

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product Identifiers

Product Name: Recombinant Human BMP-4  
*E. coli*-expressed  
 Catalog Number: 314-BPE  
 Components: Acetonitrile TFA - Liquid  
 Acetonitrile TFA - Lyophilized

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

Identified Uses:

### 1.3 Details of the supplier of the safety data sheet

|                 |                                                                                             |                |                                                                                      |
|-----------------|---------------------------------------------------------------------------------------------|----------------|--------------------------------------------------------------------------------------|
| Company:        | R&D Systems, Inc. a Bio-Techne Brand<br>614 McKinley Place NE<br>Minneapolis, MN 55413, USA | Telephone:     | 1-800-343-7475                                                                       |
|                 |                                                                                             | Fax:           | 1-612-656-4400                                                                       |
|                 |                                                                                             | Internet:      | <a href="http://www.rndsystems.com">www.rndsystems.com</a>                           |
|                 |                                                                                             | Email address: | <a href="mailto:info@bio-techne.com">info@bio-techne.com</a>                         |
| Canada:         | 21 Canmotor Ave<br>Toronto, ON M8Z 4E6                                                      | Telephone:     | 1-855-668-8722                                                                       |
|                 |                                                                                             | Fax:           | 902-827-6402                                                                         |
|                 |                                                                                             | Email address: | <a href="mailto:Canada.inquiries@bio-techne.com">Canada.inquiries@bio-techne.com</a> |
| United Kingdom: | 19 Barton Lane<br>Abingdon Science Park<br>Abingdon, OX14 3NB                               | Telephone:     | 44 (0)1235 529449                                                                    |
|                 |                                                                                             | Fax:           | 44 (0)1235 533420                                                                    |
|                 |                                                                                             | Email address: | <a href="mailto:info.emea@bio-techne.com">info.emea@bio-techne.com</a>               |
| China:          | 1193 Changning Road<br>Unit 1901, Raffles Changning Office<br>Shanghai, China               | Telephone:     | 86-400-821-3475                                                                      |
|                 |                                                                                             | Fax:           | 76 (021)52371001                                                                     |
|                 |                                                                                             | Email address: | <a href="mailto:techsupport.cn@bio-techne.com">techsupport.cn@bio-techne.com</a>     |

### 1.4 Emergency Telephone Number

Emergency Tel: US: 612-379-2956 or 800-343-7475 / Europe: +44(0)1235-529449 / China 86-400-821-3475

## 2. HAZARDS IDENTIFICATION

See additional safety data sheets.

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

**1.1 Product Identifiers**

Product Name: Acetonitrile TFA - Liquid

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

Identified Uses:

**1.3 Details of the supplier of the safety data sheet**

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**1.4 Emergency Telephone Number**

For chemical emergency, spill, leak, fire, exposure, or accident call CHEMTREC day or night:  
Within U.S. 1-800-262-8200. Worldwide 1-703-741-5500. Bio-Techne Tel: US: 612-379-2956 or 800-343-7475 / Europe: +44(0)1235-529449 / China 86-400-821-3475

**2. HAZARDS IDENTIFICATION**

**2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008 [GHS/CLP] or 29 CFR 1910.1200 [OSHA]**

Liquide inflammable - Catégorie 2  
Toxicité aiguë en cas d'ingestion - Catégorie 4  
Toxicité aiguë en cas de contact avec la peau - Catégorie 4  
Irritation/lésions oculaires graves - Catégorie 2A  
Toxicité aiguë en cas d'inhalation - Catégorie 4

**2.2 Label Elements**

**Labeling according to Regulation (EC) No 1272/2008 [GHS/CLP]**

Pictogram(s):



Signal Word: Danger

Hazard Statement(s):

|      |                                          |
|------|------------------------------------------|
| H225 | Liquide et vapeurs très inflammables.    |
| H302 | Nocif en cas d'ingestion.                |
| H312 | Nocif par contact cutané.                |
| H319 | Provoque une sévère irritation des yeux. |
| H332 | Nocif par inhalation.                    |

