

**LudgerZyme Recombinant PNGase F Kit  
- LZ-rPNGaseF-kit**

Version: 2.1  
Date written: 25<sup>th</sup> July 2018  
Date reviewed: 3<sup>rd</sup> March 2021

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

|                        |   |
|------------------------|---|
| Product Name           | <b>Denaturation Solution (5% SDS, 400 mM Dithiothreitol)</b>                |
| Product Catalogue Name | <b>10X Glycoprotein Denaturing Buffer, LZ-10X-DENAT-01, LZ-10X-DENAT-50</b> |
| Company:               | Ludger Ltd<br>Culham Science Centre<br>Abingdon<br>Oxford OX14 3EB          |
| Telephone:             | 01865 408554  |
| Emergency Telephone:   | 01865 408554  |
| Email:                 | info@ludger.com   |

## **SECTION 2. HAZARDS IDENTIFICATION**

### **2.1 Classification of the substance or mixture**

**Classification according to Regulation (EC) No 1272/2008**

Chronic aquatic toxicity (Category 3), H412

### **2.2 Label elements**

**Product identifier**

**Hazard statements**

H412 - Harmful to aquatic life with long-lasting effects

### **2.3 Other hazard information**

Other hazards Harmful to aquatic life

## **SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

### **3.1 Substances**

Not applicable

### **3.2 Mixtures**

**Full text of H- and EUH-phrases: see section 16**

## **SECTION 4. FIRST-AID MEASURES**

### **4.1 Description of First Aid Measures**

#### **General advice**

Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove from exposure, and lie down. Do not breathe dust/fumes/gas/mist/vapours/spray.

#### **Eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

#### **Skin contact**

Wash skin with soap and water.

**Inhalation**

Remove to fresh air.

**Ingestion**

Clean your mouth with water and drink afterwards plenty of water.

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

No information available

**4.3 Indication of immediate medical attention and special treatment needed****Note to physicians**

Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES****5.1 Extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**

CAUTION: Use of water spray when fighting fire may be inefficient

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

No information available

**5.3 Advice for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures****Personal precautions**

Ensure adequate ventilation, especially in confined areas.

**For emergency responders**

Use personal protection recommended in Section 8.

**6.2 Environmental Precautions**

See Section 12 for additional Ecological Information.

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

Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**

Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. This material and its container must be disposed of as hazardous waste.

**SECTION 7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Handle following good industrial hygiene and safety practices.

**7.2 Conditions for safe storage, including any incompatibilities****Storage temperature**

Refer to [www.ludger.com](http://www.ludger.com) for specific information.

**Storage Conditions**

Keep/store only in the original container.

**Incompatible materials**

None known based on the information supplied

**7.3 Specific end uses****Risk management methods [RMM]**

The information required is contained in this Safety Data Sheet.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters**

**Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region-specific regulatory bodies

**Derived No Effect Level (DNEL)** No information available

**Predicted No Effect Concentration (PNEC)** No information available

**8.2 Exposure controls****Engineering controls**

Showers. Eyewash stations.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Wear safety glasses with side shields (or goggles).

**Skin and body protection**

Wear suitable protective clothing and gloves.

**Respiratory protection**

Use in well-ventilated areas.

**General hygiene considerations**

Handle following good industrial hygiene and safety practices.

**Environmental exposure controls**

See Section 12: ECOLOGICAL INFORMATION.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

|  |  |
|--|--|
| Appearance                                   | Liquid   |
| Colour                                       | Colourless   |
| Odour  | Mild   |
| Odour Threshold                              | No data available  |
| pH   | Refer to <a href="http://www.ludger.com">www.ludger.com</a> for specific information |
| Melting point/freezing point                 | No data available  |
| Initial boiling point and boiling range      | No data available  |
| Flash point                                  | No data available  |
| Evaporation rate                             | No data available  |
| Flammability (solid, gas)                    | No data available  |
| Upper/lower flammability or explosive limits | No data available  |
| Vapour pressure                              | No data available  |
| Vapour density                               | No data available  |
| Relative density                             | No data available  |
| Water solubility                             | Soluble  |
| Partition coefficient: n-octanol/water       | No data available  |
| Auto-ignition temperature                    | No data available  |
| Decomposition temperature                    | No data available  |
| Viscosity                                    | No data available  |
| Explosive properties                         | No data available  |
| Oxidizing properties                         | No data available  |

## 9.2 Other information

No further relevant information is available.

## SECTION 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of Hazardous Reactions

Can react briskly with oxidizers - the danger of explosion.

### 10.4 Conditions to avoid

Incompatible materials. Ignition sources. Heat.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

Thermal decomposition can lead to the release of irritating and toxic gases and vapours. Carbon monoxide. Carbon dioxide (CO<sub>2</sub>).

