

SAFETY DATA SHEET

1. Identification

Product identifier: GLYCEROL

Other means of identification

Synonyms: Glycerin, 1,2,3-Propanetriol
Product No.: 5271, 5273, 5270, 4043, 2135, M778, 2143, 2142, 2140, 2136, 5093, 5092, 72138

Recommended use and restriction on use

Recommended use: Not available.
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name: Avantor Performance Materials, Inc.
Address: 3477 Corporate Parkway, Suite 200
Center Valley, PA 18034
Telephone:
Customer Service: 855-282-6867
Fax:
Contact Person: Environmental Health & Safety
e-mail: info@avantormaterials.com

Emergency telephone number:

24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Not classified

Label elements

Hazard symbol: No symbol

Signal word: No signal word.

Hazard statement: Not applicable

Precautionary statement Not applicable

Other hazards which do not result in GHS classification:

None.

3. Composition/information on ingredients

Substances

| Chemical identity | Common name and synonyms | CAS number | Content in percent (%)* |
|-------------------|--------------------------|------------|-------------------------|
| GLYCERIN | | 56-81-5 | 100% |

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

| | |
|-----------------------------|---|
| General information: | Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance. |
| Ingestion: | Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth. |
| Inhalation: | Move to fresh air. Get medical attention if symptoms persist. |
| Skin contact: | Wash skin thoroughly with soap and water. Get medical attention if symptoms occur. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. |
| Eye contact: | Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if symptoms persist. |

Most important symptoms/effects, acute and delayed

Symptoms: May cause irritation to skin, eyes, and respiratory tract.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

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| General fire hazards: | No data available. |
| Suitable (and unsuitable) extinguishing media | |
| Suitable extinguishing media: | Water spray, fog, CO ₂ , dry chemical, or alcohol resistant foam. |
| Unsuitable extinguishing media: | None known. |
| Specific hazards arising from the chemical: | This product is not flammable. May burn, but does not ignite readily. |

Special protective equipment and precautions for firefighters

| | |
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| Special fire fighting procedures: | Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. |
| Special protective equipment for fire-fighters: | Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. |

6. Accidental release measures

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|---|---|
| Personal precautions, protective equipment and emergency procedures: | See Section 8 of the MSDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away. Ventilate closed spaces before entering them. Use personal protective equipment. |
| Methods and material for containment and cleaning up: | Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal. |
| Notification Procedures: | Inform authorities if large amounts are involved. |
| Environmental precautions: | Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. |

7. Handling and storage

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| Precautions for safe handling: | Use personal protective equipment as required. Avoid breathing mist. Avoid contact with eyes. Use only in well-ventilated areas. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment. |
| Conditions for safe storage, including any incompatibilities: | Keep container tightly closed. Store in a dry place. Store in a well-ventilated place. |

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

| Chemical identity | Type | Exposure Limit values | Source |
|---------------------------------|------|-----------------------|---|
| GLYCERIN - Mist. | TWA | 10 mg/m3 | US. ACGIH Threshold Limit Values (2011) |
| GLYCERIN - Total dust. | PEL | 15 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| GLYCERIN - Respirable fraction. | PEL | 5 mg/m3 | US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006) |
| | TWA | 5 mg/m3 | US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989) |
| GLYCERIN - Total dust. | TWA | 10 mg/m3 | US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989) |

| | |
|---|--------------------|
| Appropriate engineering controls | No data available. |
|---|--------------------|

Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

Eye/face protection: Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection: No data available.

Other: Wear suitable protective clothing and gloves.

Respiratory protection: In case of inadequate ventilation use suitable respirator.

Hygiene measures: Provide eyewash station and safety shower. Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Avoid contact with skin.

9. Physical and chemical properties

Appearance

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| Physical state: | Liquid |
| Form: | Syrupy liquid or solid (below 64 °F) |
| Color: | Clear colorless |
| Odor: | Mild odor |
| Odor threshold: | No data available. |
| pH: | No data available. |
| Melting point/freezing point: | 20 °C |
| Initial boiling point and boiling range: | 290 °C (101.325 kPa) |
| Flash Point: | 199 °C |
| Evaporation rate: | No data available. |
| Flammability (solid, gas): | No data available. |
| Upper/lower limit on flammability or explosive limits | |
| Flammability limit - upper (%): | No data available. |
| Flammability limit - lower (%): | No data available. |
| Explosive limit - upper (%): | No data available. |
| Explosive limit - lower (%): | No data available. |
| Vapor pressure: | < 0.01 kPa (25 °C) |
| Vapor density: | 3.17 AIR=1 |
| Relative density: | 1.26 (20 °C) |
| Solubility(ies) | |
| Solubility in water: | Miscible with water. |
| Solubility (other): | No data available. |
| Partition coefficient (n-octanol/water): | -1.76 |
| Auto-ignition temperature: | 393 °C |
| Decomposition temperature: | No data available. |
| Viscosity: | No data available. |
| Other information | |
| Molecular weight: | 92.09 g/mol (C ₃ H ₈ O ₃) |

