



## Section 1. Identification

**Product identifier** : **Solubor® Flow**

**Product type** : Liquid.

### Recommended use of the chemical and restrictions on use

**Material uses** : Agriculture

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

**Rio Tinto Minerals Asia Pte Ltd**  
12 Marina Boulevard  
#20-01 Marina Bay Financial Centre Tower 3  
Singapore 018982  
Tel: +65 6679 9316

**Manufacturer**  
**Borax Francais S.A.S.**  
Usine/Siège Social  
Route de Bourbourg  
59411 Coudekerque-Branche  
Cedex, France  
Tel: +33 3 28 29 28 30

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

**Emergency telephone number** : APAC +65 3158 1074 (24-Hr Non toll-free number) (Rio Tinto Borates)  
AMERICAS +1 866 928 0789 (Toll Free (24 Hr)) or  
+1 215 207 0061 (Non-Toll Free (24 Hr))(Rio Tinto Borates)  
For advice on chemical emergencies, spillages, fires or first aid.

## Section 2. Hazard identification

**Classification of the substance or mixture** : ACUTE TOXICITY (oral) - Category 5  
TOXIC TO REPRODUCTION (Unborn child) - Category 2

### GHS label elements

**Hazard pictograms** :



**Signal word** : Warning

**Hazard statements** : May be harmful if swallowed.  
Suspected of damaging the unborn child.

### Precautionary statements

## Section 2. Hazard identification

|                   |                                                                             |
|-------------------|-----------------------------------------------------------------------------|
| <b>Prevention</b> | : Do not handle until all safety precautions have been read and understood. |
| <b>Response</b>   | : IF exposed or concerned: Get medical advice/attention.                    |
| <b>Storage</b>    | : Not applicable.                                                           |
| <b>Disposal</b>   | : Dispose of contents/container in accordance with local regulation.        |

**Other hazards which do not result in classification** : None known.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

| <b>Ingredient name</b>                   | <b>%</b>  | <b>Identifiers</b>               |
|------------------------------------------|-----------|----------------------------------|
| Pentaboron sodium octaoxide pentahydrate | ≥50 - ≤75 | CAS: 12631-71-9<br>EC: 234-522-7 |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment 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

|                     |                                                                                                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | : Use eye wash fountain or fresh water to cleanse the eye. If irritation persists for more than 30 minutes, seek medical attention.                                                |
| <b>Inhalation</b>   | : If symptoms such as nose or throat irritation are observed, remove to fresh air.                                                                                                 |
| <b>Skin contact</b> | : No treatment necessary.                                                                                                                                                          |
| <b>Ingestion</b>    | : 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

|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | : No known significant effects or critical hazards.                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Inhalation</b>   | : No known significant effects or critical hazards.                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Skin contact</b> | : 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.                                                                                                                                                                                                               |
| <b>Ingestion</b>    | : 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

|                     |                                                                                                                                                                                                                                                                                     |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Eye contact</b>  | : No known significant effects or critical hazards.                                                                                                                                                                                                                                 |
| <b>Inhalation</b>   | : No known significant effects or critical hazards.                                                                                                                                                                                                                                 |
| <b>Skin contact</b> | : 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 4. First aid measures

**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** : 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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**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

## Section 6. Accidental release measures

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. 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

None.

#### Biological exposure indices

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<sup>3</sup>. To convert product into equivalent boron (B) content, multiply by 0.1832

- 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.

