



# Ludger

## SAFETY DATA SHEET

Version: 1.0

Date written: 25<sup>th</sup> July 2018

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### 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 **PNGase F**

Company: Ludger Ltd  
Culham Science Centre  
Abingdon  
Oxford 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

**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.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3. 2 Mixtures

##### Description:

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

**Components:** Void

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### 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, lie down. Do not breathe dust/fume/gas/mist/vapours/spray.

**If Ingested**

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

**If 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.

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**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.

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**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.

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

Handle in accordance with good industrial hygiene and safety practice.

**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 original container.

**Incompatible materials**

None known based on information supplied.

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

The information required is contained in this Safety Data Sheet.

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**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 in accordance with good industrial hygiene and safety practice.

**Environmental exposure controls**

See Section 12: ECOLOGICAL INFORMATION.

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## 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 <a href="http://www.ludger.com">www.ludger.com</a> 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 available.

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## 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 - 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 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**

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

**Inhalation**

Avoid breathing vapours or mists. May cause irritation of 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 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, 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 available.

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**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 be in accordance with applicable regional, national and local laws and regulations. Send to a licensed recycler, reclaimer or incinerator.

**Contaminated packaging**

Empty containers must be tripled rinsed prior to disposal.

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**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

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

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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****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).

TSCA	Complies
EINECS	Complies
ELINCS	-
DSL	Complies
NDSL	Complies
PICCS	Complies
ENCS	-
IECSC	Complies
AICS	Complies
KECL	Complies

**15.2 Chemical Safety Assessment**

No information available.

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**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 in accordance with our instructions. It is the responsibility of the buyer/user to ensure that its activities comply with all applicable governmental requirements. Since conditions of use of the product are not under the control of Ludger, it is the duty of the buyer/user to 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                    **Ammonium Formate, 2M aqueous solution**

Product Catalogue Name    **LC-N-BUFFX40-30**

Company:                        Ludger Ltd  
                                      Culham Science Centre  
                                      Abingdon  
                                      Oxfordshire  
                                      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]**

Skin irritation (Category 2)

Eye irritation (Category 2)

Specific target organ toxicity – single exposure (Category 3)

**2.2 Label elements**

Signal Word: Warning

**Hazard Statement(s)**

H314

Causes severe skin burns and eye damage.

H315

Causes skin irritation.

H319

Causes serious eye irritation.

H335

May cause respiratory irritation.

**Precautionary Statement(s)**

P261

Avoid breathing dust/fume/gas/mist/vapours/spray.

P280

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

P305+P351+P338

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

**2.3 Other hazard information:**

None.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms: None  
 Formula: CH<sub>5</sub>NO<sub>2</sub>

Component		Classification	Concentration
Name	Ammonium Formate	Skin Irrit. 2; Eye Irrit. 2; STOT SE 3;	> 10%
CAS-No.	540-69-2	H315, H319, H335	
EC-No.	208-753-9		
Name	Formic Acid	Skin Corr. 1A; H314	<15%
CAS-No.	64-18-6		
EC-No.	200-579-1		
Index-No.	607-001-00-0		
2 <sup>nd</sup> Name	Water	-	>75%
CAS-No.	7732-18-5		
EC-No.	231-791-2		

For the full text of the H-statements mentioned in this section, see Section 16 or 2.

## SECTION 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General Advice

Consult a physician if exposure causes ill effects and if in any doubt. Show this safety data sheet to the physician/ first responder in attendance.

#### If Ingested

Rinse mouth well with water, NEVER give anything by mouth if person is unconscious. Consult a physician.

#### If skin is exposed

Wash area well with plenty of soap and water. Consult a physician.

#### If eyes are exposed

Rinse thoroughly for at least 15 minutes with water or eye wash solution. If present and safe to do so, remove contact lenses and carry on rinsing. Consult a physician.

#### If inhaled

Move affected person to a source of fresh air/ strong ventilation. If not breathing, give artificial respiration. Consult a physician.

### 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

No data available.

