

MATERIAL SAFETY DATA SHEET

GLYCERINE, ALL GRADES, LIQUID

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Brenntag Canada Inc.
43 Jutland Rd.
Toronto, ON
M8Z 2G6
(416) 259-8231

WHMIS#: 00061350
Index: HCl0198/07A
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Website: <http://www.brenntag.ca>

EMERGENCY TELEPHONE NUMBERS (FOR EMERGENCIES INVOLVING CHEMICAL SPILLS OR RELEASE)

Toronto, ON (416) 226-6117
Edmonton, AB (780) 424-1754

Montreal, QC (514) 861-1211
Calgary, AB (403) 263-8660

Winnipeg, MB (204) 943-8827
Vancouver, BC (604) 685-5036

PRODUCT IDENTIFICATION

Product Name: Glycerine, All Grades, Liquid.
Chemical Name: 1,2,3-Propanetriol.
Synonyms: Glycerine USP; Glycerine 99.5 %, USP; Glycerol; Glycerine Mist; Emery 912; Emery 914; Emery 915; Emery 916; Emery 917.
Chemical Family: Triol. Aliphatic Alcohol.
Molecular Formula: C₃H₈O₃; HO - CH₂ - CHO₂ - CH₂ - OH.
Product Use: Lubricant. Pharmaceutical. Shampoos and detergents. Automotive coolant/antifreeze.

WHMIS Classification / Symbol:

Not regulated.

READ THE ENTIRE MSDS FOR THE COMPLETE HAZARD EVALUATION OF THIS PRODUCT.

2. COMPOSITION, INFORMATION ON INGREDIENTS (Not Intended As Specifications)

<i>Ingredient</i>	<i>CAS#</i>	<i>ACGIH TLV</i>	<i>% Concentration</i>
Glycerine	56-81-5	10 mg/m ³	99 - 100

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Low hazard for usual industrial or commercial handling. See "Other Health Effects" Section. Can decompose at high temperatures forming toxic gases. Contents may develop pressure on prolonged exposure to heat.

POTENTIAL HEALTH EFFECTS

Inhalation: Inhalation is not a likely route of exposure at normally encountered temperatures. Caution should be taken to prevent aerosolization or misting of this product. Prolonged or repeated overexposure to mists may cause mild respiratory irritation. See "Other Health Effects" Section.

Skin Contact: This product is non-irritating upon contact. Prolonged, confined (especially under the finger nails, under rings or watch bands) or repeated exposure may cause skin irritation.

Skin Absorption: A single, prolonged skin exposure is not likely to result in the absorption of toxic amounts of the material.

Eye Contact: This product may cause mild, transient irritation.

Ingestion: This product may cause mild gastrointestinal discomfort. Ingestion of large amounts may cause nausea, gastrointestinal upset and abdominal pain.

Other Health Effects: Effects (irritancy) on the skin and eyes may be delayed, and damage may occur without the sensation or onset of pain. Strict adherence to first aid measures following any exposure is essential.

May cause liver damage and central nervous system (CNS) depression. CNS depression is characterized by headache, dizziness, drowsiness, nausea, vomiting and incoordination. Severe overexposures may lead to coma and possible death due to respiratory failure. Liver damage is characterized by the loss of appetite, jaundice (yellowish skin colour), and occasional pain in the upper left-hand side of the abdomen.

4. FIRST AID MEASURES

FIRST AID PROCEDURES

Inhalation: Move victim to fresh air. Give artificial respiration ONLY if breathing has stopped. Give cardiopulmonary resuscitation (CPR) if there is no breathing AND no pulse. Obtain medical attention IMMEDIATELY.

Skin Contact: Start flushing while removing contaminated clothing. Wash affected areas thoroughly with soap and water. If irritation, redness, or a burning sensation develops and persists, obtain medical advice.

Eye Contact: Immediately flush eyes thoroughly for 5 minutes with running water. Hold eyelids open during flushing. If irritation persists, repeat flushing. Obtain medical attention.

Ingestion: Do not attempt to give anything by mouth to an unconscious person. If victim is alert and not convulsing, rinse mouth out and give 1/2 to 1 glass of water to dilute material. DO NOT induce vomiting. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. Obtain medical attention IMMEDIATELY.

