

VD2021007, FEM (15054253)

Issuing Date 23-Feb-2021

Revision Date 24-Feb-2021

Revision A

**1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING****Product identifier****Product Name** FEM, ForenSeq™ Enzyme Mix**Other means of identification****Product Codes(s)** 15054253**Synonyms** None**Recommended use of the chemical and restrictions on use****Recommended Use** reagent**Details of the supplier of the safety data sheet****Manufacturer Address**Verogen, Inc.  
11111 Flintkote Avenue  
San Diego, CA 92121 USA  
[www.verogen.com](http://www.verogen.com)**Company Phone Number**+1-858-285-4101  
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+44-(0)-208-054-8706 (UK)  
(858)-381-5209 (fax)**E-mail address**[techsupport@verogen.com](mailto:techsupport@verogen.com)**2. HAZARDS IDENTIFICATION****GHS Classification****OSHA Regulatory Status**

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS).

**Label elements****Emergency Overview****Signal word**

None

**Hazard statements**

Not Hazardous

The product contains no substances which at their given concentration are considered to be hazardous to health.

**Appearance** Colorless liquid**Physical state** Liquid**Odor** Odorless**Precautionary Statements – Prevention**

Handle in accordance with good industrial hygiene and safety practice.

**Precautionary Statements – Storage**

Store away from incompatible materials.

**Precautionary Statements – Disposal**

Dispose of in accordance with federal, state and local regulations.

**Hazards not otherwise classified (HNOC)**

Not applicable.

**Other Information**

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

The product contains no substances which at their given concentration are considered to be hazardous to health.

Chemical Name	CAS No.	Weight-%	Trade Secret
Glycerol	56-81-5	40 - 70	*

\* The exact percentage (concentration) of composition has been withheld as a trade secret.

**4. FIRST AID MEASURES****Description of first aid measures****General Advice**

Use first aid treatment according to the nature of the injury.

**Eye Contact**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

**Skin Contact**

Wash skin with soap and water. Get medical attention if irritation develops and persists.

**Inhalation**

Not expected to be an inhalation hazard under anticipated conditions of normal use of this material. Consult a physician if necessary

**Ingestion**

Not expected to present a significant ingestion hazard under anticipated conditions of normal use. If you feel unwell, get medical advice/attention.

**Self-protection of the first aider**

Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

**Most important symptoms and effects, both acute and delayed****Symptoms**

No information available.

**Indication of any immediate medical attention and special treatment needed****Note to physicians**

Treat symptomatically.

**5. FIRE-FIGHTING MEASURES****Suitable extinguishing media**

Water, Water spray (fog), Foam, Dry chemical, Carbon dioxide (CO2).

**Unsuitable extinguishing media**

None known.

**Specific hazards arising from the chemical**

None known.

**Hazardous combustion products**

No information available.

**Explosion data**

**Sensitivity to Mechanical Impact** None

**Sensitivity to Static Discharge** None

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

<b>Personal precautions</b>	Ensure adequate ventilation. Use personal protective equipment as required.
<b>For emergency responders</b>	Use personal protection recommended in Section 8. Keep unnecessary personnel away.

### Environmental precautions

<b>Environmental precautions</b>	No special environmental precautions required.
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### Methods and material for containment and cleaning up

<b>Methods for containment</b>	Soak up with inert absorbent material.
<b>Methods for cleaning up</b>	Soak up with inert absorbent material.
<b>Prevention of secondary hazards</b>	Clean contaminated objects and areas thoroughly observing environmental regulations.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

<b>Advice on safe handling</b>	Use personal protective equipment as required. Handle in accordance with good industrial hygiene and safety practice.
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### Conditions for safe storage, including any incompatibilities

<b>Storage Conditions</b>	Keep container in a cool, dry and well-ventilated place. Keep/store in properly labeled container. Store away from incompatible materials.
<b>Incompatible materials</b>	None.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Glycerol 56-81-5	-	TWA: 15 mg/m3 mist, total particulate TWA: 5 mg/m3 mist, respirable fraction (vacated) TWA: 10 mg/m3 mist, total particulate (vacated) TWA: 5 mg/m3 mist, respirable fraction	-

*NIOSH IDLH Immediately Dangerous to Life or Health*

Chemical Name	Brazil – OEL – TWAs (LTs)	Brazil – OEL - Ceilings	Brazil – OEL – Skin Designations
Glycerol 56-81-5	-	-	-

#### Other Information

### Appropriate engineering controls

<b>Engineering Controls</b>	Ventilation systems
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### Individual protection measures, such as personal protective equipment

<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin and body protection</b>	Wear chemical-resistant gloves, footwear and protective clothing appropriate for risk of exposure. Contact glove manufacturer for specific information.
<b>Respiratory protection</b>	In case of insufficient ventilation wear respirators and components tested and approved

under appropriate government standards.