## SECTION 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

Select extinguishing media appropriate to surrounding area. Compatible media for use with the product are water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

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

Carbon oxides, nitrogen oxides (NO<sub>x</sub>)

### 5.3 Advice for firefighters

If necessary wear self-contained breathing equipment.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

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

Wear PPE, Personal protective equipment. Avoid breathing in vapours, mist or gas by ensuring adequate ventilation. Relocate any non-essential staff away from the spillage.

### 6.2 Environmental Precautions

Do not let the product enter the drainage system.

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

Contain the spillage with a spill kit, using a spillage mat or an inert material such as vermiculite. Collect the contaminated material and store in a suitable container with a lid, in cool, dry well-ventilated area. Arrange disposal.

### 6.4 Reference to other sections

For more information on disposal see Section 13.

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## SECTION 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin, eyes and breathing in vapours/mist/gas.

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

Store the product in a dry, cool cabinet/cupboard, not in direct sunlight.

### 7.3 Specific end uses

No data available.

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

This product contains no substances with occupational exposure limits values.

### 8.2 Exposure controls

#### Appropriate engineering controls

Wear PPE, Personal protective equipment and wash/dry hands before and after handling the product, avoid contact with skin and eyes. Handle the product in accordance to good laboratory and hygiene practice.

#### Personal Protective Equipment

##### Eye / face protection

Wear Safety glasses/ goggles with side shields, which conform to EN 166. Equipment used must conform to an appropriated and approved government standard such as NIOSH (US) or EN 166 (EU).

**Skin protection**

Handle the product wearing gloves; these are to be inspected before use. Remove used gloves using the proper removal technique so skin does not touch the outer layer of the gloves. Dispose of used gloves as contaminated solid waste; see section 13 for more information. Wash and dry hands.

Gloves must satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Body Protection**

Wear a laboratory coat or a similar covering over clothing.

**Respiratory protection**

No data available.

**Thermal hazards**

No data available.

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

Appearance	Form: clear, liquid Colour: Colourless
Odour	No data available
Odour threshold	No data available
pH	4.4 at 22°C
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
Upper/lower flammability or explosive limits	No data available
Vapour Pressure	No data available
Vapour density	No data available
Relative Density	No data available
Solubility in water and solvents	No data available
Partition coefficient	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidising properties	No data available

**9.2 Other information**

No data available

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

No data available

**10.2 Chemical stability**

No data available

**10.3 Possibility of hazardous reactions**

No data available

#### 10.4 Conditions to Avoid

No data available

#### 10.5 Incompatible materials

Strong oxidizing agents, Strong acids.

#### 10.6 Hazardous decomposition products

Other decomposition products – No data available.

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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/irritation

No data available.

#### Respiratory or skin sensitisation

No data available.

#### Germ cell mutagenicity

No data available.

#### Carcinogenicity

IARC: No components 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.

#### STOT-single exposure

No data available.

#### STOT-repeated exposure

No data available.

#### Aspiration hazard.

No data available.

#### Potential Health Hazards

**Inhalation** May be harmful if inhaled. Causes respiratory tract irritation.

**Ingestion** May be harmful if swallowed. Causes burns.

**Skin** May be harmful if absorbed through skin. Causes skin irritation and burns.

**Eyes** Causes serious eye irritation.

#### Signs and symptoms of exposure

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



No data available

## 15.2 Chemical Safety Assessment

No data available

Please note that the label elements that used to go in Section 15 are now in Section 2.

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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.

Text of the H-codes mentioned in Section 3.

Eye Irrit.	Eye Irritation.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
Skin Irrit.	Skin Irritation.
STOT SE	Specific target organ toxicity – single exposure.



# Ludger

## SAFETY DATA SHEET

Version: 1.0

Date written: 25<sup>th</sup> July 2018

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

Product Name **dimethyl sulfoxide**

Product Catalogue Name **LT-DMSO-02**

CAS-No. **67-68-5**

Company: Ludger Ltd  
Culham Science Centre  
Abingdon  
Oxford 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

**Classification according to Regulation (EC) No. 1272/2008 [EU-GHS-CLP]**

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008 [EU-GHS-CLP].

