



Viscoferm®

Revision date: 01/25/2015

Version No: 3

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Viscoferm®
Chemical Name	Enzyme preparation
Declared activity	Beta-glucanase (endo-1,3(4)-)
Use of the substance/preparation	Novozymes' enzyme preparations are biocatalysts used in a variety of industrial processes within food manufacturing
Contact Manufacturer	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

2. HAZARD(S) IDENTIFICATION

Classification Classification of the chemical in accordance with 29CFR §1910.1200

Respiratory sensitization	Category 1
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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
 P285 - In case of inadequate ventilation wear respiratory protection

Precautionary Statements - Response
 P304 + P341 - IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position 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

Hazardous Components

Chemical Name	CAS-No	IUB No.	Weight %*
Cellulase (aep)	9012-54-8	3.2.1.4	5 - 10
Xylanase (endo-1,4-) (aep)	9025-57-4	3.2.1.8	1 - 5
Beta-glucanase (endo- 1,3(4)-) (aep)	62213-14-3	3.2.1.6	0.1- 1

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

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

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

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Flammable Properties	Slightly flammable according to HMIS criteria
Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide
Unsuitable Extinguishing Media	None
Hazardous Combustion Products	None
Specific Hazards Arising from the Chemical	May cause allergic respiratory reaction
Protective Equipment and Precautions for Firefighters	Self-contained breathing apparatus and standard turn-out apparel

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.

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. Temperature 0-25 °C (32-77 °F)

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical Name	DNEL Dermal Acute Local (Workers)	DMEL Inhalation Long term Local (Workers)
Cellulase (aep)		DMEL = 60 ng/m ³
Xylanase (endo-1,4-) (aep)		DMEL = 60 ng/m ³
Beta-glucanase (endo-1,3(4)-) (aep)		DMEL = 60 ng/m ³

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 Safety glasses with side-shields

Skin and body protection No special technical protective measures are necessary

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid
Color	Light brown
Odor	Slight fermentation odor
Density (g/ml)	1.18
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

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

Inhalation

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

Skin contact

Mild skin irritation

Eye contact

Mild eye irritation

Ingestion

Chemical Name	Acute oral toxicity	Acute inhalation toxicity	Skin corrosion/irritation	Serious eye damage/eye irritation
Cellulase (aep)	LD50: > 2000 mg/kg bw (OECD TG 401, 420)		Not irritating (OECD TG 404)	Not irritating (OECD TG 405)
Xylanase (endo-1,4-) (aep)	LD50: > 2000 mg/kg bw (OECD TG 401, 420)		Not irritating (OECD TG 404)	Not irritating (OECD TG 405)
Beta-glucanase (endo-1,3(4)-) (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
Cellulase (aep)		No indication of mutagenic effects (OECD TG 471, 476)		Sensitizer (Human experience)
Xylanase (endo-1,4-) (aep)		No indication of mutagenic effects (OECD TG 471, 476, 487)		Sensitizer (Human experience)
Beta-glucanase (endo-1,3(4)-) (aep)		No indication of mutagenic effects (OECD TG 471, 476, 487)		Sensitizer (Human experience)

12. ECOLOGICAL INFORMATION

Toxicity

Chemical Name	Daphnia, acute	Algae, acute	Fish, acute
Cellulase (aep)	EC50 (48 hours): >39.5 mg aep/l (OECD TG 202)	-	LC50 (96 hours): >39.5 mg aep/l (OECD TG 203)
Xylanase (endo-1,4-) (aep)	EC50 (48 hours): >42 mg test substance/l (OECD TG 202)	ErC50 (72 hours): > 1000 mg test substance/l (OECD TG 201)	LC50 (96 hours): > 1000mg test substance/l (OECD TG 203)
Beta-glucanase (endo-1,3(4)-) (aep)	EC50 (48 hours): >100 mg TOS/l (OECD TG 202)	ErC50 (72 hours): > 100 mg TOS/l (OECD TG 201)	LC50 (96 hours): > 100mg TOS/l (OECD TG 203)

Persistence/Degradability

Chemical Name	Persistence and degradability	Partition coefficient (n-octanol/water)	Bioaccumulative Potential
Cellulase (aep)	Readily biodegradable (OECD 301E/F)	LogPow: <0	Does not bioaccumulate
Xylanase (endo-1,4-) (aep)	Readily biodegradable (OECD 301)	LogPow: <0	Does not bioaccumulate
Beta-glucanase (endo-1,3(4)-) (aep)	Readily biodegradable (OECD 301)	LogPow: <0	Does not bioaccumulate

Mobility in soil Not relevant

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method 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

Transport hazard class(es) not applicable

Packing group not applicable

Environmental hazards 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

Canada

WHMIS Hazard Class Controlled product hazard class D2 A (respiratory sensitizer)

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

16. OTHER INFORMATION

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