Note to Physicians: This product contains materials that may cause severe pneumonitis if aspirated. If ingestion has occurred less than 2 hours earlier, carry out careful gastric lavage; use endotracheal cuff if available, to prevent aspiration. Observe patient for respiratory difficulty from aspiration pneumonitis. Give artificial resuscitation and appropriate chemotherapy if respiration is depressed.

Medical conditions that may be aggravated by exposure to this product include neurological and cardiovascular disorders, diseases of the skin, eyes or respiratory tract, preexisting liver and kidney disorders.

5. FIRE-FIGHTING MEASURES

Flashpoint (°C)	Autolgnition Temperature (°C)	Flammability Limits in Air (%):	
		LEL	UEL
159 - 199. (3)	369. (3)	Not available.	Not available.
Flammability Class (WHMIS):	Not regulated.		
Hazardous Combustion Products:	Thermal decomposition products are toxic and may include oxides of carbon and irritating gases.		
Unusual Fire or Explosion Hazards:	Do not direct a solid stream of foam into hot, burning pools. This may cause spattering and increase fire intensity. Water may cause frothing if it gets below the surface of the liquid and turns to steam. Closed containers exposed to heat may burst.		
Sensitivity to Mechanical Impact:	Not expected to be sensitive to mechanical impact.		
Rate of Burning:	Not available.		
Explosive Power:	Not available.		
Sensitivity to Static Discharge:	Not expected to be sensitive to static discharge.		
EXTINGUISHING MEDIA			
Fire Extinguishing Media:	Use carbon dioxide or dry chemical media for small fires. If only water is available, use it in the form of a fog.		
FIRE FIGHTING INSTRUCTIONS			
Instructions to the Fire Fighters:	Isolate materials that are not involved in the fire and protect personnel. Cool containers with flooding quantities of water until well after the fire is out. Spilled material may cause floors and contact surfaces to become slippery.		
Fire Fighting Protective Equipment:	Use self-contained breathing apparatus and protective clothing.		

6. ACCIDENTAL RELEASE MEASURES

Information in this section is for responding to spills, leaks or releases in order to prevent or minimize the adverse effects on persons, property and the environment. There may be specific reporting requirements associated with spills, leaks or releases, which change from region to region.

Containment and Clean-Up Procedures: In all cases of leak or spill contact vendor at Emergency Number shown on the front page of this MSDS. Wear protective clothing. Collect product for recovery or disposal. For release to land, or storm water runoff, contain discharge by constructing dykes or applying inert absorbent; for release to water, utilize damming and/or water diversion to minimize the spread of contamination. Ventilate enclosed spaces. Notify applicable government authority if release is reportable or could adversely affect the environment. Spilled material may cause floors and contact surfaces to become slippery.

7. HANDLING AND STORAGE

HANDLING

Handling Practices: Use normal "good" industrial hygiene and housekeeping practices. Containers exposed to heat may be under internal pressure. These should be cooled and carefully vented before opening. A face shield and apron should be worn. Vent container frequently, and more often in warm weather, to relieve pressure.

Ventilation Requirements: See Section 8, "Engineering Controls".

Other Precautions: Use only with adequate ventilation and avoid breathing aerosols (vapours or mists). Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Wash contaminated clothing thoroughly before re-use. Do not use cutting or welding torches on empty drums that contained this material/product.

STORAGE

Storage Temperature (°C): 10 to 32 °C.

Ventilation Requirements: General exhaust is acceptable.

Storage Requirements: Store in a cool, well-ventilated area. Keep away from heat, sparks and flames. Keep containers closed. Avoid freezing! Protect from direct sunlight. Protect against physical damage. Hygroscopic.

Special Materials to be Used for Packaging or Containers: Confirm suitability of any material before using.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Recommendations listed in this section indicate the type of equipment, which will provide protection against overexposure to this product. Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

ENGINEERING CONTROLS

Engineering Controls: General exhaust is acceptable. Local exhaust ventilation preferred. Make up air should be supplied to balance air that is removed by local or general exhaust ventilation. Ventilate low lying areas such as sumps or pits where dense vapours may collect.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Eye Protection: Safety glasses with side shields are recommended to prevent eye contact. Use chemical safety goggles when there is potential for eye contact. Contact lenses should not be worn when working with this material.

Skin Protection: Gloves and protective clothing made from neoprene, natural rubber or nitrile rubber should be impervious under conditions of use. Prior to use, user should confirm impermeability. Discard contaminated gloves.

