

DIPHENYL ETHER

DPE

CAUTIONARY RESPONSE INFORMATION

Common Synonyms		Liquid	Colorless	Mild pleasant odor
Diphenyl oxide Phenoxybenzene Phenyl ether		May float or sink in water. Freezing point is 81°F.		
<p>Shut off ignition sources. Call fire department. Keep people away. Call fire department. Avoid contact with liquid and solid. Notify local health and pollution control agencies. Protect water intakes.</p>				
Fire	Combustible. Extinguish with dry chemicals or carbon dioxide. Water and foam may be ineffective on fire.			
Exposure	Call for medical aid. LIQUID OR SOLID Irritating to 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	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;
 Dredge
 Chemical and Physical Treatment:
 Absorb
 Clean shore line
 Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Not listed.
 2.2 **Formula:** C₁₂H₁₀O
 2.3 **IMO/UN Designation:** Not listed
 2.4 **DOT ID No.:** Not listed.
 2.5 **CAS Registry No.:** 101-84-8
 2.6 **NAERG Guide No.:** Not listed
 2.7 **Standard Industrial Trade Classification:** 51616

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Goggles or face shield; rubber gloves.
 3.2 **Symptoms Following Exposure:** Inhalation may cause nausea because of disagreeable odor. Contact of liquid with eyes causes mild irritation. Prolonged exposure of skin to liquid causes reddening and irritation. Ingestion produces nausea.
 3.3 **Treatment of Exposure:** EYES: flush with water for at least 15 min. SKIN: wipe off, wash with soap and water. INGESTION: induce vomiting and get medical attention.
 3.4 **TLV-TWA:** 1 ppm
 3.5 **TLV-STEL:** 2 ppm
 3.6 **TLV-Ceiling:** Not listed.
 3.7 **Toxicity by Ingestion:** Grade 2; oral LD₅₀ = 3,370 mg/kg (rat)
 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:** 0.1 ppm
 3.13 **IDLH Value:** 100 ppm
 3.14 **OSHA PEL-TWA:** 1 ppm
 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:** 239°F C.C.
 4.2 **Flammable Limits in Air:** 0.8%-1.5%
 4.3 **Fire Extinguishing Agents:** Dry chemical, carbon dioxide
 4.4 **Fire Extinguishing Agents Not to Be Used:** Water or foam may cause frothing.
 4.5 **Special Hazards of Combustion Products:** Not pertinent
 4.6 **Behavior in Fire:** Not pertinent
 4.7 **Auto Ignition Temperature:** 1,148°F
 4.8 **Electrical Hazards:** Currently not available
 4.9 **Burning Rate:** 3.2 mm/min.
 4.10 **Adiabatic Flame Temperature:** Currently not available
 4.11 **Stoichiometric Air to Fuel Ratio:** 66.6 (calc.)
 4.12 **Flame Temperature:** Currently not available
 4.13 **Combustion Molar Ratio (Reactant to Product):** 17.0 (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: T
 Damage to living resources: 3
 Human Oral hazard: 1
 Human Contact hazard: I
 Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Pure grade; Technical grade; Perfume grade
 7.2 **Storage Temperature:** Ambient
 7.3 **Inert Atmosphere:** No requirement
 7.4 **Venting:** Pressure-vacuum
 7.5 **IMO Pollution Category:** A
 7.6 **Ship Type:** 3
 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:** Yes
 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:** 170.2
 9.3 **Boiling Point at 1 atm:** 495°F = 257°C = 530°K
 9.4 **Freezing Point:** 81°F = 27°C = 300°K
 9.5 **Critical Temperature:** 921.2°F = 494°C = 767.2°K
 9.6 **Critical Pressure:** 478 psia = 32.5 atm = 3.30 MN/m²
 9.7 **Specific Gravity:** 1.07 at 27°C (liquid)
 9.8 **Liquid Surface Tension:** 40.05 dynes/cm = 0.0401 N/m at 20°C
 9.9 **Liquid Water Interfacial Tension:** (est.) 36 dynes/cm = 0.036 N/m at 20°C
 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:** 130 Btu/lb = 72 cal/g = 3.0 X 10⁴ J/kg
 9.13 **Heat of Combustion:** -15,520 Btu/lb = -8,620 cal/g = -361 X 10³ 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:** Low

NOTES

DIPHENYL ETHER

DPE

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
81	66.509	81	0.460	85	0.873		C U R R E N T L Y N O T A V A I L A B L E
82	66.480	82	0.460	90	0.870		
83	66.450	83	0.460	95	0.866		
84	66.419	84	0.460	100	0.863		
85	66.389	85	0.460	105	0.859		
86	66.349	86	0.460	110	0.856		
87	66.320	87	0.460	115	0.852		
88	66.290	88	0.460	120	0.849		
89	66.259	89	0.460	125	0.845		
90	66.230	90	0.460	130	0.842		
91	66.200	91	0.460	135	0.838		
92	66.169	92	0.460	140	0.835		
93	66.139	93	0.460	145	0.831		
94	66.110	94	0.460	150	0.828		
95	66.070	95	0.460	155	0.824		
				160	0.821		
				165	0.818		
				170	0.814		
				175	0.811		
				180	0.807		
				185	0.804		
				190	0.800		
				195	0.797		
				200	0.793		
				205	0.790		
				210	0.786		

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
	I N S O L U B I L E	310	0.887	310	0.01828		N O T P E R T I N E N T
		320	1.069	320	0.02173		
		330	1.281	330	0.02572		
		340	1.529	340	0.03032		
		350	1.817	350	0.03558		
		360	2.150	360	0.04159		
		370	2.534	370	0.04842		
		380	2.974	380	0.05617		
		390	3.478	390	0.06491		
		400	4.053	400	0.07475		
		410	4.706	410	0.08580		
		420	5.446	420	0.09816		
		430	6.281	430	0.11190		
		440	7.222	440	0.12730		
		450	8.278	450	0.14430		
		460	9.460	460	0.16310		
		470	10.780	470	0.18390		
		480	12.250	480	0.20670		
		490	13.880	490	0.23180		