

## BUFFER SOLUTION PH9 (BORATE)

GHS Safety Data Sheet

Version No:2.0

Page 1 of 12

### Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT NAME

BUFFER SOLUTION PH9 (BORATE)

#### OTHER NAMES

"borate buffer solution", "laboratory reagent",

#### PRODUCT USE

Used as a pH 9 buffer in pH determinations.

#### SUPPLIER

Company: S D FINE - CHEM LIMITED

Address:

315- 317, T.V.IND.ESTATE,

248 WORLI ROAD,

MUMBAI- 400 030, INDIA

technical@sdfine.com

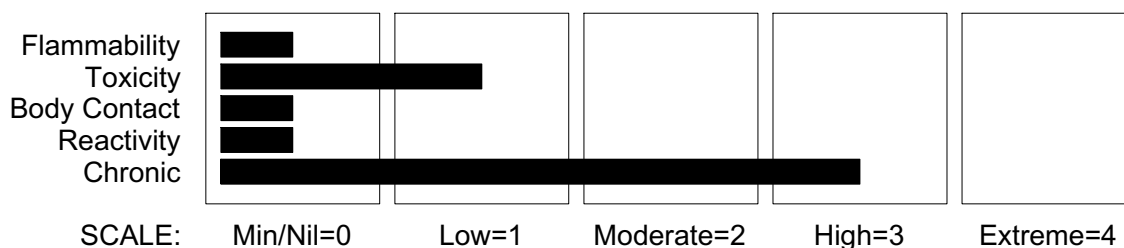
Telephone: 91- 22 24959898

Telephone: 91- 22 24959899

Fax: 91- 22 24937232

### Section 2 - HAZARDS IDENTIFICATION

#### HAZARD RATINGS



#### GHS Classification

Eye Irritation Category 2A

Reproductive Toxicity Category 1B

Skin Corrosion/Irritation Category 2



continued...

# BUFFER SOLUTION PH9 (BORATE)

GHS Safety Data Sheet

Version No:2.0

Page 2 of 12

## Section 2 - HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

#### HAZARD

##### DANGER

Determined by using GHS criteria:

H360 H360 H315 H319

May damage fertility

May damage the unborn child

Causes skin irritation

Causes serious eye irritation

### PRECAUTIONARY STATEMENTS

#### Prevention

Obtain special instructions before use.

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

Wash thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

Use personal protective equipment as required.

#### Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF exposed or concerned: Get medical advice/ attention.

If eye irritation persists: Get medical advice/attention.

#### Storage

Store locked up.

## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

| NAME                       | CAS RN    | %    |
|----------------------------|-----------|------|
| sodium borate, decahydrate | 1303-96-4 | 1-10 |
| water                      | 7732-18-5 | > 60 |

## Section 4 - FIRST AID MEASURES

### SWALLOWED

- If poisoning occurs, contact a doctor or Poisons Information Centre.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

### EYE

- If this product comes in contact with the eyes:
- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.

continued...

# BUFFER SOLUTION PH9 (BORATE)

GHS Safety Data Sheet

Version No:2.0

Page 3 of 12

## Section 4 - FIRST AID MEASURES

- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

- If skin contact occurs:
  - Immediately remove all contaminated clothing, including footwear.
  - Flush skin and hair with running water (and soap if available).
  - Seek medical attention in event of irritation.

### INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

### NOTES TO PHYSICIAN

- Treat symptomatically.

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

- There is no restriction on the type of extinguisher which may be used.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

### FIRE/EXPLOSION HAZARD

- Non combustible liquid.

Not considered to be a significant fire risk.

Heating may cause expansion or decomposition leading to violent rupture of containers.

### FIRE INCOMPATIBILITY

- None known.

### PERSONAL PROTECTION

Glasses:

Not normally required.

Gloves:

When handling larger quantities:

Respirator:

Particulate

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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### MINOR SPILLS

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

### MAJOR SPILLS

- Minor hazard.
- Clear area of personnel.

continued...

# BUFFER SOLUTION PH9 (BORATE)

GHS Safety Data Sheet

Version No:2.0

Page 4 of 12

## Section 6 - ACCIDENTAL RELEASE MEASURES

- Alert Fire Brigade and tell them location and nature of hazard.
- Control personal contact by using protective equipment as required.
- Prevent spillage from entering drains or water ways.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal.
- Wash area and prevent runoff into drains or waterways.
- If contamination of drains or waterways occurs, advise emergency services.

