

**Section I – Chemical/Manufacturer Information**

**Manufacturer Contact Info:**

ENZYMATICS, INC  
 100 Cummings Center  
 Suite 336H  
 Beverly, MA 01915  
 T. (978) 927-7027  
 F. (978) 927-7127

**Product Name: Klenow Fragment**

Glycerol	50%	CAS #:	56-81-5
DTT	<1%	CAS #:	3483-12-3
KPO <sub>4</sub>	<1%	CAS #:	7778-77-0

**Section II – Composition/Information on Ingredients**

**Hazardous/Non-hazardous Compounds**

CHEMICAL NAME:	CAS #:	Formula:	SARA 313:
Glycerol	56-81-5	HOCH <sub>2</sub> CHOHCH <sub>2</sub> OH	NO

Synonyms: glycerin, glycerol USP, glycerine, 1,2,3-propanetriol, propanetriol, 1,2,3-trihydroxypropane, bulbold, citifluor AF 2, cristal, emergy 916, glyrol, glycerol ophthalgan, glyciterol, glycyl alcohol, osmoglyn, pricerine 9091

**Section III – Hazardous Ingredients Identification**

Generally not hazardous in normal handling, however good laboratory practices should always be used. Avoid long term exposure to skin or by inhalation.

**Section IV – First Aid Measures**

FIRST AID: SKIN: Wash exposed area with soap and water. If irritation persists, seek medical attention.  
 EYES: Wash eyes with plenty of water for at least 15 minutes, lifting lids occasionally. Seek Medical Aid.  
 INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.  
 INGESTION: Give several glasses of milk or water. Vomiting may occur spontaneously, but it is not necessary to induce. Never give anything by mouth to an unconscious person.

**Section V – Fire Fighting Measures**

Fire Extinguisher Type: Carbon Dioxide, dry chemical powder or appropriate foam  
 Fire/Explosion Hazards: Slight Flammability. Material must be heated before ignition will occur.  
 Fire Fighting Procedure: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and clothing.

**Section VI – Accidental Release Measures**

Absorb spill with inert material, then place in a chemical waste container. Dispose of in a manner consistent with federal, local law.

**Section VII – Handling and Storage**

HANDLING:	STORAGE:	NOTES:
Avoid inhalation	Keep tightly closed	Hygroscopic
Avoid contact with eyes, skin, and clothing	Store in cool, dry place	
Avoid prolonged or repeated exposure		

**Section VIII – Exposure Controls/Personal Protective Equipment**

**Engineering:**

Safety Shower and eye wash. Ensure adequate ventilation.

**Personal Protective Equipment:**

Respiratory: NIOSH/MSHA-approved respirator  
 Hand: Compatible chemical resistant gloves  
 Eye: Compatible safety goggles  
 Skin and Body: Lightweight protective clothing  
 Hygiene Measures: Accordance with good industrial hygiene and safety practices  
 Environmental Exposure Controls: Prevent product from entering drains

**Exposure Limits:**

CHEMICAL NAME:	OSHA PEL (TWA)	OSHA PEL (Ceiling):	ACGIH OEL (TWA)	ACGIH OEL (STEL)
Glycerol	15 mg/m <sup>3</sup> total dust	-	10 mg/m <sup>3</sup>	-

5 mg/m<sup>3</sup> respirable  
fraction

---

**Section IX – Physical and Chemical Properties**

---

**General:****Physical Form:** Liquid**Appearance:** Clear**Odor:** Faint**Physical Properties:****Melting Point:** 18°C**Boiling Point:** 289°C**Flash Point:** 193°C**Autoignition Temp:** 400°C**Explosion Limits in Air:****Lower:** 0.9%**Specific Gravity:** 1.2610g/cm<sup>3</sup>**Solubility:** Miscible in water**Vapor Pressure:** 0.0025 mm Hg @ 5°C**Vapor Density:** 3.17 g/L**pH:** 5.5-8.0

---

**Section X – Stability and Reactivity**

---

**Stability:** Stable**Materials to Avoid:** Strong oxidizing agents, strong bases**Hazardous Decomposition products:** Carbon Monoxide, Carbon Dioxide**Hazardous Polymerization:** Will not occur***PROTECT FROM HEAT AND MOISTURE***

---

**Section XI – Toxicological Information**

---

Conditions aggravated / target organs: Single dose oral toxicity is low. Ingestion of larger amounts may cause injury. Signs and symptoms of excessive exposure may be central nervous system effects and increased blood sugar levels. Person with preexisting conditions may be more susceptible.

DOT Classification: Not Regulated

DOT regulations may change from time to time. Please consult the most recent version of the relevant regulations.

---

## Section XII – Ecological Information

---

Data not available.

---

## Section XIII – Disposal considerations

---

Dispose of in accordance with local regulations.

---

## Section XIV – Transport Information

---

Substance considered non-hazardous for ground or air transport. No DOT shipping name required.

---

## Section XV – Regulatory Information

---

### International Inventories:

CHEMICAL NAME:	TSCA:	PICCS:	ENCS:	DSL:	NDSL:	AICS:
Glycerol	Listed	Listed	Listed	Listed	-	Listed

### U.S. Federal Regulations:

SARA 313: Not regulated

### U.S. State Regulations:

CHEMICAL NAME:	MA - RTK:
Glycerol	Listed

### WHMIS Hazard Class:

Product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

---

## Section XVI – Other Information

---

**Disclaimer:**

This product intended for R&D and clinical diagnostic uses. Use of material must be supervised by technically qualified individual.

This above information is believed to be correct but may not be all inclusive and shall be used as a reference guide only. Company shall not be held liable for any damage resulting from handling or contact with above product.

---

Revision	Issue Date	DCR #	Revision Description and Reason for Change
B			Update format to match QMS.
A	03/12/09	09-018	New Document

---