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Product information

The product does not present an acute toxicity hazard based on known or supplied information.

#### Inhalation

Avoid breathing vapours or mists. May irritate the respiratory tract.

#### Eye contact

Redness. May cause slight irritation.

#### Skin contact

Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking.

#### Ingestion

May cause drowsiness or dizziness. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Symptoms include a burning sensation, coughing, wheezing, shortness of breath, headache, nausea, and vomiting.

#### Unknown acute toxicity

11.2 % of the mixture consists of ingredient(s) of unknown toxicity

The following values are calculated based on Chapter 3.1 of the GHS document

|                                      |                 |
|--------------------------------------|-----------------|
| <b>ATEmix (oral)</b>                 | 25,760.00 mg/kg |
| <b>ATEmix (dermal)</b>               | 11,600.00 mg/kg |
| <b>ATEmix (inhalation-dust/mist)</b> | 19.50 mg/l      |
| <b>ATEmix (inhalation-vapour)</b>    | 78,000.00 mg/l  |

| Chemical Name          | Oral LD50            | Dermal LD50            | Inhalation LC50                      |
|------------------------|----------------------|------------------------|--------------------------------------|
| Water                  | > 90 mL/kg ( Rat )   | -                      | -                                    |
| Sodium Dodecyl Sulfate | = 1288 mg/kg ( Rat ) | = 580 mg/kg ( Rabbit ) | > 3900 mg/m <sup>3</sup> ( Rat ) 1 h |

**Skin corrosion/irritation**

Mild

|  |  |
|--|--|
| <b>Serious eye damage/eye irritation</b> | Mild   |
| <b>Sensitization</b>                     | Not applicable                               |
| <b>Germ cell mutagenicity</b>            | Not applicable                               |
| <b>Carcinogenicity</b>                   | No information available                     |
| <b>Reproductive toxicity</b>             | No information available                     |
| <b>Developmental toxicity</b>            | No information available                     |
| <b>Teratogenicity</b>                    | No information available                     |
| <b>STOT - single exposure</b>            | No information available                     |
| <b>STOT - repeated exposure</b>          | No information available                     |
| <b>Neurological effects</b>              | No information available                     |
| <b>Target organ effects</b>              | Kidneys, Respiratory system, Eyes, and Skin. |
| <b>Other adverse effects</b>             | No information available                     |
| <b>Symptoms</b>                          | No information available                     |
| <b>Aspiration hazard</b>                 | No information available                     |

## **SECTION 12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

#### **Ecotoxicity**

Harmful to aquatic life with long-lasting effects

6.2 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

### **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

## **SECTION 13. DISPOSAL CONSIDERATIONS**

### **13.1 Waste Treatment Methods**

#### **Relevant Information**

Keep out of drains, sewers, ditches and waterways.

#### **Waste from Residues/Unused Products**

Disposal should follow applicable regional, national and local laws and regulations. Send to a licensed recycler, reclaimer, or incinerator.

#### **Contaminated packaging**

Empty containers must be tripled and rinsed before disposal.

## **SECTION 14. TRANSPORT INFORMATION**

### **IMDG**

|                                  |               |
|----------------------------------|---------------|
| <b>14.1 UN/ID No</b>             | Not regulated |
| <b>14.2 Proper shipping name</b> | Not regulated |
| <b>14.3 Hazard class</b>         | Not regulated |
| <b>14.4 Packing group</b>        | Not regulated |

|   |                          |
|---|--------------------------|
| 14.5 Marine pollutant   | Not applicable           |
| 14.6 Special Provisions   | None                     |
| 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | No information available |

## RID

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special Provisions   | None           |

## ADR

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special Provisions   | None           |

## ICAO (air)

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special Provisions   | None           |

## IATA

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special Provisions   | None           |

## SECTION 15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

#### National Regulations

#### Occupational Illnesses (R-463-3, France)

#### European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

#### International Inventories

**All of the components in the product are on the following Inventory lists** TSCA (United States), Canada (DSL/NDSL), Europe (EINECS/ELINCS), Australia (AICS), China (IECSC), Philippines (PICCS).

|        |          |
|--------|----------|
| TSCA   | Complies |
| EINECS | Complies |
| ELINCS | -        |
| DSL    | Complies |
| NDSL   | Complies |
| PICCS  | Complies |

ENCS  
IECSC  
AICS  
KECL

-  
Complies  
Complies  
-

### 15.2 Chemical Safety Assessment

No information available

## SECTION 16. OTHER INFORMATION

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The information in this SDS is provided in good faith based on our knowledge as of the issue date (or subsequent revision date, if any), and is to be used only as a guide. This SDS does not constitute a guarantee (express or implied) of any kind and we make no warranties or merchantability or fitness for a particular purpose. This information relates only to the designated product as shipped and may not be valid if the product is used in combination with any other materials or is not used following our instructions. It is the responsibility of the buyer/user to ensure that its activities comply with all applicable governmental requirements. Since the conditions of use of the product are not under the control of Ludger, the buyer/user must determine the necessary conditions for the safe use of the product. Ludger will not be liable for any damages resulting from handling or contact with the product.

