



Termamyl® Ultra 300 L

Revision date: 03/30/2015

Version No: 3

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

1.1 Product identifier

Product name Termamyl® Ultra 300 L

Chemical Name Enzyme preparation

Declared activity Alpha-amylase

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

Novozymes' enzyme preparations are biocatalysts used in a variety of industrial processes and in certain consumer products .

1.3 Details of the supplier of the safety data sheet

Novozymes A/S
Krogshøjvej 36
2880 Bagsvaerd
Denmark
Tel.: +45 44460000
Fax.: +45 44469999
E-mail: SafetyDataSheet@novozymes.com
www.novozymes.com

1.4 Emergency telephone number

+45 44462223 (24/7)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Respiratory sensitization

Category 1

Classification according to EU Directives 64/548/EEC or 1999/45/EC see section 16.

2.2 Label elements



Signal Word

Danger

Hazard Statements

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statements

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray

P285 - In case of inadequate ventilation wear respiratory protection

P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician

P304 + P341 - IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing

Contains

Alpha-amylase

Contains 1,2-Benzisothiazolin-3-one. May produce an allergic reaction.

2.3 Other information

Human health effects

Repeated inhalation of enzyme dust or aerosols resulting from improper handling may induce sensitization and may cause allergic type 1 reactions in sensitized individuals
 Repeated inhalation of enzyme dust or aerosols resulting from improper handling may induce sensitization and may cause allergic type 1 reactions in sensitized individuals
 Mild skin irritation
 Mild eye irritation

Effects of overexposure

See Section 4

The mixture does not meet the criteria for PBT or vPvB.

See Section 11 and 12 for additional Toxicological information

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous Components

Chemical Name	Weight %	CAS-No	EC No.	EU Classification (67/548/EEC)	CLP Classification (No 1272/2008)
Alpha-amylase (aep)	2.5 - 5	9000-90-2	232-565-6	R42	Resp. Sens. 1;H334

3. COMPOSITION/INFORMATION ON INGREDIENTS

Proxel	0.1 - 1	2634-33-5	220-120-9	Xn;R22 Xi;R38-41 R43 N;R50	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317 Aquatic Acute 1; H400
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Active enzyme protein (aep) is the part of the enzyme concentrate contributing to the classification of the mixture. Proxel = 20% Benz-iso-thiazoline-3-one, CAS-No 2634-33-5

Regulatory information *

Chemical Name	Weight %	IUB No.	REACH Registration No.
Alpha-amylase	10 - 20	3.2.1.1	01-2119938627-26

*: In the scope of REACH registration enzymes are defined as enzyme concentrate (dry matter basis)

For the full text of the R/H phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

4.1 Description of first-aid measures

Inhalation

Effects	May cause allergic respiratory reaction
Symptoms	Shortness of breath, wheezing and coughing The effect of inhalation may be delayed
First Aid	Remove person to fresh air. If signs/symptoms continue, get medical attention Show this safety data sheet to the doctor in attendance

Skin contact

Effects	May cause slight irritation.
Symptoms	Slight irritation.
First Aid	Remove and wash contaminated clothing before re-use. Wash off immediately with plenty of water. If symptoms persist, call a doctor. Show this safety data sheet to the doctor in attendance.

Eye contact

Effects	May cause slight irritation.
Symptoms	Slight irritation
First Aid	Hold eye open and rinse slowly and gently with water for 15-20 min. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye. If symptoms persist, call a doctor. Show this safety data sheet to the doctor in attendance

Ingestion

Effects	Ingestion may cause gastrointestinal irritation.
Symptoms	Irritation
First Aid	Rinse mouth with water and drink plenty of water. If symptoms persist, call a doctor. Show this safety data sheet to the doctor in attendance.

4.2 Most important symptoms and effects, both acute and delayed

See section 4.1

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

Unsuitable Extinguishing Media none

Hazardous combustion products None

5.2 Special hazards arising from the substance or mixture

May cause allergic respiratory reaction

5.3 Advice for firefighters

Self-contained breathing apparatus

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For personal protection see section 8

6.2 Environmental precautions

Collect spillage.

6.3 Methods and materials for containment and cleaning up

Avoid formation of dust and aerosols

Spilled preparation should be removed immediately to avoid formation of dust from dried preparation. Take up by mechanical means preferably by a vacuum cleaner equipped with a high efficiency filter. Flush remainder carefully with plenty of water. Avoid splashing and high pressure washing (avoid formation of aerosols). Ensure sufficient ventilation. Wash contaminated clothing.

6.4 Reference to other sections

For personal protection see section 8

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid formation of dust and aerosols

Ensure adequate ventilation

Liquid enzyme preparations are dustfree preparations. However, inappropriate handling may cause formation of dust or aerosols.

7.2 Conditions for safe storage, including any incompatibilities

7. HANDLING AND STORAGE

Keep tightly closed in a dry and cool place.

Temperature 0-25 °C (32-77 °F)

In unbroken packaging - dry and protect from the sun. The product has been formulated for optimal stability. Extended storage or adverse conditions such as higher temperatures or higher humidity may lead to a higher dosage requirement.

