

SECTION 1: Identification

1.1. Identification

Product form	: Mixture
Trade name	: Benzoyl peroxide, 70% active (water wet)
Product code	: 21446
Formula	: C14H10O4

1.2. Recommended use and restrictions on use

Recommended use	: Use as laboratory reagent, Manufacture of substances
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1.3. Supplier

Supplier

Polysciences
400 Valley Road
Warrington, PA 18976 - United States
T +1 215 343 6484 - F +1 215 343 0214
info@polysciences.com - www.polysciences.com

1.4. Emergency telephone number

Emergency number	: 24-hour emergency phone number ChemTel 1-800-255-3924
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SECTION 2: Hazard(s) identification


2.1. Classification of the substance or mixture

GHS US classification

Explosive Category 1.3	Explosive; fire, blast or projection hazard
Acute toxicity (inhalation) Category 4	Harmful if inhaled
Skin corrosion/irritation Category 2	Causes skin irritation
Serious eye damage/eye irritation Category 2B	Causes eye irritation
Skin sensitization, category 1B	May cause an allergic skin reaction
Hazardous to the aquatic environment – Acute Hazard Category 1	Very toxic to aquatic life

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)	: 
Signal word (GHS US)	: Danger
Hazard statements (GHS US)	: Explosive; fire, blast or projection hazard Causes skin irritation May cause an allergic skin reaction Causes eye irritation Harmful if inhaled Very toxic to aquatic life
Precautionary statements (GHS US)	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking Keep wetted with appropriate material. Ground/Bond container and receiving equipment. Do not subject to grinding/shock/friction. Avoid breathing dust/fume/gas/mist/vapors/spray. Wash hands, forearms and face thoroughly after handling.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
Dibenzoyl peroxide	(CAS-No.) 94-36-0	71 – 80	Org. Perox. B, H241 Eye Irrit. 2, H319 Skin Sens. 1, H317 Aquatic Acute 1, H400
Benzoic acid	(CAS-No.) 65-85-0	0 – 5	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Aquatic Acute 3, H402
Benzoyl chloride	(CAS-No.) 98-88-4	0 – 5	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Carc. 1B, H350 Aquatic Acute 3, H402

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures general : Call a poison center/doctor/physician if you feel unwell.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor/physician if you feel unwell.
- First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.
- Symptoms/effects after eye contact : Mild eye irritation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Water spray. Dry powder. Foam.

5.2. Specific hazards arising from the chemical

- Explosion hazard : Explosion risk in case of fire.
- Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Evacuate area. Do not fight fire when fire reaches explosives.
- Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

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6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.
Methods for cleaning up : Mechanically recover the product. Notify authorities if product enters sewers or public waters.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Do not subject to grinding, shock, friction. Wear personal protective equipment. Use only outdoors or in a well-ventilated area. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.
Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment.
Storage conditions : Keep cool. Store in a well-ventilated place. Store at room temp.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Benzoyl peroxide, 70% active (water wet)	
No additional information available	
Benzoic acid (65-85-0)	
No additional information available	
Benzoyl chloride (98-88-4)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Benzoyl chloride
ACGIH Ceiling (ppm)	0.5 ppm
Remark (ACGIH)	TLV® Basis: URT & eye irr. Notations: A4 (Not classifiable as a Human Carcinogen)
ACGIH chemical category	Not Classifiable as a Human Carcinogen
Regulatory reference	ACGIH 2020
USA - AIHA - Occupational Exposure Limits	
WEEL C [ppm]	5 ppm
AIHA chemical category	skin notation, Skin sensitizer
Dibenzoyl peroxide (94-36-0)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Benzoyl peroxide
ACGIH TWA (mg/m³)	5 mg/m³
Remark (ACGIH)	TLV® Basis: URT & skin irr. Notations: A4 (Not classifiable as a Human Carcinogen)
ACGIH chemical category	Not Classifiable as a Human Carcinogen
Regulatory reference	ACGIH 2020
USA - OSHA - Occupational Exposure Limits	
Local name	Benzoyl peroxide
OSHA PEL (TWA) (mg/m³)	5 mg/m³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
USA - IDLH - Occupational Exposure Limits	
US IDLH (mg/m³)	1500 mg/m³

