

DIETHYLENE GLYCOL MONOBUTYL ETHER ACETATE

DEM

CAUTIONARY RESPONSE INFORMATION

Common Synonyms 2-(2-Butoxyethoxy) ethanol acetate Butyl "carbitol" acetate Diglycol monobutyl ether acetate Ektasolve DB acetate		Liquid Colorless Mild odor Floats and mixes slowly with water.
Keep people away. Avoid contact with liquid. Call fire department. Notify local health and pollution control agencies.		
Fire	Combustible. Extinguish with water, dry chemicals, alcohol foam, or carbon dioxide. Cool exposed containers with water.	
Exposure	Call for medical aid. LIQUID Irritating to skin and eyes. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. 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. 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
 Contain
 Collection Systems: Skim
 Chemical and Physical Treatment:
 Absorb

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** 34; Ester
 2.2 **Formula:** C₁₂H₂₂O₆
 2.3 **IMO/UN Designation:** Not listed
 2.4 **DOT ID No.:** Not listed
 2.5 **CAS Registry No.:** 124-17-4
 2.6 **NAERG Guide No.:** Not listed
 2.7 **Standard Industrial Trade Classification:** 51616

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Face shield or safety glasses; protective gloves; air mask for prolonged exposure to vapor.
- 3.2 **Symptoms Following Exposure:** Prolonged breathing of vapor may cause irritation and nausea. Contact with liquid may cause mild irritation of eyes and skin. Can be absorbed through skin in toxic amounts.
- 3.3 **Treatment of Exposure:** INHALATION: move victim to fresh air; if breathing has stopped, administer artificial respiration. EYES: flush with water for at least 15 min. SKIN: wash skin with large amounts of water for 15 min.; call physician if needed. INGESTION: induce vomiting; 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 2; oral LD₅₀ = 2.34 g/kg (guinea pig)
 3.8 **Toxicity by Inhalation:** Currently not available.
- 3.9 **Chronic Toxicity:** Kidney damage noted in animals following repeated contact with skin.
- 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:** 240°F O.C.
 4.2 **Flammable Limits in Air:** 0.8%-5.0%
 4.3 **Fire Extinguishing Agents:** Water, alcohol foam, dry chemical, 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:** 563°F
 4.8 **Electrical Hazards:** Currently not available
 4.9 **Burning Rate:** 3.8 mm/min.
 4.10 **Adiabatic Flame Temperature:** Currently not available
 4.11 **Stoichiometric Air to Fuel Ratio:** 61.9 (calc.)
 4.12 **Flame Temperature:** Currently not available
 4.13 **Combustion Molar Ratio (Reactant to Product):** 20.0 (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: 1
 Human Oral hazard: 1
 Human Contact hazard: I
 Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 98+%
 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:** 204.3
 9.3 **Boiling Point at 1 atm:** 475°F = 246°C = 519°K
 9.4 **Freezing Point:** -27°F = -33°C = 240°K
 9.5 **Critical Temperature:** Not pertinent
 9.6 **Critical Pressure:** Not pertinent
 9.7 **Specific Gravity:** 0.985 at 20°C (liquid)
 9.8 **Liquid Surface Tension:** (est.) 22 dynes/cm = 0.022 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):** Not pertinent
 9.12 **Latent Heat of Vaporization:** 106 Btu/lb = 59 cal/g = 2.5 X 10⁵ J/kg
 9.13 **Heat of Combustion:** (est.) -13,000 Btu/lb = -7,400 cal/g = -310 X 10⁵ J/kg
 9.14 **Heat of Decomposition:** Not pertinent
 9.15 **Heat of Solution:** (est.) -27 Btu/lb = -15 cal/g = -0.63 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:** Currently not available

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
34	62.660	51	0.400	85	1.275	42	5.201
36	62.600	52	0.400	90	1.269	44	5.048
38	62.530	53	0.400	95	1.264	46	4.900
40	62.460	54	0.400	100	1.258	48	4.758
42	62.390	55	0.400	105	1.252	50	4.621
44	62.320	56	0.400	110	1.247	52	4.489
46	62.250	57	0.400	115	1.241	54	4.362
48	62.180	58	0.400	120	1.236	56	4.239
50	62.110	59	0.400	125	1.230	58	4.120
52	62.040	60	0.400	130	1.224	60	4.006
54	61.970	61	0.400	135	1.219	62	3.896
56	61.900	62	0.400	140	1.213	64	3.790
58	61.830	63	0.400	145	1.207	66	3.687
60	61.760	64	0.400	150	1.202	68	3.588
62	61.690	65	0.400	155	1.196	70	3.492
64	61.620	66	0.400	160	1.190	72	3.400
66	61.560	67	0.400	165	1.185	74	3.310
68	61.490	68	0.400	170	1.179	76	3.224
70	61.420	69	0.400			78	3.140
72	61.350	70	0.400			80	3.060
74	61.280	71	0.400			82	2.982
76	61.210	72	0.400			84	2.906
78	61.140	73	0.400			86	2.833
80	61.070	74	0.400				
82	61.000	75	0.400				
84	60.930	76	0.400				

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
68	6.500	270	0.168	270	0.00439		N
		280	0.222	280	0.00570		O
		290	0.290	290	0.00736		T
		300	0.376	300	0.00943		
		310	0.485	310	0.01200		P
		320	0.622	320	0.01519		E
		330	0.792	330	0.01909		R
		340	1.003	340	0.02388		T
		350	1.262	350	0.02966		I
		360	1.579	360	0.03666		N
		370	1.965	370	0.04508		E
		380	2.433	380	0.05515		N
		390	2.997	390	0.06714		N
		400	3.675	400	0.08135		T
		410	4.484	410	0.09813		
		420	5.447	420	0.11780		
		430	6.587	430	0.14090		
		440	7.933	440	0.16780		
		450	9.515	450	0.19910		
		460	11.370	460	0.23520		
		470	13.530	470	0.27690		
		480	16.040	480	0.32490		