Precautionary Statement(s):

|              |                                                                                                                                                                                                                      |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P210         | Tenir à l'écart de la chaleur, des surfaces chaudes, des étincelles, des flammes nues et de toute autre source d'ignition. Ne pas fumer.                                                                             |
| P233         | Maintenir le récipient fermé de manière étanche.                                                                                                                                                                     |
| P240         | Mise à la terre et liaison équipotentielle du récipient et du matériel de réception.                                                                                                                                 |
| P241         | Utiliser du matériel [électrique/de ventilation/d'éclairage/...] antidéflagrant.                                                                                                                                     |
| P242         | Utiliser des outils ne produisant pas d'étincelles.                                                                                                                                                                  |
| P243         | Prendre des mesures de précaution contre les décharges électrostatiques.                                                                                                                                             |
| P261         | Éviter de respirer les poussières / fumées / gaz / brouillards / vapeurs / aérosols.                                                                                                                                 |
| P264         | Se laver soigneusement les mains après manipulation                                                                                                                                                                  |
| P270         | Ne pas manger, boire ou fumer en manipulant ce produit.                                                                                                                                                              |
| P271         | Utiliser seulement dans des zones bien ventilées.                                                                                                                                                                    |
| P280         | Porter des gants de protection/des vêtements de protection/un équipement de protection des yeux/du visage.                                                                                                           |
| P301+312     | EN CAS D'INGESTION: Appeler un CENTRE ANTIPOISON/un médecin/.../ en cas de malaise.                                                                                                                                  |
| P302+352     | EN CAS DE CONTACT AVEC LA PEAU: laver abondamment à l'eau et au savon.                                                                                                                                               |
| P303+361+353 | EN CAS DE CONTACT AVEC LA PEAU (ou les cheveux): Enlever immédiatement tous les vêtements contaminés. Rincer la peau à l'eau [ou se doucher].                                                                        |
| P304+340     | EN CAS D'INHALATION: Transporter la personne à l'extérieur et la maintenir dans une position où elle peut confortablement respirer.                                                                                  |
| P305+351+338 | EN CAS DE CONTACT AVEC LES YEUX: Rincer avec précaution à l'eau pendant plusieurs minutes. Enlever les lentilles de contact si la victime en porte et si elles peuvent être facilement enlevées. Continuer à rincer. |
| P312         | Appeler un centre antipoison / un médecin si vous ne vous sentez pas bien.                                                                                                                                           |
| P321         | Traitement spécifique (voir Section 4).                                                                                                                                                                              |
| P330         | Rincer la bouche.                                                                                                                                                                                                    |
| P337+313     | Si l'irritation des yeux persiste: Demander un avis médical/Consulter un médecin.                                                                                                                                    |
| P362+P364    | Enlever les vêtements contaminés et les laver avant réutilisation.                                                                                                                                                   |
| P370+378     | En cas d'incendie: Utiliser des poudres chimiques sèches, du CO2 ou une mousse résistante à l'alcool.                                                                                                                |

## 2.3 Other Hazards - None

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Not applicable.

### 3.2 Mixtures

| Component             | CAS No.   | EC No.    | Index No. | Classification                   | Conc.     |
|-----------------------|-----------|-----------|-----------|----------------------------------|-----------|
| Acetonitrile Solution | 75-05-8   | 200-835-2 |           | H225 , H302 , H312 , H319 , H332 | 30 - 40 % |
| Trifluoroacetic Acid  | 76-05-1   | 200-929-3 |           |                                  | = 0.1 %   |
| Water                 | 7732-18-5 | 231-791-2 |           |                                  | 60 - 70 % |

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General Advice

Consult a doctor and show this safety data sheet.

#### If Inhaled

Acetonitrile Solution - Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

Trifluoroacetic Acid - Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

#### In Case of Skin Contact

Acetonitrile Solution - Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Trifluoroacetic Acid - Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.

#### In Case of Eye Contact

Acetonitrile Solution - Flush with copious amounts of water for at least 15 minutes. Remove contact lenses if present and easy to do so. If eye irritation persists, consult a doctor.

Trifluoroacetic Acid - Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

#### If Swallowed

Acetonitrile Solution - 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 necessary, call a poison center or physician. 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.

Trifluoroacetic Acid - Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

### 4.2 Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

### 4.3 Indication of immediate medical attention and special treatment needed

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

## 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing Media

#### Suitable extinguishing media

Acetonitrile Solution - Dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Trifluoroacetic Acid - Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Acetonitrile Solution - Use water spray to cool unopened containers.

## 5.2 Special hazards arising from the substance or mixture

Acetonitrile Solution - Emits toxic fumes under fire conditions. Carbon oxides.

Trifluoroacetic Acid - In combustion, may emit toxic fumes.

## 5.3 Precautions for fire-fighters

Acetonitrile Solution - Wear self contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Trifluoroacetic Acid - Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

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## 6. ACCIDENTIAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Acetonitrile Solution - Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate all personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Trifluoroacetic Acid - Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

### 6.2 Environmental precautions

Acetonitrile Solution - Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Trifluoroacetic Acid - Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Acetonitrile Solution - Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

Trifluoroacetic Acid - Cover spillage with suitable absorbent material. Hold all material for appropriate disposal as described under section 13 of SDS.

