

# SAFETY DATA SHEET

10x PHOSPHATE BUFFERED SALINE

## Section 1. Identification

**Product name** : 10x PHOSPHATE BUFFERED SALINE  
**Other means of identification** : R7009 STICKS  
**Product type** : Liquid.  
**Product part number** : R5020  
**Kit name** : BSA COATED MEMBRANE  
  
**Kit part number** : R5014  
**Validation date** : 05/05/2021

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

**Product use** : For R&D use only.  
**Area of application** : Professional applications.


**Manufacturer** : MOLECULAR DEVICES, LLC  
3860 N First Street  
San Jose, CA 95134  
USA

**e-mail address of person responsible for this SDS** : msdsinquiry@moldev.com

**Emergency telephone number (with hours of operation)** : CHEMTREC (24 hours): 1-800-424-9300 (USA/Canada),  
+1 703-527-3887 (Outside USA/Canada)

## Section 2. Hazards identification

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

**Classification of the substance or mixture** :  H319 EYE IRRITATION - Category 2A

### GHS label elements

**Hazard pictograms** :



**Signal word** : Warning

**Hazard statements** : H319 - Causes serious eye irritation.

### Precautionary statements

**Date of issue/Date of revision** : 05/05/2021 **Date of previous issue** : 02/21/2018 **Version** : 2.01 1/12

## Section 2. Hazards identification

|   |   |
|---|---|
| <b>Prevention</b>                       | : P280 - Wear eye or face protection.<br>P264 - Wash thoroughly after handling.   |
| <b>Response</b>                         | : P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.<br>P337 + P313 - If eye irritation persists: Get medical advice or attention. |
| <b>Storage</b>                          | : Not applicable.   |
| <b>Disposal</b>                         | : Not applicable.   |
| <b>Hazards not otherwise classified</b> | : None known.   |

## Section 3. Composition/information on ingredients

|                                      |                |
|--------------------------------------|----------------|
| <b>Substance/mixture</b>             | : Mixture      |
| <b>Other means of identification</b> | : R7009 STICKS |

| Ingredient name                 | Other names     | %   | CAS number |
|---------------------------------|-----------------|-----|------------|
| Sodium chloride                 | Sodium chloride | ≤10 | 7647-14-5  |
| disodium hydrogenorthophosphate | -               | ≤5  | 7558-79-4  |

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

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

## Section 4. First aid measures

### Description of necessary first aid measures

|                     |   |
|---------------------|---|
| <b>Eye contact</b>  | : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.   |
| <b>Inhalation</b>   | : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.  |
| <b>Skin contact</b> | : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.   |
| <b>Ingestion</b>    | : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. |

## Section 4. First aid measures

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

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

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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** : Do not use water jet.

**Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
phosphorus oxides  
halogenated compounds  
metal oxide/oxides

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## 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** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- 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** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

- 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** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

| Ingredient name                 | Exposure limits |
|---------------------------------|-----------------|
| sodium chloride                 | None.           |
| disodium hydrogenorthophosphate | None.           |

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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

### Individual protection measures

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

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

#### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**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

### Appearance

|   |                   |
|---|-------------------|
| <b>Physical state</b>                               | : Liquid.         |
| <b>Color</b>  | : Not available.  |
| <b>Odor</b>   | : Not available.  |
| <b>Odor threshold</b>                               | : Not available.  |
| <b>pH</b>   | : Not available.  |
| <b>Melting point</b>                                | : Not available.  |
| <b>Boiling point</b>                                | : Not available.  |
| <b>Flash point</b>                                  | : Not available.  |
| <b>Evaporation rate</b>                             | : Not available.  |
| <b>Flammability (solid, gas)</b>                    | : Not applicable. |
| <b>Lower and upper explosive (flammable) limits</b> | : Not available.  |
| <b>Vapor pressure</b>                               | : Not available.  |
| <b>Vapor density</b>                                | : Not available.  |
| <b>Relative density</b>                             | : Not available.  |
| <b>Density</b>                                      | : Not available.  |
| <b>Solubility</b>                                   | : Not available.  |
| <b>Partition coefficient: n-octanol/water</b>       | : Not available.  |
| <b>Auto-ignition temperature</b>                    | : Not available.  |
| <b>Decomposition temperature</b>                    | : Not available.  |
| <b>SADT</b>   | : Not available.  |
| <b>Viscosity</b>                                    | : Not available.  |
| <b>Flow time (ISO 2431)</b>                         | : Not available.  |