Respiratory Protection: No specific guidelines available. Respiratory protection should not be necessary unless the material is heated or a mist created. A NIOSH/MSHA-approved air-purifying respirator equipped with organic vapour cartridges for concentrations up to 100 ppm glycerine. An air-supplied respirator if concentrations are higher or unknown.

If while wearing a respiratory protection, you can smell, taste or otherwise detect anything unusual, or in the case of a full facepiece respirator you experience eye irritation, leave the area immediately. Check to make sure the respirator to face seal is still good. If it is, replace the filter, cartridge or canister. If the seal is no longer good, you may need a new respirator. (4)

Other Personal Protective Equipment: Wear regular work clothing. The use of coveralls is recommended. Locate safety shower and eyewash station close to chemical handling area. Take all precautions to avoid personal contact.

EXPOSURE GUIDELINES

SUBSTANCE	ACGIH TLV (STEL)	OSHA PEL		NIOSH REL	
		(TWA)	(STEL)	(TWA)	(STEL)
Glycerine	—	5 mg/m ³	---	---	---

9. PHYSICAL AND CHEMICAL PROPERTIES (Not intended as Specifications)

Physical State:	Liquid.
Appearance:	Water-white to slightly yellow liquid.
Odour:	Odourless to characteristic odour.
Odour Threshold (ppm):	Not applicable.
Boiling Range (°C):	182 - 290.
Melting/Freezing Point (°C):	18 - 20.
Vapour Pressure (mm Hg at 20° C):	< 1.
Vapour Density (Air = 1.0):	3.17.
Relative Density (g/cc):	1.00 - 1.260.
Bulk Density:	1 000 - 1 260 kg/m ³
Viscosity:	1 490 mPa.s; 1 490cP.
Evaporation Rate (Butyl Acetate = 1.0):	Not available.
Solubility:	Soluble in water. Hygroscopic.
% Volatile by Volume:	Not available.
pH:	Neutral
Coefficient of Water/Oil Distribution:	<0.
Volatile Organic Compounds (VOC):	Not available.

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY

Under Normal Conditions:	Stable.
Under Fire Conditions:	Flammable.
Hazardous Polymerization:	Above 149 °C.
Conditions to Avoid:	Temperatures above 149 °C.
Materials to Avoid:	Strong oxidizers. Lewis or mineral acids. Materials reactive with hydroxyl bearing compounds. Isocyanates. Strong bases. Moisture. Hygroscopic. Product can react explosively with potassium chlorate, Phosphorous Trioxide, Perchloric Acid, Chlorine, Calcium Hypochlorite, Nitric Acid, Hydrofluoric Acid, Sulphuric Acid, Sodium peroxide, potassium permanganate, Hydrogen Peroxide, Chromium Trioxide, Sodium Hydride. (3, 4)
Decomposition or Combustion Products:	Thermal decomposition products are toxic and may include oxides of carbon and irritating gases.

11. TOXICOLOGICAL INFORMATION

TOXICOLOGICAL DATA:

SUBSTANCE	LD50 (Oral, Rat)	LD50 (Dermal, Rabbit)	LC50 (Inhalation, Rat, 4h)
Glycerine	12 600 mg/kg (1)	> 10 000 mg/kg (1)	> 285 mg/m ³ (1)

Carcinogenicity Data:	The ingredient(s) of this product is (are) not classed as carcinogenic by ACGIH, IARC, OSHA or NTP.
Reproductive Data:	No adverse reproductive effects are anticipated.
Mutagenicity Data:	No adverse mutagenic effects are anticipated.
Teratogenicity Data:	No adverse teratogenic effects are anticipated.

Respiratory / Skin Sensitization Data:	None known.
Synergistic Materials:	Alcohols may interact synergistically with chlorinated solvents (example - carbon tetrachloride, chloroform, bromotrichloromethane), dithiocarbamates (example - disulfiram), dimethylnitrosamine and thioacetamide. (4)
Other Studies Relevant to Material:	Application of 0.1 mL of 100% Glycerol to eyes of rabbits caused no irritation (corneal capacity 0/4; iris injury 0/2; redness 0/4; chemosis (edema) 0/4. (4)

12. ECOLOGICAL INFORMATION

Ecotoxicity:	Not available. May be harmful to aquatic life.
Environmental Fate:	This product is biodegradable. Do not contaminate domestic or irrigation water supplies, lakes, streams, ponds, or rivers. Chemical Oxygen Demand (COD): 1. 16. (3) Biochemical Oxygen Demand (BOD): 0. 87, 5 days. (3)

