

SAFETY DATA SHEETS

This SDS packet was issued with item:

078917018

N/A



MATERIAL SAFETY DATA SHEET

1. Product And Company Identification

Product Name: MetriZyme®

Manufacturer: METREX® RESEARCH
1717 W. Collins Ave.
Orange, CA 92867
U.S.A.

Information Phone Number: 1-800-841-1428 (Customer Service)

Canadian Importer: Sybron Canada LP
250 First Gulf Boulevard
Brampton ON L6W4T5
Canada
(714) 516-7788

Chemical Emergency Phone Number (Chemical Spills, Leaks, Fire, Exposure or Accident only):
CHEMTREC 1-800-424-9300 (in the US) 1-703-527-3887 (Outside the US)
In Canada Canutec: 1 (613) 996-6666 (24 hours)

MSDS Date Of Preparation/Revision: 12/19/2012

Product Use: Dual Enzymatic Detergent.

2. Hazards Identification

Bluish-green liquid. Mint odor.

EMERGENCY OVERVIEW

Causes eye irritation. May cause skin irritation. Inhalation of mists may cause irritation of the mucous membranes and upper respiratory tract. Inhalation of mists may cause an allergic reaction, particularly in sensitized individuals.

3. Composition/Information On Ingredients

Component	CAS No.	Amount
Propylene glycol	57-55-6	10-30%
Nonionic Surfactants	Proprietary	10-20%
Fragrance Oil	Proprietary	5-10%
Proteinase subtilisin	9014-01-1	0.1-1%
Water and non-hazardous ingredients	Mixture	30-60%



4. First Aid Measures

Inhalation: Move to fresh air if effects occur and seek medical attention if effects persist.

Skin Contact: Wash with soap and water. Seek medical attention if irritation develops and persists. Remove and launder contaminated clothing.

Eye Contact: Hold eye open and rinse slowly and gently with water for 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Seek medical attention if irritation develops and persists.

Ingestion: If the victim is alert, have them rinse their mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Do not attempt to give anything by mouth to an unconscious person. Seek medical advice by calling a Poison Center or doctor.

5. Fire Fighting Measures

Extinguishing Media: Use any extinguishing media that is appropriate for the surrounding fire. Cool fire exposed containers with water.

Special Fire Fighting Procedures: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

Unusual Fire Hazards: None known.

Hazardous Combustion Products: Burning residual after water has evaporated may produce carbon monoxide, carbon dioxide, nitrogen oxides, and hydrocarbons.

6: Accidental Release Measures

Wear appropriate protective clothing and equipment (See Section 8). Collect material with an inert absorbent material and place in appropriate, labeled container for disposal. Refer to Section 13 for disposal advice.

7. Handling and Storage

Avoid contact with eyes, skin and clothing. Avoid generating and breathing mists. Wear appropriate eye protection and gloves when handling (see Section 8). Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

Store at room temperature.

8. Exposure Controls / Personal Protection

Exposure Limits

Chemical	Exposure Limit
Propylene glycol	10 mg/m ³ TWA AIHA WEEL 10 mg/m ³ (as particulate), 155 mg/m ³ (as total vapor and particulates) (Ontario)
Nonionic Surfactants	None Established
Fragrance Oil	None Established
Proteinase subtilisin	0.00006 mg/m ³ (as 100% crystalline active pure enzyme) TWA ACGIH Ceiling Limit (Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Labrador, Nova Scotia, Nunavut, Prince Edward Island, Saskatchewan, Ontario; Quebec, Northwest Territories, Yukon)

Ventilation: General ventilation should be adequate for normal use. For operations where the exposure limits may be exceeded, mechanical ventilation such as local exhaust may be needed to minimize exposure.

Respiratory Protection: None under normal use conditions with adequate ventilation. For operations where the occupational exposure limits are exceeded, a NIOSH approved respirator with particulate cartridges is recommended. Equipment selection depends on contaminant type and concentration. Select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Gloves: Impervious gloves such as butyl rubber or nitrile are recommended.

Eye Protection: Safety goggles are recommended for operations where eye contact is possible.

Other Protective Equipment/Clothing: Wear protective clothing if needed to avoid prolonged/repeated skin contact.

9. Physical and Chemical Properties

Appearance and Odor: Clear blue liquid. Coastal breeze scent.

