



Material Safety Data Sheet

Section 1. Product and Company Identification

| | | | |
|---------------------|---|-----------------------|------------|
| Product Name | Glycerol, GR | Product Code | GX0185 |
| Manufacturer | EMD Chemicals Inc. P.O. Box 70 480 Democrat Road Gibbstown, NJ 08027 Prior to January 1, 2003 EMD Chemicals Inc. was EM Industries, Inc. or EM Science, Division of EM Industries, Inc. | Effective Date | 11/11/2004 |
| | | Print Date | 12/6/2004 |

For More Information Call

856-423-6300 Technical Service
Monday-Friday: 8:00 AM - 5:00 PM

In Case of Emergency Call

800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Synonym GLYCERINE; 1,2,3-PROPANETRIOL

Material Uses Analytical reagent.

Chemical Family Alcohol.

Section 2. Composition and Information on Ingredients

| Component | CAS # | % by Weight |
|-----------|---------|-------------|
| Glycerin | 56-81-5 | 100 |

Section 3. Hazards Identification

Physical State and Appearance Liquid. (Viscous liquid.)

Emergency Overview CAUTION!
MAY CAUSE EYE AND SKIN IRRITATION.
CAUSES DAMAGE TO THE FOLLOWING ORGANS: KIDNEYS, RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA.

Routes of Entry Inhalation. Ingestion.

Potential Acute Health Effects

Eyes May be hazardous in case of eye contact (irritant).

Skin May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Inhalation No known acute effects of this product resulting from inhalation.

Ingestion No known acute effects of this product resulting from ingestion.

Potential Chronic Health Effects

Carcinogenic Effects This material is not known to cause cancer in animals or humans.

Additional information See Toxicological Information (section 11)

Continued on Next Page

Medical Conditions Aggravated by Overexposure: Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4. First Aid Measures

| | |
|---------------------|--|
| Eye Contact | Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention. |
| Skin Contact | In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention. |
| Inhalation | If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. |
| Ingestion | Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear. |

Section 5. Fire Fighting Measures

| | |
|--|--|
| Flammability of the Product | May be combustible at high temperature. |
| Auto-ignition Temperature | 369.9°C (697.8°F) |
| Flash Points | Closed cup: 159.9°C (319.8°F). |
| Flammable Limits | Not available. |
| Products of Combustion | These products are carbon oxides (CO, CO ₂). |
| Fire Hazards in Presence of Various Substances | Slightly flammable to flammable in presence of open flames, sparks and static discharge, of heat, of oxidizing materials. |
| Explosion Hazards in Presence of Various Substances | Risks of explosion of the product in presence of static discharge: Slightly flammable in presence of open flames, sparks and static discharge. Risks of explosion of the product in presence of mechanical impact: No. |
| Fire Fighting Media and Instructions | SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet. |
| Protective Clothing (Fire) | Be sure to use an approved/certified respirator or equivalent. |
| Special Remarks on Fire Hazards | Not available. |
| Special Remarks on Explosion Hazards | Not available. |

Section 6. Accidental Release Measures

| | |
|------------------------------|---|
| Small Spill and Leak | Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. |
| Large Spill and Leak | If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: Absorb with an inert material and put the spilled material in an appropriate waste disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities. |
| Spill Kit Information | No specific spill kit required for this product. |

Continued on Next Page

+ Section 7. Handling and Storage

Handling Avoid contact with eyes, skin and clothing. Do not ingest. Do not breathe gas/fumes/vapor/spray.

Storage Keep container tightly closed. Store at room temperature.

Section 8. Exposure Controls/Personal Protection

Engineering Controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection

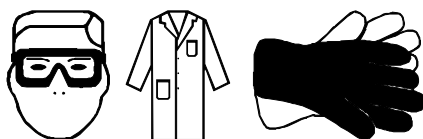
Eyes Splash goggles.

Body Lab coat.

Respiratory Not applicable.

Hands Gloves.

Feet Not applicable.

Protective Clothing (Pictograms)

Personal Protection in Case of a Large Spill Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Product Name

Glycerin

Exposure Limits

Belgium Minister of Labour (Belgium, 1998).

VL: 10 mg/m³ 8 hour(s).

Tyterveyslaitos (Finland, 1998).

TWA: 20 mg/m³ 8 hour(s).

INRS (France, 1996).

VME: 10 mg/m³ 8 hour(s).

National Authority for Occupational Safety/Health (Ireland, 1999).

OEL: 10 mg/m³ 8 hour(s).

Arbeidsinspectie (Netherlands, 1999).

TGG 8 uur: 10 mg/m³ 8 hour(s).

EH40-OES (United Kingdom (UK), 1997).

TWA: 10 mg/m³ 8 hour(s).

ACGIH (United States, 1994).

TWA: 10 mg/m³ 8 hour(s). Form: Mist

OSHA Final Rule (United States, 1989).