#### 2.2 Label elements

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

Signal Word: None

#### Hazard Statement(s)

None

#### Precautionary Statement(s)

None

#### 2.3 Other hazard information:

None

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Synonyms: DMSO  
methyl sulfoxide  
dimethyl sulfoxide

Formula: C<sub>2</sub>H<sub>6</sub>OS

Molecular Weight: 78.13g/mol

Component		Concentration
Name	Dimethyl Sulfoxide	-
CAS-No.	67-68-5	
EC-No.	200-664-3	



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## SECTION 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General Advice

Consult a physician if exposure causes ill effects and if in any doubt. Show this safety data sheet to the physician/ first responder in attendance.

#### If Ingested

Do NOT induce vomiting. Rinse mouth well with water. Never give anything by mouth to an unconscious person.

#### If skin is exposed

Wash off with plenty of soap and water.

#### If eyes are exposed

Flush eyes with plenty of water/ eye wash solution as a precaution.

#### If inhaled

Move affected person to fresh air. If not breathing give artificial respiration.

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

Effects due to ingestion may include: Nausea, Fatigue and Headache.

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

No data available.

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## SECTION 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

Small fires: Use extinguishing media such as "alcohol" foam, dry chemical or carbon dioxide.

Large fires: Use extinguishing media such as water, from a far away distance as possible. Use very large quantities of water as mist or spray to flood the fire and the combustible material. Cool all affected containers with large quantities of water.

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

Carbon oxides, Sulphur oxides

### 5.3 Advice for fire fighters

Wear self contained breathing apparatus for fire fighting if necessary, to spray cool water on any unopened containers near the fire.

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

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

Avoid breathing vapours, gas or mist. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

### 6.2 Environmental Precautions

Prevent further leakage or spillage if safe to do so, e.g. with spill mats. Do not let the product enter drains.

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

Contain the spillage and put the collected material into a suitable container with a secure lid. Wash the area well, do not let run off into the drains, collect as waste.

#### 6.4 Reference to other sections

See section 13 for disposal of waste material(s).

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## SECTION 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid inhalation of vapour or mist. Keep away from sources of ignition- No smoking.  
Take measures to prevent the build up of electrostatic charge.

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

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

### 7.3 Specific end uses

No data available

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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

Handle in accordance with good laboratory hygiene and safety practice. Wash hands before breaks and at the end of the day.

#### Personal Protective Equipment

##### Eye / face protection

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, which should be inspected before use. Use proper glove removal technique (removal without the outside of the glove touching the skin) to avoid contact with the skin/chemical. Dispose of contaminated gloves as Laboratory waste in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Gloves should be of the standard that will stratify the specifications of EU directive 89/696/EEC and the standard EN 374 derived from it.

##### Body Protection

The type of protective clothing must be selected according to the amount of substance at the specific workplace being used. Impervious coats or laboratory coats.

##### Respiratory protection

Use substance in an operation fume hood/ outside venting extraction cupboard. Wear full face respirator if appropriate to use, must be tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance	Form: Liquid, clear
Odour	Colour: Colourless
Odour threshold	No data available
pH	No data available
Freezing/Melting Point	No data available
Initial boiling point and boiling range	Melting point/range: 16-19°C
Flash Point	189°C
Evaporation rate	87°C – Closed cup
Flammability	No data available
Upper/lower flammability or explosive limits	No data available
	Upper explosion limit: 42% (V)
	Lower explosion limit: 3.5% (V)
Vapour Pressure, Pa at temperature degree C	0.55hPa at 20°C
Relative Density	1.1g/mL
Solubility in water and solvents	Completely miscible
Partition coefficient: n-octanol/water	log Pow: - 2.03
Auto ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidising properties	No data available

## 9.2 Other information

No data available

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## SECTION 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

No data available

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to Avoid

Heat, flames and sparks

### 10.5 Incompatible materials

Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents and strong reducing agents.

