

**1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING**

**Product Identifier:**

**Product Name:** Borax Imported  
**Chemical Name (EINECS):** Borax Decahydrate  
**Chemical Formula:** Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub> 10H<sub>2</sub>O  
**Trade Names:** Borax Decahydrate  
**Synonyms:** Sodium Tetraborate decahydrate, disodium tetraborate, borax  
**CAS Number:** 1303-96-4  
**EINECS Number:** 215-540-4  
**REACH Registration Number:** 01-2119490790-32-XXXX

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

**Identified use(s):** Ceramics  
Detergents  
Borosilicate glass  
Insulation fibreglass

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**2. HAZARDS IDENTIFICATION**

**Classification of the substance or mixture:**

**Regulation 1272/2008 (CLP):** Harmonised classification provided in the 1st ATP to CLP (Regulation EC n°790/2009)  
Repr. Cat. 1B; H360FD  
Specific concentrations limits: Repr. 1B; H360FD: C ≥8.5%  
Self-classification based on the classification criteria provided in CLP  
Eye irrit. Cat. 2; H319  
Specific concentrations limits: C ≥ 10,0 % Xi; H319  
Precautionary Statement Prevention: P201; P202; P281; P264; P280  
Precautionary Statement Response: P308 + P313; P305+P351+P338; P337+P313  
Precautionary Statement Storage: P405  
Precautionary Statement Disposal: P501

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**Label elements:**

According to Regulation (EC) No. 1272/2008 (CLP).

**Hazard pictograms:**



**Signal word:**

Danger

**Hazard statement(s):**

H360FD: May damage fertility or the unborn child.  
H319: Causes serious eye irritation.

**Precautionary statement(s):**

P201: Obtain special instructions before use.  
P202: Do not handle until all safety precautions have been read and understood.  
P280: Wear protective gloves/protective clothing/eye protection/face protection.  
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+P313: IF exposed or concerned: Get medical advice/attention.  
P405: Store locked up.

**According to REACH, Annex XVII:** Restricted to professional users

**Other hazards:**

**Emergency overview:**

Borax decahydrate is a white odourless, powdered substance that is not flammable, combustible, or explosive, and has low acute oral and dermal toxicity.

**Potential health effects:**

Inhalation is the most significant route of exposure in occupational and other settings. Dermal exposure is not usually a concern because borax decahydrate is poorly absorbed through intact skin.

**Inhalation:**

Occasional mild irritation effects to nose and throat may occur from inhalation of borax decahydrate dusts at levels higher than 10 mg/m<sup>3</sup>.

**Eye contact:**

Borax decahydrate is a serious eye irritant.

**Skin contact:**

Borax decahydrate does not cause irritation to intact skin.

**Ingestion:**

Products containing borax decahydrate are not intended for ingestion. Borax decahydrate has low acute toxicity. Small amounts (e.g. a teaspoonful) swallowed accidentally are not likely to cause effects; swallowing amounts larger than that may cause gastrointestinal symptoms.

[cont...]

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**Reproductive/Developmental:** Animal ingestion studies in several species, at high doses, indicate that borates cause reproductive and developmental effects. A human study of occupational exposure to borate dust showed no adverse effect on reproduction. A recent epidemiological study and a peer reviewing report of the past epidemiological studies conducted in China didn't show any negative effect of boron on human fertility (10, 11).

**Potential ecological effects:** Large amounts of borax decahydrate can be harmful to plants and other species. Therefore releases to the environment should be minimised.

**Signs and symptoms of exposure:** Symptoms of accidental over-exposure to borax decahydrate have been associated with ingestion or absorption through large areas of damaged skin. These may include nausea, vomiting, and diarrhoea, with delayed effects of skin redness and peeling (see section 11).

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

**Substances:** Borax Decahydrate

CAS Number	EINECS Number	REACH Registration Number	Hazard Statements (CLP)	Content
1303-96-4	215-540-4	01-2119490790-32-XXXX	H360FD H319	99.9%

For other "Chemical inventory listing", please refer to section 15.

### 4. FIRST AID MEASURES

#### Description of first aid measures:

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

**Skin contact:** No treatment necessary because non-irritating.

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

**Ingestion:** If large amounts are swallowed (i.e. more than one teaspoon), give two glasses of water or milk to drink and seek medical attention.

**Note to physicians:** Observation only is required for adult ingestion of less than 9 grams of borax decahydrate. For ingestion in excess of 9 grams, maintain adequate kidney function and force fluids. Gastric lavage is recommended for symptomatic patients only. Haemodialysis should be reserved for massive acute ingestion or patients with renal failure. Boron analyses of urine or blood are only useful for documenting exposure and should not be used to evaluate severity of poisoning or to guide treatment [1] (see section 11).

