



UNIVAR®

Univar USA Inc Material Safety Data Sheet

Univar USA Inc., 17425 NE Union Hill Rd., Redmond WA 98052
(425) 889 3400

Emergency Assistance

For emergency assistance involving chemicals call
Chemtrec - (800) 424-9300

The Version Date and Number for this MSDS is : 01/11/2007 - #014

PRODUCT NAME: GLYCERINE ALL GRADES

MSDS NUMBER: DZ08439

DATE ISSUED: 12/12/2006

SUPERSEDES: 7/10/2000

ISSUED BY: 008360

Material Safety Data Sheet

1. Product and Company Identification

Product Name
GLYCERINE ALL GRADES

Distributed by:
Univar USA Inc.
17425 NE Union Hill Road
Redmond, WA 98052
425-889-3400

2. Hazards Identification

Emergency Overview

Color: Colorless
Physical State: Liquid
Odor: Odorless

Hazards of product:
No significant immediate hazards for emergency response are known.

OSHA Hazard Communication Standard

This product is not a Hazardous Chemical as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause slight temporary eye irritation. Corneal injury is unlikely.

Skin Contact: Prolonged exposure not likely to cause significant skin irritation.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts. Prolonged/repeated exposure to damaged skin (as in burn patients) may result in absorption of toxic amounts.

Inhalation: At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material or mist may cause respiratory irritation.

Ingestion: Very low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. In humans, effects have been reported on the following organs: Central nervous system. Observations in humans include: Altered blood sugar levels.

Effects of Repeated Exposure: Excessive exposure to glycerine may cause increased fat levels in blood. In animals, effects have been reported on the following organs: Gastrointestinal tract.

Reproductive Effects: Reproductive effects seen in female animals are believed to be due to altered nutritional states resulting from extremely high doses of glycerine given in the diet. Similar effects have been seen in animals fed synthetic diets.

3. Composition Information

| Component | CAS # | Amount |
|-----------|---------|-----------|
| Glycerol | 56-81-5 | >= 99.7 % |

4. First-aid measures

Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Skin Contact: Wash skin with plenty of water.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are

preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Recover spilled material if possible. Contain spilled material if possible. Absorb with materials such as: Sand. Collect in suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling: No special precautions required.

Storage

Store in a dry place. Avoid moisture.

Shelf life: Use within Storage temperature:
24 Months 17 - 55 deg C

8. Exposure Controls I Personal Protection

Exposure Limits

| Component | List | Type | Value |
|-----------|-------|-----------|----------|
| Glycerol | ACGIH | TWA Mist. | 10 mg/m3 |

| | | |
|------------|----------------------|----------|
| OSHA Table | PEL | 5 mg/m3 |
| Z-1 | Respirable fraction. | |
| OSHA Table | PEL Total | 15 mg/m3 |
| Z-1 | dust. | |

Personal Protection

Eye/Face Protection: Use safety glasses.

Skin Protection: When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Polyethylene. Neoprene. Natural rubber (latex). Polyvinyl chloride (PVC or vinyl). Nitrile/butadiene rubber (nitrile or NBR). Polyvinyl alcohol (PVA). Ethyl vinyl alcohol laminate (EVAL). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

9. Physical and Chemical Properties

| | |
|--------------------------|---|
| Physical State | Liquid |
| Color | Colorless |
| Odor | Odorless |
| Flash Point - Closed Cup | 199 deg C (390 deg F) Pensky-Martens Closed Cup ASTM D 93 |
| Flammable Limits In Air | Lower: 2.6 %(V) Literature Vapor Upper: 11.3 %(V) Literature Vapor |
| Autoignition Temperature | 1 atm 370 deg C (698 deg F) Literature |
| Vapor Pressure | 1 mmHg @ 20 deg C Literature |

| | |
|---------------------------------|---|
| Boiling Point (760 mmHg) | 290 deg C (554 deg F) Literature . |
| Vapor Density (air = 1) | 3.1 @ 20 deg C Literature |
| Specific Gravity (H2O = 1) | 1.2607 Literature |
| Liquid Density | 10.49 g/cm ³ @ 25 deg C Test method in development |
| Freezing Point | 18 deg C (64 deg F) Literature |
| Melting Point | Not applicable |
| Solubility in Water (by weight) | 100 % @ 20 deg C Literature |
| pH | 6.5 - 8.5 pH Electrode (50% aq. sol.) |
| Molecular Weight | 92.1 g/mol Literature |
| Octanol/Water Partition | -1.76 Measured Coefficient |
| Dynamic Viscosity | 945 mPs @ 25 deg C Literature |
| Kinematic Viscosity | No test data available |

10. Stability and Reactivity

Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7.

