EVS

Valsure® Enzymatic Cleaner

STERIS®

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 03/9/2017 Version: 1.0

SECTION 1: Identification

1.1. Product Identifier

Product Form: Mixture
Product Name: Valsure® Enzymatic Cleaner
Product Code: 1C52

1.2. Intended Use of the Product

Use of the substance/mixture: Enzymatic Cleaner

1.3. Name, Address, and Telephone of the Responsible Party

Company
STERIS Corporation
Official Mailing Address:
P.O. Box 147
St. Louis, MO 63166 USA

Street Address:
7501 Page Avenue
St. Louis, MO 63133 USA

Telephone Number for Information: 1-800-548-4873 (Customer Service-Healthcare Products)
web: www.steris.com
email: asksteris_msds@steris.com

1.4. Emergency Telephone Number

Emergency Number : 1-314-535-1395 or CHEMTREC: 1-800-424-9300

SECTION 2: Hazards Identification

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Skin Irrit. 2	H315
Eye Irrit. 2A	H319
Resp. Sens. 1	H334

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :



GHS08 GHS07

Signal Word (GHS-US) : Danger

Hazard Statements (GHS-US) : H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary Statements (GHS-US) : P261 - Avoid breathing vapors, mist, spray.
P264 - Wash hands and exposed areas thoroughly after handling.
P280 - Wear eye protection, protective gloves, protective clothing.
P284 - [In case of inadequate ventilation] wear respiratory protection.
P302+P352 - IF ON SKIN: Wash with plenty of water.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

2.3. Other Hazards

Contains a small ammount of substances that are combustible dusts. If dried and allowed to accumulate may form combustible dust concentrations in air that could ignite and cause an explosion .

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: Composition/Information On Ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
1,2-Propylene glycol	(CAS No) 57-55-6	20 -30	Not classified
Citric acid	(CAS No) 77-92-9	1 - 5	Comb. Dust Eye Irrit. 2A, H319
Ethanolamine	(CAS No) 141-43-5	1 - 5	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 3, H402 Aquatic Chronic 3, H412
Alcohols, C9-11, ethoxylated	(CAS No) 68439-46-3	0.5 – 1.5	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318
Subtilisins (proteolytic enzymes)	(CAS No) 9014-01-1	0.1 - 1	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334 STOT SE 3, H335 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-phrases: see section 16

SECTION 4: First Aid Measures

4.1. Description of First Aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid Measures After Inhalation: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
First-aid Measures After Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
First-aid Measures After Eye Contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Obtain medical attention if irritation persists.
First-aid Measures After Ingestion: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/Injuries: Causes irritation. May cause an allergic reaction in sensitive individuals.
Symptoms/Injuries After Inhalation: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/Injuries After Skin Contact: Causes skin irritation.
Symptoms/Injuries After Eye Contact: Causes serious eye irritation.
Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.
Chronic Symptoms: None expected under normal conditions of use.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.
Unsuitable Extinguishing Media: Do not use a heavy water stream. A heavy water stream may spread burning liquid.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.
Explosion Hazard: Product is not explosive. Contains a small ammount of substances that are combustible dusts. If dried and allowed to accumulate may form combustible dust concentrations in air that could ignite and cause an explosion .
Reactivity: Hazardous reactions will not occur under normal conditions.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.
Firefighting Instructions: Do not allow run-off from fire fighting to enter drains or water sources. Do not breathe fumes from fires or vapors from decomposition.
Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.
Hazardous Combustion Products: Carbon oxides (CO, CO_2). Nitrogen oxides.

SECTION 6: Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Handle in accordance with good industrial hygiene and safety practice.

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).
Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Responders
Protective Equipment: Equip cleanup crew with proper protection. Use appropriate personal protection equipment (PPE).
Emergency Procedures: Evacuate unnecessary personnel. Stop leak if safe to do so. Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.
Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely. Absorb and/or contain spill with inert material, then place in suitable container. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See Section 8: Exposure Controls and Personal Protection.

SECTION 7: Handling And Storage

7.1. Precautions for Safe Handling

Precautions for Safe Handling: Avoid contact with skin, eyes and clothing. Avoid breathing vapors, mist, spray. Wear recommended personal protective equipment.
Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Keep container closed when not in use.
Incompatible Products: Strong acids. Strong bases. Strong oxidizers. Alkalines. Halogens. Isocyanates.