## Section 8. Exposure controls/personal protection

- 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.
- 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 and safety characteristics

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

### Appearance

- Physical state** : Liquid. [Slurry; aqueous suspensions]
- Color** : White.
- Odor** : Odorless.
- Odor threshold** : Not available.
- pH** : 7 to 8(Slurry)
- Melting point/freezing point** : -3°C (26.6°F)
- Boiling point or initial boiling point and boiling range** : 100 to 110°C (212 to 230°F)
- Flash point** : Not applicable. Inorganic substance.
- Burning time** : Not applicable.
- Burning rate** : Not applicable.
- Evaporation rate** : Not applicable. [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** :

| Ingredient name | Vapor Pressure at 20°C |     |        | Vapor pressure at 50°C |     |        |
|-----------------|------------------------|-----|--------|------------------------|-----|--------|
|                 | mm Hg                  | kPa | Method | mm Hg                  | kPa | Method |
| water           | 17.5                   | 2.3 |        |                        |     |        |

- Relative vapor density** : Not available.
- Bulk density** : Not available.
- Granulometry** : Not available.
- Relative density** : 1.3
- Solubility(ies)** :

| Media      | Result  |
|------------|---------|
| cold water | Soluble |
| hot water  | Soluble |

- Solubility in water** : Not available.

## Section 9. Physical and chemical properties and safety characteristics

|                                               |                                                                                                |
|-----------------------------------------------|------------------------------------------------------------------------------------------------|
| <b>Partition coefficient: n-octanol/water</b> | : There are no data available on the mixture itself. [Inorganic substance.]                    |
| <b>Auto-ignition temperature</b>              | : Not applicable. [Not self-heating.]                                                          |
| <b>Decomposition temperature</b>              | : Not applicable.                                                                              |
| <b>SADT</b>                                   | : Not available.                                                                               |
| <b>Viscosity</b>                              | : Dynamic (room temperature): Not applicable.<br>Kinematic (room temperature): Not applicable. |
| <b>Flow time (ISO 2431)</b>                   | : Not available.                                                                               |
| <b><u>Particle characteristics</u></b>        |                                                                                                |
| <b>Median particle size</b>                   | : Not applicable.                                                                              |

## Section 10. Stability and reactivity

|                                           |                                                                                                                                                   |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reactivity</b>                         | : No specific test data related to reactivity available for this product or its ingredients.                                                      |
| <b>Chemical stability</b>                 | : Under ambient temperatures, the product is stable.                                                                                              |
| <b>Possibility of hazardous reactions</b> | : Reaction with strong reducing agents such as metal hydrides or alkali metals will generate hydrogen gas which could create an explosive hazard. |
| <b>Conditions to avoid</b>                | : Avoid contact with strong reducing agents by storing according to good industrial practice.                                                     |
| <b>Incompatible materials</b>             | : Strong reducing agents                                                                                                                          |
| <b>Hazardous decomposition products</b>   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced.                                            |

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

##### **Product/ingredient name**

Pentaboron sodium octaoxide pentahydrate

##### **Result**

**Rat - Male - Oral - LD50**

3200 to 3400 mg/kg

**Rabbit - Dermal - LD50**

>2000 mg/kg

**Rat - Inhalation - LC50 Vapor**

2.12 mg/l [4 hours]

##### **Conclusion/Summary [Product]**

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

#### Skin corrosion/irritation

##### **Product/ingredient name**

Pentaboron sodium octaoxide pentahydrate

##### **Result**

**New Zealand White Rabbit - Skin - No irritation.**

Amount/concentration applied: 0.5 g moistened with saline  
(Disodium tetraborate pentahydrate)

##### **Conclusion/Summary [Product]**

: No data available on the product itself. Based on the lack of dermal irritation responses in the rabbit from dermal exposure, the classification criteria are not met.

## Section 11. Toxicological information

### Serious eye damage/eye irritation

#### Product/ingredient name

Pentaboron sodium octaoxide pentahydrate

#### Result

**New Zealand White Rabbit - Eyes - No irritation.**

Amount/concentration applied: 0.1 g Sodium Pentaborate

Irritation score: <1

Fully reversible

#### Conclusion/Summary [Product]

: Non-irritating to the eyes. Based on mean scores less than 1, the effects were fully reversible within 7 days. Based on the available data, the classification criteria are not met.

### Respiratory corrosion/irritation

Not available.

