

# DIETHYLENE GLYCOL MONOMETHYL ETHER

DGM

## CAUTIONARY RESPONSE INFORMATION

|  |  |                              |           |               |
|--|--|------------------------------|-----------|---------------|
| <b>Common Synonyms</b><br>Diethylene glycol methyl ether<br>Dowanol DM<br>2-(2-Methoxyethoxy)-ethanol<br>Methyl carbitol<br>Poly-solv DM |  | Liquid                       | Colorless | Pleasant odor |
| Call fire department.<br>Avoid contact with liquid.<br>Notify local health and pollution control agencies.<br>Protect water intakes.     |  | Floats and mixes with water. |           |               |
| <b>Fire</b>  | Combustible.<br>Extinguish with dry chemical, water, or carbon dioxide.<br>Cool exposed containers with water.   |                              |           |               |
| <b>Exposure</b>  | CALL FOR MEDICAL AID.<br><br>LIQUID<br>Irritating to eyes.<br>Harmful if swallowed.<br>IF IN EYES, hold eyelids open and flush with plenty of water.<br>IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk. |                              |           |               |
| <b>Water Pollution</b>   | Effect of low concentrations on aquatic life is unknown.<br>May be dangerous if it enters water intakes.<br>Notify local health and wildlife officials.<br>Notify operators of nearby water intakes.                           |                              |           |               |

### 1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse  
Stop discharge

### 2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: 40; Glycol ether
- 2.2 Formula: CH<sub>3</sub>OCH<sub>2</sub>CH<sub>2</sub>OCH<sub>2</sub>CH<sub>2</sub>OH
- 2.3 IMO/UN Designation: Not listed
- 2.4 DOT ID No.: Not listed
- 2.5 CAS Registry No.: 111-77-3
- 2.6 NAERG Guide No.: Not listed
- 2.7 Standard Industrial Trade Classification: 51616

### 3. HEALTH HAZARDS

- 3.1 Personal Protective Equipment: Safety goggles.
- 3.2 Symptoms Following Exposure: Liquid may irritate eyes.
- 3.3 Treatment of Exposure: SKIN OR EYES: Flush with water
- 3.4 TLV-TWA: Not listed.
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: Not listed.
- 3.7 Toxicity by Ingestion: Grade 2; LD<sub>50</sub> = 0.5 to 5 g/kg (guinea pig)
- 3.8 Toxicity by Inhalation: Currently not available.
- 3.9 Chronic Toxicity: Currently not available
- 3.10 Vapor (Gas) Irritant Characteristics: None
- 3.11 Liquid or Solid Characteristics: None
- 3.12 Odor Threshold: Currently not available
- 3.13 IDLH Value: Not listed.
- 3.14 OSHA PEL-TWA: Not listed.
- 3.15 OSHA PEL-STEL: Not listed.
- 3.16 OSHA PEL-Ceiling: Not listed.
- 3.17 EPA AEGL: Not listed

### 4. FIRE HAZARDS

- 4.1 Flash Point: 200°F O.C.
- 4.2 Flammable Limits in Air: LFL = 1.2%
- 4.3 Fire Extinguishing Agents: Water, carbon dioxide, or dry chemical
- 4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
- 4.5 Special Hazards of Combustion Products: Not pertinent
- 4.6 Behavior in Fire: Not pertinent
- 4.7 Auto Ignition Temperature: Currently not available
- 4.8 Electrical Hazards: Not pertinent
- 4.9 Burning Rate: Currently not available
- 4.10 Adiabatic Flame Temperature: Currently not available
- 4.11 Stoichiometric Air to Fuel Ratio: 30.9 (calc.)
- 4.12 Flame Temperature: Currently not available
- 4.13 Combustion Molar Ratio (Reactant to Product): 11.0 (calc.)
- 4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

### 5. CHEMICAL REACTIVITY

- 5.1 Reactivity with Water: No reaction
- 5.2 Reactivity with Common Materials: No reaction
- 5.3 Stability During Transport: Stable
- 5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
- 5.5 Polymerization: Not pertinent
- 5.6 Inhibitor of Polymerization: Not pertinent