10. Stability and reactivity

| | |
|--|---|
| Reactivity: | No dangerous reaction known under conditions of normal use. |
| Chemical stability: | Material is stable under normal conditions. |
| Possibility of hazardous reactions: | Hazardous polymerization does not occur. |
| Conditions to avoid: | Excessive heat. |
| Incompatible materials: | Strong oxidizing agents. Strong acids. Strong bases. |
| Hazardous decomposition products: | Thermal decomposition may release oxides of carbon. |

11. Toxicological information

Information on likely routes of exposure

| | |
|----------------------|---|
| Ingestion: | Expected to be a low ingestion hazard. |
| Inhalation: | May cause irritation to the respiratory system. |
| Skin contact: | May cause irritation. |
| Eye contact: | May irritate eyes. |

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: No data available.

Dermal
Product: No data available.

Inhalation
Product: No data available.

Repeated dose toxicity
Product: No data available.

Skin corrosion/irritation
Product: No data available.

Serious eye damage/eye irritation
Product: No data available.

Respiratory or skin sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: This substance has no evidence of carcinogenic properties.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ cell mutagenicity

In vitro
Product: No mutagenic components identified

In vivo
Product: No mutagenic components identified

Reproductive toxicity
Product: No components toxic to reproduction

Specific target organ toxicity - single exposure
Product: None known.

Specific target organ toxicity - repeated exposure

| | |
|-----------------------------------|----------------|
| Product: | None known. |
| Aspiration hazard Product: | Not classified |
| Other effects: | None known. |

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 51,000 mg/l

Aquatic invertebrates

Product: No data available.

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and degradability

Biodegradation

Product: Expected to be readily biodegradable.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)

Product: Log Kow: -1.76

Mobility in soil:

The product is partly soluble in water. May spread in the aquatic environment.

Other adverse effects:

The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

13. Disposal considerations

Disposal instructions:

Discharge, treatment, or disposal may be subject to national, state, or local laws.

Contaminated packaging:

Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated.

IMDG

Not regulated.

IATA

Not regulated.

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

None present or none present in regulated quantities.

SARA 311/312 Hazardous chemical

| Chemical identity | Threshold Planning Quantity |
|-------------------|-----------------------------|
| GLYCERIN | 500 lbs |

SARA 313 (TRI reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

GLYCERIN Listed

US. Massachusetts RTK - Substance List

GLYCERIN Listed

US. Pennsylvania RTK - Hazardous Substances

GLYCERIN Listed

US. Rhode Island RTK
GLYCERIN

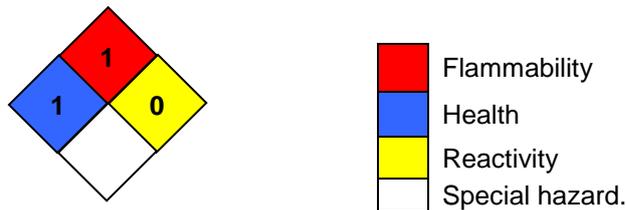
Listed

Inventory Status:

| | |
|--|--|
| Australia AICS: | On or in compliance with the inventory |
| Canada DSL Inventory List: | On or in compliance with the inventory |
| EINECS, ELINCS or NLP: | On or in compliance with the inventory |
| Japan (ENCS) List: | On or in compliance with the inventory |
| China Inv. Existing Chemical Substances: | Not in compliance with the inventory. |
| Korea Existing Chemicals Inv. (KECI): | On or in compliance with the inventory |
| Canada NDSL Inventory: | Not in compliance with the inventory. |
| Philippines PICCS: | On or in compliance with the inventory |
| US TSCA Inventory: | On or in compliance with the inventory |
| New Zealand Inventory of Chemicals: | On or in compliance with the inventory |
| Japan ISHL Listing: | On or in compliance with the inventory |
| Japan Pharmacopoeia Listing: | On or in compliance with the inventory |

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

| | |
|-----------------------------|--------------------|
| Issue date: | 04-24-2014 |
| Revision date: | No data available. |
| Version #: | 1.0 |
| Further information: | No data available. |

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