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

|                        |   |
|------------------------|---|
| Product Name(s)        | <b>10X Glyco Buffer (500mM sodium phosphate pH 7.5)<br/>10X Reaction Buffer (500mM sodium phosphate pH 7.5)</b> |
| Product Catalogue Name | <b>10X Glyco Buffer 2, LZ-10X-REACT-01, LZ-10X-REACT-50</b>   |
| Company:               | Ludger Ltd<br>Culham Science Centre<br>Abingdon<br>Oxford OX14 3EB  |
| Telephone:             | 01865 408554  |
| Emergency Telephone:   | 01865 408554  |
| Email:                 | info@ludger.com   |

**SECTION 2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****Regulation (EC) No 1272/2008**

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS].

**2.2 Label elements****Product identifier**

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

**Signal word**

None

**2.3 Other hazard information:**

None

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS****3.1 Substances**

Not applicable

**3.2 Mixtures**

**Full text of H- and EUH-phrases: see section 16**

**SECTION 4. FIRST-AID MEASURES****4.1 Description of First Aid Measures****General advice**

Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove from exposure, and lie down. Do not breathe dust/fumes/gas/mist/vapours/spray.

**Eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**Skin contact**

Wash skin with soap and water.



**Inhalation**

Remove to fresh air.

**Ingestion**

Clean your mouth with water and drink afterwards plenty of water.

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

No information available

**4.3 Indication of immediate medical attention and special treatment needed****Note to physicians**

Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES****5.1 Extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**

CAUTION: Use of water spray when fighting fire may be inefficient.

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

No information available

**5.3 Advice for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures****Personal precautions**

Ensure adequate ventilation, especially in confined areas.

**For emergency responders**

Use personal protection recommended in Section 8.

**6.2 Environmental Precautions**

See Section 12 for additional Ecological Information.

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

Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**

Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. This material and its container must be disposed of as hazardous waste.

**SECTION 7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Handle following good industrial hygiene and safety practices.

**7.2 Conditions for safe storage, including any incompatibilities****Storage temperature**

Refer to [www.ludger.com](http://www.ludger.com) for specific information.

**Storage Conditions**

Keep/store only in the original container.

**Incompatible materials**

None is known based on the information supplied.

### 7.3 Specific end uses

#### Risk management methods [RMM]

The information required is contained in this Safety Data Sheet.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

**Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region-specific regulatory bodies

**Derived No Effect Level (DNEL)** No information available

**Predicted No Effect Concentration (PNEC)** No information available

### 8.2 Exposure controls

#### Engineering controls

Showers. Eyewash stations.

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

##### Eye/face protection

Wear safety glasses with side shields (or goggles).

##### Skin and body protection

Wear suitable protective clothing and gloves.

##### Respiratory protection

Use in well-ventilated areas.

##### General hygiene considerations

Handle following good industrial hygiene and safety practices.

##### Environmental exposure controls

See Section 12: ECOLOGICAL INFORMATION.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

|  |  |
|--|--|
| Appearance                                   | Liquid   |
| Colour                                       | Colourless   |
| Odour  | Mild   |
| pH   | Refer to <a href="http://www.ludger.com">www.ludger.com</a> for specific information |
| Odour threshold                              | No data available  |
| Melting point/freezing point                 | No data available  |
| Initial boiling point and boiling range      | No data available  |
| Flash point                                  | No data available  |
| Evaporation rate                             | No data available  |
| Flammability (solid, gas)                    | No data available  |
| Upper/lower flammability or explosive limits | No data available  |
| Vapour pressure                              | No data available  |
| Vapour density                               | No data available  |
| Relative density                             | No data available  |
| Water solubility                             | Soluble  |
| Partition coefficient: n-octanol/water       | No data available  |
| Auto-ignition temperature                    | No data available  |
| Decomposition temperature                    | No data available  |
| Viscosity                                    | No data available  |
| Explosive properties                         | No data available  |
| Oxidizing properties                         | No data available  |

**9.2 Other information**

No further relevant information is available.

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

No data available.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of Hazardous Reactions**

Can react briskly with oxidizers - the danger of explosion.