Boiling Point:	100-105°C	Specific Gravity:	>1.07
Solubility in Water:	Complete	pH:	7.5-8.5
Vapor Pressure:	Same as water	Vapor Density:	Same as water
Percent Volatile:	>50%	Melting/Freezing Point:	Not Determined
Coefficient of Water/Oil Distribution:	Not Determined		
Flash Point:	Not flammable or combustible	Flammable Limits:	Not applicable

10. Stability and Reactivity

Stability: Stable

Conditions To Avoid: Avoid excessive heat.

Incompatibility: Strong oxidizing agents, strong acids and bleach.

Hazardous Decomposition Products: Thermal decomposition will produce carbon monoxide, carbon dioxide, nitrogen oxides, and hydrocarbons.

Hazardous Polymerization: Will not occur.

11. Toxicological Information

Potential Health Effects:

Acute Hazards:

Inhalation: May cause minor irritation of the nose, throat and upper respiratory tract. Inhalation of mists may cause an allergic reaction in individuals sensitized to enzymes.

Skin Contact: Prolonged or repeated exposure may cause mild irritation.

Eye Contact: May cause irritation with tearing, redness and pain.

Ingestion: Ingestion may cause gastrointestinal disturbances.

Chronic Hazards: None currently known.

Medical Conditions Aggravated By Exposure: None currently known.

Carcinogen: None of the components is listed as a carcinogen or potential carcinogen by IARC, NTP, ACGIH, or OSHA.

Acute Toxicity Values:

Propylene Glycol: LD50 Oral Rat 20,000 – 34,000 mg/kg; LD50 Dermal Rabbit >20,000 mg/kg

Trisodium Citrate Dihydrate: No data available. Not acutely toxic.

Proteinase subtilisin: LD50 Oral Rat >2000 mg/kg

12. Ecological Information

Toxicity: No data available for product

Persistence and degradability: No data available for product

Bioaccumulative Potential: No data available for product

Mobility in Soil: No data available for product



13. Disposal Considerations

Solution Disposal: For unused solution, flush thoroughly with large quantities of water into sewage disposal system in accordance with Federal, State, and local regulations. For used solution, the waste solution must be characterized by the generator and disposed of in accordance with Federal, State, and local regulations.

Container Disposal: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. If recycling is not available, discard in trash.

14. Transport Information

U.S. DOT Hazard Classification

Proper Shipping Name: Not Regulated

Technical Name: N/A

UN Number: N/A

Hazard Class/Packing Group: N/A

Labels Required: N/A

DOT MARINE POLLUTANTS: This product does not contain Marine Pollutants as defined in 49 CFR 171.8.

Canada TDG

Proper Shipping Name: Not Regulated

Technical Name: N/A

UN Number: N/A

Hazard Class/Packing Group: N/A

Labels Required: N/A

IMDG Code Shipping Classification

Proper Shipping Name: Not Regulated

UN Number: N/A

Hazard Class: N/A

Packing Group: N/A

Labels Required: None

Placards Required: None

Not classified as a marine pollutant

ICAO Air Transport Classification

Proper Shipping Name: Not Regulated

ID Number: N/A

Hazard Class: N/A

Packing Group: N/A

Labels Required: None



15. Regulatory Information

EPA SARA 311/312 Hazard Classification: Acute Health, Chronic Health

EPA SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

Protection Of Stratospheric Ozone: This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

CERCLA SECTION 103: This product is not subject to CERCLA reporting requirements; however, many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

EPA TSCA Inventory: All of the components of this material are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory or exempt.

Canadian Regulations

National Pollutant Release Inventory (NPRI): This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements NPRI: None

WHMIS Classification: Class D-2-A

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*.

16. Other Information

NFPA Rating: Fire: 0 Health: 2 Instability: 0

The information and recommendations set forth herein are taken from sources believed to be accurate as of the date of preparation, however, METREX® RESEARCH makes no warranty with respect to the accuracy or suitability of the recommendations, and assumes no liability to any use thereof.

SAFETY DATA SHEET

Section 1. Product And Company Identification

Product Name: MetriZyme®

Product Use: Dual Enzymatic Detergent.

Manufacturer: METREX® RESEARCH
1717 W. Collins Ave.
Orange, CA 92867
U.S.A.

