



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name ENZ-OUT
CAS # Mixture
Product Use Enzyme spotter
Manufacturer CFR Division of Tacony Corporation
3101 Wichita Court
Fort Worth, TX 76140-1710 US
Phone: 1-800-880-2913 ext.150

LEGEND HMIS	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

Health	* 2
Flammability	0
Physical Hazard	0
Personal Protection	B

2. Hazards Identification

Emergency Overview WARNING
EYE AND SKIN IRRITANT.
May cause sensitisation by inhalation.

Potential short term health effects

Routes of exposure Eye, Skin contact, Inhalation, Ingestion.

Eyes May cause irritation.

Skin May cause irritation.

Inhalation May cause respiratory tract irritation.

Ingestion May cause stomach distress, nausea or vomiting.

Target organs Eyes. Skin.

Chronic effects Prolonged or repeated exposure can cause drying, defatting and dermatitis.

Signs and symptoms Symptoms may include redness, oedema, drying, defatting and cracking of the skin.
Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

3. Composition/Information on Ingredients

Ingredient(s)	CAS #	Percent
Subtilisin protease enzyme	9014-01-1	0.1178
Alpha-Amylase (ID# 3.2.1.1)	9000-85-5	0.5 - 1.5
Methyloxirane, polymer with oxirane, monooctyl ether	37311-02-7	1 - 5
Methyloxirane, polymer with oxirane, monohexyl ether	52232-09-4	1 - 5
Methyloxirane, polymer with oxirane monodecyl ether	37251-67-5	1 - 5
1,2-Propylene glycol	57-55-6	15 - 40

4. First Aid Measures

First aid procedures

Eye contact Flush with cool water. Remove contact lenses, if applicable, and continue flushing.
Obtain medical attention if irritation persists.

Skin contact Flush with cool water. Wash with soap and water. Obtain medical attention if irritation persists.

Inhalation	If symptoms develop move victim to fresh air. If symptoms persist, obtain medical attention.
Ingestion	Do not induce vomiting. Rinse mouth with water, then drink one or two glasses of water. Obtain medical attention. Never give anything by mouth if victim is unconscious, or is convulsing.
Notes to physician	Symptoms may be delayed.
General advice	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting Measures

Flammable properties	Not flammable by WHMIS criteria.
Extinguishing media	
Suitable extinguishing media	Dry chemical. Water spray. Foam. Carbon dioxide.
Unsuitable extinguishing media	Not available
Protection of firefighters	
Specific hazards arising from the chemical	Not available
Protective equipment for firefighters	Firefighters should wear full protective clothing including self contained breathing apparatus.
Hazardous combustion products	May include and are not limited to: Oxides of carbon.
Explosion data	
Sensitivity to mechanical impact	Not available
Sensitivity to static discharge	Not available

6. Accidental Release Measures

Personal precautions	Keep unnecessary personnel away. Do not touch or walk through spilled material. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep people away from and upwind of spill/leak.
Methods for containment	Stop leak if you can do so without risk. Prevent entry into waterways, sewers, basements or confined areas. Use water spray to reduce vapours or divert vapour cloud drift.
Methods for cleaning up	Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with non-reactive absorbent and placed in suitable, covered, labelled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills in original containers for re-use. Large Spills: Wet down with water and dike for later disposal. After removal flush contaminated area thoroughly with water.

7. Handling and Storage

Handling	Use good industrial hygiene practices in handling this material.
Storage	Keep out of reach of children. Store in a closed container away from incompatible materials.

8. Exposure Controls / Personal Protection

Exposure limits

Ingredient(s)	Exposure limits
1,2-Propylene glycol	ACGIH-TLV Not established
Alpha-Amylase (ID# 3.2.1.1)	ACGIH-TLV Not established
Methyloxirane, polymer with oxirane monodecyl ether	ACGIH-TLV Not established
Methyloxirane, polymer with oxirane, monohexyl ether	ACGIH-TLV Not established
Methyloxirane, polymer with oxirane, monooctyl ether	ACGIH-TLV Not established
Subtilisin protease enzyme	ACGIH-TLV Ceiling: 0.0001 mg/m3

Engineering controls

General ventilation normally adequate.

Personal protective equipment

Eye/Face protection

Wear safety glasses with side shields.

Hand protection

Rubber gloves. Confirm with a reputable supplier first.

Skin and body protection

As required by employer code.

Respiratory protection

Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. When using do not eat or drink. Wash hands before breaks and immediately after handling the product.