**10.4 Conditions to avoid**

Incompatible materials. Ignition sources. Heat.

**10.5 Incompatible materials**

Strong oxidizing agents.

**10.6 Hazardous decomposition products**

Thermal decomposition can lead to the release of irritating and toxic gases and vapours. Carbon monoxide. Carbon dioxide (CO<sub>2</sub>).

**SECTION 11. TOXICOLOGICAL INFORMATION****11.1 Information on toxicological effects****Acute toxicity****Product information**

The product does not present an acute toxicity hazard based on known or supplied information.

**Inhalation**

Avoid breathing vapours or mists. May irritate the respiratory tract.

**Eye contact**

Redness. May cause slight irritation.

**Skin contact**

Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking.

**Ingestion**

May cause drowsiness or dizziness. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Symptoms include a burning sensation, coughing, wheezing, shortness of breath, headache, nausea, and vomiting.

**Unknown acute toxicity**

7.1 % of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on Chapter 3.1 of the GHS document mg/kg

**Skin corrosion/irritation**

Mild

**Serious eye damage/eye irritation**

Mild

**Sensitization**

Not applicable

**Germ cell mutagenicity**

Not applicable

**Carcinogenicity**

No information available

**Reproductive toxicity**

No information available

**Developmental toxicity**

No information available

**Teratogenicity**

No information available

**STOT - single exposure**

No information available

**STOT - repeated exposure**

No information available

|                              |  |
|------------------------------|--|
| <b>Neurological effects</b>  | No information available                     |
| <b>Target organ effects</b>  | Kidneys, Respiratory system, Eyes, and Skin. |
| <b>Other adverse effects</b> | No information available                     |
| <b>Symptoms</b>              | No information available                     |
| <b>Aspiration hazard</b>     | No information available                     |

## **SECTION 12. ECOLOGICAL INFORMATION**

### **12.1 Toxicity**

7.1 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

### **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**

PBT/vPvB assessment is not available as chemical safety assessment is not required/not conducted.

### **12.6 Other adverse effects**

No further relevant information is available.

## **SECTION 13. DISPOSAL CONSIDERATIONS**

### **13.1 Waste Treatment Methods**

#### **Relevant Information**

Keep out of drains, sewers, ditches and waterways.

#### **Waste from Residues/Unused Products**

Disposal should follow applicable regional, national and local laws and regulations. Send to a licensed recycler, reclaimer or incinerator.

#### **Contaminated packaging**

Empty containers must be triple-rinsed before disposal.

## **SECTION 14. TRANSPORT INFORMATION**

### **IMDG**

|  |                          |
|--|--------------------------|
| <b>14.1 UN/ID No</b>   | Not regulated            |
| <b>14.2 Proper shipping name</b>   | Not regulated            |
| <b>14.3 Hazard class</b>   | Not regulated            |
| <b>14.4 Packing group</b>  | Not regulated            |
| <b>14.5 Marine pollutant</b>   | Not applicable           |
| <b>14.6 Special Provisions</b>   | None                     |
| <b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b> | No information available |

### **RID**

|                                  |                |
|----------------------------------|----------------|
| <b>14.1 UN/ID No</b>             | Not regulated  |
| <b>14.2 Proper shipping name</b> | Not regulated  |
| <b>14.3 Hazard class</b>         | Not regulated  |
| <b>14.4 Packing group</b>        | Not regulated  |
| <b>14.5 Environmental hazard</b> | Not applicable |

## 14.6 Special Provisions

None

### ADR

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special Provisions   | None           |

### ICAO (air)

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special Provisions   | None           |

### IATA

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special Provisions   | None           |

## SECTION 15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

#### **National Regulations**

#### **Occupational Illnesses (R-463-3, France)**

#### **European Union**

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at Work

#### **International Inventories**

**All of the components in the product are on the following Inventory lists** TSCA (United States), Canada (DSL/NDSL), Europe (EINECS/ELINCS), Australia (AICS), South Korea (KECL), China (IECSC), Philippines (PICCS).

|               |          |
|---------------|----------|
| <b>TSCA</b>   | Complies |
| <b>EINECS</b> | Complies |
| <b>ELINCS</b> | -        |
| <b>DSL</b>    | Complies |
| <b>NDSL</b>   | Complies |
| <b>PICCS</b>  | Complies |
| <b>ENCS</b>   | -        |
| <b>IECSC</b>  | Complies |
| <b>AICS</b>   | Complies |
| <b>KECL</b>   | Complies |

### **15.2 Chemical Safety Assessment**

No information available.