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 10 mg/m³ 8 hour(s). Form: Total dust

Section 9. Physical and Chemical Properties

Odor Odorless.

Color Colorless.

Physical State and Appearance Liquid. (Viscous liquid.)

Molecular Weight 92.11 g/mole

Continued on Next Page

| | |
|-----------------------------------|-----------------------------|
| Molecular Formula | C3-H8-O3 |
| pH | Not available. |
| Boiling/Condensation Point | 290.05°C (554.1°F) |
| Melting/Freezing Point | 17.8°C (64°F) |
| Specific Gravity | 1.261 (Water = 1) |
| Vapor Pressure | Not available. |
| Vapor Density | 3.1 (Air = 1) |
| Odor Threshold | Not available. |
| Evaporation Rate | Not available. |
| LogK_{ow} | Not available. |
| Solubility | Partially soluble in water. |

Section 10. Stability and Reactivity

| | |
|--|---------------------------------|
| Stability and Reactivity | The product is stable. |
| Conditions of Instability | Not available. |
| Incompatibility with Various Substances | Reactive with oxidizing agents. |
| Rem/Incompatibility | Not available. |
| Hazardous Decomposition Products | Not available. |
| Hazardous Polymerization | Will not occur. |

Section 11. Toxicological Information

| | | |
|--|---|-----------|
| RTECS Number: | Glycerol, GR | MA8050000 |
| Toxicity | Acute oral toxicity (LD ₅₀): 4090 mg/kg [Mouse]. | |
| Chronic Effects on Humans | Not available. | |
| Acute Effects on Humans | May be hazardous in case of eye contact (irritant). May be hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Non-hazardous in the case of ingestion. | |
| Synergetic Products (Toxicologically) | Not available. | |
| Irritancy | <u>Draize Test</u> (Rabbit): Eyes: 500mg/24h. Reaction: Mild. Skin: 500 mg/24h mild | |
| Sensitization | Not available. | |
| Carcinogenic Effects | This material is not known to cause cancer in animals or humans. | |

Continued on Next Page

| | |
|--|---|
| Toxicity to Reproductive System | Tests on laboratory animals for reproductive effects are cited in Registry of Toxic Effects on Chemical Substances (RTECS). |
| Teratogenic Effects | Not available. |
| Mutagenic Effects | Tests on laboratory animals for mutagenic effects are cited in Registry of Toxic Effects of Chemical Substances (RTECS). |

Section 12. Ecological Information

| | |
|---|---|
| Ecotoxicity | Not available. |
| BOD5 and COD | Not available. |
| Toxicity of the Products of Biodegradation | The product itself and its products of degradation are not toxic. |

Section 13. Disposal Considerations

| | |
|-------------------------|--|
| EPA Waste Number | Not available. |
| Treatment | Material does not have an EPA Waste Number and is not a listed waste, however consultation with a permitted waste disposal site (TSD) should be accomplished. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations. |

Section 14. Transport Information

| | |
|---------------------------------|--|
| DOT Classification | Proper Shipping Name: CHEMICALS, N.O.S. RQ: Not applicable. |
| TDG Classification | Not available. |
| IMO/IMDG Classification | Proper Shipping Name: CHEMICALS, N.O.S. RQ: Not applicable. |
| ICAO/IATA Classification | Proper Shipping Name: CHEMICALS, N.O.S. RQ: Not applicable. |

Section 15. Regulatory Information

| | | |
|----------------------------------|---|-----------|
| U.S. Federal Regulations | TSCA 8(b) inventory: Glycerin SARA 302/304/311/312 extremely hazardous substances: No products were found. SARA 302/304 emergency planning and notification: No products were found. SARA 302/304/311/312 hazardous chemicals: Glycerin SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Glycerin: Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard SARA 313 toxic chemical notification and release reporting: No products were found. Clean Water Act (CWA) 307: No products were found. Clean Water Act (CWA) 311: No products were found. Clean air act (CAA) 112 accidental release prevention: No products were found. Clean air act (CAA) 112 regulated flammable substances: No products were found. Clean air act (CAA) 112 regulated toxic substances: No products were found. | |
| WHMIS (Canada) | Not controlled under WHMIS (Canada). CEPA DSL: Glycerin This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information. | |
| International Regulations | | |
| EINECS | Glycerin | 200-289-5 |

Continued on Next Page

DSCL (EEC) R36/38- Irritating to eyes and skin.

International Lists Australia (NICNAS): Glycerin

Japan (MITI): Glycerin

Korea (TCCL): Glycerin

Philippines (RA6969): Glycerin

China: No products were found.

State Regulations Pennsylvania RTK: Glycerin: (generic environmental hazard)
Massachusetts RTK: Glycerin
California prop. 65: No products were found.

Section 16. Other Information

**National Fire
Protection
Association
(U.S.A.)**



**Changed Since Last
Revision**



Notice to Reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.