Information Phone Number: 1-800-841-1428 (Customer Service)

Chemical Emergency Phone Number (Chemical Spills, Leaks, Fire, Exposure or Accident only):
CHEMTREC 1-800-424-9300 (in the US) 1-703-527-3887 (Outside the US)

SDS Date of Preparation/Revision: 8/1/16

Section 2. Hazards Identification

GHS / HAZCOM 2012 Classification:

Skin Irritation Category 2

Skin Sensitization Category 1

Eye Damage Category 1

Respiratory Sensitization Category 1

Toxic to Reproduction Category 2

Label Elements

Danger!



Hazard Phrases

Causes skin irritation.

May cause an allergic skin reaction.

Causes serious eye damage.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Suspected of damaging fertility.

Precautionary Phrases:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Wash thoroughly after handling.

Wear protective gloves and eye protection.

Avoid breathing mist, vapors or spray.



Contaminated work clothing must not be allowed out of the workplace
In case of inadequate ventilation wear respiratory protection.
Wear protective gloves. And eye protection.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical attention
Take off contaminated clothing and wash it before reuse.
IF INHALED: remove person to fresh air and keep comfortable for breathing.
If experiencing respiratory symptoms: Call a POISON CENTER.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.
IF exposed or concerned: Get medical attention.
Store locked up.
Dispose of contents and container in accordance with local and national regulations.

Section 3. Composition/Information on Ingredients

Component	CAS No.	Amount
Propylene glycol	57-55-6	10-30%
Nonylphenol, branched, ethoxylated	68412-54-4	5-10%
Peppermint Oil	8006-90-4	5-10%
Alcohols, C10-12, ethoxylated propoxylated	68154-97-2	5-10
Proteinase subtilisin	9014-01-1	0.1-1%
Octamethylcyclotetrasiloxane	3844-45-9	<0.2%

Section 4. First Aid Measures

Inhalation: Move to fresh air if effects occur and seek medical attention if effects persist.

Skin Contact: Wash with soap and water. Seek medical attention if irritation develops and persists. Remove and launder contaminated clothing.

Eye Contact: Hold eye open and rinse slowly and gently with water for 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. Seek immediate medical attention.

Ingestion: If the victim is alert, have them rinse their mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Do not attempt to give anything by mouth to an unconscious person. Seek medical advice by calling a Poison Center or doctor.

Most important symptoms and effects, acute and delayed: Causes severe eye irritation or burns. Permanent damage may occur. Causes skin irritation. May cause an allergic skin reaction. Inhalation of mists may cause irritation of the mucous membranes and upper respiratory tract. Inhalation of mists may cause an allergic reaction, particularly in sensitized individuals. Possible reproductive hazard. May cause reproductive effects based on animal data.

Indication of immediate medical attention and special treatment, if needed: If eye contact occurs, get immediate medical attention. If respiratory sensitization occurs, get immediate medical attention.

Section 5. Fire Fighting Measures

Suitable (and Unsuitable) Extinguishing Media: Use any extinguishing media that is appropriate for the surrounding fire. Cool fire exposed containers with water.

Specific Hazards Arising from the Chemical: Burning sponge and residual after water has evaporated may produce carbon monoxide, carbon dioxide, nitrogen oxides, and hydrocarbons.

Special Protective Equipment and Precautions for Fire-fighters: Firefighters should wear positive pressure self-contained breathing apparatus and full protective clothing for fires in areas where chemicals are used or stored.

Section 6: Accidental Release Measures

Personal precautions, Protective equipment, and Emergency procedures: Wear appropriate protective clothing and equipment.

Environmental Precautions: Avoid release to the environment. Report spill as required by local and federal regulations.

Methods and Materials for Containment and Cleaning up: Pick up sponge and collect liquid with an inert absorbent material and place in appropriate, labeled container for disposal.

Section 7. Handling and Storage

Precautions for Safe Handling: Prevent contact with eyes. Avoid contact with skin and clothing. Wear appropriate eye protection and gloves when handling (see Section 8). Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

Conditions for Safe Storage, Including any Incompatibilities: Store at room temperature.

