

N,N-DIETHYLETHANOLAMINE

DAE

CAUTIONARY RESPONSE INFORMATION

Common Synonyms DEAE Diethylaminoethanol 2-N-Diethylaminoethanol 2-Hydroxytriethylamine	Liquid Colorless Amine Floats and mixes with water.
Keep people away. AVOID CONTACT WITH LIQUID. Avoid inhalation. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Shut off ignition sources and call fire department. Notify local health and pollution control agencies.	
Fire	Combustible. Wear goggles, self-contained breathing apparatus and rubber overclothing (including gloves). Extinguish with water, dry chemical, carbon dioxide, or alcohol foam.
Exposure	CALL FOR MEDICAL AID. LIQUID. Will burn skin and eyes. Harmful if swallowed. 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	Dangerous to aquatic life in high concentrations. May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS	2. CHEMICAL DESIGNATIONS	3. HEALTH HAZARDS
Dilute and disperse Stop discharge	2.1 CG Compatibility Group: 8; Alkanolamine 2.2 Formula: (C ₂ H ₅) ₂ NC ₂ H ₅ OH 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: 2686 2.5 CAS Registry No.: 100-27-8 2.6 NAERG Guide No.: 132 2.7 Standard Industrial Trade Classification: 51461	3.1 Personal Protective Equipment: Rubber gloves, all purpose canister respirator, overalls, face shield or goggles. 3.2 Symptoms Following Exposure: INHALATION: Irritation of mucous membranes. EYES: Corrosive, causes intense pain. SKIN: Severe irritation. May cause allergic skin reaction. INGESTION: Gastrointestinal irritation. 3.3 Treatment of Exposure: Call a doctor. INHALATION: Remove from exposure. If breathing has stopped, give artificial respiration. EYES: Flush with copious amounts of water for at least 15 min. SKIN: Wash with soap and water. Remove contaminated clothing. INGESTION: Drink large amounts of water, milk, lemon juice or demulcents. 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 ₅₀ = .5 to 5 g/kg 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available. 3.10 Vapor (Gas) Irritant Characteristics: Vapors cause a slight smarting of the eyes or respiratory system if present in high concentration. The effect is temporary. 3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 3.12 Odor Threshold: abs. perception limit in air = 0.011 ppm. 100% recognition in air = 0.04 ppm. 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	7. SHIPPING INFORMATION							
4.1 Flash Point: 135°F O.C. 125°F C.C. 4.2 Flammable Limits in Air: Currently not available 4.3 Fire Extinguishing Agents: Alcohol foam, CO ₂ , dry chemical foam or water fog. 4.4 Fire Extinguishing Agents Not to Be Used: Not listed 4.5 Special Hazards of Combustion Products: Toxic and irritating gases may be generated. 4.6 Behavior in Fire: Can react with oxidizing materials. 4.7 Auto Ignition Temperature: Currently not available 4.8 Electrical Hazards: Not listed 4.9 Burning Rate: Currently not available 4.10 Adiabatic Flame Temperature: Currently not available 4.11 Stoichiometric Air to Fuel Ratio: 46.4 (calc.) 4.12 Flame Temperature: Currently not available 4.13 Combustion Molar Ratio (Reactant to Product): 14.5 (calc.) 4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed	7.1 Grades of Purity: 99.5% 7.2 Storage Temperature: Currently not available 7.3 Inert Atmosphere: Currently not available 7.4 Venting: Currently not available 7.5 IMO Pollution Category: C 7.6 Ship Type: 3 7.7 Barge Hull Type: Currently not available							
8. HAZARD CLASSIFICATIONS								
8.1 49 CFR Category: Flammable liquid 8.2 49 CFR Class: 3 8.3 49 CFR Package Group: III 8.4 Marine Pollutant: No 8.5 NFPA Hazard Classification: <table border="1"> <tr> <td>Category</td> <td>Classification</td> </tr> <tr> <td>Health Hazard (Blue)</td> <td>3</td> </tr> <tr> <td>Flammability (Red)</td> <td>2</td> </tr> <tr> <td>Instability (Yellow)</td> <td>0</td> </tr> </table>	Category	Classification	Health Hazard (Blue)	3	Flammability (Red)	2	Instability (Yellow)	0
Category	Classification							
Health Hazard (Blue)	3							
Flammability (Red)	2							
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 FWCNA List:	Not listed							
5. CHEMICAL REACTIVITY	9. PHYSICAL & CHEMICAL PROPERTIES							
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: Dilute with water. 5.5 Polymerization: Not pertinent 5.6 Inhibitor of Polymerization: Not pertinent	9.1 Physical State at 15°C and 1 atm: Liquid 9.2 Molecular Weight: 117.19 9.3 Boiling Point at 1 atm: 315.5–327.2°F = 157.5–164°C = 430.7–437.2°K 9.4 Freezing Point: -36.4°F = -38°C = 235.2°K 9.5 Critical Temperature: 709.9°F = 376.6°C = 649.8°K 9.6 Critical Pressure: 457.3 psia = 31.11 atm = 3.15 MN/m ² 9.7 Specific Gravity: 0.8921 at 25°C 9.8 Liquid Surface Tension: (est.) 34.3 dynes/cm = 0.0343 N/m at 20°C 9.9 Liquid Water Interfacial Tension: Not pertinent 9.10 Vapor (Gas) Specific Gravity: 4.03 9.11 Ratio of Specific Heats of Vapor (Gas): (est.) > 1 9.12 Latent Heat of Vaporization: 140.2 Btu/lb = 77.9 cal/g = 3.26 X 10 ⁵ J/kg 9.13 Heat of Combustion: 964 Kcal/mole 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		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
68	55.690	68	0.813		C U R R E N T L Y		C U R R E N T L Y
69	55.606				N O T A V A I L A B L E		N O T A V A I L A B L E
70	55.522						
71	55.438						
72	55.354						
73	55.271						
74	55.188						
75	55.105						
76	55.022						
77	54.940						

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	80	0.037	80	0.00110			C U R R E N T L Y
I	100	0.094	100	0.00172			
S	120	0.200	120	0.00268			
C	140	0.379	140	0.00417			
I	160	0.660	160	0.00650			
B	180	1.074	180	0.01013			
L	200	1.661	200	0.01579			
E	220	2.465	220	0.02460			
	240	3.534	240	0.03834			
	260	4.922	260	0.05974			
	280	6.689	280	0.09310			
	300	8.901	300	0.14508			
	320	11.627	320	0.22609			N O T A V A I L A B L E