**Personal Protective Equipment advice is contained in Section 8 of the MSDS.**

## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

### SUITABLE CONTAINER

- Glass container is suitable for laboratory quantities.
- Plastic container.
- Check that containers are clearly labelled.
  - Packaging as recommended by manufacturer.

### STORAGE INCOMPATIBILITY

- None known.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well ventilated area.
- DO NOT allow to freeze.
- Store away from incompatible materials.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

### SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



X



X



+



X



X



+

+: May be stored together

O: May be stored together with specific preventions

X: Must not be stored together

continued...

# BUFFER SOLUTION PH9 (BORATE)

GHS Safety Data Sheet

Version No:2.0

Page 5 of 12

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

| Source                       | Material                                                                | TWA mg/m <sup>3</sup> |
|------------------------------|-------------------------------------------------------------------------|-----------------------|
| Australia Exposure Standards | sodium borate, decahydrate (Borates, tetra, sodium salts (decahydrate)) | 5                     |
| Australia Exposure Standards | sodium borate, decahydrate (Borates, tetra, sodium salts (anhydrous))   | 1                     |

The following materials had no OELs on our records

• water:

CAS:7732- 18- 5

### MATERIAL DATA

BUFFER SOLUTION PH9 (BORATE):

- None assigned. Refer to individual constituents.

SODIUM BORATE, DECAHYDRATE:

■ It is the goal of the ACGIH (and other Agencies) to recommend TLVs (or their equivalent) for all substances for which there is evidence of health effects at airborne concentrations encountered in the workplace.

At this time no TLV has been established, even though this material may produce adverse health effects (as evidenced in animal experiments or clinical experience). Airborne concentrations must be maintained as low as is practically possible and occupational exposure must be kept to a minimum.

NOTE: The ACGIH occupational exposure standard for Particles Not Otherwise Specified (P.N.O.S) does NOT apply.

Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

For inorganic borates and tetraborates:

No data are currently available to establish a causal link between inhalation exposures to sodium tetraborates and chronic respiratory and/or systemic effects.

An occupationally important toxic effect of the sodium tetraborates is their acute irritant effect when in contact with skin and the mucous membranes of the eyes, nose and other sites of the respiratory tract. The irritant properties increase with decreasing water of hydration due to the exothermic effect of hydration. The TLV-TWA of 1 mg/m<sup>3</sup> for the anhydrous and pentahydrate forms and 5 mg/m<sup>3</sup> for the decahydrate is thought to be protective against the acute irritant effects.

WATER:

- No exposure limits set by NOHSC or ACGIH.

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# BUFFER SOLUTION PH9 (BORATE)

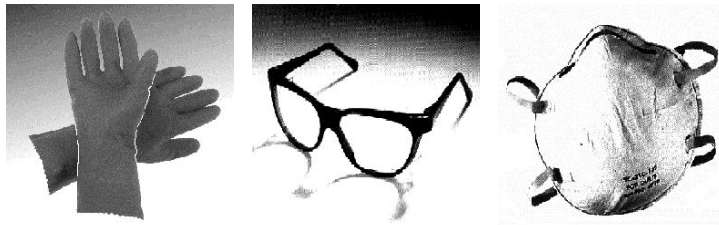
GHS Safety Data Sheet

Version No:2.0

Page 6 of 12

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### PERSONAL PROTECTION



#### EYE

- No special equipment for minor exposure i.e. when handling small quantities.
- OTHERWISE:
- Safety glasses with side shields.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

#### HANDS/FEET

- No special equipment needed when handling small quantities.
- OTHERWISE: Wear general protective gloves, eg. light weight rubber gloves.
- Wear protective gloves, eg. PVC.

#### OTHER

- No special equipment needed when handling small quantities.
- Eyewash unit.

#### RESPIRATOR

- Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

| Breathing Zone Level<br>ppm (volume) | Maximum Protection<br>Factor | Half- face Respirator | Full- Face Respirator |
|--------------------------------------|------------------------------|-----------------------|-----------------------|
| 1000                                 | 10                           | - AUS P               | -                     |
| 1000                                 | 50                           | -                     | - AUS P               |
| 5000                                 | 50                           | Airline *             | -                     |
| 5000                                 | 100                          | -                     | - 2 P                 |
| 10000                                | 100                          | -                     | - 3 P                 |
|                                      | 100+                         |                       | Airline**             |

\* - Continuous Flow \*\* - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult your Occupational Health and Safety Advisor.

continued...

# BUFFER SOLUTION PH9 (BORATE)

GHS Safety Data Sheet

Version No :2.0

Page 7 of 12

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### ENGINEERING CONTROLS

- None required when handling small quantities.
- General exhaust is adequate under normal operating conditions.

## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

### APPEARANCE

Colourless or turquoise liquid; mixes with water.

### PHYSICAL PROPERTIES

Liquid.

Mixes with water.

|                                 |               |                           |                |
|---------------------------------|---------------|---------------------------|----------------|
| State                           | Liquid        | Molecular Weight          | Not applicable |
| Melting Range (°C)              | Not available | Boiling Range (°C)        | Not available  |
| Solubility in water (g/L)       | Miscible      | Flash Point (°C)          | Not applicable |
| pH (1% solution)                | Not available | Decomposition Temp (°C)   | Not available  |
| pH (as supplied)                | 9.2           | Autoignition Temp (°C)    | Not applicable |
| Vapour Pressure (kPa)           | Not available | Upper Explosive Limit (%) | Not applicable |
| Specific Gravity (water=1)      | Not available | Lower Explosive Limit (%) | Not applicable |
| Relative Vapour Density (air=1) | Not available | Volatile Component (%vol) | Not available  |
| Evaporation Rate                | Not available |                           |                |

## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

### CONDITIONS CONTRIBUTING TO INSTABILITY

- Product is considered stable and hazardous polymerisation will not occur.
- For incompatible materials - refer to Section 7 - Handling and Storage.*

## Section 11 - TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

- Although ingestion is not thought to produce harmful effects (as classified under EC Directives), the material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.
- Considered an unlikely route of entry in commercial/industrial environments.
- Ingestion may result in nausea, abdominal irritation, pain and vomiting.

##### EYE

- Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

continued...

# BUFFER SOLUTION PH9 (BORATE)

GHS Safety Data Sheet

Version No:2.0

Page 8 of 12

## Section 11 - TOXICOLOGICAL INFORMATION

### SKIN

■ The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

### INHALED

■ The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

■ Not normally a hazard due to non-volatile nature of product.

### CHRONIC HEALTH EFFECTS

■ Ample evidence exists from experimentation that reduced human fertility is directly caused by exposure to the material.

■ Ample evidence exists, from results in experimentation, that developmental disorders are directly caused by human exposure to the material.

■ Primary route of exposure is usually by skin contact/eye contact.

As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

### TOXICITY AND IRRITATION

■ Not available. Refer to individual constituents.

#### SODIUM BORATE, DECAHYDRATE:

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

#### TOXICITY

Dermal (rabbit) LD50: >10, 000 mg/kg

Inhalation (rat) LC50: >2.0 mg/L

Oral (man) LDLo: 709 mg/kg

Oral (rat) LD50: 2660 mg/kg

■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.

Oral (rat) LD50: 4500-5000 mg/kg

Eyes (rabbit) (-) Mild

[Orica BORAX-Europe]

Reproductive effector in rats

Mutagenic towards bacteria

#### WATER:

■ No significant acute toxicological data identified in literature search.

continued...

# BUFFER SOLUTION PH9 (BORATE)

GHS Safety Data Sheet

Version No:2.0

Page 9 of 12

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## Section 12 - ECOLOGICAL INFORMATION

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Refer to data for ingredients, which follows:

### SODIUM BORATE, DECAHYDRATE:

■ Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air. Once released to surface waters and moist soils their fate depends on solubility and dissociation in water. Environmental processes (such as oxidation and the presence of acids or bases) may transform insoluble metals to more soluble ionic forms. Microbiological processes may also transform insoluble metals to more soluble forms. Such ionic species may bind to dissolved ligands or sorb to solid particles in aquatic or aqueous media. A significant proportion of dissolved/ sorbed metals will end up in sediments through the settling of suspended particles. The remaining metal ions can then be taken up by aquatic organisms.

When released to dry soil most metals will exhibit limited mobility and remain in the upper layer; some will leach locally into ground water and/ or surface water ecosystems when soaked by rain or melt ice.

Environmental processes may also be important in changing solubilities.

Even though many metals show few toxic effects at physiological pHs, transformation may introduce new or magnified effects.

A metal ion is considered infinitely persistent because it cannot degrade further.

The current state of science does not allow for an unambiguous interpretation of various measures of bioaccumulation.

The counter-ion may also create health and environmental concerns once isolated from the metal. Under normal physiological conditions the counter-ion may be essentially insoluble and may not be bioavailable.

Environmental processes may enhance bioavailability.