#### Conclusion/Summary [Product]

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

### Respiratory or skin sensitization

#### Product/ingredient name

Disodium tetraborate pentahydrate

#### Result

**Guinea pig - skin**

OECD 406

Result: Not sensitizing

### Skin

#### Conclusion/Summary [Product]

: There are no data available on the mixture itself. There are no data to suggest that disodium tetraborates or Pentaboron sodium octaoxide pentahydrate are skin or respiratory sensitizers. Based on the available data, the classification criteria are not met.

### Respiratory

#### Conclusion/Summary [Product]

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

### Germ cell mutagenicity

#### Product/ingredient name

Pentaboron sodium octaoxide pentahydrate

#### Result

**In vitro - Mammalian-Animal - Germ**

(based on boric acid).

100 to 10000 ppm

Result: Negative

#### Conclusion/Summary [Product]

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

### Carcinogenicity

#### Product/ingredient name

Boric acid

#### Result

**Mouse - Oral - TC**

OECD 451 [Oral feeding study]

446 to 1150 mg/kg

Result: Negative

#### Conclusion/Summary [Product]

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

### Reproductive toxicity

## Section 11. Toxicological information

### Product/ingredient name

Pentaboron sodium octaoxide pentahydrate

### Result

#### Rat - Oral

Prenatal Developmental Toxicity Study of Boric Acid ; Oral feeding study

Effects: 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

Maternal toxicity: Positive

Developmental: Positive

#### Human - Inhalation

Effects: 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.

Maternal toxicity: Negative

Fertility effects: Negative

Developmental: Negative

#### Rat - Oral

Three-generation feeding study. Two-Generation Reproduction Toxicity Study

Effects: NOAEL in rats for effects on fertility in males is 17.5 mg B/kg body weight.

Fertility effects: Positive

### Conclusion/Summary [Product]

: 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

### Specific target organ toxicity (single exposure)

#### Product/ingredient name

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

#### Result

### Specific target organ toxicity (repeated exposure)

#### Product/ingredient name

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

#### Result

### Aspiration hazard

#### Product/ingredient name

Pentaboron sodium octaoxide pentahydrate

#### Result

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.

## Section 11. Toxicological information

- 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.
- 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

Pentaboron sodium octaoxide pentahydrate  
(based on boric acid).

#### Result

**Chronic - Rat - Oral - NOEL**  
OECD [Chronic Toxicity Studies]  
17.5 mg/kg

- Conclusion/Summary [Product]** : A NOEL 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.

## Section 11. Toxicological information

|                              |                                                     |
|------------------------------|-----------------------------------------------------|
| <b>General</b>               | : No known significant effects or critical hazards. |
| <b>Carcinogenicity</b>       | : No known significant effects or critical hazards. |
| <b>Mutagenicity</b>          | : No known significant effects or critical hazards. |
| <b>Reproductive toxicity</b> | : Suspected of damaging the unborn child.           |

### Numerical measures of toxicity

#### Acute toxicity estimates

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapors) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|-------------------------|--------------|----------------|--------------------------|----------------------------|-------------------------------------|
| Solubor® Flow           | 2500         | N/A            | N/A                      | N/A                        | N/A                                 |

## Section 12. Ecological information

### Toxicity

#### Product/ingredient name

Pentaboron sodium octaoxide pentahydrate

#### Result

##### LC50

Invertebrate

*Ceriodaphnia dubia*

91 mg/l - (as Boron)

##### NOEC

Invertebrate

*Daphnia magna*

14.2 mg/l - (as Boron)

##### NOEC

Fish.

*Brachydanio rerio*

6.4 mg/l - (as Boron)

##### LC50

Fish.

*Pimephales promelas*

79.7 mg/l - (as Boron)

##### EC50

Algae

*Pseudokirchneriella subcapitata*

52.4 mg/l - (as Boron)

##### NOEC

Algae

*Pseudokirchneriella subcapitata*

17.5 mg/l - (as Boron)

#### Conclusion/Summary [Product]

: Note that the data values are expressed as boron equivalents. To convert product into equivalent boron (B) content, multiply by 0.1832. 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

Not available.

