

# DIBENZOYL PEROXIDE

DPO

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b>	Solid powder or granules	White	Odorless
Benzoyl peroxide Benzoyl superoxide BP BPO Lucidol Oxylite	Sinks in water.		
<p>Keep people away. Evacuate area in case of large discharge.                  Avoid inhalation.                  Wear goggles and self-contained breathing apparatus.                  Stay upwind and use water spray to "knock down" dust.                  Shut off ignition sources and call fire department.                  Avoid contact with solid and dust.                  Notify local health and pollution control agencies.                  Protect water intakes.</p>			
<b>Fire</b>	<p><b>FLAMMABLE.</b>                  MAY EXPLODE IF SUBJECTED TO HEAT, SHOCK OR FRICTION.                  May cause fire and explode on contact with combustibles.                  Evacuate surrounding area.                  Wear goggles and self-contained breathing apparatus.                  Combat fires from safe distance.                  Cool exposed containers with water.</p>		
<b>Exposure</b>	<p>CALL FOR MEDICAL AID.</p> <p><b>SOLID</b>                  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 and have victim induce vomiting.                  IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.</p>		
<b>Water Pollution</b>	<p>Effect of low concentrations on aquatic life is unknown.                  May be dangerous if it enters water intakes.                  Notify local health and pollution control officials.                  Notify operators of nearby water intakes.</p>		

### 1. CORRECTIVE RESPONSE ACTIONS

Stop discharge  
 Collection Systems: Dredge  
 Keep organic materials away

### 2. CHEMICAL DESIGNATIONS

- 2.1 **CG Compatibility Group:** Not listed.
- 2.2 **Formula:** C<sub>14</sub>H<sub>10</sub>CO O O COC<sub>6</sub>H<sub>5</sub>
- 2.3 **IMO/UN Designation:** 5.2/1521
- 2.4 **DOT ID No.:** 2085
- 2.5 **CAS Registry No.:** 94-36-0
- 2.6 **NAERG Guide No.:** 146
- 2.7 **Standard Industrial Trade Classification:** 51629

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Safety goggles, face shield, rubber gloves.
- 3.2 **Symptoms Following Exposure:** CONTACT WITH EYES OR SKIN: irritates eyes. Prolonged contact may irritate skin.
- 3.3 **Treatment of Exposure:** INGESTION: administer an emetic to induce vomiting and call a physician. CONTACT WITH EYES OR SKIN: do not use oils or ointments; flush eyes with plenty of water and get medical attention; wash skin with plenty of soap and water.
- 3.4 **TLV-TWA:** 5 mg/m<sup>3</sup>
- 3.5 **TLV-STEL:** Not listed.
- 3.6 **TLV-Ceiling:** Not listed.
- 3.7 **Toxicity by Ingestion:** Grade 2; LD<sub>50</sub> = 0.5 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:** Not pertinent
- 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:** Odorless
- 3.13 **IDLH Value:** 1,500 mg/m<sup>3</sup>
- 3.14 **OSHA PEL-TWA:** 5 mg/m<sup>3</sup>
- 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:**  
Highly flammable solid; explosion-sensitive to shock, heat, and friction
- 4.2 **Flammable Limits in Air:** Not pertinent
- 4.3 **Fire Extinguishing Agents:** Difficult to extinguish once ignited. Use water spray to cool surrounding area.
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Do not use hand extinguishers
- 4.5 **Special Hazards of Combustion Products:** Sulfocating smoke evolved
- 4.6 **Behavior in Fire:** May explode
- 4.7 **Auto Ignition Temperature:** Currently not available
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** Not pertinent
- 4.10 **Adiabatic Flame Temperature:** Currently not available
- 4.11 **Stoichiometric Air to Fuel Ratio:** 69.0 (calc.)
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** 19.0 (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:**  
Special care must be taken to avoid contamination with combustible materials (wood, paper, etc.), various inorganic and organic acids, alkalies, alcohols, amines, easily oxidizable materials such as ethers, or materials used as accelerators in polymerization reactions.
- 5.3 **Stability During Transport:** Extremely explosion-sensitive to shock (impact, blows), heat, and friction. Has been reported to explode for apparently no specific reason. Self-reactive.
- 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:** Not listed

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 98% (dry); 70-78% (wet); various pastes of dibenzoyl peroxide and liquid plasticizers such as tricresyl phosphate, silicone oil.
- 7.2 **Storage Temperature:** 65-85°F
- 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:** Organic Peroxide
- 8.2 **49 CFR Class:** 5
- 8.3 **49 CFR Package Group:** Not listed.
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:**

<b>Category</b>	<b>Classification</b>
<b>Health Hazard (Blue)</b> .....	1
<b>Flammability (Red)</b> .....	4
<b>Instability (Yellow)</b> .....	4
- 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:** Solid
- 9.2 **Molecular Weight:** 242.22
- 9.3 **Boiling Point at 1 atm:** Not pertinent
- 9.4 **Freezing Point:** 217°F = 103°C = 376°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 1.334 at 15°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:** 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
	N O T  P E R T I N E N T		N O T  P E R T I N E N T		N O T  P E R T I N E N T		N O T  P E R T I N E N T

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
77	19.000		N O T  P E R T I N E N T		N O T  P E R T I N E N T		N O T  P E R T I N E N T