

**MATERIAL SAFETY DATA SHEET (MSDS)**

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# Material Safety Data Sheet

## Section 1. Product and Company Identification

**Product Name** **Benzoyl Peroxide, For Synthesis**

**Manufacturer** EM Science  
A Division of EM Industries  
P.O. Box 70  
480 Democrat Road  
Gibbstown, N.J. 08027

**For More Information Call**  
856-423-6300 Technical Service  
Monday-Friday: 8:00 AM - 5:00 PM

**Synonym** DIBENZOYL PEROXIDE  
**Material Uses** Analytical reagent.  
**Chemical Family** Organic peroxide.

**Product Code** BX0470  
**Effective Date** 10/29/2001

**In Case of Emergency Call**  
800-424-9300 CHEMTREC (USA)  
613-996-6666 CANUTEC (Canada)  
24 Hours/Day: 7 Days/Week

## Section 2. Composition and Information on Ingredients

Component	CAS #	% by '
BENZOYL PEROXIDE	94-36-0	100

## Section 3. Hazards Identification

**Physical State and Appearance** Solid. (Insoluble solid is moistened with water.)

**Emergency Overview** DANGER!  
MAY CATCH FIRE AND EXPLODE.  
FLAMMABLE SOLID.  
OXIDIZER.  
CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.  
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.  
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: RESPIRATORY TRACT, SKIN, EYES, EYE, LENS OR CORNEA.

**Routes of Entry** Inhalation. Ingestion.

**Potential Acute Health Effects**

**Eyes** Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.

**Skin** Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

**Inhalation** Hazardous in case of inhalation (lung irritant).

**Ingestion** Ingestion can cause nausea and vomiting.

**Potential Chronic Health Effects**

**Carcinogenic Effects** This material is not known to cause cancer in animals or humans.

**Additional information** See Toxicological Information (section 11)

**Medical Conditions** Repeated or prolonged exposure is not known to aggravate medical condition.

**Aggravated by Overexposure:**

## Section 4. First Aid Measures

**Eye Contact** Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention immediately.

**Skin Contact** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

**Inhalation** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Ingestion** Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

## Section 5. Fire Fighting Measures

**Flammability of the Product** Product will burn.

**Auto-ignition Temperature** 80.05°C (176.1°F)

**Flash Points** CLOSED CUP: 79.9°C (175.8°F).

**Flammable Limits** Not available.

<b>Products of Combustion</b>	These products are carbon oxides (CO, CO <sub>2</sub> ).
<b>Fire Hazards in Presence of Various Substances</b>	Highly flammable in presence of open flames, sparks and static discharge, of shocks, of heat.
<b>Explosion Hazards in Presence of Various Substances</b>	<b>Risks of explosion of the product in presence of static discharge:</b> Highly flammable in presence of open flames, sparks and static discharge. Highly explosive in presence of open flames, sparks and static discharge.
<b>Fire Fighting Media and Instructions</b>	<b>Risks of explosion of the product in presence of mechanical impact:</b> Highly flammable in presence of shocks. Highly explosive in presence of shocks. Explosive Flammable solid. Oxidizing Material SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Do not use water jet. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion. Do not fight fire. Evacuate surrounding areas. Use flooding quantities of water. Avoid contact with organic materials.
<b>Protective Clothing (Fire)</b>	Be sure to use an approved/certified respirator or equivalent.
<b>Special Remarks on Fire Hazards</b>	Not available.
<b>Special Remarks on Explosion Hazards</b>	Extremely explosive when dry.

### Section 6. Accidental Release Measures

<b>Small Spill and Leak</b>	Use appropriate tools to put the spilled solid in a convenient waste disposal container.
<b>Large Spill and Leak</b>	Stop leak if without risk. Do not touch damaged container or spilled material. Do not clean-up or dispose except under supervision of a specialist. Do not operate radio transmitters within 100 m of an electric detonator. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
<b>Spill Kit Information</b>	No specific spill kit required for this product.

### Section 7. Handling and Storage

<b>Handling</b>	Keep away from heat, sparks and flame. Store in tightly closed container. Avoid contact with combustible materials. Avoid shock and friction. Keep moist to reduce explosive properties.
<b>Storage</b>	Keep container in a cool, well-ventilated area. Separate from acids, alkalies, reducing agents and combustibles.

### Section 8. Exposure Controls/Personal Protection

<b>Engineering Controls</b>	Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
<b>Personal Protection</b>	<p><b>Eyes</b> Splash goggles.</p> <p><b>Body</b> Lab coat.</p> <p><b>Respiratory</b> Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.</p> <p><b>Hands</b> Gloves.</p> <p><b>Feet</b> Not applicable.</p>
<b>Personal Protection in Case of a Large Spill</b>	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
<b>Product Name</b> BENZOYL PEROXIDE	<p><b>Exposure Limits</b></p> <p><b>AUVA (Austria, 1995).</b> PEAK: 10 mg/m<sup>3</sup> 8 times per shift, Period: 5 minute(s). MAK: 5 mg/m<sup>3</sup></p> <p><b>Belgium Minister of Labour (Belgium, 1998).</b> VL: 5 mg/m<sup>3</sup></p> <p><b>BAUA (Germany, 1997).</b> PEAK: 5 mg/m<sup>3</sup> MAK: 5 mg/m<sup>3</sup></p> <p><b>DK-Arbejdstylnet (Denmark, 1996).</b> GV: 5 mg/m<sup>3</sup></p> <p><b>Tyterveyslaitos (Finland, 1998).</b> STEL: 10 mg/m<sup>3</sup> TWA: 5 mg/m<sup>3</sup></p> <p><b>INRS (France, 1996).</b> VME: 5 mg/m<sup>3</sup></p> <p><b>National Authority for Occupational Safety/Health (Ireland, 1999).</b> OEL: 5 mg/m<sup>3</sup></p>