13. DISPOSAL CONSIDERATIONS

Deactivating Chemicals:	None required.
Waste Disposal Methods:	This information applies to the material as manufactured. Reevaluation of the product may be required by the user at the time of disposal since the product uses, transformations, mixtures and processes may influence waste classification. Dispose of waste material at an approved (hazardous) waste treatment/disposal facility in accordance with applicable local, provincial and federal regulations. Do not dispose of waste with normal garbage, or to sewer systems.
Safe Handling of Residues:	See "Waste Disposal Methods".
Disposal of Packaging:	Empty containers retain product residue. Do not dispose of package until thoroughly washed out.

14. TRANSPORTATION INFORMATION

CANADIAN TDG ACT SHIPPING DESCRIPTION:

This product is not regulated by TDG.
Label(s): Not applicable. Placard: Not applicable.
ERAP Index: ----. Exemptions: None known.

US DOT CLASSIFICATION (49CFR 172.101, 172.102):

This product is not regulated by DOT.
Label(s): Not applicable. Placard: Not applicable.
CERCLA-RQ: Not available. Exemptions: None known.

15. REGULATORY INFORMATION

CANADA

CEPA - NSNR: All constituents of this product are included on the DSL.
CEPA - NPRI: Not included.
Controlled Products Regulations Classification (WHMIS):
Not regulated.

USA

Environmental Protection Act: All constituents of this product are included on the TSCA inventory.
OSHA HCS (29CFR 1910.1200): Not regulated.
NFPA: 1 Health, 1 Fire, 0 Reactivity (3)
HMIS: 1 Health, 1 Fire, 0 Reactivity (3)

INTERNATIONAL

The following component or components of this product appear on the European Inventory of Existing Commercial Chemical Substances: Glycerine.

16. OTHER INFORMATION

REFERENCES

1. RTECS-Registry of Toxic Effects of Chemical Substances, Canadian Centre for Occupational Health and Safety RTECS database.
2. Clayton, G.D. and Clayton, F.E., Eds., Patty's Industrial Hygiene and Toxicology, 3rd ed., Vol. IIA,B,C, John Wiley and Sons, New York, 1981.
3. Supplier's Material Safety Data Sheet(s).
4. CHEMINFO, through "CCINFODisc", Canadian Centre for Occupational Health and Safety, Hamilton, Ontario, Canada.
5. Guide to Occupational Exposure Values, 2005, American Conference of Governmental Industrial Hygienists, Cincinnati, 2005.
6. Regulatory Affairs Group, Brenntag Canada Inc.
7. The British Columbia Drug and Poison Information Centre, Poison Managements Manual, Canadian Pharmaceutical Association, Ottawa, 1981.

The information contained herein is offered only as a guide to the handling of this specific material and has been prepared in good faith by technically knowledgeable personnel. It is not intended to be all-inclusive and the manner and conditions of use and handling may involve other and additional considerations. No warranty of any kind is given or implied and Brenntag Canada Inc. will not be liable for any damages, losses, injuries or consequential damages which may result from the use of or reliance on any information contained herein. This Material Safety Data Sheet is valid for three years.

To obtain revised copies of this or other Material Safety Data Sheets, contact your nearest Brenntag Canada Regional office.

British Columbia: 20333-102B Avenue, Langley, BC, V1M 3H1
Phone: (604) 513-9009 Facsimile: (604) 513-9010

Alberta: 6628 - 45 th. Street, Leduc, AB, T9E 7C9
Phone: (780) 986-4544 Facsimile: (780) 986-1070

Manitoba: 681 Plinquet Street, Winnipeg, MB, R2J 2X2
Phone: (204) 233-3416 Facsimile: (204) 233-7005

Ontario: 43 Jutland Road, Toronto, ON, M8Z 2G6
Phone: (416) 259-8231 Facsimile: (416) 259-5333

Quebec: 2900 Jean Baptiste Des., Lachine, PQ, H8T 1C8
Phone: (514) 636-9230 Facsimile: (514) 636-0877

Atlantic: A-105 Akerley Boulevard, Dartmouth, NS, B3B 1R7
Phone: (902) 468-9690 Facsimile: (902) 468-3085

Prepared By: Regulatory Affairs Group, Brenntag Canada Inc., (416) 259-8231.