**Most important symptoms and effects, both acute and delayed:** Not Applicable.

**Indication of any immediate medical attention and special treatment needed:** Not Applicable.

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### 5. FIRE-FIGHTING MEASURES

**Extinguishing media:** Suitable extinguishing media: any fire extinguishing media may be used on nearby fires.

**Special hazards arising from the substance:** None. Borax decahydrate is not flammable, combustible or explosive. The product is itself a flame retardant.

**Advice for firefighters:** Not Applicable.

### 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions, protective equipment and emergency procedures:**

Avoid dust formation. In case of exposure to prolonged or high level of airborne dust, wear a personal respirator in compliance with national legislation.

**Environmental precautions:** Borax decahydrate is a water-soluble white powder that may, at high concentrations cause damage to trees or vegetation by root absorption (see section 12).

**Methods and material for containment and cleaning up:**

**Land spill:** Vacuum, shovel or sweep up borax decahydrate and place in containers for disposal in accordance with applicable local regulations. Avoid contamination of water bodies during clean up and disposal. No personal protective equipment is needed to clean up land spills.

**Spillage into water:** Where possible, remove any intact containers from the water. 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 (see sections 12, 13 and 15).

**Reference to other sections:** See Sections 8 and 13 for further information.

### 7. HANDLING AND STORAGE

**Precautions for safe handling:** To maintain package integrity and to minimise caking of the product, bags should be handled on a first-in first-out basis. Good housekeeping and dust prevention procedures should be followed to minimise dust generation and accumulation. Your supplier can advise you on safe handling, please contact the supplier.

**Conditions for safe storage, including any incompatibilities:**

No special handling precautions are required, but dry, indoor storage is recommended. No specific requirements. Provide appropriate ventilation and store bags such as to prevent any accidental damage.

**Specific end use(s):** The product should be kept away from strong reducing agents.  
See exposure scenario in Annex to the MSDS.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters:

#### Occupational Exposure Limit Values:

**Substance:** Disodium Tetraborate, Decahydrate

**CAS No:** 1303-96-4

	Limit value-Eight hours		Limit value-Short term	
	Ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Belgium		2		6
Canada – Quebec		5		
Denmark		2	4	
France		5		
Germany (DFG)		0.75 inhalable aerosol (1)		0.75 inhalable aerosol (1, 2)
Poland		0.5		2
Spain		5		
Sweden		2		5
Switzerland		5 inhalable aerosol		5 inhalable aerosol
USA – NIOSH		5		
United Kingdom		5		

**Source:** IFA Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung.

**Remarks:** Calculated as boron.  
15 minutes average value.

Respect regulatory provisions for dust (total and respirable).

Occupational exposure limits for dust (total and respirable). Are treated by OSHA, Cal OSHA and ACGIH as "Particulate Not Otherwise Classified" or "Nuisance Dust".

**ACGIH/TLV:** 10 mg/m<sup>3</sup>

**Cal OSHA/PEL:** 10 mg/m<sup>3</sup>

**OSHA/PEL (total dust):** 15 mg/m<sup>3</sup>

**OSHA/PEL (respirable dust):** 5 mg/

### DNEL values:

Exposure pattern	Type/site of effect	Exposure route	DNEL value
<b>DNELs for workers:</b>			
Acute	Local	Inhalation	22.3 mg/m <sup>3</sup>
Long-term	Systemic	Inhalation	12.8 mg/m <sup>3</sup>
Long-term	Systemic	Dermal	42478 mg/day

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### DNELs for the general public:

Acute	Systemic	Oral	1.5 mg/kg bw/day
Acute	Local	Inhalation	22.3 mg/m <sup>3</sup>
Long-term	Systemic	Dermal (external)	3.35 mg/kg bw/day
Long-term	Systemic	Dermal (systemic)	1.5 mg/kg bw/day
Long-term	Systemic	Inhalation	6.5 mg/m <sup>3</sup>
Long-term	Systemic	Oral	1.5 mg/kg bw/day
Long-term	Local	Inhalation	22.3 mg/m <sup>3</sup>

**Source:** Chemical Safety Report of disodium tetraborate, anhydrous.

### PNEC values:

**PNEC add, freshwater, marine water=** 1.35 mg B/L

**PNEC add aqua intermittent=** 9.1 mg B/L

**PNEC add freshwater sediment, marine water sediment=** 1.8 mg B/kg sediment dry weight

**PNEC soil=** 5.4 mg B/kg soil dry weight

**PNEC add, STP=** 1.75 mg B/L

**Source:** Chemical Safety Report of disodium tetraborate, anhydrous.

### Exposure controls:

**Appropriate engineering controls:** No data available

### Individual protection measures, such as personal protective equipment:

Use local exhaust ventilation to keep airborne concentrations of borax decahydrate dust below permissible exposure levels. Wash hands before breaks and at the end of the workday.  
Remove and wash soiled clothing.