Section 8. Exposure Controls / Personal Protection

Exposure Limits

Chemical	Exposure Limit
Propylene glycol	10 mg/m ³ TWA AIHA WEEL
Nonylphenol, branched, ethoxylated	None Established
Fragrance Oil	None Established
Alcohols, C10-12, ethoxylated propoxylated	None Established
Proteinase subtilisin	0.00006 mg/m ³ (as 100% crystalline active pure enzyme) TWA ACGIH Ceiling Limit
Octamethylcyclotetrasiloxane	10 ppm TWA Manufacturer

Appropriate Engineering Controls: General ventilation should be adequate for normal use. For operations where the exposure limits may be exceeded, mechanical ventilation such as local exhaust may be needed to minimize exposure.



Respiratory Protection: None under normal use conditions with adequate ventilation. For operations where the occupational exposure limits are exceeded, a NIOSH approved respirator with particulate cartridges is recommended. Equipment selection depends on contaminant type and concentration. Select in accordance with 29 CFR 1910.134 and good industrial hygiene practice. For firefighting, use self-contained breathing apparatus.

Hand protection: Impervious gloves such as butyl rubber or nitrile are recommended.

Eye Protection: Safety goggles are recommended for operations where eye contact is possible.

Skin Protection: Wear protective clothing as needed to avoid skin contact.

Hygiene measures: Suitable eye wash and washing facilities should be available in the work area.

Section 9. Physical and Chemical Properties

Appearance:	Bluish-green liquid.	Odor:	Mint
Odor Threshold:	Not available	pH:	6.5-8.0
Melting/Freezing Point:	Not available	Boiling Point/Range:	100-105°C / 212-221°F
Flash Point:	Not flammable	Evaporation Rate:	Not available
Flammability: (Solid, Gas)	Not applicable	Flammability Limits:	Not applicable
Vapor Pressure:	Same as water	Vapor Density:	Same as water
Relative Density:	1.036	Solubilities:	Complete (water)
Partition Coefficient: (N-Octanol/Water)	Not available	Autoignition Temperature:	Not flammable
Decomposition Temperature:	Not available	Viscosity:	Not available

Section 10. Stability and Reactivity

Reactivity: None known.

Chemical Stability: Stable.

Possibility of Hazardous Reactions: None known.

Conditions to avoid: Avoid excessive heat.

Incompatible Materials: Strong oxidizing agents, strong acids and bleach.

Hazardous decomposition products: Thermal decomposition will produce carbon monoxide, carbon dioxide, nitrogen oxides, and hydrocarbons.

Section 11. Toxicological Information

Potential Health Effects:

Inhalation: May cause irritation of the nose, throat and upper respiratory tract. Inhalation of mists may cause an allergic reaction.

Skin Contact: Skin contact may cause irritation with redness. May cause an allergic skin reaction.



Eye Contact: Causes irritation with tearing, redness and pain. Permanent damage may occur.

Ingestion: Ingestion may cause gastrointestinal disturbances.

Chronic Hazards: None currently known.

Carcinogen: None of the components is listed as a carcinogen or potential carcinogen by IARC, NTP, ACGIH, or OSHA.

Reproductive Toxicity: Octamethylcyclotetrasiloxane has been found to cause reproductive effects in studies with laboratory animals. In a two generational inhalation studies with rats, a decrease in the number of pups born and litter size was seen. Prolonged estrous cycles and decreased mating and fertility indices were seen at the 700 ppm dose in the second generation.

Mutagenic Toxicity: None of the components have been shown to cause mutagenic activity.

Acute Toxicity Values: No toxicity data is available for the product.

Acute Toxicity Estimate (ATE): Oral: >8,333 mg/kg, Dermal: >2000 mg/kg

Propylene Glycol: LD50 Oral Rat 20,000 – 34,000 mg/kg; LD50 Dermal Rabbit >20,000 mg/kg

Nonylphenol, branched, ethoxylated: Oral rat LD50 >1000 mg/kg; Dermal rabbit LD50 >2000 mg/kg

Alcohol Ethoxylate: Oral rat LD50 >1800 mg/kg, Dermal rabbit LD50 >2000 mg/kg

Proteinase subtilisin: LD50 Oral Rat >2000 mg/kg

Octamethylcyclotetrasiloxane: Oral rat LD50 >4800 mg/kg; Inhalation rat LC50 36 mg/L/4 hr; Dermal rabbit LD50 >2400 mg/kg

Section 12. Ecological Information

Toxicity: No toxicity data available for product.