7.3. Specific End Use(s) No additional information available

Manual/pre-cleaning including use in ultrasonics, and for use in hospital washer/disinfectors and other similar equipment. This liquid cleaner is designed to clean surgical instruments and other medical devices. For professional use only.

SECTION 8: Exposure Controls/personal Protection

8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

Subtilisins (proteolytic enzymes) (9014-01-1)		
USA ACGIH	ACGIH Ceiling (mg/m³)	0.00006 mg/m³
USA NIOSH	NIOSH REL (STEL) (mg/m³)	0.00006 mg/m³
Alberta	OEL Ceiling (mg/m³)	0.00006 mg/m³
British Columbia	OEL Ceiling (mg/m³)	0.00006 mg/m³
Manitoba	OEL Ceiling (mg/m³)	0.00006 mg/m³
New Brunswick	OEL Ceiling (mg/m³)	0.00006 mg/m³ (proteolytic enzymes)
Newfoundland & Labrador	OEL Ceiling (mg/m³)	0.00006 mg/m³
Nova Scotia	OEL Ceiling (mg/m³)	0.00006 mg/m³
Nunavut	OEL Ceiling (mg/m³)	0.00006 mg/m³ (Proteolytic enzymes)
Northwest Territories	OEL Ceiling (mg/m³)	0.00006 mg/m³ (Proteolytic enzymes)
Ontario	OEL Ceiling (mg/m³)	0.00006 mg/m³
Prince Edward Island	OEL Ceiling (mg/m³)	0.00006 mg/m³
Québec	PLAFOND (mg/m³)	0.00006 mg/m³ (Proteolytic enzymes)
Saskatchewan	OEL Ceiling (mg/m³)	0.00006 mg/m³
Yukon	OEL Ceiling (mg/m³)	0.00006 mg/m³ (Proteolytic enzymes)

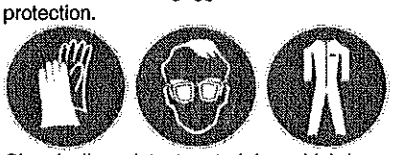
Ethanolamine (141-43-5)		
Mexico	OEL TWA (mg/m³)	8 mg/m³
Mexico	OEL TWA (ppm)	3 ppm
Mexico	OEL STEL (mg/m³)	15 mg/m³
Mexico	OEL STEL (ppm)	6 ppm
USA ACGIH	ACGIH TWA (ppm)	3 ppm
USA ACGIH	ACGIH STEL (ppm)	6 ppm
USA OSHA	OSHA PEL (TWA) (mg/m³)	6 mg/m³
USA OSHA	OSHA PEL (TWA) (ppm)	3 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m³)	8 mg/m³
USA NIOSH	NIOSH REL (TWA) (ppm)	3 ppm
USA NIOSH	NIOSH REL (STEL) (mg/m³)	15 mg/m³
USA NIOSH	NIOSH REL (STEL) (ppm)	6 ppm
USA IDLH	US IDLH (ppm)	30 ppm
Alberta	OEL STEL (mg/m³)	15 mg/m³
Alberta	OEL STEL (ppm)	6 ppm
Alberta	OEL TWA (mg/m³)	7.5 mg/m³