Arbeidsinspectie (Netherlands, 1999).  
 TGG 8 uur: 5 mg/m<sup>3</sup>  
 N-Arbeidstilsynet (Norway, 1996). Sensitizer skin, Sensitizer inhalation  
 AN: 5 mg/m<sup>3</sup>  
 EH40-OES (United Kingdom (UK), 1997).  
 MEL: 5 mg/m<sup>3</sup>  
 ACGIH (United States, 1996).  
 TWA: 5 mg/m<sup>3</sup>  
 NIOSH REL (United States, 1994).  
 TWA: 5 mg/m<sup>3</sup> Period: 10 hour(s).  
 OSHA Final Rule (United States, 1989).  
 TWA: 5 mg/m<sup>3</sup>

### Section 9. Physical and Chemical Properties

Odor	Odorless.
Color	Colorless.
Physical State and Appearance	Solid. (Insoluble solid is moistened with water.)
Molecular Weight	242.24 g/mole
Molecular Formula	C14-H10-O4
pH	Not available.
Boiling/Condensation Point	Decomposes.
Melting/Freezing Point	Decomposes.
Specific Gravity	1.334 (Water = 1)
Vapor Pressure	Not available.
Vapor Density	Not available.
Odor Threshold	Not available.
Evaporation Rate	Not available.
LogKow	Not available.
Solubility	Very slightly soluble in water.

### Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Reactive with reducing agents, acids.
Rem/Incompatibility	Not available.
Hazardous Decomposition Products	Not available.
Hazardous Polymerization	Will not occur.

### Section 11. Toxicological Information

RTECS Number:	Benzoyl Peroxide, For Synthesis	DM8575000
Toxicity	Acute oral toxicity (LD50): 5700 mg/kg [Mouse].	
Chronic Effects on Humans	Not available.	
Acute Effects on Humans	Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Hazardous in case of inhalation (lung irritant).	
Synergetic Products (Toxicologically)	Not available.	
Irritancy	Draize Test (Rabbit): Eye: 500mg/24h. Reaction: Mild. Hazardous in case of skin contact (sensitizer).	
Sensitization	This material is not known to cause cancer in animals or humans.	
Carcinogenic Effects	Not available.	
Toxicity to Reproductive System	Not available.	
Teratogenic Effects	Tests on laboratory animals for mutagenic effects are cited in Registry of Toxic Effects of Chemical Substances (RTECS).	
Mutagenic Effects		

### Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Toxicity of the Products of Biodegradation	The product itself and its products of degradation are not toxic.

**Section 13. Disposal Considerations**

**EPA Waste Number** D001 D003  
**Treatment** Specified Technology - Contact your local permitted waste disposal site (TSD) for permissible treatment sites. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.

**Section 14. Transport Information**

**DOT Classification**  
**TDG Classification**  
**IMO/IMDG Classification**  
**ICAO/IATA Classification**

**Section 15. Regulatory Information**

**U.S. Federal Regulations** TSCA 8(b) inventory: BENZOYL PEROXIDE  
SARA 302/304/311/312 extremely hazardous substances: No products were found.  
SARA 302/304 emergency planning and notification: No products were found.  
SARA 302/304/311/312 hazardous chemicals: BENZOYL PEROXIDE  
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: BENZOYL PEROXIDE: Fire Hazard, reactive, Sudden Release of Pressure, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard  
SARA 313 toxic chemical notification and release reporting: BENZOYL PEROXIDE  
Clean Water Act (CWA) 307: No products were found.  
Clean Water Act (CWA) 311: No products were found.  
Clean air act (CAA) 112 accidental release prevention: No products were found.  
Clean air act (CAA) 112 regulated flammable substances: No products were found.  
Clean air act (CAA) 112 regulated toxic substances: No products were found.

**WHMIS (Canada)** CLASS B-4: Flammable solid.  
CLASS C: Oxidizing material.  
Class D-2B: Material causing other toxic effects (TOXIC).  
CEPA DSL: BENZOYL PEROXIDE  
This product has been classified in accordance with the hazard criteria of the Controlled Product Regulations and the MSDS contains all required information.

**International Regulations**  
**EINECS** BENZOYL PEROXIDE 202-327-6  
**DSCL (EEC)** R2- Risk of explosion by shock, friction, fire or other sources of ignition.  
R36- Irritating to eyes.  
R43- May cause sensitization by skin contact.

**International Lists** Australia (NICNAS): BENZOYL PEROXIDE  
Japan (MITI): BENZOYL PEROXIDE  
Korea (TCCL): BENZOYL PEROXIDE  
Philippines (RA6969): BENZOYL PEROXIDE  
China: No products were found.  
Pennsylvania RTK: BENZOYL PEROXIDE: (environmental hazard, generic environmental hazard)  
Massachusetts RTK: BENZOYL PEROXIDE  
New Jersey: BENZOYL PEROXIDE  
California prop. 65: No products were found.

**State Regulations**

**Section 16. Other Information**

**National Fire  
Protection Association  
(U.S.A.)**

**Health** 4  
**Fire Hazard** 4  
**Reactivity** 4  
**Specific Hazard** OXY

**Changed Since Last Revision** +

**Notice to Reader**

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