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USA - NIOSH - Occupational Exposure Limits

NIOSH REL (TWA) (mg/m ³)	5 mg/m ³
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8.2. Appropriate engineering controls

- Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

[In case of inadequate ventilation] wear respiratory protection.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: white granules.
Color	: Mixture contains one or more component(s) which have the following colour(s): white clear Colorless
Odor	: There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: faint pleasant aromatic penetrating Acrid
Odor threshold	: No data available
pH	: No data available
Melting point	: no data
Freezing point	: Not applicable
Boiling point	: no data
Flash point	: > ≥ 200
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: no data
Relative vapor density at 20°C	: no data
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: Not applicable
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: Not applicable

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Explosive properties : No data available
Oxidizing properties : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Explosive; fire, blast or projection hazard.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Harmful if inhaled.

Benzoyl peroxide, 70% active (water wet)	
LD50 oral rat	> ≥ 950 µg/kg mg/Kg
LC50 Inhalation - Rat	> ≥ 22.4 mg/l mg/L
ATE US (oral)	0.95 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

Benzoic acid (65-85-0)	
LD50 oral rat	1700 mg/kg
LD50 dermal rabbit	> 10000 mg/kg
LC50 Inhalation - Rat	> 26 mg/m ³ (Exposure time: 1 h)

Benzoyl chloride (98-88-4)	
LD50 oral rat	1900 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 Inhalation - Rat	1.45 mg/l/4h

Dibenzoyl peroxide (94-36-0)	
LD50 oral rat	7710 mg/kg

Skin corrosion/irritation : Causes skin irritation.
Serious eye damage/irritation : Causes eye irritation.
Respiratory or skin sensitization : May cause an allergic skin reaction.
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified

Benzoyl chloride (98-88-4)	
IARC group	2A - Probably carcinogenic to humans, 3 - Not classifiable
In OSHA Hazard Communication Carcinogen list	Yes

Dibenzoyl peroxide (94-36-0)	
IARC group	3 - Not classifiable

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Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Benzoic acid (65-85-0)	
NOAEL (oral,rat,90 days)	1000 mg/kg body weight Animal: rat
NOAEL (dermal,rat/rabbit,90 days)	> 2500 mg/kg body weight Animal: rabbit, Guideline: EPA OPP 82-2 (Repeated Dose Dermal Toxicity -21/28 Days)
NOAEC (inhalation,rat,dust/mist/fume,90 days)	≤ 0.025 mg/l air Animal: rat, Guideline: OECD Guideline 412 (Subacute Inhalation Toxicity: 28-Day Study)

Aspiration hazard : Not classified

Viscosity, kinematic : No data available

Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.

Symptoms/effects after eye contact : Mild eye irritation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment. Very toxic to aquatic life.

Benzoic acid (65-85-0)	
LC50 fish 1	47.3 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 Daphnia 1	860 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
LC50 fish 2	44.6 mg/l Test organisms (species): Lepomis macrochirus
NOEC (chronic)	≥ 25 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	> 120 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri) Duration: '28 d'

Benzoyl chloride (98-88-4)	
LC50 fish 1	28.5 – 45.3 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])

Dibenzoyl peroxide (94-36-0)	
LC50 fish 1	0.0602 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 Daphnia 1	0.11 mg/l Test organisms (species): Daphnia magna

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Benzoic acid (65-85-0)	
Partition coefficient n-octanol/water (Log Pow)	1.9

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN3104 Organic peroxide type C, solid, 5.2
UN-No.(DOT) : UN3104
Proper Shipping Name (DOT) : Organic peroxide type C, solid
Class (DOT) : 5.2 - Class 5.2 - Organic Peroxide 49 CFR 173.128
Hazard labels (DOT) : 5.2 - Organic peroxide