**SECTION 16. OTHER INFORMATION**

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The information in this SDS is provided in good faith based on our knowledge as of the issue date (or subsequent revision date, if any), and is to be used only as a guide. This SDS does not constitute a guarantee (express or implied) of any kind, and we make no warranties for merchantability or fitness for a particular purpose. This information relates only to the designated product as shipped and may not be valid if the product is used in combination with any other materials or is not used following our instructions. It is the responsibility of the buyer/user to ensure that its activities comply with all applicable governmental requirements. Since the conditions of use of the product are not under the control of Ludger, the buyer/user must determine the necessary conditions for the safe use of the product. Ludger will not be liable for any damages resulting from handling or contact with the product.

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

Product Name **NP-40 10% solution**

Product Catalogue Name **NP-40 10% solution, LZ-NP40SOL-01, LZ-NP40SOL-50**

Company: Ludger Ltd  
Culham Science Centre  
Abingdon  
Oxford OX14 3EB

Telephone: 01865 408554

Emergency Telephone: 01865 408554

Email: info@ludger.com

**SECTION 2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****Regulation (EC) No 1272/2008**

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS].

**2.2 Label elements****Product identifier**

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS].

**Signal word**

None

**2.3 Other hazard information****SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS****3.1 Substances**

Not applicable

**3.2 Mixtures**

Full text of H- and EUH-phrases: see section 16.

**SECTION 4. FIRST-AID MEASURES****4.1 Description of First Aid Measures****General advice**

No hazards which require special first aid measures.

**Eye contact**

None under normal use conditions.

**Skin contact**

None under normal use conditions.

**Inhalation**

None under normal use conditions.

**Ingestion**

None under normal use conditions.

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

None known

**4.3 Indication of immediate medical attention and special treatment needed****Note to physicians**

Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES****5.1 Extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**

None

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

None in particular.

**5.3 Advice for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures****Personal precautions**

No information available.

**For emergency responders**

Use personal protection recommended in Section 8.

**6.2 Environmental Precautions**

See Section 12 for additional Ecological Information.

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

Not applicable.

**Methods for cleaning up**

Collect spillage.

**SECTION 7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Handle following good industrial hygiene and safety practices.

**7.2 Conditions for safe storage, including any incompatibilities****Storage temperature**

No information available.

**Storage Conditions**

Keep/store only in the original container.

**Incompatible materials**

None known based on the information supplied.

**7.3 Specific end uses****Risk management methods [RMM]**

The information required is contained in this Safety Data Sheet.



**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters**

**Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region-specific regulatory bodies

**Derived No Effect Level (DNEL)** No information available

**Predicted No Effect Concentration (PNEC)** No information available

**8.2 Exposure controls****Engineering controls**

Showers. Eyewash stations.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Wear safety glasses with side shields (or goggles).

**Skin and body protection**

Wear suitable protective clothing and gloves.

**Respiratory protection**

Not applicable.

**General hygiene considerations**

Handle following good industrial hygiene and safety practices.

**Environmental exposure controls**

See Section 12: ECOLOGICAL INFORMATION.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

|  |                   |
|--|-------------------|
| Appearance                                   | Liquid            |
| Colour                                       | Colourless        |
| Odour  | Mild              |
| Odour Threshold                              | No data available |
| pH   | Not applicable    |
| Melting point/freezing point                 | No data available |
| Initial boiling point and boiling range      | No data available |
| Flash point                                  | No data available |
| Evaporation rate                             | No data available |
| Flammability (solid, gas)                    | No data available |
| Upper/lower flammability or explosive limits | No data available |
| Vapour pressure                              | No data available |
| Vapour density                               | No data available |
| Relative density                             | No data available |
| Water solubility                             | Soluble           |
| Partition coefficient: n-octanol/water       | No data available |
| Auto-ignition temperature                    | No data available |
| Decomposition temperature                    | No data available |
| Viscosity                                    | No data available |
| Explosive properties                         | No data available |
| Oxidizing properties                         | No data available |

**9.2 Other information**

No further relevant information available.

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

No data available.

## 10.2 Chemical stability

Stable under normal conditions.

## 10.3 Possibility of Hazardous Reactions

None under normal processing.

## 10.4 Conditions to avoid

None known based on the information supplied.

## 10.5 Incompatible materials

None known based on the information supplied.

## 10.6 Hazardous decomposition products

None known based on the information supplied.

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Product information

The product does not present an acute toxicity hazard based on known or supplied information.