### 6.4 Reference to other sections

For required PPE see section 8. For disposal see section 13.

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## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Acetonitrile Solution - Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Trifluoroacetic Acid - Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

### 7.2 Conditions for safe storage, including any incompatibilities

Acetonitrile Solution - Store in cool, well-ventilated area. Keep cool. Keep container tightly sealed until ready to use.

Trifluoroacetic Acid - Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use.

### 7.3 Specific end uses

Not applicable.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Acetonitrile Solution - STEL: 102 mg/m<sup>3</sup> 15 minutes. TWA: 68 mg/m<sup>3</sup> 8 hours.

Trifluoroacetic Acid - Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Appropriate Engineering Controls

Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

#### Personal Protective Equipment

##### Eye / Face Protection

Use appropriate safety glasses.

##### Skin Protection

Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling.

##### Body Protection

Wear appropriate protective clothing.

##### Respiratory Protection

If risk assessment indicates necessary, use a suitable respirator.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

#### Appearance

Colorless liquid

#### Vapor Pressure

No data available.

|                                                       |                    |                                  |                    |
|-------------------------------------------------------|--------------------|----------------------------------|--------------------|
| <b>Odor</b>                                           | No data available. | <b>Vapor Density</b>             | No data available. |
| <b>Odor Threshold</b>                                 | No data available. | <b>Relative Density</b>          | No data available. |
| <b>pH</b>                                             | 2.0 ± 0.3          | <b>Solubility(ies)</b>           | Soluble            |
| <b>Melting / Freezing Point</b>                       | No data available. | <b>Partition Coefficient</b>     | No data available. |
| <b>Boiling Point / Range</b>                          | No data available. | <b>Autoignition Temperature</b>  | No data available. |
| <b>Flash Point</b>                                    | No data available. | <b>Decomposition Temperature</b> | No data available. |
| <b>Evaporation Rate</b>                               | No data available. | <b>Viscosity</b>                 | No data available. |
| <b>Flammability (Solid, Gas)</b>                      | No data available. | <b>Explosive Properties</b>      | No data available. |
| <b>Upper / Lower Flammability or Explosive Limits</b> | No data available. | <b>Oxidizing Properties</b>      | No data available. |

## 9.2 Other safety information

No data available.

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Stable under recommended transport or storage conditions.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

### 10.4 Conditions to avoid

Acetonitrile Solution - Avoid all sources of ignition (heat, spark, flame and direct sunlight.)  
Trifluoroacetic Acid - Heat, moisture.

### 10.5 Incompatible materials

Acetonitrile Solution - Strong acids/alkalis, strong oxidizing/reducing agents. May attack plastics, rubbers and coatings.  
Trifluoroacetic Acid - Strong acids/alkalis, strong oxidising/reducing agents.

### 10.6 Hazardous decomposition products

Acetonitrile Solution - In combustion may emit toxic fumes such as hydrogen cyanide (hydrocyanide acid), carbon dioxide, carbon monoxide or oxides of nitrogen.  
Trifluoroacetic Acid - Strong acids/alkalis, strong oxidising/reducing agents.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute Toxicity

Acetonitrile Solution - LD50 rat oral - Dose: 2460 mg/kg; Dermal: LD50 rabbit - Dose: >2000 mg/kg, Inhalation: LD50 rat - Dose: 12.68 mg/L with 8 hours of exposure  
Trifluoroacetic Acid - Classified based on available data

#### Skin Corrosion / Irritation

Acetonitrile Solution - Mild irritant rabbit  
Trifluoroacetic Acid - Classified based on available data

#### Serious Eye Damage / Irritation

Acetonitrile Solution - Moderate irritant rabbit  
Trifluoroacetic Acid - Classified based on available data

#### Respiratory or Skin Sensitization

Classified based on available data

#### Germ Cell Mutagenicity

Classified based on available data

#### Carcinogenicity

Classified based on available data

#### Reproductive Toxicity

Classified based on available data

#### Specific Target Organ Toxicity - Single Exposure

Classified based on available data

#### Specific Target Organ Toxicity - Repeated Exposure

Classified based on available data

#### Aspiration Hazard

Classified based on available data

#### Symptoms / Routes of Exposure

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.  
Ingestion: There may be irritation of the throat.  
Skin: Acetonitrile Solution - Adverse symptoms may include the following: irritation, redness.  
Trifluoroacetic Acid - There may be mild irritation at the site of contact.  
Eyes: Acetonitrile Solution - Adverse symptoms may include the following: pain or irritation, watering, redness.  
Trifluoroacetic Acid - There may be irritation and redness.

