

# DOWTHERM

DTH

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Diphenyl-diphenyl ether mixture Dowtherm A		Liquid	Light to dark brown	Fragrant odor
May float or sink in water. Freezing point is 54°F.				
<p>Call fire department. Avoid contact with liquid. Notify local health and pollution control agencies. Protect water intakes.</p>				
<b>Fire</b>	Combustible. Wear self-contained breathing apparatus. Extinguish with water, dry chemical, foam or carbon dioxide.			
<b>Exposure</b>	CALL FOR MEDICAL AID.  LIQUID 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, have victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.			
<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.			

<b>1. CORRECTIVE RESPONSE ACTIONS</b> Stop discharge Contain Collection Systems: Skim; Pump; Dredge Clean shore line Salvage waterfowl	<b>2. CHEMICAL DESIGNATIONS</b> 2.1 <b>CG Compatibility Group:</b> Not listed. 2.2 <b>Formula:</b> (C <sub>6</sub> H <sub>5</sub> -O-C <sub>6</sub> H <sub>5</sub> )(C <sub>6</sub> H <sub>5</sub> -C <sub>6</sub> H <sub>5</sub> ) 2.3 <b>IMO/UN Designation:</b> Not listed 2.4 <b>DOT ID No.:</b> Not listed 2.5 <b>CAS Registry No.:</b> Currently not available 2.6 <b>NAERG Guide No.:</b> Not listed 2.7 <b>Standard Industrial Trade Classification:</b> 51129
<b>3. HEALTH HAZARDS</b> 3.1 <b>Personal Protective Equipment:</b> Safety glasses 3.2 <b>Symptoms Following Exposure:</b> Odor of hot material may cause discomfort. Mildly irritating to eyes and skin. 3.3 <b>Treatment of Exposure:</b> INHALATION: if ill effects are experienced, remove to fresh air and get medical attention. INGESTION: no known antidote; treat the symptoms; induce vomiting if large amounts are swallowed and get medical attention. EYES OR SKIN: flush with plenty of water; get medical attention if ill effects develop. 3.4 <b>TLV-TWA:</b> Not listed. 3.5 <b>TLV-STEL:</b> Not listed. 3.6 <b>TLV-Ceiling:</b> Not listed. 3.7 <b>Toxicity by Ingestion:</b> Grade 2; LD <sub>50</sub> = 0.5 to 5 g/kg 3.8 <b>Toxicity by Inhalation:</b> Currently not available. 3.9 <b>Chronic Toxicity:</b> Currently not available 3.10 <b>Vapor (Gas) Irritant Characteristics:</b> Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary. 3.11 <b>Liquid or Solid Characteristics:</b> Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin. 3.12 <b>Odor Threshold:</b> 0.1-1.0 ppm 3.13 <b>IDLH Value:</b> Not listed. 3.14 <b>OSHA PEL-TWA:</b> 1 ppm 3.15 <b>OSHA PEL-STEL:</b> Not listed. 3.16 <b>OSHA PEL-Ceiling:</b> Not listed. 3.17 <b>EPA AEG1:</b> Not listed	

## 4. FIRE HAZARDS

- 4.1 **Flash Point:** 255°F O.C.
- 4.2 **Flammable Limits in Air:** At 500°F: 0.5%-6.2% At 300°F: 0.8%-3.3%
- 4.3 **Fire Extinguishing Agents:** Water fog, foam, carbon dioxide, dry chemical
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Currently not available
- 4.5 **Special Hazards of Combustion Products:** Irritating gases generated when heated
- 4.6 **Behavior in Fire:** Not pertinent
- 4.7 **Auto Ignition Temperature:** 1150°F
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Currently not available
- 4.10 **Adiabatic Flame Temperature:** Currently not available
- 4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** Not pertinent
- 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:** Currently not available
- 6.5 **GESAMP Hazard Profile:**  
 Bioaccumulation: T  
 Damage to living resources: 3  
 Human Oral hazard: 1  
 Human Contact hazard: II  
 Reduction of amenities: XXX