### 6. WATER POLLUTION

- 6.1 Aquatic Toxicity: Currently not available
- 6.2 Waterfowl Toxicity: Currently not available
- 6.3 Biological Oxygen Demand (BOD): 34% of theoretical in 5 days
- 6.4 Food Chain Concentration Potential: None
- 6.5 GESAMP Hazard Profile:  
 Bioaccumulation: 0  
 Damage to living resources: 0  
 Human Oral hazard: 1  
 Human Contact hazard: I  
 Reduction of amenities: X

### 7. SHIPPING INFORMATION

- 7.1 Grades of Purity: Commercial
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: No requirement
- 7.4 Venting: Open (flame arrester)
- 7.5 IMO Pollution Category: D
- 7.6 Ship Type: Data not available
- 7.7 Barge Hull Type: Currently not available

### 8. HAZARD CLASSIFICATIONS

- 8.1 49 CFR Category: Not listed
- 8.2 49 CFR Class: Not pertinent
- 8.3 49 CFR Package Group: Not listed.
- 8.4 Marine Pollutant: No
- 8.5 NFPA Hazard Classification:
 

|                      |                |
|----------------------|----------------|
| Category             | Classification |
| Health Hazard (Blue) | 1              |
| Flammability (Red)   | 1              |
| Instability (Yellow) | 0              |
- 8.6 EPA Reportable Quantity: Not listed.
- 8.7 EPA Pollution Category: Not listed.
- 8.8 RCRA Waste Number: Not listed
- 8.9 EPA FWPCA List: Not listed

### 9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 Physical State at 15° C and 1 atm: Liquid
- 9.2 Molecular Weight: 120.15
- 9.3 Boiling Point at 1 atm: 381°F = 194°C = 467°K
- 9.4 Freezing Point: -120°F = -85°C = 188°K
- 9.5 Critical Temperature: Not pertinent
- 9.6 Critical Pressure: Not pertinent
- 9.7 Specific Gravity: 1.025 at 20°C (liquid)
- 9.8 Liquid Surface Tension: Not pertinent
- 9.9 Liquid Water Interfacial Tension: Not pertinent
- 9.10 Vapor (Gas) Specific Gravity: Not pertinent
- 9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
- 9.12 Latent Heat of Vaporization: 160 Btu/lb = 90 cal/g = 3.8 X 10<sup>5</sup> J/kg
- 9.13 Heat of Combustion: -10,830 Btu/lb = -6020 cal/g = -252 X 10<sup>5</sup> J/kg
- 9.14 Heat of Decomposition: Not pertinent
- 9.15 Heat of Solution: Not pertinent
- 9.16 Heat of Polymerization: Not pertinent
- 9.17 Heat of Fusion: Currently not available
- 9.18 Limiting Value: Currently not available
- 9.19 Reid Vapor Pressure: 0.01 psia