**General Hygiene Considerations**

Handle in accordance with good industrial hygiene and safety practice. Wash after handling this material and before eating, drinking and/or smoking. Regular cleaning of equipment, work area and clothing is recommended.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

Physical state	Liquid
Appearance	Colorless liquid
Odor	Odorless
Color	Colorless
Odor threshold	No information available

<b><u>Property</u></b>	<b><u>Values</u></b>	<b><u>Remarks • Methods</u></b>
pH	No data available	
Melting point / freezing point	No data available	
Boiling point / boiling range		
Flash point		
Evaporation rate	No data available	
Flammability (solid, gas)	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits:	No data available	
Lower flammability or explosive limits:	No data available	
Vapor pressure	No data available	
Vapor density	No data available	
Specific gravity	No data available	
Water solubility	No data available	
Solubility in other solvents	No data available	
Partition coefficient	No data available	
Autoignition temperature	No data available	
Decomposition temperature	No data available	
Kinematic viscosity	No data available	
Dynamic viscosity	No data available	
Explosive properties	No unusual fire or explosion hazards noted.	
Oxidizing properties	No data available	

**Other Information**

Softening point	No data available
Molecular weight	No data available
VOC content (%)	No data available
Liquid density	No data available
Bulk density	No data available

## 10. STABILITY AND REACTIVITY

**Reactivity****Chemical stability**

Stable under normal conditions. Stable under recommended storage conditions.

**Possibility of Hazardous Reactions**

None under normal processing.

**Hazardous polymerization**

Hazardous polymerization does not occur.

**Conditions to avoid**

None known.

**Incompatible materials**

No dangerous reaction known under conditions of normal use.

**Hazardous decomposition products**

None known based on information supplied.

**11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

<b>Product Information</b>	Low hazard for usual industrial or commercial handling by trained personnel.
<b>Inhalation</b>	Under normal conditions of intended use, this material is not expected to be an inhalation hazard.
<b>Eye Contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Skin Contact</b>	Prolonged contact may cause redness and irritation.
<b>Ingestion</b>	No harmful effects expected in amounts likely to be ingested by accident.

**Component Information**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Glycerol 56-81-5	= 12600 mg/kg ( Rat )	> 10 g/kg ( Rabbit )	> 570 mg/ m3 ( Rat ) 4 h

**Information on toxicological effects**

**Symptoms** None known.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

<b>Skin corrosion/irritation</b>	Not classified.
<b>Serious eye damage/eye irritation</b>	Not classified.
<b>Skin sensitization</b>	Not classified.
<b>Respiratory sensitization</b>	Not classified.
<b>Germ cell mutagenicity</b>	Not classified.
<b>Carcinogenicity</b>	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
<b>Reproductive toxicity</b>	Not classified.
<b>STOT – single exposure</b>	Not classified.
<b>STOT – repeated exposure</b>	Not classified.
<b>Target organ effects</b>	Eyes, Respiratory system.
<b>Aspiration hazard</b>	Not classified.
<b>Other adverse effects</b>	No information available.

**Numerical measures of toxicity – Product Information**

**Unknown acute toxicity** Not classified.

**12. ECOLOGICAL INFORMATION****Ecotoxicity**

0 % of the mixture consists of components(s) of unknown hazards to the aquatic environment.

Chemical Name	Algae/aquatic plants	Fish	Crustacea	Log Pow
Glycerol 56-81-5	Daphnia magna EC50>500 mg/L (24 h)	-	-	logPow-1.76

**Persistence and degradability**

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

**Bioaccumulation**

No data available.

**Mobility**

No data available.

**Other adverse effects**

No data available.

**Ozone**

Not classified.

**Ozone depletion potential (ODP)**

No information available.

**13. DISPOSAL CONSIDERATIONS****Waste treatment methods****Disposal of wastes**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

**Contaminated packaging**

Do not reuse container. Disposal should be in accordance with applicable regional, national and local laws and regulations.

**14. TRANSPORT INFORMATION**

DOT	Not regulated
TDG	Not regulated
MEX	Not regulated
ICAO (air)	Not regulated
IATA	Not regulated
IMDF	Not regulated
RID	Not regulated
ADR	Not regulated
ADN	Not regulated

**15. REGULATORY INFORMATION**

Chemical Name	US TSCA
Glycerol 56-81-5	Listed

**International Inventories**

TSCA	Does not comply
DSL/NDSL	Does not comply
EINECS/ELINCS	Does not comply
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply
INSQ	This product complies with INSQ

**Legend****TSCA**—United States Toxic Substances Control Act Section 8(b) Inventory**DSL/NDSL**—Canadian Domestic Substances List/Non-Domestic Substances List**EINECS/ELINCS**—European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances**ENCS**—Japan Existing and New Chemical Substances**IECSC**—China Inventory of Existing Chemical Substances**KECL**—Korean Existing and Evaluated Chemical Substances**PICCS**—Philippines Inventory of Chemicals and Chemical Substances**AICS**—Australian Inventory of Chemical Substances**INSQ**—Mexican National Inventory of Chemical Substances

**US Federal Regulations****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 Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire hazard</b>	No
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**US State Regulations****California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**U.S. State Right-to-Know Regulations**

This product does not contain any substances regulated by state right-to-know regulations.

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

**National Regulations – Brazil**

Chemical Name	CAS No.	Brazil – National Agency for Sanitary Surveillance (ANVISA)	Brazil – National List of Carcinogen Agents to Humans (LINACH)
Glycerol	56-81-5	Not Listed	Not Listed

**16. OTHER INFORMATION**

<b>NFPA</b>	Health Hazards 0	Flammability 0	Instability 0	Physical and Chemical Properties -
<b>HMIS</b>	Health Hazards 0	Flammability 0	Physical Hazards 0	Personal Protection X

<b>Prepared By</b>	Verogen, Inc.
<b>Issuing Date</b>	23-Feb-2021
<b>Revision Date</b>	24-Feb-2021
<b>Revision Note</b>	Not applicable

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**End of Safety Data Sheet**