
MATERIAL SAFETY DATA SHEET

(According to (EC) Directive 1907/2006/EC)

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1 – PRODUCT AND COMPANY INFORMATION

About the product -

Description: **Pullulanase**
Cat. No.: **PRO-E0414**
Form: **White protein suspension in 3.2 M ammonium sulphate**
Intended use: **laboratory research only (not for drug, household or other uses)**

About the company -

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2 – HAZARD IDENTIFICATION

Consideration of human and environmental hazards -

In addition to the usual general precautions that should be observed when handling chemical compounds and recombinant proteins, there is at the date indicated above no indication of any particular hazardous properties.

NOTE: irritating to eyes, respiratory system and skin. Slightly hazardous to water and ground.

3 – COMPOSITION / INFORMATION ON INGREDIENTS

3.2 M Ammonium sulphate:	> 98 %
Purified recombinant pullulanase (from <i>E. coli</i> host):	< 2 %

NOTE: labelling not required and contains no hazardous substances in concentrations to be declared.

4 – FIRST AID MEASURES

Skin contact: Immediately wash with copious amounts of water.
Eye contact: Immediately wash eyes with copious amount of water. Continue for > 15 minutes and seek medical advice.
Ingestion: Wash mouth out with water if person is conscious and seek medical advice.

5 – FIRE FIGHTING MEASURES

Extinguishing media: No restriction.
Decomposition: Dangerous decomposition is not anticipated.

6 – ACCIDENTAL RELEASE MEASURES

If spilled: Absorb using suitable absorbent material and dispose of suitably.
Absorbent material: Not restricted.
Special measures: It is not necessary to put special measures in place for this product.

7 – HANDLING AND STORAGE

Safe handling: Do not breath vapour. Avoid contact with eyes, skin, and clothing. Minimise repeated or prolonged exposure.
Storage: Refrigerate at +1°C to +8°C (+4°C recommended as stated on label). **NOTE:** this product is shipped at ambient temperature
Do not store together with: No restriction

8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

General hygiene measures: Wash hands thoroughly after use and before breaks.
Respiratory protection: No respiratory equipment required for normal use.
Eye protection: Chemical safety goggles.
Hand protection: Protective gloves (do not re-use).

9 – PHYSICAL AND CHEMICAL PROPERTIES

Form: Protein suspension in 3.2 M ammonium sulphate
Colour: Off-white
Fire promoting: No oxidising properties
pH: 6 - 7 (25°C)

Density: approx. 1.225 g/cm³ (fully homogenise before taking sample)
Miscibility: Fully miscible with water

10 – STABILITY AND REACTIVITY

Hazardous reactions: None under normal use
Hazardous decomposition products: Nitrogen and sulphur oxides
Hazardous polymerisation: Will not occur

11 – TOXICOLOGICAL INFORMATION

Signs and symptoms of exposure: To our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. However, intoxication has so far not become known.

Route of exposure

Skin contact: Skin irritation caused
Skin absorption: May be harmful
Eye contact: Eye irritation caused
Inhalation: May be harmful to mucous membranes and upper respiratory system
Ingestion: May be harmful

12 – ECOLOGICAL INFORMATION

Water hazard class: 1 (German regulations [VwVwS])

13 – DISPOSAL CONSIDERATIONS

Contents: After dilution this product can be disposed of in general waste water according to local regulations
Packaging: None-contaminated outer packaging should be re-cycled as for any general paper waste. Packaging used to contain this product should be disposed off in accordance with local regulations, i.e. the same as for any general chemical compound

14 – TRANSPORT INFORMATION

Non-hazardous for road (RID/ADR), sea (IMDG) and air (IATA/ICAO) transport.

15 – REGULATORY INFORMATION

Classification and labelling according to EU directives –

Indication of danger:	Xi (irritant)
R-Phrases:	36/37/38 (irritating to eyes, respiratory system and skin)
S-Phrases:	26-36/37 (in case of contact with eyes, rinse immediately with copious amounts of water and seek medical advice. Wear suitable personal protective clothing, gloves and goggles.
Caution:	Substance not yet fully tested (EU).
Country specific information:	WGK: 1 (Germany; self classification)

16 – OTHER INFORMATION

Disclaimer: **This product is intended for laboratory research use only (not for drug, household or any other use)**

The above information has been presented to the best of our knowledge and is believed to be correct. However, it may not be accurate or inclusive, should only be used as a guide, and is provided without warranty of any kind. Among others, the recipient of this product is responsible for considering appropriate safety precautions and ensuring that existing laws and guidelines are fully observed. Prozomix Limited will not be held liable for damages resulting from handling, contact or use of this product.
