

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
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Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 800-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

BENZOYL PEROXIDE

1. Product Identification

Synonyms: Dibenzoyl peroxide; benzoic acid, peroxide; benzoperoxide
CAS No.: 94-36-0
Molecular Weight: 242.23
Chemical Formula: C₁₄H₁₀O₄
Product Codes: 2063

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Benzoyl Peroxide	94-36-0	100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. EXTREMELY EXPLOSION-SENSITIVE TO SHOCK, HEAT AND

FRICITION. EXTREMELY FLAMMABLE. UNSTABLE AT ELEVATED TEMPERATURES. HARMFUL IF SWALLOWED OR INHALED. ALLERGEN. EXPOSURE MAY PRODUCE ALLERGIC RESPONSE. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate

Flammability Rating: 2 - Moderate

Reactivity Rating: 4 - Extreme (Explosive)

Contact Rating: 3 - Severe (Life)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: Red Stripe (Store Separately)

Potential Health Effects

Inhalation:

Inhalation of dust causes irritation to the mucous membranes with coughing, sore throat. Decomposition products are toxic and inhalation of the products can produce life threatening health effects.

Ingestion:

Ingestion may cause abdominal pain, nausea, vomiting.

Skin Contact:

Causes irritation with redness and pain, and skin sensitization in some individuals. Stinging or burning sensation may occur for a brief time after application to skin.

Eye Contact:

Causes irritation, redness, and pain.

Chronic Exposure:

Exposure may cause asthmatic effects to occur in some individuals.

Aggravation of Pre-existing Conditions:

Prolonged or repeated contact may cause sensitization dermatitis.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Immediately flush skin with plenty of soap and water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:

Flash point: 40C (104F) CC

Autoignition temperature: 80C (176F)

Extremely Flammable!

Substance is a strong oxidizer and a strong supporter of combustion. Its heat of reaction with combustibles and reducing agents can cause ignition.

Explosion:

Explosive! Extremely explosion-sensitive to shock, heat and friction. May explode spontaneously when dry. Sensitive to mechanical impact. Sensitive to static discharge.

Fire Extinguishing Media:

Water or water spray. Water spray may be used to keep fire exposed containers cool.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Fight fires with water from an explosion-resistant location. In advanced or massive fires, the area should be evacuated. Clean-up and salvage operations after a fire should not be attempted until all of the peroxide has cooled completely.

6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Provide maximum explosion-proof ventilation. Wear appropriate personal protective equipment as specified in Section 8.

Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. The spilled material can be mixed with water-wetted vermiculite, swept up, and then placed into appropriate plastic containers for immediate disposal.

Benzoyl peroxide may be destroyed by pouring it slowly into about 10 times its own weight of about 10% sodium hydroxide solution. Stir while adding water to thin as needed, and flush down drain when complete.

Empty peroxide containers should be disposed of by remote burning or should be washed with 10% sodium hydroxide.

7. Handling and Storage

Protect containers against physical damage. Isolate in a well-detached, fire-resistant, cool

and well-ventilated building with no other materials stored therein. Shield containers from direct sunlight and maintain their temperature at less than 38C (100F). Employ grounding, bonding, venting and explosion relief provisions in accord with accepted engineering practices in any process capable of generating an explosion due to static discharge, shock, impact, heat, friction, or blows. Provide explosion venting in a safe direction and prohibit any electrical installation or heating facilities. Benzoyl peroxide should be stored in and used from original containers. Do not return product which has been taken out of original container. Never mix unless at least 33% water is present. KEEP PURE! Impurities are hazardous in peroxides. Do not add accelerators. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product. Do Not attempt to clean empty containers since residue is difficult to remove. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, sparks, flame, static electricity or other sources of ignition: they may explode and cause injury or death.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

- OSHA Permissible Exposure Limit (PEL):
5 mg/m³ (TWA)
- ACGIH Threshold Limit Value (TLV):
5 mg/m³ (TWA); A4 - not classifiable as a human carcinogen.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, and engineering controls are not feasible, a full-face piece respirator with an organic vapor cartridge and particulate filter (NIOSH type N100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P particulate filter. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. This compound possibly exists in both particulate and vapor phase. A gas/vapor cartridge should be used in addition to the particulate filter (NIOSH type N95 or better filter). If the vapor concentration alone exceeds the exposure limits, use a supplied air respirator, because warning properties are unknown for these compounds. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).

