SAFETY DATA SHEET Revision date: 2019/09/06 Version No: 3 Compliant with 29 CFR §1910.1200 HCS 2012 Compliant with HPR WHMIS 2015

Termamyl® SC DS

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Termamyl® SC DS
Chemical Name Enzyme preparation
Declared activity Alpha-amylase

Use of the substance/preparation
Novozymes' enzyme preparations are biocatalysts used in a variety of industrial processes within food manufacturing

Supplier's details Novozymes North America, Inc. 77 Perry Chapel Church Rd., Box 576 Franklinton, NC 27525 E-mail: SafetyDataSheet@novozymes.com www.novozymes.com

Information Telephone Number 1-919-494-3000, 8 am - 4:30 pm EST M-F

Emergency Telephone Number 1-800-424-9300 (Chemtrec) 24 hours every day

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2. HAZARD(S) IDENTIFICATION

Classification

Classification of the chemical in accordance with 29CFR §1910.1200

WHMIS Classification

Respiratory sensitization

Category 1

Label elements

Danger

Hazard statements

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

Precautionary Statements - Prevention

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

P284 - In case of inadequate ventilation wear respiratory protection Precautionary Statements - Response

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTRE or doctor/physician



Hazards not otherwise classified (HNOC)

1	Health
1	Flammability
0	Reactivity
X	Protective Equipment



3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	IUB No.	Weight-%
Alpha-amylase (aep)	19000-90-2		0.1- < 1

aep (active enzyme protein) contributes to the GHS classification.

4. FIRST AID MEASURES

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In case of unintended overexposure, the following measures apply

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, nausea, vomiting and diarrhea.

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...

5. FIRE-FIGHTING MEASURES

Flammable Properties Slightly flammable according to HMIS criteria.

Unsuitable Extinguishing Media None.

Hazardous Combustion Products None.

Specific Hazards Arising from the Chemical May cause allergic respiratory reaction

Protective Equipment and Precautions for Self-contained breathing apparatus and standard turn-out apparel

Firefighters

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions For personal protection see section 8

Environmental Precautions Collect spillage.

Methods for 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 HEPA (High Efficiency Particulate Air) filter. Flush remainder carefully with plenty of water. Avoid splashing, high pressure washing or compressed air cleaning to avoid formation of aerosols. Ensure sufficient ventilation. Wash

contaminated clothing.





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Other Information For personal protection see section 8.

7. HANDLING AND STORAGE

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

Storage 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. Temperature 0-10 °C (32-50 °F)

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical name	DNEL Dermal Acute Local (Workers)	DMEL Inhalation Long term Local (Workers)
Alpha-amylase (aep)	-	$DMEL = 60 \text{ ng/m}^3$

Derived No Effect Level (DNEL) Derived Minimal Effect Level (DMEL)

Occupational exposure controls

Engineering Controls

Ensure adequate ventilation, especially in confined areas.

Maintain good conditions of industrial hygiene. Some processes may require enclosures, local exhaust

ventilation, or other engineering controls to control airborne levels. Additional handling and

healthy/safety information is available upon request

Personal Protective Equipment

Respiratory protection

In case of insufficient ventilation wear suitable respiratory equipment that meets HEPA/P100

specifications

Eye Protection Skin and body protection Wear safety glasses with side shields (or goggles)

No special technical protective measures are necessary

General Hygiene Considerations Environmental exposure controls Handle in accordance with good industrial hygiene and safety practice Local authorities should be advised if significant spillages cannot be contained

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State Liquid Color Amber

Odor Slight fermentation odor

pH Adjusted to the range where active enzyme is stable – typically pH 4 – 9

Melting point / freezing point No information available

Initial boiling point and boiling range
Flash Point
Evaporation rate
Flammability (solid, gas)
Not determined
Not available
Not determined

Upper/lower flammability or explosive Not available

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limits

Vapor Pressure No data available Vapor density Density (g/ml) Not available

1.27

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) No data available

Autoignition temperature

Decomposition temperature

Not available Not available Viscosity Not available

Other information No information available

10. STABILITY AND REACTIVITY

Reactivity Not relevant

Chemical stability Stable under recommended storage conditions

Possibility of hazardous reactions None under normal processing

Conditions to Avoid None Incompatible materials None

Hazardous Decomposition Products None

11. TOXICOLOGICAL INFORMATION

Information on toxicological 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

Chemical name	Acute oral toxicity	Acute inhalation toxicity	Skin corrosion/irritation	Serious eye damage/eye
	_	_		irritation
Alpha-amylase (aep)	LD50: > 2000 mg/kg bw (OECD TG 401, 420)		Not irritating (OECD TG 404)	Not irritating (OECD TG 405)

Chemical name	Specific target organ toxicity (single exposure)	Genetic toxicity	Skin sensitization	Respiratory sensitization
Alpha-amylase (aep)		No indication of mutagenic effects (OECD TG 471, 476)		Sensitizer (Human experience)

12. ECOLOGICAL INFORMATION

Toxicity

Chemical name	Daphnia, acute	Algae, acute	Fish, acute
Alpha-amylase (aep)	EC50 (48 hours): 31.7 - 457 mg	ErC50 (72 hours): >= 5.2 mg aep/l	LC50 (96 hours): 58.3 - 326.7 mg
	aep/I (OECD TG 202)	(OECD TG 201)	aep/I (OECD TG 203)



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Persistence/Degradability

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

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

Mobility in soil Not relevant

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Disposal of wastes Dispose of in accordance with local regulations.

Contaminated Packaging Dispose of wastes in an approved waste disposal facility.

14. TRANSPORT INFORMATION

Transport Regulations

No dangerous goods according to transport regulations

No special precautions required

UN-No Not applicable
Proper Shipping Name Not applicable
Hazard Class Not applicable
Packing Group Not applicable
Reportable Quantity (RQ) Not applicable
Marine Pollutant Not applicable

15. REGULATORY INFORMATION

The product complies with the recommended purity specifications for food-grade enzymes given by the Joint FAO/WHO Expert Committee on Food Additives (JECFA) and the Food Chemical Codex (FCC).

USA, Federal Regulations

TSCA Inventory

The active ingredient and all components of the enzyme preparation are listed on the TSCA inventory

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and 40 CFR Part 372.

SARA 311/312 Hazardous Categorization

Acute Health Hazard No
Chronic Health Hazard No
Fire Hazard No
Sudden Release of Pressure Hazard No
Reactive Hazard No

USA, State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

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Canada

All components are listed either on the DSL or NDSL

WHMIS Statement

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by WHMIS 2015.

16. OTHER INFORMATION

Details on the safe handling of this product are located in the Novozymes Customer Center Document Training advice

Library on www.mynovozymes.com

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

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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