

# METHYL DIETHANOLAMINE

MDE

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> MDEA 2,2'-Methyliminodiethanol		Liquid	Colorless
Wear full impervious protective clothing and approved respirator. Shut off ignition sources and call fire department. Notify local health and pollution control agencies.			
<b>Fire</b>	Combustible. Wear full protective clothing with self-contained breathing apparatus. Extinguish fire with dry chemical, alcohol foam, carbon dioxide. Use water spray to cool exposed containers.		
<b>Exposure</b>	CALL FOR MEDICAL AID.  VAPOR Move victim to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.  LIQUID Irritating to skin and eyes. Remove contaminated clothing and shoes. Flush affected areas with water. IF IN EYES, hold eyelids open and flush with plenty of water.		
<b>Water Pollution</b>	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

Stop discharge

### 2. CHEMICAL DESIGNATIONS

- 2.1 CG Compatibility Group: 8; Alkanolamines
- 2.2 Formula: (HOCH<sub>2</sub>CH<sub>2</sub>)<sub>2</sub>NCH<sub>3</sub>
- 2.3 IMO/UN Designation: Currently not available
- 2.4 DOT ID No.: Not listed.
- 2.5 CAS Registry No.: 105-59-9
- 2.6 NAERG Guide No.: Not listed
- 2.7 Standard Industrial Trade Classification: 51451

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Full impervious protective clothing, including boots and gloves. Where splashing is possible wear full face shield or chemical safety goggles. Use approved respirator to protect against vapors.
- 3.2 **Symptoms Following Exposure:** Exposure can cause irritation of eyes, nose and throat.
- 3.3 **Treatment of Exposure:** Get medical attention. INHALATION: Remove to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. EYES: Flush with water for at least 15 min., lifting lids occasionally. SKIN: Remove contaminated clothing and shoes. Flush 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 2; LD<sub>50</sub> = 4.78 g/kg (rat).
- 3.8 **Toxicity by Inhalation:** Currently not available.
- 3.9 **Chronic Toxicity:** Currently not available
- 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors are moderately irritating such that personnel will not usually tolerate moderate or high concentrations.
- 3.11 **Liquid or Solid Characteristics:** Fairly severe skin irritant. May cause pain and second-degree burns after a few minutes' contact.
- 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:** 258.8°F C.C.
- 4.2 **Flammable Limits in Air:** Currently not available
- 4.3 **Fire Extinguishing Agents:** Dry chemical, alcohol foam, or carbon dioxide.
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Water.
- 4.5 **Special Hazards of Combustion Products:** Irritating vapors and toxic gases, such as nitrogen oxides and carbon monoxide, may be formed when involved in fire.
- 4.6 **Behavior in Fire:** Currently not available
- 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:** 39.3 (calc.)
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** 12.5 (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:** Currently not available
- 5.3 **Stability During Transport:** Stable.
- 5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent.
- 5.5 **Polymerization:** Will not polymerize.
- 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:** Not listed

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 99%; technical grades.
- 7.2 **Storage Temperature:** Ambient.
- 7.3 **Inert Atmosphere:** No requirement.
- 7.4 **Venting:** Open.
- 7.5 **IMO Pollution Category:** D
- 7.6 **Ship Type:** 3
- 7.7 **Barge Hull Type:** 3

### 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:** Not listed
- 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:** 119.16
- 9.3 **Boiling Point at 1 atm:** 474.8 - 478.4°F = 246 - 248°C = 519 - 521°K
- 9.4 **Freezing Point:** Currently not available
- 9.5 **Critical Temperature:** Currently not available
- 9.6 **Critical Pressure:** Currently not available
- 9.7 **Specific Gravity:** 1.0377 @ 20°C
- 9.8 **Liquid Surface Tension:** Currently not available
- 9.9 **Liquid Water Interfacial Tension:** Currently not available
- 9.10 **Vapor (Gas) Specific Gravity:** Currently not available
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available
- 9.12 **Latent Heat of Vaporization:** Currently not available
- 9.13 **Heat of Combustion:** Currently not available
- 9.14 **Heat of Decomposition:** Currently not available
- 9.15 **Heat of Solution:** Currently not available
- 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	8.660		C U R R E N T L Y  N O T  A V A I L A B L E		C U R R E N T L Y  N O T  A V A I L A B L E		C U R R E N T L Y  N O T  A V A I L A B L E

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
	C U R R E N T L Y  N O T  A V A I L A B L E		C U R R E N T L Y  N O T  A V A I L A B L E		C U R R E N T L Y  N O T  A V A I L A B L E		C U R R E N T L Y  N O T  A V A I L A B L E