

SAFETY DATA SHEET  
Revision date: 2020/08/20  
Version No: 3  
According to UN GHS

# Termamyl 2X

## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product Identifier

Product Name	Termamyl® 2X
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 within food manufacturing

### 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

Initial Supplier Identifier  
Données relatives au fournisseur

**Univar Solutions Canada Ltd.**

9800 Van Horne Way  
Richmond, BC V6X 1W5  
Telephone: 1-866-686-4827

### 1.4 Emergency telephone number

+45 44462223 (24/7)

## 2. HAZARDS IDENTIFICATION

### 2.1. Classification of the substance or mixture

Respiratory sensitisation Category 1

### 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  
P284 - In case of inadequate ventilation wear respiratory protection  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing  
P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician  
P402 + P404 - Store in a dry place. Store in a closed container  
P501 - Dispose of contents/containers in accordance with local regulations

Rethink Tomorrow

novozymes

### 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  
Mild skin irritation  
Mild eye irritation

#### Physical and Chemical Hazards

None known

#### Specific hazards

None known

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	IUB No.	Weight-%
Alpha-amylase (aep.)	9000-90-2	3.2.1.1	1 - 5

Active enzyme protein (aep) is the part of the enzyme concentrate contributing to the classification of the mixture.

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### 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.

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## 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 material 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

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## 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  
Keep tightly closed in a dry and cool place  
The product can be transported at ambient temperature. Following delivery, the product should be stored as recommended. 0-10 °C (32-50 °F)

7.3 Specific end use(s)  
Handle in accordance with good industrial hygiene and safety practice

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## 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 <sup>3</sup>

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)

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	Wear safety glasses with side shields (or goggles)
Skin Protection	Long sleeved clothing
Hand Protection	Skin should be washed after contact
General Hygiene Considerations	Handle in accordance with good industrial hygiene and safety practice
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
Colour	Yellow to light brown
Odour	Slight fermentation odor
Melting point / freezing point	No information available
Initial boiling point and boiling range	Not available
Flammability (solid, gas)	Not available
Upper/lower flammability or explosive limits	Not available
Flash Point	> 100 °C
Autoignition temperature	Not available
Decomposition temperature	Not available
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
Partition Coefficient (n-octanol/water)	Not available
Vapour Pressure	Not available
Density (g/ml)	1.26
Vapour density	Not available
Particle characteristics	Not applicable
Evaporation rate	Not available
Oxidising Properties	Not available

9.2 Other information

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

Chemical name	Acute oral toxicity	Respiratory sensitisation	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)

## 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)

### 12.2 Persistence and degradability

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

### 12.3 Bioaccumulative potential

Chemical name	Bioaccumulative potential
Alpha-amylase (aep.)	Does not bioaccumulate

12.4 Mobility in soil  
 Not relevant

12.5 Results of PBT and vPvB assessment  
 The components in this formulation do not meet the criteria for classification as PBT or vPvB

12.6 Other adverse effects  
No information available

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### 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

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### 14. TRANSPORT INFORMATION

#### Transport Regulations

This product is not classified as dangerous goods according to UN GHS classification criteria.

IATA Not regulated

IMDG/IMO Not regulated

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

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### 15. REGULATORY INFORMATION

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

Please check the consequences of national regulations on this product yourself.

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### 16. OTHER INFORMATION

#### GHS-Classification

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

#### Further information

This SDS is compiled according to the UN GHS rev. 5 Guideline.

For further information please consult available product documentation including 'Product Application Guidelines' and/or 'Application Sheets', which are available on [market.novozymes.com](http://market.novozymes.com) or from Novozymes sales representatives.

Training advice

Details on the safe handling of this product can be found in the "Handling enzymes" on [market.novozymes.com](http://market.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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