**Respiratory protection:** In case of prolonged exposure to dust wear a personal respirator in compliance with national legislation (make reference to the appropriate CEN standard).

**Eyes and hands protection:** Goggles and gloves are not required for normal industrial exposures, but may be warranted if environment is excessively dusty.

**Environmental exposure controls:** No special requirement.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties:

<b>Physical State:</b>	Crystalline solid
<b>Colour:</b>	White
<b>Odour:</b>	Odourless
<b>Odour threshold:</b>	Not applicable
<b>pH in water solution @ 20°C:</b>	9.3 (0.1 % solution) 9.2 (1.0% solution) 9.3 (4.7 % solution)
<b>Melting point/freezing point:</b>	741°C (heated in closed space)
<b>Initial boiling point and boiling range:</b>	1575 °C
<b>Flash point:</b>	Non flammable

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<b>Evaporation rate:</b>	Not applicable
<b>Flammability (solid, gas):</b>	Not applicable
<b>Upper/lower flammability or explosive limits:</b>	Not applicable
<b>Vapour pressure:</b>	Negligible @ 20°C
<b>Vapour density:</b>	N.A.
<b>Relative density:</b>	1.72 @ 20°C
<b>Solubility in water:</b>	4.7% @ 20°C; 65.6% @ 100°C
<b>Partition coefficient: n-octanol/water:</b>	Log Kow (Pow): 1.53±0.05 (at 22±1°C) pH 7.5
<b>Auto-ignition temperature:</b>	Not applicable
<b>Decomposition temperature:</b>	8H <sub>2</sub> O @ 60°C & -10H <sub>2</sub> O @ 320°C
<b>Viscosity:</b>	Not applicable
<b>Explosive properties:</b>	Non-explosive
<b>Oxidising properties:</b>	Not applicable
<b>Other information:</b>	
<b>Molecular weight:</b>	381.37
<b>Specific gravity:</b>	1.71 – 1.73 @ 20°C

### 10. STABILITY AND REACTIVITY

<b>Reactivity:</b>	Not applicable.
<b>Chemical stability:</b>	Borax decahydrate is a stable product, but when heated it loses water, eventually forming anhydrous borax (Na <sub>2</sub> B <sub>4</sub> O <sub>7</sub> ).
<b>Possibility of hazardous reactions:</b>	Reaction with strong reducing agents such as metal hydrides, acetic anhydride or alkali metals will generate hydrogen gas which could create an explosive hazard.
<b>Conditions to avoid:</b>	Not applicable.
<b>Incompatible materials:</b>	Avoid contact with strong reducing agents such as metal hydrides, acetic anhydride or alkali metals.
<b>Hazardous decomposition products:</b>	Not applicable.

### 11. TOXICOLOGICAL INFORMATION

#### Information on toxicological effect:

##### Substances:

<b>Acute toxicity:</b>	Low acute oral toxicity; LD50 in rats is 6,000 mg/kg of body weight.
<b>Skin corrosion / irritation:</b>	Low acute dermal toxicity; LD50 in rabbits is greater than 2,000 mg/kg of body weight. Borax decahydrate is poorly absorbed through intact skin. Non-irritant.
<b>Serious eye damage/ irritation:</b>	Borax decahydrate is a serious eye irritant.
<b>Respiratory or skin sensitisation:</b>	Not applicable.
<b>Germ cell mutagenicity:</b>	Not applicable.
<b>Carcinogenicity:</b>	Not applicable.

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<b>Reproductive toxicity:</b>	Animal feeding studies in rat, mouse and dog, at high doses, have demonstrated effects on fertility and testes [2]. Studies with the chemically related boric acid in rat, mouse and rabbit, at high doses, demonstrate developmental effects on the foetus including foetal weight loss and minor skeletal variations. The doses administered were many times in excess of those which humans would normally be exposed to [3,4,5]. Human epidemiological studies show no increase in pulmonary disease in occupational populations with chronic exposures to sodium borate dust. A recent epidemiology study under the conditions of normal occupational exposure to borate dusts indicated no effect on fertility.
<b>STOT-single exposure:</b>	Not applicable.
<b>STOT-repeated exposure:</b>	Not applicable.
<b>Aspiration hazard:</b>	Low acute inhalation toxicity; LC50 in rats is greater than 2.0 mg/l (or g/m <sup>3</sup> ).

