust generation and accumulation. Avoid spills. Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.
Conditions for Safe Storage	No special handling precautions are required, but dry, indoor storage is recommended. To maintain package integrity and to minimise caking of the product, bags should be handled on a first-in first-out basis. Storage temperature: Ambient Storage pressure: Atmospheric Special sensitivity: Moisture (Caking)

Section 8: Exposure Controls/Personal Protection

Components with Workplace Control Parameters	Occupational exposure limit values: In the absence of a national OEL, Rio Tinto Borax recommends and applies internally an Occupational Exposure Limit (OEL) of 1 mg B/m ³ . To convert product into equivalent boron (B) content, multiply by 0.175. ACGIH, which is not a regulatory agency, has established a Threshold Limit Value (TLV) for borates. Occupational Exposure Limits: ACGIH 2 mg/m ³ 8-hr TWA OEL (mg/m ³) inhalable fraction - Borate Compounds, inorganic ACGIH 6 mg/m ³ 15 min STEL (mg/m ³) inhalable fraction - Borate Compounds, inorganic OSHA/PEL (total dust) 15 mg/m ³ Particulate Not Otherwise Classified or Nuisance Dust OSHA/PEL (respirable dust) 5 mg/m ³ Particulate Not Otherwise Classified or Nuisance Dust Cal OSHA/PEL 5 mg/m ³ Particulate Not Otherwise Classified or Nuisance Dust
Appropriate Engineering Controls	Use local exhaust ventilation to keep airborne concentrations of dust below permissible exposure limits.
PPE - Eye/Face Protection	Eye protection according to ANSI Z.87.1 or other national standards may be warranted if environment is excessively dusty.
PPE - Skin Protection	Standard work gloves (cotton, canvas or leather) may be warranted if environment is excessively dusty.
PPE - Body Protection	Standard work gloves (cotton, canvas or leather) may be warranted if environment is excessively dusty.
PPE - Respiratory Protection	Where airborne concentrations are expected to exceed exposure limits, respirators should be used.

Section 9: Physical and Chemical Properties

Appearance	White, crystalline solid.
Upper/Lower Flammability or Explosive Limits	No data available
Odor	Odorless
Vapor Pressure	Not applicable: melting point 171°C
Odor Threshold	Not applicable: odorless
Vapor Density	Not applicable: melting point 171°C
pH	@20°C: 6.1 (0.1% solution); 5.1 (1.0% solution); 3.7 (4.7% solution)
Relative Density	1.49 @ 23°C
Melting Point/Freezing Point	171°C
Solubility	Water: 49.2 g/L @ 20°C
Initial Boiling Point and Boiling Range	Not applicable: melting point 171°C
Flash Point	Not applicable: inorganic substance
Evaporation Rate	Not applicable: non-volatile
Flammability (Solid, Gas)	Non-flammable (used as a flame retardant)
Partition Coefficient	Log Pow = -1.09 @ 22°C
Auto-Ignition Temperature	Not applicable: not self-heating
Decomposition Temperature	If heated above 100°C water is lost and boric acid converts initially to metaboric acid (HBO ₂) and on further heating forms boric oxide (B ₂ O ₃)
Viscosity	Not applicable: solid substance

Section 10: Stability and Reactivity

Reactivity	None known.
Chemical Stability	Under normal ambient temperatures (-40°C to +40°C), the product is stable product. When heated it loses water, first forming metaboric acid (HBO ₂), and on further heating it is converted into boric oxide (B ₂ O ₃).
Possibility of Hazardous Reactions	Boric acid is a weak acid that may cause corrosion of base metals. Reaction with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could create an explosive hazard.
Conditions to Avoid	Avoid contact with strong reducing agents by storing according to good industrial practice.
Incompatible Materials	Strong reducing agents.
Hazardous Decomposition Products	None.

Section 11: Toxicological Information

Acute Toxicity - LD50 Oral	Method: Acute Oral Toxicity Study – OECD Guideline 401 Species: Rat Dose: 2000 – 5000 mg/kg body weight Routes of Exposure: Oral Results: Low acute oral toxicity. The oral LD50 value in male rats is 3,450 mg/kg bw, and in female rats is 4080 mg/kg bw. Classification: Acute Toxicity (Oral) Category 5 (Hazard statement: H303: May be harmful if swallowed)
Acute Toxicity - Inhalation	Method: Acute Inhalation Toxicity Study – OECD Guideline 403 Species: Rat Dose: 2.12 mg/L Routes of Exposure: Inhalation Results: Low acute inhalation toxicity; LC50 in rats is > 2.0 mg/l (or g/m3). Based on the available data, the classification criteria are not met.
Acute Toxicity - Dermal	Method: Acute Dermal Toxicity Study – U.S. EPA FIFRA Guidelines Species: Rabbit Dose: 2,000 mg/kg bw Routes of Exposure: Dermal Results: Low acute dermal toxicity; LD50 in rabbits is > 2,000 mg/kg of body weight. Poorly absorbed through intact skin. Based on the available data, the classification criteria are not met.
Acute Toxicity - Eye	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. 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.
Skin Corrosion/Irritation	Method: Primary Dermal Irritation Study - U.S. EPA FIFRA Guidelines Species: New Zealand White Rabbit Dose: 0.5 g moistened with saline Routes of Exposure: Dermal Results: No skin irritation. Mean Primary Irritation Score: 0.1. Based on the available data, the classification criteria are not met
Serious Eye Damage/Irritation	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. 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	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 sensitiser. No respiratory sensitisation studies have been conducted. There are no data to suggest that boric acid is a respiratory sensitiser. Based on the available data, the classification criteria are not met.
Germ Cell Mutagenicity	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/10T 1/2 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). Based on the available data, the classification criteria are not met.
Carcinogenicity IARC	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. Based on the available data, the classification criteria are not met.
Carcinogenicity ACGIH	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. Based on the available data, the classification criteria are not met.
Carcinogenicity NTP	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. Based on the available data, the classification criteria are not met.
Carcinogenicity OSHA	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. Based on the available data, the classification criteria are not met.
Reproductive Toxicity	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.)
Specific Target Organ Toxicity - Single Exposure	Method: Standard Test Method for Estimating Sensory Irritancy of Airborne Chemicals – ASTM E981-04 (2004) Species: Mouse Dose: 221 - 1096 mg boric acid/m3 Routes of Exposure: Inhalation Results: The highest concentration of boric acid that was achievable with acceptable control of the aerosol concentration was 1096 mg/m3 with a %RD of 19%. The lowest exposure tested of 221 mg/m3 boric acid resulted in a reduced respiration rate of 9%, graded as no irritation. Based on the available data, the classification criteria are not met. Method: Sensory irritation in human volunteers Species: Human Dose: 2.5, 5, 10 mg boric acid/m ³ Routes of Exposure: Inhalation Results: No irritation from boric acid was observed at exposures up to 10 mg/m3 among male and female human volunteers under controlled laboratory conditions.
Specific Target Organ Toxicity - Repeated Exposure	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. Based on the available data, the classification criteria are not met.
Aspiration Hazard	Physical form of solid powder indicates no aspiration hazard potential.