9. Physical & Chemical Properties

Appearance	Clear.
Colour	Light tan
Form	Liquid
Odour	Natural
Odour threshold	Not available
Physical state	Liquid
pH	7 - 8 (100%)
Freezing point	Not available
Boiling point	> 100 °C (> 212.00 °F)
Flash point	None
Evaporation Rate	Not available
Flammability limits in air, lower, % by volume	Not applicable
Flammability Limits in Air, Upper, % by Volume	Not applicable
Vapour pressure	Not available
Vapour density	Not available
Specific gravity	1.02 - 1.05
Octanol/water coefficient	Not available
Solubility (H2O)	Complete
Auto-ignition temperature	Not applicable
VOC (Weight %)	Not available
Viscosity	Water thin
Percent volatile	Not available

10. Chemical Stability & Reactivity Information

Chemical stability	Stable under recommended storage conditions.
Conditions to avoid	Do not mix with other chemicals.
Incompatible materials	Strong oxidizing agents.
Hazardous decomposition products	May include and are not limited to: Oxides of carbon.
Possibility of hazardous reactions	Will not occur.

11. Toxicological Information

Component analysis - LC50

Ingredient(s)	LC50
1,2-Propylene glycol	Not available
Alpha-Amylase (ID# 3.2.1.1)	Not available
Methyloxirane, polymer with oxirane monodecyl ether	Not available
Methyloxirane, polymer with oxirane, monohexyl ether	Not available
Methyloxirane, polymer with oxirane, monooctyl ether	Not available
Subtilisin protease enzyme	Not available

Component analysis - Oral LD50

Ingredient(s)	LD50
1,2-Propylene glycol	14800 mg/kg rabbit; 20000 mg/kg rat
Alpha-Amylase (ID# 3.2.1.1)	Not available
Methyloxirane, polymer with oxirane monodecyl ether	Not available
Methyloxirane, polymer with oxirane, monohexyl ether	3000 mg/kg rat
Methyloxirane, polymer with oxirane, monooctyl ether	Not available
Subtilisin protease enzyme	2000 mg/kg rat

Effects of acute exposure

Eye	May cause irritation.
Skin	May cause irritation.
Inhalation	May cause respiratory tract irritation.
Ingestion	May cause stomach distress, nausea or vomiting.
Sensitisation	Contains potential respiratory tract sensitizers.
Chronic effects	Non-hazardous by WHMIS criteria.
Carcinogenicity	Non-hazardous by WHMIS criteria.
Mutagenicity	Non-hazardous by WHMIS criteria.
Reproductive effects	Non-hazardous by WHMIS criteria.
Teratogenicity	Non-hazardous by WHMIS criteria.

12. Ecological Information

Ecotoxicity effects	Components of this product have been identified as having potential environmental concerns.
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Ecotoxicity - Freshwater Algae Data

1,2-Propylene glycol	57-55-6	96 Hr EC50 Selenastrum capricornutum: 19000 mg/L
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Ecotoxicity - Freshwater Fish Species Data

1,2-Propylene glycol	57-55-6	96 Hr LC50 Oncorhynchus mykiss: 51600 mg/L [static]; 96 Hr LC50 Pimephales promelas: 51400 mg/L [static]
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Ecotoxicity - Microtox Data

1,2-Propylene glycol	57-55-6	30 min EC50 Photobacterium phosphoreum: 710 mg/L
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Ecotoxicity - Water Flea Data

1,2-Propylene glycol	57-55-6	48 Hr EC50 water flea: >10000 mg/L
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Environmental effects	Not available
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Aquatic toxicity	Not available
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Persistence and degradability	Not available
Bioaccumulation/accumulation	Not available
Partition coefficient	Not available
Mobility in environmental media	Not available
Chemical fate information	Not available

13. Disposal Considerations

Waste codes	Not available
Disposal instructions	Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Not available
Contaminated packaging	Not available

14. Transport Information

Transportation of Dangerous Goods (TDG)

Not regulated as dangerous goods.

15. Regulatory Information

Canadian federal regulations	This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.
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Canada - WHMIS - Ingredient Disclosure List

1,2-Propylene glycol 57-55-6 1 %

WHMIS classification	Class D - Division 2A, 2B
WHMIS status	Controlled
WHMIS labeling	



Inventory Status

Country(s) or region	Inventory Name	On Inventory (Yes/No)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other Information

Disclaimer	Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.
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