

## 1 Identification

### Product identifier

Trade name: 617P37 - Hardener Powder

### Recommended use and restrictions on use

General use: Curing agent for reactive resins for orthopedic procedures.  
For commercial user only

### Initial supplier identifier

Company name: Otto Bock HealthCare Canada Ltd.

Street/POB-No.: 5470 Harvester Road

Postal code, city: Burlington, ON L7L 5N5, CA  
Canada

WWW: www.ottobock.ca

Email: info.canada@ottobock.com

Telephone: (800) 665-3327

Telefax: (800) 463-3659

Department responsible for information:

Mark Agro, Telephone: (800) 665-3327 (9 am - 5 pm)

Additional information:

Corporate headquarters:  
Ottobock SE & Co. KGaA  
Max-Näder-Straße 15  
Duderstadt  
Germany

### Emergency telephone number

COLLECT, Telephone: (613) 996-6666

Transport:

CONSULTANK Lutz Harder GmbH (Contract QUALI003)

Telephone: +49 (0)178-4337434 (from USA: 01149 178 4337434)

## 2 Hazard identification

### Classification

Organic Peroxide D

Heating may cause a fire.

Eye Irritation 2A

Causes serious eye irritation.

Sensitization - skin 1

May cause an allergic skin reaction.

Reproductive toxicity 1B

May damage the unborn child.

Aquatic toxicity - acute 1

Very toxic to aquatic life.

Aquatic toxicity - chronic 1

Very toxic to aquatic life with long lasting effects.

### Information elements

Symbols:



Signal word:

**Danger**

Hazard statements:

- Heating may cause a fire.
- May cause an allergic skin reaction.
- Causes serious eye irritation.
- May damage the unborn child.
- Very toxic to aquatic life with long lasting effects.

Precautionary statements:

- Obtain special instructions before use.
- Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- Keep only in original container.
- Avoid breathing dust/gas/mist/vapours.
- Avoid release to the environment.
- Wear protective gloves/protective clothing/eye protection.
- IF exposed or concerned: Get medical advice/attention.
- Take off contaminated clothing and wash it before reuse.
- Collect spillage.
- Store at temperatures not exceeding 30 °C/86 °F.

### Other hazards known to the supplier with respect to the product

People who suffer from skin sensitization problems, asthma, allergies, chronic or recurring respiratory illnesses should not be deployed in any process using this mixture.  
Dust explosive

## 3 Composition/Information on ingredients

### Mixture

Chemical name: Powder-mixture.

Hazardous ingredients:

CAS No.	Designation	Content	Classification
CAS 84-61-7	Dicyclohexyl phthalate	40 - 50 %	Sensitization - skin 1. Reproductive toxicity 1B. Aquatic toxicity - chronic 3.
CAS 94-36-0	Dibenzoyl peroxide	40 - 50 %	Organic Peroxide B. Eye Irritation 2A. Sensitization - skin 1. Aquatic toxicity - acute 1 (M-factor = 10). Aquatic toxicity - chronic 1 (M-factor = 10).

The actual concentration or concentration range is withheld as a trade secret.

## 4 First-aid measures

### Description of necessary first-aid measures

General information: In case of accident or if you feel unwell, seek medical advice immediately.  
IF exposed or concerned: Get medical advice/attention.  
First aider: Pay attention to self-protection!

In case of inhalation: Move victim to fresh air; if necessary, provide artificial respiration or oxygen. Immediately get medical attention.

In case of swallowing: Immediately get medical attention. Do not induce vomiting without medical assistance.  
In case of vomiting, lay at least head on side.  
Never give anything by mouth to an unconscious person.  
Inhalation during vomiting: lung damages

In case of skin contact: Wash with generous amount of water and soap. Take off immediately all contaminated clothing and wash it before reuse.  
Immediately get medical attention.

In case of eye contact: Immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Remove contact lenses, if present and easy to do. Continue rinsing. Subsequently consult an ophthalmologist.

### Most important symptoms and effects, whether acute or delayed

May cause an allergic skin reaction. Causes serious eye irritation.  
In case of inhalation/after contact with skin: Irritant effects are possible.

### Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.  
Call a POISON CENTER.  
Inhalation during vomiting: lung damages. Due to risk of aspiration gastric lavage may only be applied under endotracheal intubation.  
Symptoms may develop several hours following exposure; medical observation therefore necessary for at least 48 hours.

## 5 Fire-fighting measures

### Suitable and unsuitable extinguishing media

Suitable extinguishing media:

Water spray jet, extinguishing powder, carbon dioxide.  
In case of large fires: water spray jet, alcohol resistant foam

Unsuitable extinguishing media:

Full water jet

### Specific hazards arising from the product

Decomposition under heating. Heating may cause a fire.  
In a case of fire, the product supports the burning process.  
In case of fire may be liberated: Organic materials, carbon monoxide and carbon dioxide.

### Special protective equipment and precautions for fire-fighters

Wear self-contained positive pressure breathing apparatus and full firefighting protective clothing.

Additional information:

In case of fire and/or explosion do not breathe fumes.  
Prevent subsequent re-ignition with abundant quantities of water.  
Cool endangered containers with water spray jet.  
Do not allow fire water to penetrate into surface or ground water.

