

DIPHENYLMETHANE DIISOCYANATE

DPM

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Carwinate 125 M Diphenylmethane-4,4'-diisocyanate Hylene M50 MDI Multirathane M Nacconate 300 Virathane 4300		Solid White to light yellow Sinks in water.
Keep people away. Avoid contact with solid and dust. Avoid inhalation. Call fire department. Notify local health and pollution control agencies. Protect water intakes.		
Fire	Combustible. Wear goggles and self-contained breathing apparatus. Extinguish with foam, dry chemical or carbon dioxide.	
Exposure	CALL FOR MEDICAL AID. SOLID Irritating to skin and eyes. Flush affected areas with plenty of water. IF IN EYES, hold eyelids open and flush with plenty of water.	
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 Stop discharge Collection Systems: Dredge Do not burn	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: 12; Isocyanate 2.2 Formula: (p-OCNC ₆ H ₄) ₂ CH ₂ 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: 2489 2.5 CAS Registry No.: 101-68-8 2.6 NAERG Guide No.: 156 2.7 Standard Industrial Trade Classification: 51489
3. HEALTH HAZARDS 3.1 Personal Protective Equipment: Approved mask or respirator; clean rubber gloves; chemical goggles; clean waterproof or freshly laundered protective clothing (coveralls, rubber boots, cap, etc.). 3.2 Symptoms Following Exposure: Breathlessness, chest discomfort, and reduced pulmonary function. 3.3 Treatment of Exposure: INHALATION: treat symptomatically; vaso-dilators; oxygen. Call a physician. SKIN CONTACT: wash with soap and water. Rubbing alcohol helpful. EYE CONTACT: flush with water at least 15 min. Call a physician. 3.4 TLV-TWA: 0.005 ppm 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Currently not available 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available 3.10 Vapor (Gas) Irritant Characteristics: Severe irritation of eyes and throat; can cause eye and lung injury. Cannot be tolerated even at low concentrations. 3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause reddening of the skin. 3.12 Odor Threshold: Currently not available 3.13 IDLH Value: 75 mg/m ³ 3.14 OSHA PEL-TWA: Not listed. 3.15 OSHA PEL-STEL: Not listed. 3.16 OSHA PEL-Ceiling: 0.02 ppm 3.17 EPA AEGL: Not listed	

4. FIRE HAZARDS

- 4.1 Flash Point: 425°F O.C.
- 4.2 Flammable Limits in Air: Not pertinent
- 4.3 Fire Extinguishing Agents: Carbon dioxide, dry chemical or foam
- 4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
- 4.5 Special Hazards of Combustion Products: Toxic vapors are generated when heated.
- 4.6 Behavior in Fire: Solid melts and burns
- 4.7 Auto Ignition Temperature: Currently not available
- 4.8 Electrical Hazards: Currently not available
- 4.9 Burning Rate: Currently not available
- 4.10 Adiabatic Flame Temperature: Currently not available
- 4.11 Stoichiometric Air to Fuel Ratio: 88.1 (calc.)
- 4.12 Flame Temperature: Currently not available
- 4.13 Combustion Molar Ratio (Reactant to Product): 22.0 (calc.)
- 4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed

5. CHEMICAL REACTIVITY

- 5.1 Reactivity with Water: Slow, non-hazardous. Forms carbon dioxide gas.
- 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: May occur slowly. Is not hazardous.
- 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: II
 Reduction of amenities: XXX

7. SHIPPING INFORMATION

- 7.1 Grades of Purity: Solid grades: 91-99%; liquid grades may contain 50% o-dichlorobenzene
- 7.2 Storage Temperature: 0° -40°F
- 7.3 Inert Atmosphere: Not pertinent
- 7.4 Venting: Pressure-vacuum
- 7.5 IMO Pollution Category: B
- 7.6 Ship Type: 2
- 7.7 Barge Hull Type: 2

8. HAZARD CLASSIFICATIONS

- 8.1 49 CFR Category: Keep Away From Food
- 8.2 49 CFR Class: 6.1
- 8.3 49 CFR Package Group: III
- 8.4 Marine Pollutant: No
- 8.5 NFPA Hazard Classification: Not listed
- 8.6 EPA Reportable Quantity: 5000 pounds
- 8.7 EPA Pollution Category: D
- 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: Solid
- 9.2 Molecular Weight: 250.3
- 9.3 Boiling Point at 1 atm: 738°F = 392°C = 665°K
- 9.4 Freezing Point: 100°F = 37.7°C = 311°K
- 9.5 Critical Temperature: Not pertinent
- 9.6 Critical Pressure: Not pertinent
- 9.7 Specific Gravity: 1.2 at 20°C (solid)
- 9.8 Liquid Surface Tension: Not pertinent
- 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: Not pertinent
- 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: 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
	NOT PERTINENT		NOT PERTINENT		NOT PERTINENT	100	6.620
						105	6.205
						110	5.822
						115	5.469
						120	5.143
						125	4.841
						130	4.562
						135	4.303
						140	4.063
						145	3.840
						150	3.632
						155	3.439
						160	3.259
						165	3.091
						170	2.934
						175	2.787
						180	2.650
						185	2.522
						190	2.401
						195	2.289
						200	2.183
						205	2.083
						210	1.989

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
	INSOLUBLE		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT