TRIETHYLENE GLYCOL

TEG

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
Di-beta-hydroxyethoxyethane
2,2'-Ethylenedioxydiethanol
Ethylene glycol dihydroxydiethyl ether
TEG
Triglycol

Liquid Colorless Mild odor

Sinks and mixes with water.

Call fire department.
Notify local health and pollution control agencies.
Protect water intakes.

Fire	Combustible. Extinguish with dry chemical, alcohol foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.
Exposure	Not harmful.
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.

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 40; Glycol ether
2.2 Formula: $HO(CH_2CH_2O)_3CH$
2.3 IMO/UN Designation: Not listed
2.4 DOT ID No.: Not listed
2.5 CAS Registry No.: 112-27-6
2.6 NAERG Guide No.: Not listed
2.7 Standard Industrial Trade Classification: 51229

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Goggles; plastic gloves.
3.2 Symptoms Following Exposure: Vapor and liquid are unlikely to cause harm.
3.3 Treatment of Exposure: Flush eyes and skin 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 1; LD_{50} = 5 to 15 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: Vapors are non-irritating to the eyes and throat.
3.11 Liquid or Solid Characteristics: No appreciable hazard. Practically harmless to the skin.
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: 330°F O.C. 350°F C.C.
4.2 Flammable Limits in Air: 0.9%-9.2%
4.3 Fire Extinguishing Agents: Alcohol foam, dry chemical, or carbon dioxide
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: 700°F
4.8 Electrical Hazards: Not pertinent
4.9 Burning Rate: 1.7 mm/min.
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 88.1 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 14.0 (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): 50%, 5 days
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: High purity; air treatment; commercial
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).....	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: 150.17
9.3 Boiling Point at 1 atm: 550°F = 288°C = 561°K
9.4 Freezing Point: 24.3°F = –4.3°C = 268.9°K
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 1.125 at 20°C (liquid)
9.8 Liquid Surface Tension: 45.2 dynes/cm = 0.0452 N/m at 20°C
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): 1.039
9.12 Latent Heat of Vaporization: 180 Btu/lb = 99 cal/g = 4.1 X 10^5 J/kg
9.13 Heat of Combustion: –10,190 Btu/lb = –5,660 cal/g = –237.0 X 10^5 J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: (est.) –13 Btu/lb = –7 cal/g = –.3 X 10^5 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
35	71.089	40	0.513		N		N
40	70.969	50	0.518		O		O
45	70.849	60	0.522		T		T
50	70.719	70	0.527				
55	70.599	80	0.531		P		P
60	70.480	90	0.536		E		E
65	70.360	100	0.540		R		R
70	70.240	110	0.545		T		T
75	70.120	120	0.549		I		I
80	70.000	130	0.553		N		N
85	69.870	140	0.558		E		E
90	69.750	150	0.562		N		N
95	69.629	160	0.567		T		T
100	69.509	170	0.571				
105	69.389	180	0.576				
110	69.270	190	0.580				
115	69.150	200	0.585				
120	69.030	210	0.589				
		220	0.593				
		230	0.598				
		240	0.602				

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	310	0.141	310	0.00256	0	0.330
	I	320	0.186	320	0.00333	25	0.339
	S	330	0.242	330	0.00429	50	0.348
	C	340	0.312	340	0.00546	75	0.357
	I	350	0.400	350	0.00691	100	0.365
	B	360	0.507	360	0.00866	125	0.374
	L	370	0.639	370	0.01077	150	0.382
	E	380	0.798	380	0.01329	175	0.391
		390	0.990	390	0.01630	200	0.399
		400	1.219	400	0.01984	225	0.407
		410	1.492	410	0.02400	250	0.415
		420	1.814	420	0.02885	275	0.423
		430	2.193	430	0.03449	300	0.431
		440	2.637	440	0.04100	325	0.438
		450	3.152	450	0.04847	350	0.446
		460	3.749	460	0.05702	375	0.453
		470	4.436	470	0.06675	400	0.460
		480	5.224	480	0.07778	425	0.467
		490	6.125	490	0.09022	450	0.474
		500	7.149	500	0.10420	475	0.481
		510	8.310	510	0.11990	500	0.488
		520	9.620	520	0.13740	525	0.495
		530	11.090	530	0.15680	550	0.501
		540	12.740	540	0.17830	575	0.508
		550	14.590	550	0.20210	600	0.514
		560	16.640	560	0.22840		