Section 12: Ecological Information

Toxicity	Note that the data values are expressed as boron equivalents. To convert to this product divide the boron equivalent by 0.175. Studies judged to be unreliable or with insufficient information to evaluate are not included. Studies available upon request.
Persistence and Degradability	Biodegradation is not an applicable endpoint since the product is an inorganic substance.
Bio-accumulative Potential	This product will undergo hydrolysis in water to form undissociated boric acid. Boric acid will not biomagnify through the food chain. Octanol/Water partition coefficient: Log Pow = -0.7570 @ 25°C (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.
Other Adverse Effects	None

Section 13: Disposal Considerations

Waste Treatment Methods Product	Product packaging should be recycled where possible. Local authorities should be consulted about any specific local requirements. Such product should, if possible, be used for an appropriate application.
Waste Treatment Methods Packaging	No data available
Special Precautions Landfill or Incinerations	No data available
Other Information	No data available

Section 14: Transport Information

UN Number	Not dangerous goods
UN Proper Shipping Name	N/A
Transport Hazard Class(es)	N/A
Packaging Group	N/A
Environmental Hazards	N/A

Section 15: Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture: Clean Air Act (Montreal Protocol) - Substances that deplete the ozone layer: Not manufactured with and does not contain any Class I or Class II ozone depleting substances. Regulation (EC) No 689/2008 - Export and Import of Dangerous Chemicals: Not listed. National Regulations: Ensure all national/local regulations are observed. U.S. EPA RCRA: This product is not listed as a hazardous waste under any sections of the Resource Conservation and Recovery Act (RCRA) or regulations (40 CFR 261 et seq). Superfund: CERCLA/SARA. This product is not listed under CERCLA (Comprehensive Environmental Response Compensation and Liability Act) or its 1986 amendments, SARA (Superfund Amendments and Reauthorization Act), including substances listed under Section 313 of SARA, Toxic Chemicals, 42 USC 11023, 40 CFR 372.65, Section 302 of SARA, Extremely Hazardous Substances, 42 USC 11002, 40 CFR 355, or the CERCLA Hazardous Substances list, 42 USC 9604, 40 CFR 302. Safe Drinking Water Act (SDWA): This product is not regulated under the SDWA, 42 USC 300g-1, 40 CFR 141 et seq. Consult state and local regulations for possible water quality advisories regarding boron compounds. Clean Water Act (CWA) (Federal Water Pollution Control Act): 33 USC 1251 et seq. a) This product is not itself a discharge covered by any water quality criteria of Section 304 of the CWA, 33 USC 1314. b) It is not on the Section 307 List of Priority Pollutants, 33 USC 1317, 40 CFR 129. c) It is not on the Section 311 List of Hazardous Substances, 33 USC 1321, 40 CFR 116. IARC: The International Agency for Research on Cancer (IARC) (a unit of the World Health Organization) does not list or categorize this product as a carcinogen. NTP Biennial Report on Carcinogens: This product is not listed. OSHA carcinogen: This product is not listed. California Proposition 65: This product is not listed on the Proposition 65 list of carcinogens or reproductive toxicants. Chemical inventory listing: The listing is sometimes under the inventory number of the anhydrous form of this inorganic salt. U.S. EPA TSCA Inventory: 10043-35-3 Canada DSL: 10043-35-3 EINECS: 233-139-2 Australia AICS: 10043-35-3 China IECSC: 10043-35-3 Japanese METI & ISHL: (1)-63 New Zealand NZIoC: 10043-35-3 Philippines PICCS: 10043-35-3 South Korea KECL: KE-03499

Section 16: Other Information

Additional Information	N/A
Prepared By	Scarlotte Smith
Revision Date	11/08/2021 16:55

Disclaimer

Letco Medical, LLC believes that the above information is 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. If the product is used as a component in another product, this information may not be applicable. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED ABOVE. Letco Medical shall not be held liable for any loss or damage resulting from handling, storage, use or from contact with the above product.