## 12. ECOLOGICAL INFORMATION

Boron occurs naturally in sea water at an average concentration of 5 mg B/l and fresh water at 1 mg B/l or less. In dilute aqueous solutions the predominant boron species present is undissociated boric acid.

### Toxicity:

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

**Algal toxicity [6]:** Green algae, *Pseudokirchneriella subcapitata* (Hansveit and Oldersma, 2000)  
72-hr EC50 –biomass = 40 mg B/L, or 229 mg boric acid/L.

**Invertebrate toxicity [7]:** Daphnia, Daphnids, *Daphnia magna* (Gersich, 1984a)  
48-hr LC50 = 133 mg B/L or 760 mg boric acid/L  
or 619 mg disodium tetraborate, anhydrous/L

**Fish toxicity [8]:** Fish, Fatheted minnow, *Pimephales promelas* (Soucek et al., 2010)  
96-hr LC50 = 79.7 mg B/L or 456 mg boric acid/L  
or 370 mg disodium tetraborate, anhydrous

**Persistence and degradability:** Boron is naturally occurring and ubiquitous in the environment. Borax decahydrate decomposes in the environment to natural borate.

**Bioaccumulative potential:** Not significantly bioaccumulative.

**Mobility in soil:** The product is soluble in water and is leachable through normal soil.

**Results of PBT and vPvB assessment:** Not applicable.

**Other adverse effects:** No Data Available.

[cont...]



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### 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods:** Small quantities of Borax decahydrate can usually be disposed of at landfill sites. No special disposal treatment is required, but local authorities should be consulted about any specific local requirements. Tonnage quantities of product are not recommended to be sent to landfills. Such product should, if possible, be used for an appropriate application.

### 14. TRANSPORT INFORMATION

Borax decahydrate has no UN Number, and is not regulated under international rail, road, water or air transport regulations.

**UN number:** Not applicable.

**UN proper shipping name:** Not applicable.

**Transport of hazard classes:** Not applicable.

**Packing group:** Not applicable.

**Environmental hazards:** Not applicable.

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

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:** Not applicable.

### 15. REGULATORY INFORMATION

#### Safety, health and environmental regulations / legislation specific for the substance:

It should be noted that borates are safe under conditions of normal handling and use, besides, they are essential nutrients to plants, and research shows that they play a beneficial role in human health. CLP classification has been solely based on animal tests where animals were exposed to high doses of boric acid over long periods of time. These doses were many times higher than humans are exposed to under conditions of normal handling and use. Consequently, a precautionary decision was taken by the European Commission. Although we will comply with the body of legislation triggered by that decision, we are in process of all possible legal actions.

**Clean Air Act (Montreal Protocol):** Borax decahydrate was not manufactured with and does not contain any Class I or Class II ozone depleting substances.

**Chemical inventory listing:** U.S. EPA TSCA Inventory 1303-96-4  
Canadian DSL 1303-96-4  
EINECS 215-540-4  
South Korea 9212-848  
Japanese MITI (1)-69

Ensure all national/local regulations are observed.

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- EU Reach Regulation:** Disodium Tetraborates are listed in the Candidate List of Substances of Very High Concern "SVHC" for eventual inclusion in Annex XIV to REACH Regulation 1907/2006 ("Authorisation List"). (18.06.2010-ED/30/2010).  
Disodium tetraborates are listed in the Annex XVII of REACH Regulation 1907/2006 (EU No.109/2012) and their use in consumer products above specific concentration limits are restricted. Note that this restriction is only specific to consumer products and do not cover their industrial and/or professional applications. Disodium tetraborates can be used in consumer products below specific concentration limits (which is **C ≥8.5%** for Borax decahydrate).
- Chemical safety assessment:** Chemical Safety Assessment of Borax Decahydrate (disodium tetraborate decahydrate) has been carried out under REACH Regulation of the EU.
- Note:** The regulatory information given above only indicates the principal regulations specifically Applicable to the product described in the safety data sheet. The user's attention is drawn to the possible existence of additional provisions which complete these regulations. Refer to all applicable national, international and local regulations or provisions.