### 10.6 Hazardous decomposition products

Other decomposition products – No data available

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral – Rat – 14,500mg/kg

LC50 Inhalation – Rat – 4h – 40250ppm

LD50 Dermal – Rabbit - > 5,000mg/kg

**Skin corrosion/irritation**

Skin – Rabbit – No skin irritation – 4h

**Serious eye damage/irritation**

Eyes – Rabbit – Mild eye irritation

**Respiratory or skin sensitisation**

No data available

**Germ cell mutagenicity**

Genotoxicity in vitro – Mouse – lymphocyte

Cytogenetic analysis

Genotoxicity in vitro – Mouse – lymphocyte

Mutation in mammalian somatic cells

Genotoxicity in vivo – Rat – Intraperitoneal

Cytogenetic analysis

Genotoxicity in vivo - Mouse – Intraperitoneal

DNA damage

**Carcinogenicity**

Carcinogenicity – Rat – Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Others: Tumors.

Carcinogenicity – Mouse – Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Lukaemia skin and appendages: Other: Tumors.

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

**Reproductive toxicity**

Reproductive toxicity – Rat – Intraperitoneal

Effects on fertility: Abortion

Reproductive toxicity – Rat – Intraperitoneal

Effects on fertility: Post – implantation mortality (e.g. dead and/or resorbed implants per total number of implants).

Reproductive toxicity – Rat – Subcutaneous

Effects on fertility: Post – implantation mortality (e.g. dead and/or resorbed implants per total number of implants). Effects on fertility: Litter size (e.g. # fetuses per litter; measured before birth).

Reproductive toxicity – Mouse – Oral

Effects on fertility: Pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or fetus: Fetotoxicity (except death, e.g. stunted fetus).

Specific developmental abnormalities: Musculoskeletal system.

Reproductive toxicity – Mouse – Intraperitoneal

Effects on embryo or fetus: Fetotoxicity (except death, e.g. stunted fetus). Specific developmental abnormalities: Musculoskeletal system.

**STOT-single exposure**

No data available

**STOT-repeated exposure**

No data available

**Aspiration hazard.**

No data available

**Potential Health Hazards****Inhalation**

May be harmful if inhaled. May cause respiratory tract irritation.

**Ingestion**

May be harmful if swallowed.

**Skin**

May be harmful if absorbed through skin. May cause skin irritation.

**Eyes**

May cause eye irritation.

**Aggravated Medical****Condition**

Avoid contact with DMSO solutions containing toxic materials or materials with unknown toxicological properties. Dimethyl sulfoxide is readily absorbed through the skin and may carry such materials into the body.

**Signs and symptoms of exposure**

Effects due to ingestion may include; Nausea, Fatigue, Headache.

**Additional Information**

RTECS: PV6210000

---

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

Toxicity to Fish

LC50-Pimephales promelas (fathead minnow) – 34,000mg/l - 96h

LC50-Oncorhynchus mykiss (rainbow trout) – 34,000mg/l-96h

Toxicity to daphnia and other

Aquatic invertebrates

EC50-Daphnia pulex (water fleas) – 27,500mg/l

Toxicity to algae

EC50-Lepomis macrochirus (bluegill) - &gt;400,000mg/l-96h

**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**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber or to be disposed of by a licensed professional waste disposal company.

**Contaminated packaging**

Dispose of as the unused product.

## 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 data sheet 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

No data available

Please note that the label elements that used to go in Section 15 are now in Section 2.

---

## 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: 3<sup>rd</sup> May 2018

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

Product Name                    **Ammonium Acetate**  
Product Catalogue Name    **LC-AA-BUFF-30**  
Company:                        Ludger Ltd  
                                      Culham Science Centre  
                                      Abingdon  
                                      Oxfordshire  
                                      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]

Not a hazardous substance or mixture.

