POLYPROPYLENE GLYCOL

PGC

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Pluracol polyol Polyoxypropylene glycol Polyoxypropylene glycol Polypropylene glycols P400 to P4000 Thanol PPG	Liquid	Colorless	Odorless or mild sweet odor
	May float or sink in water.		

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

Fire	Combustible. Extinguish with dry chemicals, foam or carbon dioxide. Water may be ineffective on fire.
Exposure	Call for medical aid. LIQUID Irritating to eyes. Harmful if swallowed. IF IN EYES, hold eyelids open and flush with plenty of water. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.
Water Pollution	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim; Pump
Chemical and Physical Treatment:
Absorb
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 40; Glycol ether
2.2 Formula: where n = 2-34
$HOCH(CH_3)CH_2O(CH_2CH(CH_3)O)_n$-H
2.3 IMO/UN Designation: Not listed
2.4 DOT ID No.: Not listed
2.5 CAS Registry No.: Currently not available
2.6 NAERG Guide No.: Not listed
2.7 Standard Industrial Trade Classification: 51229

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Safety glasses or face shield; rubber gloves
3.2 Symptoms Following Exposure: The compound has a very low toxicity; few, if any, symptoms will be observed. Contact of liquid with eyes causes slight transient pain and irritation similar to that caused by a mild soap.
3.3 Treatment of Exposure: EYES: flush with water until mild irritation is gone.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: (depends on molecular wt.) Grade 2; oral LD_{50} = 2,150 mg/kg (rat) Grade 1; LD_{50} 5 to 15 g/kg Grade 0; LD_{50} >15 g/kg
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Currently not available
3.11 Liquid or Solid Characteristics: Currently not available
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: 390–495°F O.C.
4.2 Flammable Limits in Air: Not pertinent
4.3 Fire Extinguishing Agents: Water, dry chemical, foam, carbon dioxide
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 Stoichometric Air to Fuel Ratio: Not pertinent.
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): Not pertinent.
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: Currently not available
6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 1
Human Oral hazard: 0
Human Contact hazard: 0
Reduction of amenities: 0

7. SHIPPING INFORMATION

7.1 Grades of Purity: Low mol. wt. (miscible with water) Medium mol. wt. (2% soluble in water) High mol. wt. (insoluble in water)
7.2 Storage Temperature: Below 140°F
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open (flame arrester)
7.5 IMO Pollution Category: D
7.6 Ship Type: Data not avaialable
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: Variable-200 to 2000
9.3 Boiling Point at 1 atm: Not pertinent (decomposes)
9.4 Freezing Point: –22 to –58°F = –30 to –50°C = 243 to 223°K
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 1.012 at 20°C (liquid)
9.8 Liquid Surface Tension: Currently not available
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: Not pertinent
9.13 Heat of Combustion: –14,200 Btu/lb = –7,900 cal/g = -330×10^5 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: Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY	
Temperature (degrees F)	Pounds per cubic foot
34	64.230
36	64.160
38	64.089
40	64.020
42	63.950
44	63.880
46	63.810
48	63.740
50	63.670
52	63.600
54	63.530
56	63.460
58	63.390
60	63.320
62	63.250
64	63.190
66	63.120
68	63.050
70	62.980
72	62.910
74	62.840
76	62.770
78	62.700
80	62.630
82	62.560
84	62.490

9.21 LIQUID HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
34	0.450
36	0.450
38	0.450
40	0.450
42	0.450
44	0.450
46	0.450
48	0.450
50	0.450
52	0.450
54	0.450
56	0.450
58	0.450
60	0.450
62	0.450
64	0.450
66	0.450
68	0.450
70	0.450
72	0.450
74	0.450
76	0.450
78	0.450
80	0.450
82	0.450
84	0.450

9.22 LIQUID THERMAL CONDUCTIVITY	
Temperature (degrees F)	British thermal unit inch per hour-square foot-F
52	1.129
54	1.129
56	1.129
58	1.129
60	1.129
62	1.129
64	1.129
66	1.129
68	1.129
70	1.129
72	1.129
74	1.129
76	1.129
78	1.129
80	1.129
82	1.129
84	1.129
86	1.129

9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Centipoise
	NOT PERTINENT

9.24 SOLUBILITY IN WATER	
Temperature (degrees F)	Pounds per 100 pounds of water
	MISCIBLE TO INSOLUBLE

9.25 SATURATED VAPOR PRESSURE	
Temperature (degrees F)	Pounds per square inch
	NOT PERTINENT

9.26 SATURATED VAPOR DENSITY	
Temperature (degrees F)	Pounds per cubic foot
	NOT PERTINENT

9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	British thermal unit per pound-F
	NOT PERTINENT