## Section 12. Ecological information

**Conclusion/Summary [Product]** : Not applicable. Inorganic substance

### Bioaccumulative potential

| Product/ingredient name | LogP <sub>ow</sub> | BCF | Potential |
|-------------------------|--------------------|-----|-----------|
| Boric acid              | -0.757             | -   | Low       |

### Mobility in soil

**Soil/Water partition coefficient** : 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** : 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. Waste packaging should be recycled. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

|                                   | UN             | IMDG           | IATA           |
|-----------------------------------|----------------|----------------|----------------|
| <b>UN number</b>                  | Not regulated. | Not regulated. | Not regulated. |
| <b>UN proper shipping name</b>    | -              | -              | -              |
| <b>Transport hazard class(es)</b> | -              | -              | -              |
| <b>Packing group</b>              | -              | -              | -              |
| <b>Environmental hazards</b>      | No.            | No.            | No.            |

**Special precautions for user** : Not applicable.

**Transport in bulk according to IMO instruments** : Not applicable.

## Section 15. Regulatory information

### 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.

### Inventory list

|                                                    |                                                                                                                             |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| <b>Australia inventory (AIIIC)</b>                 | : All components are listed or exempted.                                                                                    |
| <b>Canada inventory</b>                            | : All components are listed or exempted.                                                                                    |
| <b>China inventory (IECSC)</b>                     | : All components are listed or exempted.                                                                                    |
| <b>Eurasian Economic Union</b>                     | : <b>Russian Federation inventory</b> : All components are listed or exempted.                                              |
| <b>Japan inventory</b>                             | : <b>Japan inventory (CSCL)</b> : Not determined.<br><b>Japan inventory (ISHL)</b> : All components are listed or exempted. |
| <b>Korea inventory</b>                             | : All components are listed or exempted.                                                                                    |
| <b>New Zealand Inventory of Chemicals (NZIoC)</b>  | : All components are listed or exempted.                                                                                    |
| <b>Philippines inventory (PICCS)</b>               | : All components are listed or exempted.                                                                                    |
| <b>Taiwan Chemical Substances Inventory (TCSI)</b> | : All components are listed or exempted.                                                                                    |
| <b>Thailand</b>                                    | : Not determined.                                                                                                           |
| <b>Turkey inventory</b>                            | : Not determined.                                                                                                           |
| <b>United States inventory (TSCA 8b)</b>           | : Not determined.                                                                                                           |
| <b>Viet Nam</b>                                    | : All components are listed or exempted.                                                                                    |

## Section 16. Other information

### History

|                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Date of issue/Date of revision</b> | : 2026/03/04                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Date of previous issue</b>         | : 2017/04/03                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Version</b>                        | : 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Key to abbreviations</b>           | : ATE = Acute Toxicity Estimate<br>BCF = Bioconcentration Factor<br>GHS = Globally Harmonized System of Classification and Labelling of Chemicals<br>IATA = International Air Transport Association<br>IBC = Intermediate Bulk Container<br>IMDG = International Maritime Dangerous Goods<br>IMSBC = International Maritime Solid Bulk Cargoes Code<br>LogPow = logarithm of the octanol/water partition coefficient<br>MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)<br>N/A = Not available<br>SGG = Segregation Group<br>UN = United Nations |

### Procedure used to derive the classification

## Section 16. Other information

| Classification                                                                          | Justification                      |
|-----------------------------------------------------------------------------------------|------------------------------------|
| ACUTE TOXICITY (oral) - Category 5<br>TOXIC TO REPRODUCTION (Unborn child) - Category 2 | Expert judgment<br>Expert judgment |

**Additional information** :

- Do not ingest.
- Keep out of reach of children.
- Refer to safety data sheet.
- Not for use in drugs, pesticides or for food preservation.
- Use only as directed.

**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.

UN / 4.14 / EN-US

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