SAFETY DATA SHEET
Revision date: 2020/02/06
Version No: 3
Compliant with 29 CFR §1910.1200 HCS 2012
Compliant with HPR WHMIS 2015

Ultraflo® Max

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Ultraflo® Max
Chemical Name	Enzyme preparation
Declared activity	Xylanase (endo-1,4-), 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

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)

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3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No	IUB No.	Weight-%
Beta-glucanase (endo-1,3(4)-) (aep)	62213-14-3	3.2.1.6	10 - 20
Xylanase (endo-1,4-) (aep)	9025-57-4	3.2.1.8	0.1- < 1

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

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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..

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

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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.

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)
Beta-glucanase (endo-1,3(4)-) (aep)	-	DMEL = 60 ng/m³
Xylanase (endo-1,4-) (aep)		DMEL = 60 ng/m³

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 — 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	Liquid
Color	Brown
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	Not determined
Flash Point	Not determined
Evaporation rate	Not available

Flammability (solid, gas)	Not determined
Upper/lower flammability or explosive limits	Not available
Vapor Pressure	No data available
Vapor density	Not available
Density (g/ml)	1.18
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	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	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
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)
Xylanase (endo-1,4-) (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
Beta-glucanase (endo-1,3(4)-) (aep)		No indication of mutagenic effects (OECD TG 471, 476, 487)		Sensitizer (Human experience)
Xylanase (endo-1,4-) (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
Beta-glucanase (endo-1,3(4)-) (aep)	EC50 (48 hours): >100 mg TOS/l (OECD TG 202)	ErC50 (72 hours): > 100 mg TOS/ll (OECD TG 201)	LC50 (96 hours): > 100mg TOS/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/ll (OECD TG 201)	LC50 (96 hours): > 1000mg test substance/l (OECD TG 203)

Persistence/Degradability

Chemical name	Persistence and degradability	Partition coefficient (n-octanol/water)
Beta-glucanase (endo-1,3(4)-) (aep)	Readily biodegradable (OECD 301)	LogPow: <0
Xylanase (endo-1,4-) (aep)	Readily biodegradable (OECD 301)	LogPow: <0

Chemical name	Bioaccumulative Potential
Beta-glucanase (endo-1,3(4)-) (aep)	Does not bioaccumulate
Xylanase (endo-1,4-) (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

Canada

DSL/NDSL
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.

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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