



Product Guide for  
LudgerZyme™  
 $\alpha$ 1-3,4 Fucosidase Kit



**Product # LZ-FUCOSIDASE-01-KIT**

**Ludger Document # LZ-FUCOSIDASE-01-KIT-Guide-v1.0**

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## Specifications for LZ-FUCOSIDASE-01-KIT

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**Description:**  $\alpha$ 1-3,4 fucosidase is a broad specificity recombinant protein from *Ruminococcus gnavus*, E1 strain, expressed in *Escherichia coli*<sup>1</sup>. The enzyme recognises  $\alpha$ 1-3,4 fucosylated glycans (e.g. Lewis X/A epitopes, including their sialylated counterparts) and hydrolyses terminal  $\alpha$ 1-3 and  $\alpha$ 1-4 fucosyl linkages in these substrates without the need to remove sialic acid. It can be used for monitoring  $\alpha$ 1-3,4 fucosylation on free glycans and glycoproteins<sup>1</sup>.

**Application:** This fucosidase can be used to remove  $\alpha$ 1-3 and  $\alpha$ 1-4 linked fucose from free glycans and glycoproteins.

**Enzyme Commission Number:** EC 3.2.1.51

**Number of Samples:** Sufficient for up to 50 samples.

**Amount of Sample:** Up to 15  $\mu$ g glycoprotein or up to 0.5  $\mu$ g free glycan per digestion.

**Suitable Samples:**  $\alpha$ 1-3,4 fucosidase can act upon oligosaccharides, complex glycans and glycoprotein samples, such as those displaying (sialylated) Lewis X/A epitopes. Either fluorescently labelled or unlabelled glycans are suitable.

**pH Optimum:** 6.0. Working pH range is between 5.5 and 7, at which the enzyme maintains at least 50% of its maximum activity.

**Molecular Weight:** 63.5 kDa.

**Storage:** Store at 4°C. Do not freeze. Protect from sources of heat and light. When stored correctly, the enzyme should be stable for 12 months from date of purchase. Exposure to ambient temperatures over several days does not result in a reduction of enzymatic activity.

**Shipping :** The product should be shipped at 4°C.

**Handling :** Ensure that any glass, plastic ware or solvents used with this item are free of environmental carbohydrates. Use powder-free gloves for all sample handling procedures and avoid contamination with environmental carbohydrate.

**Safety:****For research use only. Not for human or drug use**

Please read the Safety Data Sheets (SDSs) for all chemicals used. All processes involving labelling reagents should be performed using appropriate personal safety protection – safety glasses, chemically resistant gloves (e.g. nitrile), lab coat, and when appropriate, in a laboratory fume cupboard.

**Licence:**

LZ-FUCOSIDASE-01-KIT is manufactured under licence from the Quadram Institute Bioscience (Norwich, UK).

**References:**

1. H. Wu, O. Rebello, E.H. Crost, C. D. Owen, S. Walpole, C. Bennati-Granier, D. Ndeh, S. Monaco, T. Hicks, A. Colvile, P.A. Urbanowicz, M.A. Walsh, J. Angulo, D.I.R. Spencer, N. Juge. Fucosidases from the human gut symbiont *Ruminococcus gnavus*. *Cell Mol Life Sci.* 2021; 78(2): 675–693

## Kit Contents

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The kit contains the following materials and reagents:

Cat. #	Item	Quantity
LZ-FUCOSIDASE-01-50	LudgerZyme $\alpha$ 1-3,4 Fucosidase (Supplied in 200 mM citrate buffer pH 6 containing 250 mM NaCl)	1
LZ-FUCOSIDASE-01-BUFF	LudgerZyme $\alpha$ 1-3,4 Fucosidase 5 $\times$ Reaction Buffer (250 mM sodium phosphate pH 6)	1

## Additional Reagents and Equipment Required

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- Pure water: resistivity above 18 M $\Omega$ -cm, particle free (>0.22  $\mu$ m), TOC <10 ppb.
- Microcentrifuge tubes for reaction.
- Waterbath or oven with constant temperature maintenance at 37°C.
- Pipettes and tips.

## Time Line for Procedure

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Procedure	Approx. Time
Preparing assay mixture	5 min
Incubation	1 h

## Method

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### 1 Preparing assay mixture

Add up to 15 µg of glycoprotein or 0.5 µg of free oligosaccharide/ glycan to reaction tube. Released glycans can be native or fluorescently labelled e.g. with 2-AB or procainamide [**LT-KAB-A2** or **LT-KPROC-24**] to enable glycan identification.

Add pure water to a total of 7 µl. Follow with 2 µl of 5x Reaction Buffer.

Add 1 µl of α1-3,4 Fucosidase. Vortex sample and briefly centrifuge.