Alberta	OEL TWA (ppm)	3 ppm
British Columbia	OEL STEL (ppm)	6 ppm
British Columbia	OEL TWA (ppm)	3 ppm
Manitoba	OEL STEL (ppm)	6 ppm
Manitoba	OEL TWA (ppm)	3 ppm
New Brunswick	OEL STEL (mg/m³)	15 mg/m³
New Brunswick	OEL STEL (ppm)	6 ppm
New Brunswick	OEL TWA (mg/m³)	7.5 mg/m³
New Brunswick	OEL TWA (ppm)	3 ppm
Newfoundland & Labrador	OEL STEL (ppm)	6 ppm
Newfoundland & Labrador	OEL TWA (ppm)	3 ppm
Nova Scotia	OEL STEL (ppm)	6 ppm
Nova Scotia	OEL TWA (ppm)	3 ppm
Nunavut	OEL STEL (mg/m³)	15 mg/m³
Nunavut	OEL STEL (ppm)	6 ppm
Nunavut	OEL TWA (mg/m³)	7.5 mg/m³
Nunavut	OEL TWA (ppm)	3 ppm
Northwest Territories	OEL STEL (mg/m³)	15 mg/m³
Northwest Territories	OEL STEL (ppm)	6 ppm
Northwest Territories	OEL TWA (mg/m³)	7.5 mg/m³
Northwest Territories	OEL TWA (ppm)	3 ppm
Ontario	OEL STEL (ppm)	6 ppm
Ontario	OEL TWA (ppm)	3 ppm
Prince Edward Island	OEL STEL (ppm)	6 ppm
Prince Edward Island	OEL TWA (ppm)	3 ppm
Québec	VECD (mg/m³)	15 mg/m³
Québec	VECD (ppm)	6 ppm
Québec	VEMP (mg/m³)	7.5 mg/m³
Québec	VEMP (ppm)	3 ppm
Saskatchewan	OEL STEL (ppm)	6 ppm
Saskatchewan	OEL TWA (ppm)	3 ppm
Yukon	OEL STEL (mg/m³)	12 mg/m³
Yukon	OEL STEL (ppm)	6 ppm
Yukon	OEL TWA (mg/m³)	6 mg/m³
Yukon	OEL TWA (ppm)	3 ppm

8.2. Exposure Controls

Appropriate Engineering Controls : Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

Personal Protective Equipment : Gloves. Protective goggles. Protective clothing. Insufficient ventilation: wear respiratory protection.



Materials for Protective Clothing : Chemically resistant materials and fabrics.

Hand Protection : Wear chemically resistant protective gloves.

Eye Protection : Chemical safety goggles.

Skin and Body Protection : Wear suitable protective clothing.

Respiratory Protection : If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Consumer Exposure Controls : Do not eat, drink or smoke during use.

SECTION 9: Physical And Chemical Properties

9.1. Information on Basic Physical and Chemical Properties

Physical State : Liquid

Appearance : Clear, colorless to yellow liquid

Odor : No data available

Odor Threshold : No data available

pH : 7 - 9

Evaporation rate : No data available

Melting Point : No data available

Freezing Point : No data available

Boiling Point : No data available

Flash Point : No data available

Auto-ignition Temperature	:	No data available
Decomposition Temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapor Pressure	:	No data available
Relative Vapor Density at 20 °C	:	No data available
Specific Gravity	:	1.0357 g/ml
Solubility	:	Complete
Partition coefficient: n-octanol/water	:	No data available
Viscosity	:	No data available
Explosion Data – Sensitivity to Mechanical Impact	:	Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	:	Not expected to present an explosion hazard due to static discharge.

9.2. Other Information

No additional information available

SECTION 10: Stability And Reactivity

10.1 Reactivity:

Hazardous reactions will not occur under normal conditions.

10.2 Chemical Stability:

Stable under normal conditions.

10.3 Possibility of Hazardous Reactions:

Hazardous polymerization will not occur.

10.4 Conditions to Avoid:

Direct sunlight. Extremely high or low temperatures. Incompatible materials. Dust Formation.

10.5 Incompatible Materials:

Strong acids. Strong bases. Strong oxidizers.

10.6 Hazardous Decomposition Products:

Carbon oxides (CO, CO2). Nitrogen oxides. Nitrous gas. Toxic fumes. Alkalines. Halogens. Isocyanates.

SECTION 11: Toxicological Information

11.1. Information On Toxicological Effects

Acute Toxicity: Not classified

Valsure® Enzymatic Cleaner	
LD50 Oral Rat	> 2000 mg/kg

Citric acid (77-92-9)	
LD50 Oral Rat	5400 mg/kg
LD50 Dermal Rat	> 2000 mg/kg

Alcohols, C9-11, ethoxylated (68439-46-3)	
LD50 Oral Rat	1400 mg/kg
LD50 Dermal Rat	> 2 g/kg

Subtilisins (proteolytic enzymes) (9014-01-1)	
LD50 Oral Rat	1.8 g/kg

Ethanolamine (141-43-5)	
LD50 Oral Rat	1720 mg/kg
LD50 Dermal Rabbit	2.46 - 2.83 ml/kg
ATE (Dermal)	1,100.00 mg/kg body weight
ATE (Gases)	4,500.00 ppmV/4h
ATE (Vapors)	11.00 mg/l/4h
ATE (Dust/Mist)	1.50 mg/l/4h

