SAFETY DATA SHEET

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Section 1. Identification

Product name : **Potassium Pentaborate**

Chemical name : Potassium pentaborate tetrahydrate

Other means of identification : Potassium pentaborate, Dipotassium decaborate octahydrate

Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against

Material uses : Industrial manufacturing

Supplier's details : U.S. Borax Inc.
14486 Borax Road
Boron, CA 93516-2000
USA
+1 (760) 762 7000

e-mail address of person responsible for this SDS : rtb.sds@riotinto.com

Emergency telephone number : Toll Free (24 Hr)
+1 866 928 0789
Non-Toll Free (24 Hr)
+1 215 207 0061 (Rio Tinto Borates)

For advice on chemical emergencies, spillages, fires or first aid.

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : TOXIC TO REPRODUCTION - Category 2

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : Suspected of damaging fertility or the unborn child.

Precautionary statements

Prevention : Do not handle until all safety precautions have been read and understood.

Response : IF exposed or concerned: Get medical advice/attention.

Section 2. Hazards identification

Storage : Not applicable.

Disposal : Dispose of contents/container in accordance with local regulation.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : Potassium pentaborate tetrahydrate

CAS number/other identifiers

CAS number : 12229-13-9

Ingredient name	%	CAS number
Potassium pentaborate tetrahydrate	>99.5	12229-13-9

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Use eye wash fountain or fresh water to cleanse the eye. If irritation persists for more than 30 minutes, seek medical attention.

Inhalation : If symptoms such as nose or throat irritation are observed, remove to fresh air.

Skin contact : No treatment necessary.

Ingestion : 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/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : 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 diarrhoea, with delayed effects of skin redness and peeling.

Ingestion : This product is not intended for ingestion. Small amounts (e.g., a teaspoon) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms. 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 diarrhoea, with delayed effects of skin redness and peeling.

Over-exposure signs/symptoms

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Section 4. First aid measures

Skin contact : 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 diarrhoea, with delayed effects of skin redness and peeling.

Ingestion : 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 diarrhoea, with delayed effects of skin redness and peeling.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : 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.

Specific treatments : No specific treatment.

Protection of first-aiders : No special protective clothing is required

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : None. The product is not flammable, combustible or explosive.

Hazardous thermal decomposition products : None.

Special protective actions for fire-fighters : None.

Special protective equipment for fire-fighters : Not applicable.

Remark : Non-flammable. The product is not flammable, combustible or explosive.

Remark : Not explosive.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : 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.

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Good housekeeping procedures should be followed to minimise dust generation and accumulation. Avoid spills.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : 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 temperature
Storage pressure: Ambient pressure
Special sensitivity: Moisture (Caking)

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Potassium pentaborate tetrahydrate	**OSHA PEL (United States). [Total dust]** Particulate Not Otherwise Classified or Nuisance Dust: 15 mg/m³ **OSHA PEL (United States). [Respirable dust]** Particulate Not Otherwise Classified or Nuisance Dust: 5 mg/m³ **Cal OSHA/PEL (United States). [Respirable dust]** Particulate Not Otherwise Classified or Nuisance Dust: 5 mg/m³

Biological exposure indices

Section 8. Exposure controls/personal protection

No exposure indices known.

Recommended monitoring procedures : In the absence of a national OEL, Rio Tinto Borates 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 0.1843

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. Recommended: Eye protection according to ANSI Z.87.1 or other national standards may be warranted if environment is excessively dusty.

Skin protection

Hand protection : Standard work gloves (cotton, canvas or leather) may be warranted if environment is excessively dusty.

Body protection : No special protective clothing is required.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Solid. [Crystalline solid.]

Color : White.

Odor : Odorless.

Odor threshold : Not applicable. Odourless.

pH : 8.4 [Conc. (% w/w): 0.3%] ; 7.6 (5.9% solution)

Melting point/freezing point : >500°C (>932°F)

Section 9. Physical and chemical properties

Boiling point, initial boiling point, and boiling range : Not applicable. [melting point >300°C]

Flash point : Not applicable. Inorganic substance.

Evaporation rate : Not applicable (solid). [Non-volatile.]

Flammability : Non-flammable. The product is not flammable, combustible or explosive.

Lower and upper explosion limit/flammability limit : Not applicable. Non-flammable.

Vapor pressure : Not applicable. Melting point>300°C

Relative vapor density : Not applicable. Melting point>300°C

Relative density : 1.58

Bulk density : Not available. Depends on batch.

Granulometry : Not available. Depends on batch.

Solubility in water : 3.8% @ 20°C; 29.6% @ 100°C

Partition coefficient: n-octanol/water : Not applicable. [Inorganic substance.]

Auto-ignition temperature : Not applicable (solid). [Not self-heating.]