This substance is not classified as dangerous according to Directive 67/548/EEC

#### 2.2 Label elements

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

#### 2.3 Other hazard information:

None.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Synonyms:                    None  
Formula:                     C<sub>2</sub>H<sub>7</sub>NO<sub>2</sub>  
Molecular Weight         77.08 g/mol

Component	Classification	Concentration
Name      Ammonium Acetate		31%
CAS-No.   631-61-8		
EC-No.    211-162-9		
Index-No. 607-001-00-0		
2 <sup>nd</sup> Name   Water	-	>75%
CAS-No.   7732-18-5		
EC-No.    231-791-2		

For the full text of the H-statements mentioned in this section, see Section 16 or 2.

## SECTION 4. FIRST AID MEASURES

### 4.1 Description of first aid measures

#### 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 immediate medical attention and special treatment needed

No data available.

---

## SECTION 5. FIRE-FIGHTING MEASURES

### 5.1 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, nitrogen oxides (NO<sub>x</sub>)

### 5.3 Advice for firefighters

If necessary wear self-contained breathing equipment.

---

## 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

Do not let the product enter the drainage system.

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

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

### 6.4 Reference to other sections

For more information on disposal see Section 13.



## 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.  
Hygroscopic. Store under inert gas.

### 7.3 Specific end uses

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

---

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

This product contains no substances with occupational exposure limits values.

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle the product in accordance to good laboratory and hygiene practice.

#### Personal Protective Equipment

##### Eye / face protection

Wear Safety glasses/ goggles with side shields, which conform to EN 166. Equipment used must conform to an appropriated and approved government standard such as NIOSH (US) or EN 166 (EU).

##### Skin protection

Handle the product wearing gloves; these are to be inspected before use. Remove used gloves using the proper removal technique so skin does not touch the outer layer of the gloves. Dispose of used gloves as contaminated solid waste; see section 13 for more information. Wash and dry hands.

Gloves should be of the standard that will stratify the specifications of EU directive 89/696/EEC and the standard EN 374 derived from it.

##### 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).

##### Thermal hazards

No data available.

---

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance

Form: clear, liquid

Colour: Colourless

Odour	No data available
Odour threshold	No data available
pH	6.5-7.5 at 77.1g/l at 25 °C
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
Upper/lower flammability or explosive limits	No data available
Vapour Pressure	No data available
Vapour density	No data available
Relative Density	No data available
Solubility in water and solvents	77.1 g/l at 20°C-completely soluble
Partition coefficient	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidising properties	No data available

## 9.2 Other information

No data available

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## SECTION 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

No data available

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to Avoid

No data available

### 10.5 Incompatible materials

Strong oxidizing agents, Strong acids.

### 10.6 Hazardous decomposition products

Other decomposition products – No data available.

---

## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

No data available.

LD50 Intraperitoneal-mouse-736mg/kg

#### Skin corrosion/irritation

No data available.

**Serious eye damage/irritation**

No data available.

**Respiratory or skin sensitisation**

No data available.

**Germ cell mutagenicity**

No data available.

**Carcinogenicity**

IARC: No components 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.

**STOT-single exposure**

No data available.

**STOT-repeated exposure**

No data available.

**Aspiration hazard.**

No data available.

**Additional Information**

RTECS: AF3675000

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

---

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

Toxicity to fish LC50 - *Cyprinus carpio* (Carp) - 56 mg/l - 48 h

**12.2 Persistence and degradability**

Biodegradability Result: - Readily biodegradable.

**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 not available as chemical safety assessment not required/not conducted

**12.6. Other adverse effects**

No data available.

---

**SECTION 13. DISPOSAL CONSIDERATIONS****13.1 Waste treatment methods**



---

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

Product Name                    **Vtag dye**

Product Catalogue Name    **LT-VTAG-02**

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

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

---

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

Serious eye damage/eye irritation (Category 2)

**2.2 Label elements**

Signal Word: Warning

**Precautionary Statement(s)**

P305+P351+P338

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

P337+P313

If eye irritation persists: Get medical advice/attention.