Skin Corrosion/Irritation: Causes skin irritation.
pH: 7 - 9
Serious Eye Damage/Irritation: Causes serious eye irritation.
pH: 7 - 9
Respiratory or Skin Sensitization: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Germ Cell Mutagenicity: Not classified
Teratogenicity: No data available
Carcinogenicity: Not classified
Reproductive Toxicity: Not classified
Specific Target Organ Toxicity (Single Exposure): Not classified
Specific Target Organ Toxicity (Repeated Exposure): Not classified
Aspiration Hazard: Not classified
Symptoms/Injuries After Inhalation: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/Injuries After Skin Contact: Causes skin irritation.
Symptoms/Injuries After Eye Contact: Causes serious eye irritation.
Symptoms/Injuries After Ingestion: Ingestion is likely to be harmful or have adverse effects.
Chronic Symptoms: None expected under normal conditions of use.

SECTION 12: Ecological Information

12.1. Toxicity

Ecology - General : Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Citric acid (77-92-9)	
LC50 Fish 1	1516 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

Subtilisins (proteolytic enzymes) (9014-01-1)	
LC50 Fish 1	14.6 mg/l
EC50 Daphnia 1	0.306 mg/l
ErC50 (algae)	0.513 (0.513 - 1.48) mg/l
NOEC chronic fish	2 mg/l

Ethanolamine (141-43-5)	
LC50 Fish 1	227 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	65 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC 50 Fish 2	3684 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])

12.2. Persistence and Degradability

Valsure® Enzymatic Cleaner	
Persistence and degradability	The surfactant(s) contained in this preparation complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

Citric acid (77-92-9)	
Persistence and Degradability	Readily biodegradable in water.

12.3. Bioaccumulative Potential

Valsure® Enzymatic Cleaner	
Bioaccumulative Potential	Not established.

Citric acid (77-92-9)	
Log Pow	-1.72 (at 20 °C)

Ethanolamine (141-43-5)	
Log Pow	-1.91 (at 25 °C)

12.4. Mobility in Soil

No additional information available

12.5. Other Adverse Effects

Other Information : Avoid release to the environment.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Sewage Disposal Recommendations: This material is hazardous to the aquatic environment. Keep out of sewers and waterways.
Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

SECTION 14: Transport Information

14.4 In Accordance with TDG

Not regulated for transport

In Accordance With ICAO/IATA/IMDG/DOT

14.1. UN Number Not regulated for transport

14.2. UN Proper Shipping Name Not regulated for transport

14.3. Additional Information Not regulated for transport

Transport by Sea Not regulated for transport
Air Transport Not regulated for transport

SECTION 15: Regulatory Information

15.1 US Federal Regulations

Valsure® Enzymatic Cleaner	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard

Citric acid (77-92-9)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Alcohols, C9-11, ethoxylated (68439-46-3)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Subtilisins (proteolytic enzymes) (9014-01-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Ethanolamine (141-43-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2 US State Regulations

1,2-Propylene glycol (57-55-6)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

Ethanolamine (141-43-5)
U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

15.3. Canadian Regulations

Citric acid (77-92-9)
Listed on the Canadian DSL (Domestic Substances List)
Listed on the Canadian IDL (Ingredient Disclosure List)

Alcohols, C9-11, ethoxylated (68439-46-3)
Listed on the Canadian DSL (Domestic Substances List)

Subtilisins (proteolytic enzymes) (9014-01-1)
Listed on the Canadian DSL (Domestic Substances List)

Ethanolamine (141-43-5)
Listed on the Canadian DSL (Domestic Substances List)
Listed on the Canadian IDL (Ingredient Disclosure List)

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

SECTION 16: Other Information

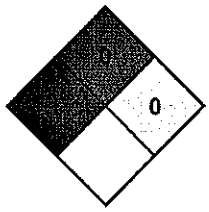
Revision Date : 03/9/2017

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Comb. Dust	Combustible Dust
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 4	Flammable liquids Category 4
Resp. Sens. 1	Respiratory sensitisation Category 1
Skin Corr. 1B	Skin corrosion/irritation Category 1B
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H227	Combustible liquid
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H400	Very toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

NFPA Health Hazard	: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA Fire Hazard	: 0 - Materials that will not burn.
NFPA Reactivity	: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS NA, Mex GHS