Decomposition temperature : Not applicable. Melting point>300°C

Viscosity : Dynamic: Not applicable (not liquid). [solid substance]
Kinematic: Not applicable (not liquid). [solid substance]

Molecular weight : 293.0

Particle characteristics

Median particle size : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : Under ambient temperatures, the product is stable. This product is a stable product, but when heated it loses water, first forming metaboric acid (HBO_2), and on further heating it is converted into boric oxide (B_2O_3).

Possibility of hazardous reactions : 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 : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Absorption : Absorption of borates via the oral route is nearly 100 %. For the inhalation route also 100 % absorption is assumed as worst case scenario. Dermal absorption through intact skin is very low with a percent dose absorbed of < 0.5 %.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Potassium pentaborate tetrahydrate	LC50 Inhalation Vapor	Rat	2.12 mg/l Disodium tetraborate pentahydrate	4 hours
	LD50 Dermal	Rabbit	>2000 mg/kg body weight	Boric acid
	LD50 Oral	Rat	3690 mg/kg body weight	Potassium pentaborate

Conclusion/Summary : Based on the available data, the classification criteria are not met.

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Potassium pentaborate tetrahydrate	Eyes - No irritation.	New Zealand White Rabbit	<1	0.1 g	-
	Skin - No irritation.	Rabbit	-	500 mg Dipotassium tetraborate	-

Conclusion/Summary

Skin : No data available on the product itself. Based on the available data, the classification criteria are not met.

Eyes : Non-irritating to the eyes. No positive irritation scores were observed in any animal throughout the OECD 405 study for any evaluated parameter. Based on the available data, the classification criteria are not met.

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

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Disodium tetraborate pentahydrate	skin	Guinea pig	Not sensitizing

Conclusion/Summary

Skin : Not a skin sensitizer. (based on boric acid/Disodium tetraborate) Based on the available data, the classification criteria are not met.

Respiratory : No respiratory sensitization studies have been conducted. There are no data to suggest that borates are respiratory sensitisers. Based on the available data, the classification criteria are not met.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Boric acid	(based on boric acid).	Experiment: In vitro Subject: Mammalian-Animal Cell: Germ	Negative

Conclusion/Summary : Not mutagenic (based on boric acid). Based on the available data, the classification criteria are not met.

Carcinogenicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Boric acid	Negative - Oral - TC	Mouse	446 to 1150 mg/kg bw /day (mg Boric acid / kg body weight / day)	Oral feeding study

Conclusion/Summary : No evidence of carcinogenicity (based on boric acid). Based on the available data, the classification criteria are not met.

Classification

Product/ingredient name	OSHA	IARC	NTP
Potassium pentaborate tetrahydrate	None.	-	-

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility Effects	Developmental effects	Species	Effects	Exposure
Boric acid	Negative	Negative	Negative	Human	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.	Combined oral ingestion and inhalation.
	Positive	-	Positive	Rat	NOAEL in rats for developmental effects on the foetus including foetal weight loss and minor skeletal variations is 9.6 mg B/kg body weight; NOAEL in rats for maternal toxicity is 13.3 mg B/kg body weight	Oral feeding study
	-	Positive	-	Rat	NOAEL in rats for effects on fertility in males is 17.5 mg B/kg body weight.	Oral feeding study

Section 11. Toxicological information

Conclusion/Summary : Reprotoxicity studies have been conducted with boric acid and disodium tetraborate. A multigeneration study in the rat gave a NOAEL for fertility in males of 17.5 mg B/kg/day. Developmental effects have been observed in laboratory animals, the most sensitive species being the rat with a NOAEL of 9.6 mg B/kg bw/day. While boron has been shown to adversely affect male reproduction in laboratory animals, there was no clear evidence of male reproductive effects attributable to boron in studies of highly exposed workers. Following an evaluation based on weight of evidence, classification as Repr. Cat 2 is justified.

Teratogenicity

Conclusion/Summary : See Reproductive toxicity.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Based on the available data, the classification criteria are not met.			

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Based on the available data, the classification criteria are not met.			

Aspiration hazard

Name	Result
Potassium pentaborate tetrahydrate	Physical form of solid powder indicates no aspiration hazard potential.

Information on the likely routes of exposure : Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because product is poorly absorbed through intact skin. **Product is not intended for ingestion.**

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : 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 diarrhoea, with delayed effects of skin redness and peeling.

Ingestion : This product is not intended for ingestion. Small amounts (e.g., a teaspoon) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms. 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 diarrhoea, with delayed effects of skin redness and peeling.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : 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 diarrhoea, with delayed effects of skin redness and peeling.