7.3 Specific end uses

Handle in accordance with good industrial hygiene and safety practice

When enzymes are used for spray products or hard surface cleaning, exposure of enzymes may exceed the safety level (15 ng/m³ DMEL). If you intend to develop such products, please contact Novozymes for further safety evaluation.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

DNEL/DMEL/PNEC

Chemical Name	DNEL Dermal Acute Local (Workers)	DMEL Inhalation Long term Local (Workers)
Alpha-amylase (aep)	-	DMEL = 60 ng/m ³

Chemical Name	DNEL Dermal Acute Local (Professional/Consumers)	DMEL Inhalation Long term Local (Professionals/Consumers)
Alpha-amylase	-	DMEL = 15 ng/m ³

Chemical Name	Fresh Water	Sea Water	Impact on Sewage Treatment
Alpha-amylase (aep)	PNEC aqua (fresh water) = 5.2 µg/l	PNEC aqua (marine water) = 0.52 µg/l	PNEC STP = 65000 µg/L

Derived No Effect Level (DNEL)

Derived Minimal Effect Level (DMEL)

Predicted No Effect Concentration (PNEC)

When enzymes are used for spray products or hard surface cleaning, exposure of enzymes may exceed the safety level (15 ng/m³ DMEL). If you intend to develop such products, please contact Novozymes for further safety evaluation.

8.2 Exposure controls

Ensure adequate ventilation, especially in confined areas

Personal Protective Equipment

Respiratory Protection In case of insufficient ventilation wear an approved mask with a particle filter type P3 used according to the manufactures instruction

Eye protection Safety glasses with side-shields

Skin Protection Long sleeved clothing

Hand Protection	Protective gloves of e.g. nitrile rubber or neoprene (thickness > 0.3 mm) according to EN 374-3. Expected breakthrough time: > 4 hours. The recommendation is a qualified estimate based on the knowledge of the components in the mixture
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practices
Environmental exposure controls	Local authorities should be advised if significant spillages cannot be contained Waste water should be discharged to sewage treatment plant

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	amber
Odor	Slight fermentation odor
Density (g/ml)	1.16
pH	Adjusted to the range where active enzyme is stable – typically pH 4 – 9
Solubility	Active component is readily soluble in application-relevant solutions at all levels of concentration, temperature and pH which may occur in normal usage

9.2 Other information

No information available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Not relevant

10.2 Chemical stability

Stable under recommended storage conditions

10.3 Possibility of hazardous reactions

None under normal processing

10.4 Conditions to Avoid

None

10.5 Incompatible Materials

None

10.6 Hazardous Decomposition Products

None

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

11. TOXICOLOGICAL INFORMATION

Chemical Name	Acute oral toxicity	Respiratory sensitization	Genetic toxicity	Skin corrosion/irritation	Serious eye damage/eye irritation
Alpha-amylase (aep)	LD50: > 2000 mg/kg bw (OECD TG 401, 420)	Sensitizer (Human experience)	No indication of mutagenic effects (OECD TG 471, 476)	Not irritating (OECD TG 404)	Not irritating (OECD TG 405)
Proxel	Harmful if swallowed	no data available	No mutagenic effect	Causes burns	Risk of serious damage to eyes

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Chemical Name	Daphnia, acute	Acute fish toxicity =	Algae, Acute
Alpha-amylase (aep)	EC50 (48 hours): 31.7 - 457 mg aep/l (OECD TG 202)	LC50 (96 hours): 58.3 - 326.7 mg aep/l (OECD TG 203)	ErC50 (72 hours): >= 5.2 mg aep/l (OECD TG 201)
Proxel	EC50 (48 hours): 2.94 mg/l (OECD TG 202)	2.18mg/l (OECD TG 203)	ErC5 (72 hours): 0.11 mg/l (OECD TG 201)

12.2 Persistence and degradability

Chemical Name	Persistence and degradability	Partition coefficient (n-octanol/water)
Alpha-amylase (aep)	Readily biodegradable (OECD 301)	LogPow: <0
Proxel	Inherently biodegradable	-

12.3 Bioaccumulative potential

Chemical Name	Bioaccumulative potential
Alpha-amylase (aep)	Does not bioaccumulate
Proxel	Bioaccumulation is unlikely

12.4 Mobility in soil

Not relevant

12.5 Results of PBT and vPvB assessment

Components do not meet PBT or vPvB criteria according to REACH Annex XIII

12.6 Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of in accordance with local regulations

Waste water should be discharged to sewage treatment plant

Waste codes should be assigned by the user based on the application for which the product was used

14. TRANSPORT INFORMATION

Transport Regulations

No dangerous goods according to transport regulations
No special precautions required

14.1	
UN number	Not applicable
14.2	
UN proper shipping name	Not applicable
14.3	
Transport hazard class(es)	Not applicable
14.4	
Packing group	Not applicable
14.5	
Environmental hazards	Not applicable
14.6	
Special precautions for user	Not applicable
14.7	
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
WGK Classification 1

15.2 Chemical Safety Report
No chemical safety assessment has been carried out

16. OTHER INFORMATION

Text of R/H phrases mentioned in Section 2&3

R42 - May cause sensitization by inhalation

Full text of H-Statements referred to under Sections 2 and 3

H302 - Harmful if swallowed

H315 - Causes skin irritation

H318 - Causes serious eye damage

H317 - May cause an allergic skin reaction

H400 - Very toxic to aquatic life

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

GHS-Classification The GHS calculation method has been used for classification of this mixture.

Classification according to EU Directives 64/548/EEC or 1999/45/EC

Symbol(s) Xn - Harmful
R-code(s) R42

Further information

This SDS is in compliance with EU Regulation No. 453/2010

For further information please consult available product documentation including 'Product Application Guidelines' and/or 'Application Sheets', which are available on www.mynovozymes.com or from Novozymes sales representatives.

Training advice

Details on the safe handling of this product can be found in the "Handling enzymes" on www.novozymes.com

Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text. Furthermore, as the conditions of use are beyond the control of Novozymes, it is the responsibility of the customer to determine the conditions of safe use of these products.

End of Safety Data Sheet

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