1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Benzoyl peroxide
Product Number: 33581
Brand: Fluka
Supplier: Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO  63103
USA
Telephone: +1 800-325-5832
Fax: +1 800-325-5052
Emergency Phone #: (314) 776-6555
Preparation Information: Sigma-Aldrich Corporation
                          Product Safety - Americas Region
                          1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Organic Peroxide, Skin sensitiser, Irritant

GHS Classification
Eye irritation (Category 2A)
Skin sensitisation (Category 1)

GHS Label elements, including precautionary statements

Pictogram

Signal word: Warning

Hazard statement(s)
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.

Precautionary statement(s)
P280 Wear protective gloves.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification
Health hazard: 3
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 3

NFPA Rating
Health hazard: 3
Fire: 0
Reactivity Hazard: 3
Special hazard: OX
Health hazard: 2
Fire: 0
Reactivity Hazard: 1
Special hazard: OX

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
Skin: May be harmful if absorbed through skin. Causes skin irritation.
Eyes: Causes eye irritation.
Ingestion: May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Weight: 242.23 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoyl peroxide</td>
<td>Org. Perox. B; Eye Irrit. 2; Skin Sens. 1; H241, H317, H319</td>
<td>70 - 90 %</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>94-36-0</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>202-327-6</td>
<td></td>
</tr>
<tr>
<td>Index-No.</td>
<td>617-008-00-0</td>
<td></td>
</tr>
</tbody>
</table>

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoyl peroxide</td>
<td>94-36-0</td>
<td>TWA</td>
<td>5 mg/m3</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remarks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Upper Respiratory Tract &amp; skin irritation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not classifiable as a human carcinogen</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TWA 5 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TWA 5 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TWA 5 mg/m3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
</tbody>
</table>

Personal protective equipment

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Form solid
Colour no data available

Safety data
pH no data available
Melting point/range: 103 - 104 °C (217 - 219 °F)
Boiling point no data available
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Flash point</td>
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<tr>
<td>Ignition temperature</td>
<td>80 °C (176 °F)</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>no data available</td>
</tr>
<tr>
<td>Lower explosion limit</td>
<td>no data available</td>
</tr>
<tr>
<td>Upper explosion limit</td>
<td>no data available</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>no data available</td>
</tr>
<tr>
<td>Density</td>
<td>no data available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>insoluble</td>
</tr>
<tr>
<td>Partition coefficient:</td>
<td>no data available</td>
</tr>
<tr>
<td>n-octanol/water</td>
<td></td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>no data available</td>
</tr>
<tr>
<td>Odour</td>
<td>no data available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>no data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>no data available</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

**Chemical stability**
Stable under recommended storage conditions.

**Possibility of hazardous reactions**
no data available

**Conditions to avoid**
Contamination

**Materials to avoid**
Strong bases, Strong oxidizing agents, Amines, Polymerizing initiators, Reducing agents

**Hazardous decomposition products**
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

Contains the following stabiliser(s):
Water (25 %)

### 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

**Oral LD50**
no data available

**Inhalation LC50**
no data available

**Dermal LD50**
no data available

**Other information on acute toxicity**
no data available

**Skin corrosion/irritation**
no data available

**Serious eye damage/eye irritation**
Eyes: no data available

**Respiratory or skin sensitisation**
no data available
**Germ cell mutagenicity**
no data available

**Carcinogenicity**
IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Benzoyl peroxide)
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**
no data available

**Teratogenicity**
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

**Aspiration hazard**
no data available

**Potential health effects**

- **Inhalation**
  May be harmful if inhaled. Causes respiratory tract irritation.

- **Ingestion**
  May be harmful if swallowed.

- **Skin**
  May be harmful if absorbed through skin. Causes skin irritation.

- **Eyes**
  Causes eye irritation.

**Signs and Symptoms of Exposure**
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Synergistic effects**
no data available

**Additional Information**
RTECS: Not available

12. **ECOLOGICAL INFORMATION**

**Toxicity**
no data available

**Persistence and degradability**
no data available

**Bioaccumulative potential**
no data available

**Mobility in soil**
no data available

**PBT and vPvB assessment**
no data available

**Other adverse effects**
no data available

13. **DISPOSAL CONSIDERATIONS**
Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3104  Class: 5.2  Packing group: II
Proper shipping name: Organic peroxide type C, solid (Dibenzoyl peroxide)
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 3104  Class: 5.2  EMS-No: F-J, S-R
Proper shipping name: ORGANIC PEROXIDE TYPE C, SOLID (DIBENZOYL PEROXIDE)
Marine pollutant: No

IATA
UN number: 3104  Class: 5.2 (HEAT)
Proper shipping name: Organic peroxide type C, solid (Dibenzoyl peroxide)

15. REGULATORY INFORMATION

OSHA Hazards
Organic Peroxide, Skin sensitiser, Irritant

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoyl peroxide</td>
<td>94-36-0</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazards
Reactivity Hazard, Acute Health Hazard

Massachusetts Right To Know Components

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoyl peroxide</td>
<td>94-36-0</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

Pennsylvania Right To Know Components

<table>
<thead>
<tr>
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<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzoyl peroxide</td>
<td>94-36-0</td>
<td>2007-07-01</td>
</tr>
<tr>
<td>Water</td>
<td>7732-18-5</td>
<td></td>
</tr>
</tbody>
</table>

New Jersey Right To Know Components

<table>
<thead>
<tr>
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<th>CAS-No.</th>
<th>Revision Date</th>
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<tbody>
<tr>
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<tr>
<td>Water</td>
<td>7732-18-5</td>
<td></td>
</tr>
</tbody>
</table>

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Text of H-code(s) and R-phrase(s) mentioned in Section 3

<table>
<thead>
<tr>
<th>H-code(s)</th>
<th>R-phrase(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Irrit.</td>
<td>Eye irritation</td>
</tr>
<tr>
<td>H241</td>
<td>Heating may cause a fire or explosion.</td>
</tr>
</tbody>
</table>
H317  May cause an allergic skin reaction.
H319  Causes serious eye irritation.
Org. Perox.  Organic peroxides
Skin Sens.  Skin sensitisation

**Further information**

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