## 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>                 | : The product is stable.  |
| <b>Possibility of hazardous reactions</b> | : Under normal conditions of storage and use, hazardous reactions will not occur.<br>Under normal conditions of storage and use, hazardous polymerization will not occur. |
| <b>Conditions to avoid</b>                | : No specific data.   |
| <b>Incompatible materials</b>             | : No specific data.   |
| <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                               | Result      | Species               | Dose        | Exposure |
|---|-------------|-----------------------|-------------|----------|
| sodium chloride<br>disodium<br>hydrogenorthophosphate | LD50 Oral   | Rat                   | 3000 mg/kg  | -        |
|   | LD50 Dermal | Rat - Male,<br>Female | >2000 mg/kg | -        |
|   | LD50 Oral   | Rat                   | 17000 mg/kg | -        |

#### Irritation/Corrosion

| Product/ingredient name   | Result                   | Species | Score | Exposure           | Observation |
|---|--------------------------|---------|-------|--------------------|-------------|
| sodium chloride<br><br><br><br>disodium<br>hydrogenorthophosphate | Eyes - Moderate irritant | Rabbit  | -     | 24 hours 100<br>mg | -           |
|   | Eyes - Moderate irritant | Rabbit  | -     | 10 mg              | -           |
|   | Skin - Mild irritant     | Rabbit  | -     | 24 hours 500<br>mg | -           |
|   | Eyes - Mild irritant     | Rabbit  | -     | 24 hours 500<br>mg | -           |
|   | Skin - Mild irritant     | Rabbit  | -     | 24 hours 500<br>mg | -           |
|   |                          |         |       |                    |             |

#### Sensitization

Not available.

#### Mutagenicity

**Conclusion/Summary** : Not available.

#### Carcinogenicity

**Conclusion/Summary** : Not available.

#### Reproductive toxicity

**Conclusion/Summary** : Not available.

#### Teratogenicity

**Conclusion/Summary** : Not available.

#### Specific target organ toxicity (single exposure)

Not available.

#### Specific target organ toxicity (repeated exposure)

Not available.

#### Aspiration hazard

Not available.

**Information on the likely routes of exposure** : Routes of entry anticipated: Oral, Dermal, Inhalation.

#### Potential acute health effects

**Eye contact** : Causes serious eye irritation.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

## Section 11. Toxicological information

### Symptoms related to the physical, chemical and toxicological characteristics

|                     |  |
|---------------------|--|
| <b>Eye contact</b>  | : Adverse symptoms may include the following:<br>pain or irritation<br>watering<br>redness |
| <b>Inhalation</b>   | : No specific data.  |
| <b>Skin contact</b> | : No specific data.  |
| <b>Ingestion</b>    | : No specific data.  |

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

#### Short term exposure

|                                    |                  |
|------------------------------------|------------------|
| <b>Potential immediate effects</b> | : Not available. |
| <b>Potential delayed effects</b>   | : Not available. |

#### Long term exposure

|                                    |                  |
|------------------------------------|------------------|
| <b>Potential immediate effects</b> | : Not available. |
| <b>Potential delayed effects</b>   | : Not available. |

#### Potential chronic health effects

|                              |   |
|------------------------------|---|
| <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> | : <input checked="" type="checkbox"/> No known significant effects or critical hazards. |

### 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) |
|---|--------------|----------------|--------------------------|----------------------------|-------------------------------------|
| <input checked="" type="checkbox"/> 10x PHOSPHATE BUFFERED SALINE | 34207.5      | 50301.8        | N/A                      | N/A                        | N/A                                 |
| sodium chloride   | 3000         | N/A            | N/A                      | N/A                        | N/A                                 |
| disodium hydrogenorthophosphate                                   | 17000        | 2500           | N/A                      | N/A                        | N/A                                 |