#### Inhalation

No known effect

#### Eye contact

No known effect based on the information supplied

#### Skin contact

No known hazard in contact with skin

#### Ingestion

No known effect based on the information supplied

#### Unknown acute toxicity

10 % of the mixture consists of ingredient(s) of unknown toxicity

| Chemical Name                     | Oral LD50                                 | Dermal LD50                                  | Inhalation LC50 |
|-----------------------------------|---|--|-----------------|
| Water                             | > 90 mL/kg ( Rat )                        | -  | -               |
| 4-Nonylphenyl-polyethylene glycol | = 1310 mg/kg ( Rat ) = 2590 mg/kg ( Rat ) | = 1780 µL/kg ( Rabbit ) = 2 mL/kg ( Rabbit ) | -               |

#### Skin corrosion/irritation

Not applicable

#### Serious eye damage/eye irritation

Not applicable

#### Sensitization

Not applicable

#### Germ cell mutagenicity

Not applicable

#### Carcinogenicity

No information available

#### Reproductive toxicity

No information available

#### Developmental toxicity

No information available

#### Teratogenicity

No information available

#### STOT - single exposure

No information available

#### STOT - repeated exposure

No information available

#### Neurological effects

No information available

#### Target organ effects

None known

#### Other adverse effects

No information available

#### Symptoms

No information available

#### Aspiration hazard

No information available

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

10 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

**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

**SECTION 13. DISPOSAL CONSIDERATIONS****13.1 Waste Treatment Methods****Waste from Residues/Unused Products**

Disposal should follow applicable regional, national and local laws and regulations. Send to a licensed recycler, reclaimer, or incinerator.

**Contaminated packaging**

Empty containers must be tripled and rinsed before disposal.

**SECTION 14. TRANSPORT INFORMATION****IMDG**

|  |                          |
|--|--------------------------|
| <b>14.1 UN/ID No</b>   | Not regulated            |
| <b>14.2 Proper shipping name</b>   | Not regulated            |
| <b>14.3 Hazard class</b>   | Not regulated            |
| <b>14.4 Packing group</b>  | Not regulated            |
| <b>14.5 Marine pollutant</b>   | Not applicable           |
| <b>14.6 Special Provisions</b>   | None                     |
| <b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b> | No information available |

**RID**

|                                  |                |
|----------------------------------|----------------|
| <b>14.1 UN/ID No</b>             | Not regulated  |
| <b>14.2 Proper shipping name</b> | Not regulated  |
| <b>14.3 Hazard class</b>         | Not regulated  |
| <b>14.4 Packing group</b>        | Not regulated  |
| <b>14.5 Environmental hazard</b> | Not applicable |
| <b>14.6 Special Provisions</b>   | None           |

**ADR**

|                                  |                |
|----------------------------------|----------------|
| <b>14.1 UN/ID No</b>             | Not regulated  |
| <b>14.2 Proper shipping name</b> | Not regulated  |
| <b>14.3 Hazard class</b>         | Not regulated  |
| <b>14.4 Packing group</b>        | Not regulated  |
| <b>14.5 Environmental hazard</b> | Not applicable |

## 14.6 Special Provisions

Done

### ICAO (air)

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special Provisions   | None           |

### IATA

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special Provisions   | None           |

## SECTION 15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

#### National Regulations

#### Occupational Illnesses (R-463-3, France)

#### European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

#### International Inventories

**All of the components in the product are on the following Inventory lists** TSCA (United States), Canada (DSL/NDL), Europe (EINECS/ELINCS), Australia (AICS), South Korea (KECL), China (IECSC), Philippines (PICCS).

|               |          |
|---------------|----------|
| <b>TSCA</b>   | Complies |
| <b>EINECS</b> | -        |
| <b>ELINCS</b> | -        |
| <b>DSL</b>    | Complies |
| <b>NDL</b>    | Complies |
| <b>PICCS</b>  | Complies |
| <b>ENCS</b>   | -        |
| <b>IECSC</b>  | Complies |
| <b>AICS</b>   | Complies |
| <b>KECL</b>   | Complies |

### 15.2 Chemical Safety Assessment

For this product, a chemical safety assessment was not carried out.

## SECTION 16. OTHER INFORMATION

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The information in this SDS is provided in good faith based on our knowledge as of the issue date (or subsequent revision date, if any), and is to be used only as a guide. This SDS does not constitute a guarantee (express or implied) of any kind, and we make no warranties for merchantability or fitness for a particular purpose. This information relates only to the designated product as shipped and may not be valid if the product is used in combination with any other materials or is not used following our instructions. It is the

responsibility of the buyer/user to ensure that its activities comply with all applicable governmental requirements. Since the conditions of use of the product are not under the control of Ludger, the buyer/user must determine the necessary conditions for the safe use of the product. Ludger will not be liable for any damages resulting from handling or contact with the product.

