SAFETY DATA SHEET Revision date: 2019/02/20 Version No: 3 Compliant with 29 CFR §1910.1200 HCS 2012 Compliant with HPR WHMIS 2015

Vinozym® FCE G

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Chemical Name Declared activity Vinozym® FCE G Enzyme preparation Polygalacturonase

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



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)





3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	IUB No.	Weight-%
Polygalacturonase (aep)	9032-75-1	3.2.1.15	1 - 5

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

4. FIRST AID MEASURES

In case of unintended overexposure, the following measures apply



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Inhalation Effects Symptoms First Aid	May cause allergic respiratory reaction. Shortness of breath, wheezing and coughing. The effect of inhalation may be delayed. Remove person to fresh air. If signs/symptoms continue, get medical atter Show this safety data sheet to the doctor in attendance.	ntion.	
Skin Contact Effects Symptoms First Aid	May cause slight irritation. Slight irritation. Remove and wash contaminated clothing before re-use. Wash off immedia symptoms persist, call a doctor. Show this safety data sheet to the doctor		ter. If
Eye Contact Effects Symptoms First Aid	May cause slight irritation. Slight irritation. Hold eye open and rinse slowly and gently with water for 15-20 min. Remo after the first five minutes, then continue rinsing eye. If symptoms persist, safety data sheet to the doctor in attendance.		
Ingestion Effects Symptoms First Aid	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarr Irritation. Rinse mouth with water and drink plenty of water. If symptoms persist, ca data sheet to the doctor in attendance.		afety

5. FIRE-FIGHTING MEASURES

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 Self-contained breathing apparatus and standard turn-out apparel. Firefighters

6. ACCIDENTAL RELEASE MEASURES

For personal protection see section 8.
Collect spillage.
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.



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7. HANDLING AND STORAGE

Handling	Avoid formation of dust and aerosols. Ensure adequate ventilation. This product is formulated to prevent formation of dust However, inappropriate handling may release dust
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 0.25 °C (32-77 °F)

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Chemical name	DNEL Dermal Acute Local (Workers)	DMEL Inhalation Long term Local (Workers)
Polygalacturonase (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	Wear safety glasses with side shields (or goggles)
Skin and body protection	No special technical protective measures are necessary
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

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State
Color
Odor
рН
Melting point / freezing point
Initial boiling point and boiling range
Flash Point
Evaporation rate
Flammability (solid, gas)
Upper/lower flammability or explosive
limits
Vapor Pressure
Vapor density
Density (g/ml)
Solubility
-

granulate Off-white Slight fermentation odor Not relevant No information available Not determined Not determined Not available Not determined Not available Not data available Not available Solution available Not available Not available Not available Not available Not available O.65 Active component is readily soluble in application-relevant solutions at all levels of concentration, temperature and pH which may occur in normal usage



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Partition Coefficient (n-octanol/water)	No data available
Autoignition temperature	Not available
Decomposition temperature	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	Avoid destruction of granulate
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		Serious eye damage/eye irritation
Polygalacturonase (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
Polygalacturonase (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
Polygalacturonase (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)

Persistence/Degradability

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

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Chemical name	Bioaccumulative Potential
Polygalacturonase (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

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 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.

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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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