Dangerous for the environment : Yes
Marine pollutant : Yes



DOT Packaging Non Bulk (49 CFR 173.xxx) : 225
DOT Packaging Bulk (49 CFR 173.xxx) : None
DOT Symbols : G - Identifies PSN requiring a technical name
DOT Packaging Exceptions (49 CFR 173.xxx) : 152
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 kg
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 10 kg
DOT Vessel Stowage Location : D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.
DOT Vessel Stowage Other : 12 - Keep as cool as reasonably practicable, 25 - Protected from sources of heat, 52 - Stow "separated from" acids, 53 - Stow "separated from" alkaline compounds
Emergency Response Guide (ERG) Number : 146
Other information : No supplementary information available.

Transportation of Dangerous Goods

Not applicable

Transport by sea

Transport document description (IMDG) : UN 3104 ORGANIC PEROXIDE TYPE C, SOLID, 5.2
UN-No. (IMDG) : 3104
Proper Shipping Name (IMDG) : ORGANIC PEROXIDE TYPE C, SOLID
Class (IMDG) : 5.2 - Organic peroxides
Limited quantities (IMDG) : 100 g
Marine pollutant : Yes



Air transport

Transport document description (IATA) : UN 3104 Organic peroxide type C, solid, 5.2

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UN-No. (IATA)	: 3104
Proper Shipping Name (IATA)	: Organic peroxide type C, solid
Class (IATA)	: 5.2 - Organic Peroxides

SECTION 15: Regulatory information

15.1. US Federal regulations

Benzoic acid (65-85-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
CERCLA RQ	5000 lb
Benzoyl chloride (98-88-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	1000 lb
Dibenzoyl peroxide (94-36-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	

15.2. International regulations

CANADA

Benzoyl peroxide, 70% active (water wet)	
Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)	
Benzoic acid (65-85-0)	
Listed on the Canadian DSL (Domestic Substances List)	
Benzoyl chloride (98-88-4)	
Listed on the Canadian DSL (Domestic Substances List)	
Dibenzoyl peroxide (94-36-0)	
Listed on the Canadian DSL (Domestic Substances List)	

EU-Regulations

Benzoic acid (65-85-0)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
Benzoyl chloride (98-88-4)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	
Dibenzoyl peroxide (94-36-0)	
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)	

National regulations

Benzoic acid (65-85-0)	
Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on KECL/KECI (Korean Existing Chemicals Inventory) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on CICR (Turkish Inventory and Control of Chemicals) Listed on the TCSI (Taiwan Chemical Substance Inventory)	

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Benzoyl chloride (98-88-4)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

Dibenzoyl peroxide (94-36-0)

Listed introduction on Australian Industrial Chemicals Introduction Scheme (AICIS Inventory)
Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory
Listed on the Japanese ISHL (Industrial Safety and Health Law)
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
Listed on INSQ (Mexican National Inventory of Chemical Substances)
Listed on CICR (Turkish Inventory and Control of Chemicals)
Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

Component	State or local regulations
Benzoic acid(65-85-0)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List; U.S. - Pennsylvania - RTK (Right to Know) List
Benzoyl chloride(98-88-4)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List; U.S. - Pennsylvania - RTK (Right to Know) List
Dibenzoyl peroxide(94-36-0)	U.S. - Massachusetts - Right To Know List; U.S. - New Jersey - Right to Know Hazardous Substance List; U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List; U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

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Hazard Rating

- Health : 2 Moderate Hazard - Temporary or minor injury may occur
- Flammability : 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II IIIA)
- Physical : 3 Serious Hazard - Materials that may form explosive mixtures with water and are capable of detonation or explosive reaction in the presence of a strong initiating source. Materials may polymerize, decompose, self-react, or undergo other chemical change at normal temperature and pressure with moderate risk of explosion

SDS US (GHS HazCom 2012)

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