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

|                        |   |
|------------------------|---|
| Product Name           | LudgerZyme recombinant Peptide N-glycosidase F (Elizabethkingia miricola) supplied in 50mM NaCl 5mM EDTA 20mM Tris-HCl pH 7.5 |
| Product Catalogue Name | rPNGase F, LZ-PNGF-150, LZ-rPNGaseF-30  |
| Company:               | Ludger Ltd<br>Culham Science Centre<br>Abingdon<br>Oxford OX14 3EB  |
| Telephone:             | 01865 408554  |
| Emergency Telephone:   | 01865 408554  |
| Email:                 | info@ludger.com   |

**SECTION 2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]**

The product is not classified as hazardous according to the CLP regulation.

**2.2 Label elements**

Labelling according to Regulation (EC) No 1272/2008: Void

Hazard pictograms: Void

Signal word: Void

Hazard statements: Void

**2.3 Other hazard information:**

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS****3.2 Mixtures****Description:**

The product is a mixture of the hazardous substances listed below along with unlisted non-hazardous substances.

**Components:** Void

**SECTION 4. FIRST-AID MEASURES****4.1 Description of First Aid Measures****General Advice**

Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove from exposure, and lie down. Do not breathe dust/fumes/gas/mist/vapours/spray.

**If Ingested**

Clean your mouth with water and drink afterwards plenty of water. If the patient feels unwell or is concerned, obtain medical advice.

**If the skin is exposed**

Wash skin with soap and water.

**If eyes are exposed**

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

**If inhaled**

Remove to fresh air. If the patient feels unwell or is concerned, obtain medical advice.

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

None

**4.3 Indication of immediate medical attention and special treatment needed****Note to physicians**

Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES****5.1 Extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Unsuitable extinguishing media**

CAUTION: Use of water spray when fighting fire may be inefficient.

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

None known.

**5.3 Advice for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**SECTION 6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures****Personal precautions**

Ensure adequate ventilation, especially in confined areas.

**For emergency responders**

Use personal protection recommended in Section 8.

**6.2 Environmental Precautions**

See Section 12 for additional Ecological Information.

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

Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**

Soak up with inert absorbent material. Pick up and transfer to properly labelled containers. This material and its container must be disposed of as hazardous waste.

**6.4 Reference to other sections**

No dangerous substances are released.  
See Section 7 for information on safe handling  
See Section 13 for disposal information.

**SECTION 7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Handle following good industrial hygiene and safety practices.

**7.2 Conditions for safe storage, including any incompatibilities****Storage temperature**

Refer to [www.ludger.com](http://www.ludger.com) for specific information.

**Storage Conditions**

Keep/store only in the original container.

**Incompatible materials**

None is known based on the information supplied.

**7.3 Specific end uses****Risk management methods [RMM]**

The information required is contained in this Safety Data Sheet.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1 Control parameters**

**Exposure Limits** This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region-specific regulatory bodies

**Derived No Effect Level (DNEL)**

No information available

**Predicted No Effect Concentration (PNEC)**

No information available

**8.2 Exposure controls****Engineering controls**

Showers. Eyewash stations.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Wear safety glasses with side shields (or goggles).

**Skin and body protection**

Wear suitable protective clothing and gloves.

**Respiratory protection**

Use in well-ventilated areas.

**General hygiene considerations**

Handle following good industrial hygiene and safety practices.

**Environmental exposure controls**

See Section 12: ECOLOGICAL INFORMATION.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES****9.1 Information on basic physical and chemical properties**

Appearance

Liquid

Colour

Colourless

Odour

Mild

Odour threshold

No data available

pH value at 20°C

Refer to [www.ludger.com](http://www.ludger.com) for specific information



|   |                   |
|---|-------------------|
| Freezing/Melting Point                  | No data available |
| Initial boiling point and boiling range | No data available |
| Flash Point                             | No data available |
| Evaporation rate                        | No data available |
| Flammability                            | No data available |
| Ignition temperature                    | No data available |
| Decomposition temperature               | No data available |
| Self-igniting                           | No data available |
| Lower                                   | No data available |
| Upper                                   | No data available |
| Vapour pressure                         | No data available |
| Density                                 | No data available |
| Relative density                        | No data available |
| Vapour density                          | No data available |
| Evaporation rate                        | No data available |
| Solubility in / Miscibility with Water  | Fully miscible.   |
| Partition coefficient (n-octanol/water) | No data available |
| Viscosity                               |                   |
| Dynamic                                 | No data available |
| Kinematic                               | No data available |

## 9.2 Other information

No further relevant information is available.

## SECTION 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available.

### 10.2 Chemical stability

Stable under normal conditions.

### 10.3 Possibility of Hazardous Reactions

Can react briskly with oxidizers - the danger of explosion.

### 10.4 Conditions to avoid

Incompatible materials. Ignition sources. Heat.