P264

Wash hands thoroughly after handling

**2.3 Other hazard information:**

None

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### 3.1 Substances

Synonyms: Velocity Ludger Tag  
Vtag dye

Formula:  $C_{19}H_{18}N_2O_8S$

Molecular Weight: 434.42 g/mol

Component	Concentration
Name Vtag dye	-
CAS-No. -	-
EC-No. -	-

---

### 4. FIRST AID MEASURES

#### 4.1 Description of first aid measures

##### General Advice

Consult a physician if exposure causes ill effects and if in any doubt. Show this safety data sheet to the physician/ first responder in attendance.

##### If Ingested

Get medical advice/attention if you feel unwell. Rinse mouth.

##### If skin is exposed

Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation or rash occurs: Get medical advice/attention.

##### If eyes are exposed

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

##### If inhaled

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.

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

No data available

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

No data available.

---

### 5. FIRE-FIGHTING MEASURES

#### 5.1 Extinguishing media

Dry chemical, foam, water spray, carbon dioxide.

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

Carbon oxides, nitrogen oxides (NO<sub>x</sub>), Sulphur oxides.

**5.3 Advice for firefighters**

When extinguishing fire, be sure to wear personal protective equipment.

---

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

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

**6.2 Environmental Precautions**

Prevent product from entering drains.

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

Sweep dust to collect it into an airtight container, taking care not to disperse it. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

**6.4 Reference to other sections**

No data available.

---

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

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

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

Keep container tightly closed. Store in a cool and dark place.

Store away from incompatible materials such as oxidizing agents.

**7.3 Specific end uses**

No data available

---

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

Components with workplace control parameters.

**8.2 Exposure controls****Appropriate engineering controls**

Install a closed system or local exhaust as possible so that workers should not be exposed directly.

Also install safety shower and eye bath.

Handle in accordance with good laboratory hygiene and safety practice. Wash hands before breaks and at the end of the day.

**Personal Protective Equipment**

**Eye / face protection**

Safety glasses. A face-shield, if the situation requires

**Skin protection**

Handle with gloves, which should be inspected before use. Use proper glove removal technique (removal without the outside of the glove touching the skin) to avoid contact with the skin/chemical. Dispose of contaminated gloves as Laboratory waste in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Gloves should be of the standard that will stratify the specifications of EU directive 89/696/EEC and the standard EN 374 derived from it.

**Body Protection**

The type of protective clothing must be selected according to the amount of substance at the specific workplace being used. Impervious coats or laboratory coats.

**Respiratory protection**

Use substance in an operation fume hood/ outside venting extraction cupboard. Wear full face respirator if appropriate to use, must be tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

---

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

Appearance	Form: white powder
	Colour: Colourless
Odour	No data available
Odour threshold	No data available
pH	No data available
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
Upper/lower flammability or explosive limits	No data available
Vapour Pressure, Pa at temperature °C	No data available
Relative Density	No data available
Solubility in water and solvents (mg/l)	No data available
Partition coefficient	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidising properties	No data available

**9.2 Other information**

No data available

---

**10. STABILITY AND REACTIVITY**



**10.1 Reactivity**

No special reactivity has been reported.

**10.2 Chemical stability**

No data available

**10.3 Possibility of hazardous reactions**

No data available

**10.4 Conditions to Avoid**

Heat, flames and sparks

**10.5 Incompatible materials**

Oxidizing agents

**10.6 Hazardous decomposition products**

Other decomposition products – No data available

---

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

LD50 Oral – Rat – 19,500mg/kg

**Skin corrosion/irritation**

**Serious eye damage/irritation** Eyes – Rabbit – mild eye irritation-24h

**Respiratory or skin sensitisation** No data available

**Germ cell mutagenicity**

**Carcinogenicity**

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

**Reproductive toxicity****STOT-single exposure**

No data available

**STOT-repeated exposure**

No data available

**Aspiration hazard.**

No data available

**Potential Health Hazards**

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.

**Ingestion** May be harmful if swallowed.

**Skin** May be harmful if absorbed through skin. May cause skin irritation.

**Eyes** May cause eye irritation.

### Additional Information

RTECS: PV6210000

---

## 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

---

## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber or to be disposed of by a licensed professional waste disposal company.