Hygroscopic.

Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose. Avoid moisture.

Incompatible Materials: Avoid contact with: Strong oxidizers.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Acrolein.

11. Toxicological Information

Acute Toxicity

Ingestion

LD50, Rat 17,000 - 27,200 mg/kg

Skin Absorption

LD50, Rabbit > 10,000 mg/kg

Inhalation

LC50, 6 h, Aerosol, Rat > 4 mg/L

Repeated Dose Toxicity

Excessive exposure to glycerine may cause increased fat levels in blood. In animals, effects have been reported on the following organs: Gastrointestinal tract.

Chronic Toxicity and Carcinogenicity

For the major component(s): Did not cause cancer in laboratory animals.

Developmental Toxicity

Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive Toxicity

Reproductive effects seen in female animals are believed to be due to altered nutritional states resulting from extremely high doses of glycerine given in the diet. Similar effects have been seen in animals fed synthetic diets.

Genetic Toxicology

In vitro genetic toxicity studies were negative.

12. Ecological Information

CHEMICAL FATE

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Henry's Law Constant (H): 1.73E-8 atm*m³/mole; 25 deg C Measured
Partition coefficient, n-octanol/water (log Pow): -1.76 Measured
Partition coefficient, soil organic carbon/water (Koc): 1 Estimated

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.

OECD Biodegradation Tests:

| Biodegradation | Exposure Time | Method |
|----------------|---------------|----------------|
| 63 % | 14 d | OECD 301C Test |

Biological oxygen demand (BOD):

| BOD 5 | BOD 10 | BOD 20 | BOD 28 |
|-------|--------|--------|--------|
| 68% | 74% | 74% | |

Chemical Oxygen Demand: 1.15 mg/mg

ECOTOXICITY

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, fathead minnow (Pimephales promelas), static, 96 h: 44,000 mg/L

Aquatic Invertebrate Acute Toxicity

LC50, water flea Daphnia magna, 24 h: > 10,000 mg/L

Toxicity to Micro-organisms

EC50, OECD 209 Test; activated sludge, respiration inhibition, 3 h: > 1,000

mg/L

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. VENDOR HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Reclaimer. Incinerator or other thermal destruction device. Any disposal practice must be in compliance with all local and national laws and regulations. Do not dump into any sewers, on the ground, or into any body of water.

14. Transport Information

DOT Non-Bulk
NOT REGULATED

DOT Bulk
NOT REGULATED

IMDG
NOT REGULATED

ICAO/IATA
NOT REGULATED

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is not a Hazardous Chemical as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

| | |
|---------------------------------|----|
| Immediate (Acute) Health Hazard | No |
| Delayed (Chronic) Health Hazard | No |
| Fire Hazard | No |

Reactive Hazard No
Sudden Release of Pressure Hazard No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:
The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

| Component | CAS # | Amount |
|-----------|---------|-----------|
| Glycerol | 56-81-5 | >= 99.7 % |

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information

Hazard Rating System

| NFPA | Health | Fire | Reactivity |
|------|--------|------|------------|
| | 1 | 1 | 1 |

Recommended Uses and Restrictions

Used in applications such as: Cosmetics ingredient. Food additive.
Emulsifying agent. Humectant. Personal care applications. Pharmaceuticals.
Chemical intermediate.

Legend

N/A Not available Weight/Weight
OEL Occupational Exposure Limit
STEL Short Term Exposure Limit
TWA Time Weighted Average
ACGIH American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG Dow Industrial Hygiene Guideline
WEEL Workplace Environmental Exposure Level
HAZ_DES Hazard Designation
Action Level A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

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For Additional Information contact MSDS Coordinator during business hours, Pacific time: (425) 889-3400

Notice

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Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Univar sales office.

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