■ For boron and borates:

Environmental fate:

Boron is generally found in nature bound to oxygen and is never found as the free element. Atmospheric boron may be in the form of particulate matter or aerosols as borides, boron oxides, borates, boranes, organoboron compounds, trihalide boron compounds, or borazines. Borates are relatively soluble in water, and will probably be removed from the atmosphere by precipitation and dry deposition. The half-life of airborne particles is usually on the order of days, depending on the size of the particle and atmospheric conditions. Boron readily hydrolyses in water to form the electrically neutral, weak monobasic acid boric acid ( $H_3BO_3$ ) and the monovalent ion,  $B(OH)_4^-$ . In concentrated solutions, boron may polymerise, leading to the formation of complex and diverse molecular arrangements. Because most environmentally relevant boron minerals are highly soluble in water, it is unlikely that mineral equilibria will control the fate of boron in water. Boron was found to not be significantly removed during the conventional treatment of waste water. Boron may, however, be co-precipitated with aluminum, silicon, or iron to form hydroxyborate compounds on the surfaces of minerals.

Waterborne boron may be adsorbed by soils and sediments. Adsorption-desorption reactions are expected to be the only significant mechanism that will influence the fate of boron in water. The extent of boron adsorption depends on the pH of the water and the chemical composition of the soil. The greatest adsorption is generally observed at pH 7.5-9.0. the single most important property of soil that will influence the mobility of boron is the abundance of amorphous aluminum oxide. The extent of boron adsorption has also been attributed to the levels of iron oxide, and to a lesser extent, the organic matter present in the soil, although other studies found that the amount of organic matter present was not important. The adsorption of boron may not be reversible in some soils. The lack of reversibility may be the result of solid-phase formation on mineral surfaces and/or the slow release of boron by diffusion from the interior of clay minerals.

It is unlikely that boron is bioconcentrated significantly by organisms from water. A bioconcentration factor (BCF) relates the concentration of a chemical in the tissues of aquatic and terrestrial animals or plants to the concentration of the chemical in water or soil. The BCFs of boron in marine and freshwater plants, fish, and invertebrates were estimated to be <100. Experimentally measured BCFs for fish have ranged from 52 to 198. These BCFs suggest that boron is not significantly bioconcentrated.

As an element, boron itself cannot be degraded in the environment; however, it may undergo various reactions that change the form of boron (e.g., precipitation, polymerization, and acid-base reactions) depending on conditions such as its concentration in water and pH. In nature, boron is generally found in its oxygenated form. In aqueous solution, boron is normally present as boric acid and borate ions, with the dominant form of inorganic boron in natural aqueous systems as undissociated boric acid. Boric acid acts as an electron acceptor in aqueous solution, accepting an hydroxide ion from water to form  $B(OH)_4^-$ -ion. In dilute solution,

continued...

# BUFFER SOLUTION PH9 (BORATE)

GHS Safety Data Sheet

Version No:2.0

Page 10 of 12

## Section 12 - ECOLOGICAL INFORMATION

the favored form of boron is  $B(OH)_4$ . In more concentrated solutions ( $>0.1$  M boric acid) and at neutral to alkaline pH (6– 11), polymeric species are formed (e.g.,  $B_3O_3(OH)_4^-$ ,  $B_5O_6(OH)_4^-$ ,  $B_3O_3(OH)_5^{2-}$ , and  $B_4O_5(OH)_4^{2-}$ ). Most boron compounds are transformed to borates in soil due to the presence of moisture. Borates themselves are not further degraded in soil. However, borates can exist in a variety of forms in soil. Borates are removed from soils by water leaching and by assimilation by plants.

The most appreciable boron exposure to the general population is likely to be ingestion of food and to a lesser extent in water. As boron is a natural component of the environment, individuals will have some exposure from foods and drinking water.

Boron-containing salts (borates) are ubiquitous in the environment. Surface soil, unpolluted waterways and seawater all typically contain significant amounts of boron as borate. Boron is an essential micronutrient for healthy growth of plants, however, it can be harmful to boron sensitive plants in higher quantities. In some areas such as the American Southwest, boron occurs naturally in surface waters in concentrations that have been shown to be toxic to commercially important plants.

Based on the collected information regarding aquatic toxicity, boron is not regarded as dangerous to aquatic organisms. The concentration in treated municipal waste water is a factor 100 lower than the NOEC-value for *Daphnia magna*.

No quality criteria exist for the concentration of boron in soil and compost. Boron is added to farmland when sewage sludge is applied as a soil improving agent, but there is not sufficient data to evaluate its effect on soil organisms. Being an essential micro-nutrient, no adverse effects of boron are expected at low concentrations.