Delayed / Immediate      No known symptoms.  
Effects:

#### Additional Information

Classified based on available data

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## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Acetonitrile Solution - Acute LC50 3600000 µg/L Fresh water Daphnia - Daphnia magna - <24 hours. Acute LC50 >1500 mg/L Fresh water Fish - Pimephales promelas - Juvenile) - 0.2 to 0.5 g at 96 hours.  
Trifluoroacetic Acid - No data available.

### 12.2 Persistence and degradability

No data available.

### 12.3 Bioaccumulative potential

Acetonitrile Solution - Potential low.  
Trifluoroacetic Acid - No data available.

### 12.4 Mobility in soil

No data available.

### 12.5 Results of PBT and vPvB assessment

No data available.

### 12.6 Other adverse effects

No data available.

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Acetonitrile Solution - Dispose of waste in accordance to applicable national, regional, or local regulations.  
Trifluoroacetic Acid - Transfer to a suitable container and arrange for collection by specialized disposal company in accordance with national, regional, or local legislation.

#### Contaminated Packaging

Dispose of in a regulated landfill site or other method for hazardous or toxic wastes in accordance with national, regional, or local legislation.

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## 14. TRANSPORT INFORMATION

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID, DOT and IATA.

### 14.1 UN-Number

Acetonitrile Solution - UN1993  
Trifluoroacetic Acid - Does not meet the criteria for classification as hazardous for transport.

### 14.2 UN proper shipping name

Acetonitrile Solution - Flammable liquids, n.o.s.  
Trifluoroacetic Acid - Does not meet the criteria for classification as hazardous for transport.

### 14.3 Transport hazard class(es)

Acetonitrile Solution - 3  
Trifluoroacetic Acid - Does not meet the criteria for classification as hazardous for transport.

### 14.4 Packaging group

Acetonitrile Solution - II  
Trifluoroacetic Acid - Does not meet the criteria for classification as hazardous for transport.

### 14.5 Environmental hazards

Does not meet the criteria for classification as hazardous for transport.

### 14.6 Special precautions for users

Does not meet the criteria for classification as hazardous for transport.

#### Additional Transport Information

Does not meet the criteria for classification as hazardous for transport.

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## 15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

### 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

**TSCA (Toxic Substances Control Act):** Not applicable.

**SARA 313:** Not applicable.

**SARA 311/312:** Not applicable.

**CERCLA Reportable Quantity:** Not applicable.

**California Proposition 65:** Not applicable.

### 15.2 Chemical safety assessment

**16. OTHER INFORMATION**

**Further Information**

Copyright © 2023 R&D Systems, Inc. a Bio-Techne Brand

This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

End of safety data sheet

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product Identifiers

Product Name: Acetonitrile TFA - Lyophilized

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

Identified Uses:

### 1.3 Details of the supplier of the safety data sheet

|                 |                                                                                             |                |                                 |
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|                 |                                                                                             | Email address: | techsupport.cn@bio-techne.com   |

### 1.4 Emergency Telephone Number

Emergency Tel: US: 612-379-2956 or 800-343-7475 / Europe: +44(0)1235-529449 / China 86-400-821-3475

## 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

This substance does not meet the classification criteria of the EC Directives 67/548/EEC, 1999/45/EC, 1272/2008 [CLP], GHS or 29 CFR 1910.1200 [OSHA].

### 2.2 Label Elements

The product does not need to be labelled in accordance with EC directives or respective national laws.

### 2.3 Other Hazards - None

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Not applicable.

### 3.2 Mixtures

This product does not contain hazardous chemicals at concentrations of 1% or greater. This product is not known to contain carcinogens at concentrations of 0.1% or greater.

## 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General Advice

Consult a doctor and show this safety data sheet.

#### If Inhaled

Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

#### In Case of Skin Contact

Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.

#### In Case of Eye Contact

Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

#### If Swallowed

Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

### 4.2 Most important symptoms and effects, both acute and delayed

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

### 4.3 Indication of immediate medical attention and special treatment needed

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

## 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing Media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

In combustion, may emit toxic fumes.

### 5.3 Precautions for fire-fighters

Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

## 6. ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

### 6.2 Environmental precautions

Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Cover spillage with suitable absorbent material. Hold all material for appropriate disposal as described under section 13 of SDS.

### 6.4 Reference to other sections

For required PPE see section 8. For disposal see section 13.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use.

### 7.3 Specific end uses

Not applicable.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Appropriate Engineering Controls

Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

#### Personal Protective Equipment

##### Eye / Face Protection

Use appropriate safety glasses.