*The reaction may be scaled-up linearly to accommodate larger amounts of glycoprotein, released glycans or oligosaccharides.*

### 2 Incubation

Incubate your samples in a water bath, oven or any other constant heating source at 37°C for 1 hour.

*Optimal incubation times and enzyme concentrations may be adjusted for a particular substrate. If needed, incubation time can be extended to up to 16 hours.*

Free native and fluorescently labelled glycans and oligosaccharides can be cleaned-up using Post-Exoglycosidase Clean-up Spin Columns [**LC-EXO-A6**] or Post-Exoglycosidase Clean-up 96-well Plate [**LC-EXO-96**].

Digested glycans can be analysed by method of choice such as chromatography or mass spectrometry.

## Warranties and liabilities

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Ludger warrants that the above product conforms to the attached analytical documents. Should the product fail for reasons other than through misuse Ludger will, at its option, replace free of charge or refund the purchase price. This warranty is exclusive and Ludger makes no other warranties, expressed or implied, including any implied conditions or warranties of merchantability or fitness for any particular purpose.

Ludger shall not be liable for any incidental, consequential or contingent damages.

This product is intended for *in vitro* research only.

## Document Revision Number

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Document # LZ-FUCOSIDASE-01-KIT, version v1.0

## Appendix 1: Troubleshooting Guide

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The following is a guide to the most likely problems associated with the use of the  $\alpha$ 1-3,4 fucosidase kit.

### The positive control gives negative results

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#### The enzyme became inactive

Repeat freeze-thaw cycles and exposure to temperature higher than ambient temperature can render the enzyme inactive. To avoid loss of activity, store enzyme under the recommended conditions.

### Fucose is released inefficiently

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#### The glycoproteins are not dissolved

If solubilization of glycoproteins is insufficient, digestion will be incomplete.

To ensure sample is dissolved properly, vortex sample longer or make up digestion in a larger volume of reaction mixture.

#### The sample contained contaminants that interfered with $\alpha$ 1-3,4 fucosidase activity

Please ensure that the glycoproteins are free from contaminants such as denaturing agents (e.g. SDS) before digestion.

#### The incubation condition was incorrect

Please ensure that the oven or heating block is equilibrated to the incubation temperature and that the reaction tube is subjected to this temperature for the entire period.

#### There was less starting glycoproteins than was originally estimated

Please ensure sufficient amount of sample is used.

# SAFETY DATA SHEET

Version: 1.0

Date written: 29 Apr 2021

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

Product Name                     **$\alpha$ 1-3,4 fucosidase (in 200 mM citrate, 250 mM NaCl pH 6)**

Product Catalogue Name      **LZ-FUCOSIDASE-01-50**

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

Telephone:                      01865 408554

Emergency Telephone:        01865 408554

Email:                             info@ludger.com

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## SECTION 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

### 2.2 Label elements

Not a hazardous substance or mixture.

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms:                      Trisodium citrate dihydrate  
                                        Sodium citrate dihydrate  
                                        Sodium citrate tribasic dihydrate

Formula:                         $\text{HOC}(\text{COONa})(\text{CH}_2\text{COONa})_2 \cdot 2\text{H}_2\text{O}$

Molecular Weight:          294.10 g/mol

CAS-No.:                        6132-04-3

EC-No.:                         200-675-3

Synonyms:                      Citric acid

Formula:                         $\text{HOC}(\text{COOH})(\text{CH}_2\text{COOH})_2$

Molecular weight:          192.12 g/mol

CAS-No.:                        77-92-9

EC-No.:                         201-069-1

Synonyms:                      Sodium chloride  
                                        Halite

Formula:                        NaCl

Molecular weight:          58.44 g/mol

CAS-No.:                        7647-14-5

EC-No.:                         231-598-3



No components need to be disclosed according to the applicable regulations.

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## SECTION 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

#### In case of skin contact

Wash off with soap and plenty of water.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## SECTION 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

Carbon oxides, Hydrogen chloride gas, Sodium oxides

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

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

Avoid dust formation. Avoid breathing vapours, mist or gas.

For personal protection see section 8.

### 6.2 Environmental precautions

No special environmental precautions required.

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

Sweep up and shovel. Keep in suitable, closed containers for disposal.

## 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed.

For precautions see section 2.2.

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

Store in cool place. Keep container tightly closed in a dry and well-ventilated place.

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 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

General industrial hygiene practice.