## 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 73.5% Diphenyl ether, 26.5% Diphenyl (eutectic)
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Open (flame arrester)
- 7.5 **IMO Pollution Category:** Currently not available
- 7.6 **Ship Type:** 1
- 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:** 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:** 166
- 9.3 **Boiling Point at 1 atm:** 494°F = 257°C = 530°K
- 9.4 **Freezing Point:** 54°F = 12°C = 285°K
- 9.5 **Critical Temperature:** 932.0°F = 500°C = 773.2°K
- 9.6 **Critical Pressure:** 456 psia = 31 atm = 3.1 MN/m<sup>2</sup>
- 9.7 **Specific Gravity:** 1.06 at 21°C (liquid)
- 9.8 **Liquid Surface Tension:** 40.1 dynes/cm = 0.0401 N/m at 20°C
- 9.9 **Liquid Water Interfacial Tension:** (est.) 30 dynes/cm = 0.03 N/m at 20°C
- 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** 1.046
- 9.12 **Latent Heat of Vaporization:** Not pertinent
- 9.13 **Heat of Combustion:** -14,000 Btu/lb = -7778 cal/g = -325.6 X 10<sup>5</sup> 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:** 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
60	66.389	60	0.373	60	0.979	70	3.504
70	66.110	70	0.377	80	0.970	75	3.314
80	65.839	80	0.381	100	0.961	80	3.138
90	65.559	90	0.385	120	0.952	85	2.975
100	65.280	100	0.388	140	0.943	90	2.822
110	65.000	110	0.392	160	0.934	95	2.680
120	64.730	120	0.396	180	0.925	100	2.548
130	64.450	130	0.399	200	0.916	105	2.424
140	64.169	140	0.403	220	0.907	110	2.308
150	63.890	150	0.407	240	0.898	115	2.200
160	63.620	160	0.411	260	0.890	120	2.098
170	63.340	170	0.414	280	0.881	125	2.003
180	63.060	180	0.418	300	0.872	130	1.914
190	62.780	190	0.422	320	0.863	135	1.830
200	62.510	200	0.425	340	0.854	140	1.751
210	62.230	210	0.429	360	0.845	145	1.676
		220	0.433	380	0.836	150	1.606
		230	0.437			155	1.540
		240	0.440			160	1.478
		250	0.444			165	1.419
		260	0.448			170	1.363
						175	1.311
						180	1.261
						185	1.214
						190	1.169
						195	1.126

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
60	0.001	130	0.005	130	0.00013	100	0.285
		140	0.007	140	0.00018	120	0.293
		150	0.010	150	0.00025	140	0.300
		160	0.014	160	0.00034	160	0.307
		170	0.019	170	0.00047	180	0.314
		180	0.026	180	0.00063	200	0.322
		190	0.036	190	0.00085	220	0.329
		200	0.048	200	0.00112	240	0.336
		210	0.064	210	0.00148	260	0.343
		220	0.085	220	0.00193	280	0.350
		230	0.111	230	0.00249	300	0.358
		240	0.145	240	0.00320	320	0.365
		250	0.187	250	0.00407	340	0.372
		260	0.240	260	0.00515	360	0.379
		270	0.306	270	0.00648	380	0.387
		280	0.387	280	0.00809	400	0.394
		290	0.487	290	0.01005	420	0.401
		300	0.609	300	0.01240	440	0.408
		310	0.757	310	0.01522	460	0.415
		320	0.936	320	0.01857	480	0.423
		330	1.152	330	0.02255	500	0.430
		340	1.409	340	0.02724	520	0.437
		350	1.715	350	0.03276	540	0.444
		360	2.078	360	0.03920	560	0.452
		370	2.506	370	0.04670	580	0.459
		380	3.008	380	0.05540	600	0.466