NOTES

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| 9.20<br>SATURATED LIQUID DENSITY |                       | 9.21<br>LIQUID HEAT CAPACITY |                                     | 9.22<br>LIQUID THERMAL CONDUCTIVITY |  | 9.23<br>LIQUID VISCOSITY   |  |
|----------------------------------|-----------------------|------------------------------|-------------------------------------|-------------------------------------|--|----------------------------|--|
| Temperature<br>(degrees F)       | Pounds per cubic foot | Temperature<br>(degrees F)   | British thermal unit per<br>pound-F | Temperature<br>(degrees F)          | British thermal unit inch<br>per hour-square foot-F          | Temperature<br>(degrees F) | Centipoise   |
| 52                               | 64.540                | 85                           | 0.518                               |                                     | N<br>O<br>T<br><br>P<br>E<br>R<br>T<br>I<br>N<br>E<br>N<br>T |                            | N<br>O<br>T<br><br>P<br>E<br>R<br>T<br>I<br>N<br>E<br>N<br>T |
| 54                               | 64.469                | 90                           | 0.521                               |                                     |  |                            |  |
| 56                               | 64.400                | 95                           | 0.524                               |                                     |  |                            |  |
| 58                               | 64.330                | 100                          | 0.527                               |                                     |  |                            |  |
| 60                               | 64.259                | 105                          | 0.529                               |                                     |  |                            |  |
| 62                               | 64.190                | 110                          | 0.532                               |                                     |  |                            |  |
| 64                               | 64.120                | 115                          | 0.535                               |                                     |  |                            |  |
| 66                               | 64.049                | 120                          | 0.538                               |                                     |  |                            |  |
| 68                               | 63.980                | 125                          | 0.541                               |                                     |  |                            |  |
| 70                               | 63.910                | 130                          | 0.543                               |                                     |  |                            |  |
| 72                               | 63.840                | 135                          | 0.546                               |                                     |  |                            |  |
| 74                               | 63.780                | 140                          | 0.549                               |                                     |  |                            |  |
| 76                               | 63.710                | 145                          | 0.552                               |                                     |  |                            |  |
| 78                               | 63.640                | 150                          | 0.554                               |                                     |  |                            |  |
| 80                               | 63.570                |                              |                                     |                                     |  |                            |  |
| 82                               | 63.500                |                              |                                     |                                     |  |                            |  |
| 84                               | 63.430                |                              |                                     |                                     |  |                            |  |
| 86                               | 63.360                |                              |                                     |                                     |  |                            |  |

| 9.24<br>SOLUBILITY IN WATER          |                                   | 9.25<br>SATURATED VAPOR PRESSURE |                        | 9.26<br>SATURATED VAPOR DENSITY |                       | 9.27<br>IDEAL GAS HEAT CAPACITY |  |
|--------------------------------------|-----------------------------------|----------------------------------|------------------------|---------------------------------|-----------------------|---------------------------------|--|
| Temperature<br>(degrees F)           | Pounds per 100 pounds<br>of water | Temperature<br>(degrees F)       | Pounds per square inch | Temperature<br>(degrees F)      | Pounds per cubic foot | Temperature<br>(degrees F)      | British thermal unit per<br>pound-F                          |
| M<br>I<br>S<br>C<br>I<br>B<br>L<br>E |                                   | 60                               | 0.003                  | 60                              | 0.00006               |                                 | N<br>O<br>T<br><br>P<br>E<br>R<br>T<br>I<br>N<br>E<br>N<br>T |
|                                      |                                   | 80                               | 0.006                  | 80                              | 0.00013               |                                 |  |
|                                      |                                   | 100                              | 0.014                  | 100                             | 0.00027               |                                 |  |
|                                      |                                   | 120                              | 0.028                  | 120                             | 0.00054               |                                 |  |
|                                      |                                   | 140                              | 0.055                  | 140                             | 0.00103               |                                 |  |
|                                      |                                   | 160                              | 0.103                  | 160                             | 0.00186               |                                 |  |
|                                      |                                   | 180                              | 0.186                  | 180                             | 0.00326               |                                 |  |
|                                      |                                   | 200                              | 0.324                  | 200                             | 0.00550               |                                 |  |
|                                      |                                   | 220                              | 0.545                  | 220                             | 0.00898               |                                 |  |
|                                      |                                   | 240                              | 0.892                  | 240                             | 0.01426               |                                 |  |
|                                      |                                   | 260                              | 1.418                  | 260                             | 0.02206               |                                 |  |
|                                      |                                   | 280                              | 2.200                  | 280                             | 0.03330               |                                 |  |
|                                      |                                   | 300                              | 3.335                  | 300                             | 0.04914               |                                 |  |
|                                      |                                   | 320                              | 4.949                  | 320                             | 0.07104               |                                 |  |
|                                      |                                   | 340                              | 7.199                  | 340                             | 0.10080               |                                 |  |
|                                      | 360                               | 10.280                           | 360                    | 0.14040                         |                       |                                 |  |
|                                      | 380                               | 14.440                           | 380                    | 0.19250                         |                       |                                 |  |