## Section 12. Ecological information

### Toxicity



## Section 12. Ecological information

| Product/ingredient name                                | Result                              | Species   | Exposure |
|--|-------------------------------------|---|----------|
| Sodium chloride<br><br>disodium hydrogenorthophosphate | Acute EC50 2430000 µg/l Fresh water | Algae - Navicula seminulum  | 96 hours |
|  | Acute EC50 519.6 mg/l Fresh water   | Crustaceans - Cypris subglobosa   | 48 hours |
|  | Acute EC50 402.6 mg/l Fresh water   | Daphnia - Daphnia magna   | 48 hours |
|  | Acute IC50 6.87 g/L Fresh water     | Aquatic plants - Lemna minor  | 96 hours |
|  | Acute LC50 1000000 µg/l Fresh water | Fish - Morone saxatilis - Larvae  | 96 hours |
|  | Chronic LC10 781 mg/l Fresh water   | Crustaceans - Hyalella azteca - Juvenile (Fledgling, Hatchling, Weanling) | 3 weeks  |
|  | Chronic NOEC 6 g/L Fresh water      | Aquatic plants - Lemna minor  | 96 hours |
|  | Chronic NOEC 0.314 g/L Fresh water  | Daphnia - Daphnia pulex   | 21 days  |
|  | Chronic NOEC 100 mg/l Fresh water   | Fish - Gambusia holbrooki - Adult   | 8 weeks  |
|  | Acute EC50 >100 mg/l Fresh water    | Algae   | 72 hours |
|  | Acute LC50 3580000 µg/l Fresh water | Daphnia - Daphnia magna   | 48 hours |
|  | Acute LC50 >100 mg/l Fresh water    | Fish  | 96 hours |
| Acute NOEC >100 mg/l Fresh water                       | Algae                               | 72 hours  |          |
| Acute NOEC 100 mg/l Fresh water                        | Fish                                | 96 hours  |          |

**Conclusion/Summary** : Not available.

### Persistence and degradability

Not available.

### Bioaccumulative potential

| Product/ingredient name       | LogP <sub>ow</sub> | BCF | Potential |
|-------------------------------|--------------------|-----|-----------|
| Sodium hydrogenorthophosphate | -5.8               | -   | low       |

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**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. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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

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

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

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

## Section 15. Regulatory information

**U.S. Federal regulations** : **TSCA 8(a) CDR Exempt/Partial exemption:** Not determined  
**United States inventory (TSCA 8b):** All components are active or exempted.  
**Clean Water Act (CWA) 311:** disodium hydrogenorthophosphate

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

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : EYE IRRITATION - Category 2A

#### Composition/information on ingredients

## Section 15. Regulatory information

| Name                   | %   | Classification               |
|------------------------|-----|------------------------------|
| Sodium chloride        | ≤10 | EYE IRRITATION - Category 2A |
| disodium               | ≤5  | EYE IRRITATION - Category 2B |
| hydrogenorthophosphate |     |                              |

### SARA 313

Not applicable.

### State regulations

**Massachusetts** : The following components are listed: PHOSPHORIC ACID, DISODIUM SALT; SODIUM PHOSPHATE, DIBASIC

**New York** : The following components are listed: Sodium phosphate, dibasic

**New Jersey** : The following components are listed: SODIUM PHOSPHATE, DIBASIC; PHOSPHORIC ACID, DISODIUM SALT

**Pennsylvania** : The following components are listed: PHOSPHORIC ACID, DISODIUM SALT

### California Prop. 65

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

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

## Section 16. Other information

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

|                  |   |   |
|------------------|---|---|
| Health           | / | 2 |
| Flammability     |   | 0 |
| Physical hazards |   | 0 |
|                  |   |   |

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

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

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

## Section 16. Other information



### Procedure used to derive the classification

| Classification               | Justification      |
|------------------------------|--------------------|
| EYE IRRITATION - Category 2A | Calculation method |

### History

**Date of issue/Date of revision** : 05/05/2021

**Date of previous issue** : 02/21/2018

**Version** : 2.01

**Prepared by** : Sphera Solutions

### Key to abbreviations

: ATE = Acute Toxicity Estimate  
 AMP = Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 N/A = Not available  
 UN = United Nations

### References

: HCS (U.S.A.)- Hazard Communication Standard  
 International transport regulations

Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.