Skin Protection:

Wear impervious (preferably, fire-resistant and antistatic) protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Plastic may generate static electricity. Use appropriate shoes to prevent a static electricity buildup.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

White crystals.

Odor:

Faint odor of benzaldehyde.

Solubility:

Slightly soluble in water.

Specific Gravity:

1.334 @ 25C

pH:

No information found.

% Volatiles by volume @ 21C (70F):

No information found.

Boiling Point:

Decomposes explosively above melting point.

Melting Point:

103 - 106C (217 - 223F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

< 1 @ 20C (68F)

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Danger! Highly reactive material.

Becomes unstable and spontaneously explosive at elevated temperatures.

Hazardous Decomposition Products:

Decomposes with formation of dense white smoke of benzoic acid, phenyl benzoate, terphenyls, biphenyls, benzene and carbon dioxide.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

A powerful oxidizer, benzoyl peroxide is incompatible with many materials including organic and inorganic acids, alcohols, amines, metallic naphthenates, polymerization accelerators and easily oxidized materials. Heat, friction, organic matter, methyl methacrylate, N, N- dimethylaniline, lithium aluminum hydride, and carbon tetrachloride with ethylene have all caused fire or explosions when placed in contact with benzoyl peroxide.

Conditions to Avoid:

Heat, flame, ignition sources, shock, friction, incompatibles.

11. Toxicological Information

Oral rat LD50: 6400 mg/kg; Irritation eye rabbit: 500 mg/24H, mild. Investigated as a tumorigen and mutagen.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Benzoyl Peroxide (94-36-0)	No	No	3

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: ORGANIC PEROXIDE TYPE C, SOLID (BENZOYL PEROXIDE)

Hazard Class: 5.2

UN/NA: UN3104

Packing Group: II

Information reported for product/size: 500G

International (Water, I.M.O.)

Proper Shipping Name: ORGANIC PEROXIDE TYPE C, SOLID (BENZOYL PEROXIDE)

Hazard Class: 5.2

UN/NA: UN3104

Packing Group: II

Information reported for product/size: 500G

International (Air, I.C.A.O.)

Proper Shipping Name: ORGANIC PEROXIDE TYPE C, SOLID (BENZOYL PEROXIDE)

Hazard Class: 5.2

UN/NA: UN3104

Packing Group: II

Information reported for product/size: 500G

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	Australia
Benzoyl Peroxide (94-36-0)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	Korea	DSL	NDSL	Phil.	Canada
Benzoyl Peroxide (94-36-0)	Yes	Yes	No	Yes	

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	-SARA 302- RQ	TPQ	-SARA 313- List	Chemical Catg.
Benzoyl Peroxide (94-36-0)	No	No	Yes	No

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Benzoyl Peroxide (94-36-0)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: No Fire: Yes Pressure: No
 Reactivity: Yes (Pure / Solid)

Australian Hazchem Code: 2WE
Poison Schedule: S5

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 4 Reactivity: 4 Other: **Oxidizer**

Label Hazard Warning:

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. EXTREMELY EXPLOSION-SENSITIVE TO SHOCK, HEAT AND FRICTION. EXTREMELY FLAMMABLE. UNSTABLE AT ELEVATED TEMPERATURES. HARMFUL IF SWALLOWED OR INHALED. ALLERGEN. EXPOSURE MAY PRODUCE ALLERGIC RESPONSE. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

Label Precautions:

Keep away from heat, sparks and flame.
Avoid contact with eyes, skin and clothing.
Avoid breathing dust.
Use only with adequate ventilation.
Keep container closed.
Wash thoroughly after handling.
Store in a tightly closed container.
Keep from contact with clothing and other combustible materials.
Avoid shock, sudden impact, heat and friction

Label First Aid:

In case of skin contact, immediately flush skin with plenty of soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 3, 11.

Disclaimer:

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