### Ecotoxicity:

In aquatic environments low concentrations of borates generally promote the growth of algae, whereas higher concentrations inhibited algal growth. In a growth inhibition test with *Scenedesmus subspicatus*, an  $EC_{50}$  value of 34 mg B/l was determined. Boric acid toxicity in *Daphnia* 48 h- $LC_{50}$  (static test) was found to be 95 mg B/l. In a separate study it was concluded that chronic effects of boron to *Daphnia* may occur at a concentration of  $> 10$  mg/l.

The toxicity of boron in fish is often higher in soft water than in hard water. The acute toxicity of boron towards *Danio rerio* (96 h- $LC_{50}$ ) has been determined to 14.2 mg B/l. In a fish early life stage test with rainbow trout NOEC levels of boron have been determined in the range between 0.009 and 0.103 mg B/l, whereas the  $EC_{50}$  ranged from 27 to 100 mg B/l dependent on the water hardness.

■ DO NOT discharge into sewer or waterways.

For sodium tetraborate:

### Algal Toxicity:

$EC_{10}$ : 24 mgB/L/96 Hr (Green algae, *Scenedesmus subspicatus*) B = boron

### Invertebrate Toxicity:

$LC_{50}$ : 242 mgB/L/24Hr (Daphnids, *Daphnia magna* Straus)

### Fish Toxicity:

Sea water-  $LC_{50}$ : 74 mgB/L/96Hr (Dab, *Limanda limanda*)

Fresh water-  $LC_{50}$ : 88 mgB/L/24day

$LC_{50}$ : 54 mgB/L/32day (Rainbow trout, *Salmo gairdneri* embryo-larval stage)

$LC_{50}$ : 65 mgB/L/7day

$LC_{50}$ : 71 mgB/L/3day (Goldfish, *Carassius auratus* embryo-larval stage)

The product decomposes in the environment to natural borate. The product is soluble in water and leachable through normal soil. [Orica Borax Europe Ltd 02/96]

### Ecotoxicity

| Ingredient | Persistence:<br>Water/Soil | Persistence: Air | Bioaccumulation | Mobility |
|------------|----------------------------|------------------|-----------------|----------|
| water      | LOW                        |                  | LOW             | HIGH     |

continued...

# BUFFER SOLUTION PH9 (BORATE)

GHS Safety Data Sheet

Version No:2.0  
Page 11 of 12

## Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
  - Consult State Land Waste Management Authority for disposal.
  - Bury residue in an authorised landfill.
  - Recycle containers if possible, or dispose of in an authorised landfill.
- May be disposed of as an inorganic salt:- Cover with soda ash, mix and scoop into a large beaker of water. Neutralize with 6M HCl and dispose with a large excess of water. [Ajax]

## Section 14 - TRANSPORTATION INFORMATION

### HAZCHEM:

☐ None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG

## Section 15 - REGULATORY INFORMATION

### REGULATIONS

Regulations for ingredients

**sodium borate, decahydrate (CAS: 1303-96-4,1344-90-7,12447-40-4,61028-24-8) is found on the following regulatory lists;**

"Australia Hazardous Substances","Australia High Volume Industrial Chemical List (HVICL)","Australia Inventory of Chemical Substances (AICS)","OECD Representative List of High Production Volume (HPV) Chemicals"

**water (CAS: 7732-18-5) is found on the following regulatory lists;**

"Australia Inventory of Chemical Substances (AICS)","IMO IBC Code Chapter 18: List of products to which the Code does not apply","OECD Representative List of High Production Volume (HPV) Chemicals"

**No data for buffer solution pH9 (borate) (CW: 15071)**

## Section 16 - OTHER INFORMATION

### INGREDIENTS WITH MULTIPLE CAS NUMBERS

| Ingredient Name            | CAS                                                  |
|----------------------------|------------------------------------------------------|
| sodium borate, decahydrate | 1303- 96- 4, 1344- 90- 7, 12447- 40- 4, 61028- 24- 8 |

### EXPOSURE STANDARD FOR MIXTURES

■ "Worst Case" computer-aided prediction of spray/ mist or fume/ dust components and concentration:

- Composite Exposure Standard for Mixture (TWA) :100 mg/m<sup>3</sup>.
- Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by using available literature references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors

continued...

# BUFFER SOLUTION PH9 (BORATE)

GHS Safety Data Sheet

Version No:2.0

Page 12 of 12

## Section 16 - OTHER INFORMATION

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determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue date: 16-June 2018