### 10.5 Incompatible materials

Strong oxidizing agents.

### 10.6 Hazardous decomposition products

Thermal decomposition can lead to the release of irritating and toxic gases and vapours. Carbon monoxide. Carbon dioxide (CO<sub>2</sub>).

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

#### Product information

The product does not present an acute toxicity hazard based on known or supplied information.

#### Inhalation

Avoid breathing vapours or mists. May irritate the respiratory tract.

#### Eye contact

Redness. May cause slight irritation.

## Skin contact

Prolonged contact may cause redness and irritation. Repeated exposure may cause skin dryness or cracking.

## Ingestion

May cause drowsiness or dizziness. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Symptoms include a burning sensation, coughing, wheezing, shortness of breath, headache, nausea, and vomiting.

## Unknown acute toxicity

0.24 % of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document mg/kg mg/l

| Chemical Name                    | Oral LD50            | Dermal LD50          | Inhalation LC50                   |
|----------------------------------|----------------------|----------------------|-----------------------------------|
| Water                            | > 90 mL/kg ( Rat )   | -                    | -                                 |
| Sodium Chloride                  | = 3 g/kg ( Rat )     | > 10 g/kg ( Rabbit ) | > 42 g/m <sup>3</sup> ( Rat ) 1 h |
| Ethylenediamine tetraacetic acid | = 1700 mg/kg ( Rat ) | -                    | -                                 |

## Skin corrosion/irritation

Mild

## Serious eye damage/eye irritation

Mild

## Sensitization

Not applicable

## Germ cell mutagenicity

Not applicable

## Carcinogenicity

No information available

## Reproductive toxicity

No information available

## Developmental toxicity

No information available

## Teratogenicity

No information available

## STOT - single exposure

No information available

## STOT - repeated exposure

No information available

## Neurological effects

No information available

## Target organ effects

Eyes, Kidneys, Respiratory system, and Skin.

## Other adverse effects

No information available

## Symptoms

No information available

## Aspiration hazard

No information available

## SECTION 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

0.24 % of the mixture consists of component(s) of unknown hazards to the aquatic environment.

### 12.2 Persistence and Degradability

Not available.

### 12.3 Bioaccumulative potential

Not known.

### 12.4 Mobility in soil

Not available.

### 12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

### 12.6 Other adverse effects

No further relevant information is available.

## SECTION 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste Treatment Methods

#### Relevant Information

Keep out of drains, sewers, ditches and waterways.

#### Waste from Residues/Unused Products

Disposal should follow applicable regional, national and local laws and regulations. Send to a licensed recycler, reclaimer, or incinerator.

#### Contaminated packaging

Empty containers must be tripled and rinsed before disposal.

## SECTION 14. TRANSPORT INFORMATION

### IMDG

|   |                          |
|---|--------------------------|
| 14.1 UN/ID No   | Not regulated            |
| 14.2 Proper shipping name   | Not regulated            |
| 14.3 Hazard class   | Not regulated            |
| 14.4 Packing group  | Not regulated            |
| 14.5 Marine pollutant   | Not applicable           |
| 14.6 Special Provisions   | None                     |
| 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | No information available |

### RID

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special Provisions   | None           |

### ADR

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special Provisions   | None           |

### ICAO (air)

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |
| 14.6 Special Provisions   | None           |

### IATA

|                           |                |
|---------------------------|----------------|
| 14.1 UN/ID No             | Not regulated  |
| 14.2 Proper shipping name | Not regulated  |
| 14.3 Hazard class         | Not regulated  |
| 14.4 Packing group        | Not regulated  |
| 14.5 Environmental hazard | Not applicable |

14.6 Special Provisions

None

**SECTION 15. REGULATORY INFORMATION**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

**15.1 Safety, health and environmental regulations/legislation specific to the substance or mixture****National Regulations****Occupational Illnesses (R-463-3, France)****European Union**

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

**International Inventories**

**All of the components in the product are on the following inventory lists** TSCA (United States), Canada (DSL/NDSL), Europe (EINECS/ELINCS), Australia (AICS), South Korea (KECL), China (IECSC), Philippines (PICCS).

|               |          |
|---------------|----------|
| <b>TSCA</b>   | Complies |
| <b>EINECS</b> | Complies |
| <b>ELINCS</b> | -        |
| <b>DSL</b>    | Complies |
| <b>NDSL</b>   | Complies |
| <b>PICCS</b>  | Complies |
| <b>ENCS</b>   | -        |
| <b>IECSC</b>  | Complies |
| <b>AICS</b>   | Complies |
| <b>KECL</b>   | Complies |

**15.2 Chemical Safety Assessment**

No information is available.

**SECTION 16. OTHER INFORMATION**

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