



## Stainzyme® 12 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** Stainzyme® 12 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

## 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)	1 - 2.5	9000-90-2	232-565-6	R42	Resp. Sens. 1;H334

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

#### Regulatory information \*

Chemical Name	Weight %	IUB No.	REACH Registration No.
Alpha-amylase	5 - 10	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

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

#### Skin contact

<b>Effects</b>	May cause slight irritation.
<b>Symptoms</b>	Slight irritation.
<b>First Aid</b>	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

<b>Effects</b>	May cause slight irritation.
<b>Symptoms</b>	Slight irritation
<b>First Aid</b>	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

<b>Effects</b>	Ingestion may cause gastrointestinal irritation.
<b>Symptoms</b>	Irritation
<b>First Aid</b>	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

<b>Notes to physician</b>	Treat symptomatically
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## 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

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/m<sup>3</sup> 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 <sup>3</sup>

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

When enzymes are used for spray products or hard surface cleaning, exposure of enzymes may exceed the safety level (15 ng/m<sup>3</sup> 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** Skin should be washed after contact

**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)	1.14
pH	Adjusted to the range where active enzyme is stable – typically pH 4 – 9
Solubility	none

### 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

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)

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Chemical Name	Daphnia, acute	Acute fish toxicity =	Algae, Acute
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## 12. ECOLOGICAL INFORMATION

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): $\geq$ 5.2 mg aep/l (OECD TG 201)
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### 12.2 Persistence and degradability

Chemical Name	Persistence and degradability	Partition coefficient (n-octanol/water)
Alpha-amylase (aep)	Readily biodegradable (OECD 301)	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

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

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](http://www.mynovozymes.com) or from Novozymes sales representatives. Enzymes are catalysts and reacts with various substrates. Enzymes will continue to react until deactivated or removed from the substrates. Consideration of where the activity is desired or undesired should be made before use.

**Training advice**      Details on the safe handling of this product can be found in the "Handling enzymes" on [www.novozymes.com](http://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*****Version No:** 3 / EU / English / 03/30/2015