## 16. OTHER INFORMATION

### Unique change made to the previous version of this Safety Data Sheet (SDS):

Update of the emergency number pursuant to Article 1.4 Annex II of REACH Regulation (see section 1.4)

### List of abbreviation and acronyms used in this SDS:

- SDS:** Safety Data Sheet
- Index No:** Atomic number of the element most characteristic of the properties of the substance
- CAS No:** Chemical Abstracts Service number
- EC No:** EINECS Number: European Inventory of Existing Commercial Substances
- REACH:** Registration, Evaluation, Authorisation and Restrictions of Chemicals Regulation (EC) N°1907/2006
- DSD:** Dangerous Substances Directive 67/548/EEC
- Repr. Cat. 1B:** Substance presumed human reproductive toxicant
- Eye irrit. Cat. 2:** Substance inducing potential reversible eye irritation
- CLP:** Classification Labelling Packaging Regulation: Regulation (EC) N°1272/2008
- 1st ATP:** 1st Adaptation to Technical and scientific Progress
- LD50:** Median Lethal Dose
- LC50:** Lethal Concentration, 50%
- N.A.:** Not Applicable
- DNEL:** Derived No effect Level
- PNEC:** Predicted No Effect Concentration
- CSR:** Chemical Safety Report
- OSHA:** Occupational Safety & Health Administration
- Cal OSHA:** The State of California Division of Occupational Safety and Health (DOSH)
- PEL:** Permissible Exposure Limits
- ACGIH:** American Conference of Governmental Industrial Hygienists

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<b>TLV:</b>	Threshold Limit Value
<b>Japanese MITI:</b>	Japanese Ministry of International Trade and Industry
<b>EC50:</b>	Half maximal effective concentration
<b>PBT:</b>	Persistent, Bioaccumulative and Toxic substance
<b>vPvB:</b>	Very Persistent and Very Bioaccumulative
<b>UN:</b>	United Nations
<b>U.S. EPA TSCA Inventory:</b>	Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the authority of the Environmental Protection Agency.
<b>Canadian DSL:</b>	Canadian Domestic Substances List

## List of relevant R phrases, hazard statements, safety phrases and/or precautionary statements used in this SDS

### According to DSD Directive:

<b>Risk Phrases:</b>	<b>R60:</b> May impair fertility <b>R61:</b> May cause harm to the unborn child <b>R36:</b> Irritating to eyes
<b>Safety Phrases:</b>	<b>S45:</b> In case of accident or if you fell unwell, contact a doctor or poisons information centre immediately (show the label where possible). <b>S53:</b> Avoid exposure – obtain special instructions before use. <b>S26:</b> In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

### According to CLP Regulation:

<b>Hazard Statement:</b>	<b>H360 FD:</b> May damage fertility or the unborn child <b>H319:</b> Causes serious eye irritation
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### Precautionary Statements:

<b>Prevention:</b>	<b>P201:</b> Obtain special instructions before use. <b>P202:</b> Do not handle until all safety precautions have been read and understood. <b>P264:</b> Wash eyes thoroughly after handling. <b>P280:</b> Wear protective gloves/ protective clothing/ eye protection/ face protection.
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<b>Response:</b>	<b>P308 + P313:</b> If exposed or concerned: get medical advice/attention. <b>P305+P351+P338:</b> IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. <b>P337+P313:</b> If eye irritation persists: Get medical advice/attention.
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<b>Storage:</b>	<b>P405:</b> Store locked up.
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<b>Disposal:</b>	<b>P501:</b> Dispose of contents/container to in accordance with local regulations.
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#### References:

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4. Fail *et al.*, Fund. Appl. Toxicol. (1991) 17, 225-239
5. Heindel *et al.*, Fund. Appl. Toxicol. (1992) 18, 266-277
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9. Birge W J, Black J A, EPA-560/-76-008 (April 1977) PB 267 085
10. Scialli AR, Bonde JP, Brüske-Hohlfeld I, Culver D, Li Y, Sullivan FM; ELSEVIER 2009
11. Robbins WA, Xun L, Jia J, Kennedy N, Elashoff DA, Ping L. ;ELSEVIER 2009;(Reproductive Toxicology)

For general information on the toxicology of borates see ECETOC Technical Report No. 63 (1995); Patty's Industrial Hygiene and Toxicology, 4th Edition Vol. II, (1994) Chap. 42, 'Boron'.

#### Legal disclaimer:

The information contained in this SDS does not constitute a risk assessment, and should not replace the user's own assessment of risks as required by other health and safety legislation. This advice is given by Nexchem Ltd who accept no legal liability for it except otherwise provided by law. The information contained herein is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It should not therefore be construed as guaranteeing specific properties.