

DIPROPYLENE GLYCOL

DPG

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Thick liquid Colorless Odorless Sinks and mixes with water.
<p>Call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	Combustible. Extinguish with water, dry chemical, alcohol foam, or carbon dioxide.
Exposure	CALL FOR MEDICAL AID. LIQUID Irritating to eyes. IF IN EYES, hold eyelids open and flush with plenty of water.
Water Pollution	Effect of low concentrations on aquatic life is unknown. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

<p>1. CORRECTIVE RESPONSE ACTIONS Dilute and disperse Stop discharge</p>	<p>2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: 40; Glycol ether 2.2 Formula: (CH₂CHOHCH₂)₂O 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: Not listed 2.5 CAS Registry No.: 110-98-5 2.6 NAERG Guide No.: Not listed 2.7 Standard Industrial Trade Classification: 51616</p>
<p>3. HEALTH HAZARDS</p> <p>3.1 Personal Protective Equipment: Safety glasses with side shields or goggles; shower and eye bath. 3.2 Symptoms Following Exposure: Minor eye irritation 3.3 Treatment of Exposure: EYES: irrigate briefly with water; if any ill effects, get medical attention. SKIN & INGESTION: if any ill effects develop, get medical attention. 3.4 TLV-TWA: Not listed. 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 1; LD₅₀ = 5 to 15 g/kg (rat) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available 3.10 Vapor (Gas) Irritant Characteristics: Nonirritating to the eyes and throat. 3.11 Liquid or Solid Characteristics: No appreciable hazard. Practically harmless to the skin. 3.12 Odor Threshold: Odorless 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</p>	

4. FIRE HAZARDS

- 4.1 **Flash Point:** 280°F O.C.
4.2 **Flammable Limits in Air:** LFL = 2.2% (approx.)
4.3 **Fire Extinguishing Agents:** Water fog, alcohol foam, carbon dioxide, dry chemical
4.4 **Fire Extinguishing Agents Not to Be Used:** Water or foam may cause frothing
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:** 2.0 mm/min.
4.10 **Adiabatic Flame Temperature:** Currently not available
4.11 **Stoichiometric Air to Fuel Ratio:** 38.1 (calc.)
4.12 **Flame Temperature:** Currently not available
4.13 **Combustion Molar Ratio (Reactant to Product):** 13.0 (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):** Currently not available
6.4 **Food Chain Concentration Potential:** None
6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: 0
Human Oral hazard: 0
Human Contact hazard: 0
Reduction of amenities: 0

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Commercial: 99%
7.2 **Storage Temperature:** Ambient
7.3 **Inert Atmosphere:** No requirement
7.4 **Venting:** Open (flame arrester)
7.5 **IMO Pollution Category:** Currently not available
7.6 **Ship Type:** Currently 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) | 0 |
| 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:** 134.17
9.3 **Boiling Point at 1 atm:** 420°F = .232°C = 505°K
9.4 **Freezing Point:** >-40°F = >-40°C = >233°K
9.5 **Critical Temperature:** 719.6°F = 382°C = 655.2°K
9.6 **Critical Pressure:** 529 psia = 36 atm = 3.6 MN/m²
9.7 **Specific Gravity:** 1.023 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):** 1.0
9.12 **Latent Heat of Vaporization:** 170 Btu/lb = 96 cal/g = 4.0 X 10⁵ J/kg
9.13 **Heat of Combustion:** -11,650 Btu/lb = -6470 cal/g = -271 X 10⁵ J/kg
9.14 **Heat of Decomposition:** Not pertinent
9.15 **Heat of Solution:** (est.) -13 Btu/lb = -7 cal/g = -0.3 X 10⁵ J/kg
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:** Very low

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
40	64.589	40	0.558	30	1.109		
50	64.339	50	0.564	40	1.109		N
60	64.089	60	0.570	50	1.109		O
70	63.830	70	0.576	60	1.109		T
80	63.580	80	0.582	70	1.109		
90	63.330	90	0.588	80	1.109		P
100	63.070	100	0.594	90	1.109		E
110	62.820	110	0.601	100	1.109		R
120	62.570	120	0.607	110	1.109		T
130	62.310	130	0.613	120	1.109		I
140	62.060	140	0.619	130	1.109		N
150	61.810	150	0.625	140	1.109		E
160	61.550	160	0.631	150	1.109		N
170	61.300	170	0.637	160	1.109		T
180	61.050	180	0.643	170	1.109		
190	60.790	190	0.649	180	1.109		
200	60.540	200	0.656	190	1.109		
210	60.290	210	0.662	200	1.109		
		220	0.668				
		230	0.674				
		240	0.680				
		250	0.686				
		260	0.692				
		270	0.698				
		280	0.704				

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	M	70	0.001	70	0.00004	0	0.329
	I	80	0.002	80	0.00005	25	0.340
	S	90	0.003	90	0.00007	50	0.351
	C	100	0.004	100	0.00010	75	0.362
	I	110	0.006	110	0.00013	100	0.373
	B	120	0.008	120	0.00018	125	0.384
	L	130	0.011	130	0.00024	150	0.394
	E	140	0.015	140	0.00032	175	0.404
		150	0.020	150	0.00042	200	0.414
		160	0.027	160	0.00054	225	0.424
		170	0.035	170	0.00070	250	0.434
		180	0.046	180	0.00089	275	0.443
		190	0.059	190	0.00114	300	0.452
		200	0.075	200	0.00143	325	0.461
		210	0.096	210	0.00179	350	0.470
		220	0.121	220	0.00222	375	0.479
		230	0.151	230	0.00274	400	0.487
		240	0.188	240	0.00336	425	0.496
		250	0.233	250	0.00410	450	0.504
		260	0.286	260	0.00497	475	0.512
		270	0.350	270	0.00600	500	0.520
		280	0.426	280	0.00719	525	0.527
		290	0.515	290	0.00859	550	0.535
		300	0.620	300	0.01020	575	0.542
						600	0.550