Contaminated packaging

Dispose of as the unused product.

---

## 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

---

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

Data not available

**15.2 Chemical Safety Assessment****Indication of danger:**

No data available.

Please note that the label elements that used to go in Section 15 are now in Section 2.

---

**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.



# Ludger

## SAFETY DATA SHEET

Version: 1.0

Date written: 25<sup>th</sup> July 2018

---

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

Product Name **Denaturation Solution (5% SDS, 400 mM Dithiothreitol)**

Product Catalogue Name **10X Glycoprotein Denaturing Buffer**

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

**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, lie down. Do not breathe dust/fume/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 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 in accordance with good industrial hygiene and safety practice.

**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 original container.

**Incompatible materials**

None known based on 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 in accordance with good industrial hygiene and safety practice.

**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: noctanol/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

Can react briskly with oxidizers - 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 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

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

#### Inhalation

Avoid breathing vapours or mists. May cause irritation of 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 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

ATEmix (oral) 25,760.00 mg/kg  
 ATEmix (dermal) 11,600.00 mg/kg  
 ATEmix (inhalation-dust/mist) 19.50 mg/l  
 ATEmix (inhalation-vapour) 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  
**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** Kidneys, Respiratory system, Eyes, Skin.  
**Other adverse effects** No information available  
**Symptoms** No information available  
**Aspiration hazard** 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 be in accordance with applicable regional, national and local laws and regulations. Send to a licensed recycler, reclaimer or incinerator.

**Contaminated packaging**

Empty containers must be tripled rinsed prior to 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 for 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).

<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>	-

### 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 in accordance with our instructions. It is the responsibility of the buyer/user to ensure that its activities comply with all applicable governmental requirements. Since conditions of use of the product are not under the control of Ludger, it is the duty of the buyer/user to 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.



# Ludger

## SAFETY DATA SHEET

Version: 1.0

Date written: 25<sup>th</sup> July 2018

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

Product Name **10X Glyco Buffer (500mM sodium phosphate pH 7.5)**

Product Catalogue Name **10X Glyco Buffer 2**

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:

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, lie down. Do not breathe dust/fume/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 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 in accordance with good industrial hygiene and safety practice.

**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 original container.

**Incompatible materials**

None known based on 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 in accordance with good industrial hygiene and safety practice.

**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: noctanol/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

Can react briskly with oxidizers - 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 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

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

#### Inhalation

Avoid breathing vapours or mists. May cause irritation of 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 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

<b>Skin corrosion/irritation</b>	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, 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 not available as chemical safety assessment not required/not conducted.

### 12.6 Other adverse effects

No further relevant information 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 be in accordance with applicable regional, national and local laws and regulations. Send to a licensed recycler, reclaimer or incinerator.

#### Contaminated packaging

Empty containers must be triple rinsed prior to 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 for 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 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 in accordance with our instructions. It is the responsibility of the buyer/user to ensure that its activities comply with all applicable governmental requirements. Since conditions of use of the product are not under the control of Ludger, it is the duty of the buyer/user to 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.



# Ludger

## SAFETY DATA SHEET

Version: 1.0

Date written: 25<sup>th</sup> July 2018

---

### 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**

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 in accordance with good industrial hygiene and safety practice.

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

##### **Storage temperature**

No information available.

##### **Storage Conditions**

Keep/store only in original container.

**Incompatible materials**

None known based on 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 in accordance with good industrial hygiene and safety practice.

**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: noctanol/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 information supplied.

**10.5 Incompatible materials**

None known based on information supplied.

**10.6 Hazardous decomposition products**

None known based on information supplied.

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

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 information supplied

**Skin contact**

No known hazard in contact with skin

**Ingestion**

No known effect based on 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

<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>	None known
<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

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 be in accordance with applicable regional, national and local laws and regulations. Send to a licensed recycler, reclaimer or incinerator.

#### Contaminated packaging

Empty containers must be tripled rinsed prior to 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**

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	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 for 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>	-
<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

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

---

## SECTION 16. OTHER INFORMATION

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