Propylene Glycol: 96 hr LC50 *Oncorhynchus mykiss* 40613 mg/L; 48 hr EC50 *Ceriodaphnia dubia* 18340 mg/L; 72 hr EC50 *Pseudokirchnerella subcapitata* 24200 mg/L

Nonylphenol, branched, ethoxylated: 96 hr LC50 *Pimephales promelas* 3.8-6.2 mg/kg, 48 hr EC50 *daphnia magna* 9.3-21.4 mg/kg

Alcohol Ethoxylate: 96 hr LC50 fish 1-10 mg/kg, 48 hr EC50 *daphnia magna* 1-10 mg/kg, 72 hr EC50 algae 1-10 mg/kg

Proteinase subtilisin: 96 hr LC50 *Oncorhynchus mykiss* 8.2 mg/L; 48 hr EC50 *daphnia magna* 0.868 mg/L; 72 hr EC50 *Pseudokirchnerella subcapitata* 1.48 mg/L

Octamethylcyclotetrasiloxane: 96 hr LC50 *Brachydanio rerio* >500 mg/kg

Persistence and degradability: Propylene glycol is readily biodegradable. Nonylphenol, branched, ethoxylated is inherently biodegradable. Alcohol ethoxylate is ultimately biodegradable.

Bioaccumulative Potential: Propylene glycol has a BCF of 3.

Mobility in Soil: Propylene glycol has a high mobility in soil.

Other Adverse Effects: This product is expected to be harmful to aquatic life with long lasting effects.



Section 13. Disposal Considerations

Disposal: For unused product, flush thoroughly with large quantities of water into sewage disposal system in accordance with Federal, State, and local regulations. Dispose of sponge in trash. For used Product, the waste solution must be characterized by the generator and disposed of in accordance with Federal, State, and local regulations.

Container Disposal: Rinse empty container thoroughly with water and discard clean, empty container as general trash or offer for recycling, if available.

Section 14. Transport Information

	UN Number	UN Proper Shipping Name	Hazard Class(s)	Packing Group	Environmental Hazards
US DOT	None	Not Regulated			None
Canada TDG	None	Not Regulated			None
IMDG	None	Not Regulated			None
IATA/ICAO	None	Not Regulated			None

Section 15. Regulatory Information

U.S. Federal Regulations:

EPA SARA 311/312 Hazard Classification: Acute Health, Chronic Health

EPA SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None

Protection of Stratospheric Ozone: This product is not known to contain or to have been manufactured with ozone depleting substances as defined in 40 CFR Part 82, Appendix A to Subpart A.

CERCLA SECTION 103: This product is not subject to CERCLA reporting requirements; however, many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

California Proposition 65: This product contains a chemical known to the State of California to cause cancer or reproductive toxicity.

Canadian Regulations

National Pollutant Release Inventory (NPRI): This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements NPRI: None

International Inventories

US EPA TSCA Inventory: All of the components of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory or exempt.

Canadian Environmental Protection Act: All of the components in this product are listed on the



Domestic Substances List (DSL) or exempt.

Australia: All of the components in this product are listed on the Australian Inventory of Chemical Substances (AICS) or exempt.

China: All of the components in this product are listed on the Inventory of Existing Chemical Substances in China (IECSC) or exempt.

European Union: All the components in this product are listed on the EINECS inventory or exempt.

Korea: All of the components in this product are listed on the Korean Existing Chemicals List (KECL) or exempt.

New Zealand: All of the components in this product are listed on the New Zealand Inventory of Chemicals (NZIoC) or exempt.

Philippines: All of the components of this product are listed on the Philippines Inventory of Chemicals and Chemical Substances (PICCS) or exempt.

Section 16. Other Information

NFPA Rating: Fire: 0 Health: 3 Instability: 0

Effective Date: August 1, 2016

Supersedes Date: June 20, 2014

Revision Summary: Section 2 Classification, Hazard Phrases, Precautionary Phrases; Section 3 Composition; Section 4 Most important symptoms and effects, acute and delayed; Section 8 Exposure Limits; Section 11 Skin Contact, Acute Toxicity; Section 12 Toxicity, Persistence and degradability, Other Adverse Effects

The information and recommendations set forth herein are taken from sources believed to be accurate as of the date of preparation, however, METREX® RESEARCH makes no warranty with respect to the accuracy or suitability of the recommendations, and assumes no liability to any use thereof.