Section 11. Toxicological information

Ingestion : 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 diarrhoea, with delayed effects of skin redness and peeling.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid and sodium borate dust. Human epidemiological studies indicate no effect on fertility in occupational populations with chronic exposures to borate dust and indicate no effect to a general population with high exposures to borates in the environment.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
Potassium pentaborate tetrahydrate (based on boric acid).	Chronic NOAEL Oral	Rat	17.5 mg/kg 0; 33 (5.9); 100 (17.5); 334 (58.5) mg boric acid (B)/ kg bw per day (nominal in diet); and 0; 52 (5.9); 155 (17.5); 516 (58.5) mg borax (B)/kg/day (nominal in diet)	Oral feeding study

Conclusion/Summary : A NOAEL of 17.5 mg B/kg body weight/day equivalent to 100 mg boric acid/kg body weight/day was determined in a chronic feeding study (2 years) in rats and is based on testes effects.

Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to boric acid and sodium borate dust. Human epidemiological studies indicate no effect on fertility in occupational populations with chronic exposures to borate dust and indicate no effect to a general population with high exposures to borates in the environment.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

Section 11. Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
None					

Toxicokinetics

Distribution : Boric acid is distributed rapidly and evenly through the body, with concentrations in bone 2-3 higher than in other tissues.

Metabolism : In the blood boric acid is the main species present and is not further metabolised.

Elimination : Boric acid is excreted rapidly, with elimination half-lives of 1 h in the mouse, 3 h in the rat and <27.8 h in humans, and has low potential for accumulation. Boric acid is mainly excreted in the urine.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Potassium pentaborate tetrahydrate	EC50 52.4 mg/l (as Boron)	*Pseudokirchneriella subcapitata*	Fresh water - Acute
	LC50 91 mg/l (as Boron)	*Ceriodaphnia dubia*	Fresh water - Acute
	LC50 79.7 mg/l (as Boron)	*Pimephales promelas*	Fresh water - Acute
	NOEC 6.4 mg/l (as Boron)	*Brachydanio rerio*	Fresh water - Chronic
	NOEC 14.2 mg/l (as Boron)	*Daphnia magna*	Fresh water - Chronic
	NOEC 17.5 mg/l (as Boron)	*Pseudokirchneriella subcapitata*	Fresh water - Chronic

Conclusion/Summary : Note that the data values are expressed as boron equivalents. To convert product into equivalent boron (B) content, multiply by 0.1843. Studies judged to be unreliable or with insufficient information to evaluate are not included.

Boron is an essential micronutrient for healthy growth of plants; however, it can be harmful to boron sensitive plants in high quantities. Care should be taken to minimize the amount of this product released to the environment.

Persistence and degradability

Conclusion/Summary : Not applicable. Inorganic substance

Bioaccumulative potential

Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	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

Soil/water partition coefficient (K_{OC}) : Not available.

Mobility : The product is soluble in water and is leachable through normal soil. Adsorption to soils or sediments is insignificant.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name					
Transport hazard class(es)					
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

Special precautions for user : Not applicable.

Transport in bulk according to IMO instruments : Not applicable.

Section 14. Transport information

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : TOXIC TO REPRODUCTION - Category 2

Composition/information on ingredients

No products were found.

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 15. Regulatory information

Inventory list

Australia : All components are listed or exempted.

China : All components are listed or exempted.

Eurasian Economic Union : **Russian Federation inventory**: All components are listed or exempted.

Japan : **Japan inventory (CSCL)**: Not determined.
Japan inventory (ISHL): Not determined.

New Zealand : All components are listed or exempted.

Philippines : Not determined.

Republic of Korea : All components are listed or exempted.

Taiwan : All components are listed or exempted.

Thailand : Not determined.

Turkey : Not determined.

United States : All components are active or exempted.

Viet Nam : Not determined.

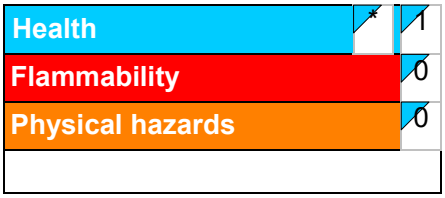
Canada

WHMIS (Canada) : TOXIC TO REPRODUCTION - Category 2

Canadian NPRI : None of the components are listed.

Section 16. Other information

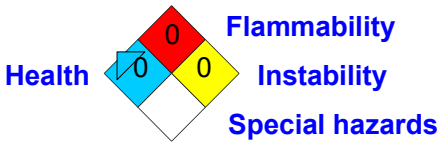
Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



Procedure used to derive the classification

Classification	Justification
TOXIC TO REPRODUCTION - Category 2	Expert judgment

Additional information : Do not ingest.
Keep out of reach of children.
Refer to safety data sheet.
Not for use in food, drugs or pesticides.

History

Section 16. Other information

Date of issue/Date of revision : 01/10/2024

Date of previous issue : 20/10/2014

Version : 1

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
IMSBC = International Maritime Solid Bulk Cargoes Code
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

References : For general information on the toxicology of borates see Patty's Toxicology, 6th Edition Vol. I, (2012) Chap. 23, 'Boron'.

Indicates information that has changed from previously issued version.

United States / 4.13 / EN-US

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