#### Personal protective equipment

##### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

##### Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

##### Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

Contact the supplier of the EC approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

## Body Protection

Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

No special environmental precautions required.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance Form	Liquid, clear
Odour	No data available
Odour Threshold	No data available
pH	6.0 at 25 °C
Melting point/freezingpoint	No data available
Initial boiling point andboiling 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	No data available
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 safety information

No data available

## SECTION 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas, Sodium oxides

Other decomposition products - No data available

In the event of fire: see section 5

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitisation

No data available

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

No data available

#### Specific target organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available

#### Additional Information

RTECS: Not available

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

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## SECTION 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

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

#### Contaminated packaging

Dispose of as unused product

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## SECTION 14. TRANSPORT INFORMATION

### 14.1 UN Number

ADR/RID: -                                      IMDG: -                                      IATA: -

### 14.2 UN Proper Shipping Name

ADR/RID:        Not dangerous goods

IMDG:            Not dangerous goods

IATA:            Not dangerous goods

### 14.3 Transport hazard class(es)

ADR/RID: -                                      IMDG: -                                      IATA: -

### 14.4 Packing group

ADR/RID: -                                      IMDG: -                                      IATA: -

### 14.5 Environmental hazards

ADR/RID: No                                      IMDG Marine pollutant: No                                      IATA: No

### 14.6 Special precautions for user

No data available.

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## 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 for the substance or mixture

No data available

### 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

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## SECTION 16. OTHER INFORMATION

The advice offered is derived from the current available information on the hazardous materials in this product and its component(s). Consideration has been made regarding the quantities offered in the pre-dispensed container. The advice offered is, therefore not all inclusive nor should it be taken as the descriptive of the compound generally.

# SAFETY DATA SHEET

Version: 1.0

Date written: 29 Apr 2021

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

Product Name                     **$\alpha$ 1-3,4 Fucosidase 5x Reaction Buffer  
(250 mM sodium phosphate pH 6)**

Product Catalogue Name      **LZ-FUCOSIDASE-01-BUFF**

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

Telephone:                      01865 408554  
Emergency Telephone:        01865 408554  
Email:                            info@ludger.com

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## SECTION 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

### 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

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms                        Monosodium phosphate (monohydrate)  
                                      Sodium dihydrogen phosphate monohydrate

Formula:                         $\text{NaH}_2\text{PO}_4 \cdot \text{H}_2\text{O}$

Molecular weight:            137.99 g/mol

CAS-No.:                        10049-21-5

EC-No.:                         231-449-2

No components need to be disclosed according to the applicable regulations.

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## SECTION 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

#### In case of skin contact

Wash off with soap and plenty of water.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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**SECTION 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**

Nature of decomposition products not known.

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

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

Avoid breathing vapours, mist or gas.

For personal protection see section 8.

**6.2 Environmental precautions**

No special environmental precautions required.

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

Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

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

For precautions see section 2.2.

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

Keep container tightly closed in a dry and well-ventilated place. Store in cool place.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Appropriate engineering controls

General industrial hygiene practice.

#### Personal protective equipment

##### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

##### Body Protection

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

##### Respiratory protection

Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### Control of environmental exposure

No special environmental precautions required.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance Form	liquid, clear
Odour	No data available
Odour Threshold	No data available
pH	6.0 at 25 °C
Melting point/freezingpoint	No data available
Initial boiling point andboiling 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	No data available
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 safety information

No data available

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## SECTION 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Nature of decomposition products not known.

Other decomposition products - No data available

In the event of fire: see section 5

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitisation

No data available

#### Germ cell mutagenicity

No data available

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### Reproductive toxicity

No data available

#### Specific target organ toxicity - single exposure

No data available

#### Specific target organ toxicity - repeated exposure

No data available

#### Aspiration hazard

No data available

#### Additional Information

RTECS: Not available

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

## SECTION 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

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Other adverse effects

No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

#### Contaminated packaging

Dispose of as unused product

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## SECTION 14. TRANSPORT INFORMATION

### 14.1 UN Number

ADR/RID: -                      IMDG: -                      IATA: -

### 14.2 UN Proper Shipping Name

ADR/RID:     Not dangerous goods  
IMDG:         Not dangerous goods  
IATA:         Not dangerous goods

### 14.3 Transport hazard class(es)

ADR/RID: -                      IMDG: -                      IATA: -

### 14.4 Packing group

ADR/RID: -                      IMDG: -                      IATA: -

### 14.5 Environmental hazards

ADR/RID: No                      IMDG Marine pollutant: No                      IATA: No

### 14.6 Special precautions for user

No data available.

---

## 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 for the substance or mixture**

No data available

### **15.2 Chemical Safety Assessment**

For this product a chemical safety assessment was not carried out

---

## **SECTION 16. OTHER INFORMATION**

The advice offered is derived from the current available information on the hazardous materials in this product and its component(s). Consideration has been made regarding the quantities offered in the pre-dispensed container. The advice offered is, therefore, not all-inclusive nor should it be taken as the descriptive of the compound generally.