##### Skin Protection

Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling.

##### Body Protection

Wear appropriate protective clothing.

##### Respiratory Protection

If risk assessment indicates necessary, use a suitable respirator.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

|                           |                                          |                           |                               |
|---------------------------|------------------------------------------|---------------------------|-------------------------------|
| Appearance                | Lyophilized white powder or clear liquid | Vapor Pressure            | No data available.            |
| Odor                      | Little to none                           | Vapor Density             | No data available.            |
| Odor Threshold            | No data available.                       | Relative Density          | No data available.            |
| pH                        | No data available.                       | Solubility(ies)           | No data available.            |
| Melting / Freezing Point  | No data available.                       | Partition Coefficient     | No data available.            |
| Boiling Point / Range     | No data available.                       | Autoignition Temperature  | Product is not self igniting. |
| Flash Point               | No data available.                       | Decomposition Temperature | No data available.            |
| Evaporation Rate          | No data available.                       | Viscosity                 | No data available.            |
| Flammability (Solid, Gas) | No data available.                       | Explosive Properties      | No data available.            |

**Upper / Lower Flammability or Explosive Limits**

No data available.

**Oxidizing Properties**

No data available.

**9.2 Other safety information**

No data available.

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**10. STABILITY AND REACTIVITY****10.1 Reactivity**

Stable under recommended transport or storage conditions.

**10.2 Chemical stability**

Stable under recommended storage conditions.

**10.3 Possibility of hazardous reactions**

Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below.

**10.4 Conditions to avoid**

Heat, moisture.

**10.5 Incompatible materials**

Strong acids/alkalis, strong oxidising/reducing agents.

**10.6 Hazardous decomposition products**

Strong acids/alkalis, strong oxidising/reducing agents.

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**11. TOXICOLOGICAL INFORMATION****11.1 Information on toxicological effects****Acute Toxicity**

Classified based on available data

**Skin Corrosion / Irritation**

Classified based on available data

**Serious Eye Damage / Irritation**

Classified based on available data

**Respiratory or Skin Sensitization**

Classified based on available data

**Germ Cell Mutagenicity**

Classified based on available data

**Carcinogenicity**

Classified based on available data

**Reproductive Toxicity**

Classified based on available data

**Specific Target Organ Toxicity - Single Exposure**

Classified based on available data

**Specific Target Organ Toxicity - Repeated Exposure**

May cause eye burns.

**Aspiration Hazard**

Classified based on available data

**Symptoms / Routes of Exposure**

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest.

Ingestion: There may be irritation of the throat.

Skin: There may be mild irritation at the site of contact.

Eyes: May cause eye burns.

Delayed / Immediate  
Effects: No known symptoms.**Additional Information**

Classified based on available data

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

No data available.

**12.2 Persistence and degradability**

No data available.

**12.3 Bioaccumulative potential**

No data available.

**12.4 Mobility in soil**

No data available.

**12.5 Results of PBT and vPvB assessment**

No data available.

**12.6 Other adverse effects**

No data available.

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**13. DISPOSAL CONSIDERATIONS**

**13.1 Waste treatment methods**

**Product**

Transfer to a suitable container and arrange for collection by specialized disposal company in accordance with national, regional, or local legislation.

**Contaminated Packaging**

Dispose of in a regulated landfill site or other method for hazardous or toxic wastes in accordance with national, regional, or local legislation.

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**14. TRANSPORT INFORMATION**

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID, DOT and IATA.

**14.1 UN-Number**

Does not meet the criteria for classification as hazardous for transport.

**14.2 UN proper shipping name**

Does not meet the criteria for classification as hazardous for transport.

**14.3 Transport hazard class(es)**

Does not meet the criteria for classification as hazardous for transport.

**14.4 Packaging group**

Does not meet the criteria for classification as hazardous for transport.

**14.5 Environmental hazards**

Does not meet the criteria for classification as hazardous for transport.

**14.6 Special precautions for users**

Does not meet the criteria for classification as hazardous for transport.

**Additional Transport Information**

Does not meet the criteria for classification as hazardous for transport.

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**15. REGULATORY INFORMATION**

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010.

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**TSCA (Toxic Substances Control Act):** Not applicable.

**SARA 313:** Not applicable.

**SARA 311/312:** Not applicable.

**CERCLA Reportable Quantity:** Not applicable.

**California Proposition 65:**

**15.2 Chemical safety assessment**

A Chemical Safety Assessment has not been made for this product.

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**16. OTHER INFORMATION**

**Further Information**

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This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists.

End of safety data sheet