## 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Avoid exposure. Eliminate all ignition sources if safe to do so.  
Wear appropriate protective equipment. Take off immediately all contaminated clothing and wash it before reuse. Keep unprotected people away.  
Avoid generation of dust. Do not breathe dust. Avoid contact with eyes and skin.  
Provide adequate ventilation.  
In case of decomposition: Use filter type A (= against vapours of organic substances) according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

#### Environmental precautions:

Do not allow to penetrate into soil, waterbodies or drains. If necessary, notify appropriate authorities.

### Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal. Waste shall NOT be closed in tight.  
Avoid generation of dust.

## 7 Handling and storage

### Precautions for safe handling

Advices on safe handling: Obtain special instructions before use. Avoid contact with skin, eyes, and clothing. Take off immediately all contaminated clothing and wash it before reuse.  
Avoid generation of dust. Do not breathe dust. Provide adequate ventilation, and local exhaust as needed.  
When using do not eat, drink or smoke. Wash hands before breaks and after work.  
Separate storage of work clothes. Contaminated work clothing should not be allowed out of the workplace.  
Avoid contact during pregnancy/while nursing.  
Safety shower and eye wash station should be easily accessible to the work area.

#### Precautions against fire and explosion:

Keep away from sources of ignition - No smoking. Use only spark proof tools.  
Use only explosion-proof equipment.  
Avoid shock and friction. Protect from: warmth

### Conditions for safe storage, including any incompatibilities

#### Requirements for storerooms and containers:

Keep container dry. Keep container in a well-ventilated place.  
Keep container tightly closed in a cool place.  
Storage temperature: <30 °C. Protect from heat and direct sunlight.  
Keep only in original container.  
Storage according to local and national regulations.

#### Hints on joint storage:

Keep away from amines, acids, basic agents, heavy metals (e.g. from accelerating agents and drying materials).  
Avoid contact with iron and copper .  
Keep away from food, drink and animal feedingstuffs.

#### Further details:

Use only stainless steel to DIN 1.4751 specifications, or PVC, polyethylene or glass surfaced apparatuses.  
Danger of spontaneous combustion.

## 8 Exposure controls/Personal protection

### Control parameters

Occupational exposure limit values:

CAS No.	Designation	Type	Limit value
94-36-0	Dibenzoyl peroxide	Canada: Alberta, OEL 8 hour	5 mg/m <sup>3</sup>
		Canada: BC, OEL TWA	5 mg/m <sup>3</sup>
		Canada: Québec, VEMP	5 mg/m <sup>3</sup>

### Appropriate engineering controls

Provide adequate ventilation, and local exhaust as needed.

Use only explosion-proof equipment. Use only spark proof tools.

Use only stainless steel to DIN 1.4751 specifications, or PVC, polyethylene or glass surfaced apparatuses.

### Individual protection measures, such as personal protective equipment

Respiratory protection: Respiratory protection must be worn whenever the TLV (WEL) levels have been exceeded. Half mask with particle filter P2 according to OSHA Standard - 29 CFR: 1910.134 or ANSI Z88.2.

Hand protection: Protective gloves according to OSHA Standard - 29 CFR: 1910.138. Glove material: butyl caoutchouc (butyl rubber), Neoprene,, fluoro rubber, nitrile rubber. Observe glove manufacturer's instructions concerning penetrability and breakthrough time.

Eye protection: Tightly sealed goggles according to OSHA Standard - 29 CFR: 1910.133 or ANSI Z87.1-2010.

Body protection: Wear suitable protective clothing.

General hygiene considerations:

Avoid shock and friction. Obtain special instructions before use.

Avoid contact with skin, eyes, and clothing. Avoid generation of dust. Do not breathe dust.

When using do not eat, drink or smoke.

Wash hands before breaks and after work.

Take off immediately all contaminated clothing and wash it before reuse.

Safety shower and eye wash station should be easily accessible to the work area.

Avoid contact during pregnancy/while nursing.

### Environmental exposure controls

Do not allow to enter into ground-water, surface water or drains.

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

Physical state at 20 °C and 101.3 kPa	solid
Colour:	Form: Powder white
Odour:	characteristic
Odour threshold:	No data available

Melting point and freezing point:	not applicable
Boiling point or initial boiling point and boiling range:	not applicable
Flammability:	Heating may cause a fire. not applicable
Lower and upper explosion limit or lower and upper flammability limit:	LEL (Lower Explosion Limit): not determined UEL (Upper Explosive Limit): not determined
Flash point/flash point range:	not applicable
Evaporation rate:	not applicable
Auto-ignition temperature:	not self-igniting
Decomposition temperature:	60 °C (SADT)
pH:	Not applicable
Kinematic viscosity:	not applicable
Water solubility:	at 20 °C: not determined
Partition coefficient — n-octanol/water:	not determined
Vapour pressure:	not applicable
Density and/or relative density	at 20 °C: 1.23 g/cm <sup>3</sup>
Vapour density:	not applicable
Particle characteristics:	No data available

### Additional information

Explosive properties:	Dust explosive
Bulk density:	at 20 °C: 650 kg/m <sup>3</sup>
Additional information:	Contents of active oxygen: 3.2 - 3.4

## 10 Stability and reactivity

Reactivity:	Heating may cause a fire. Decomposition under heating.
Chemical stability:	Stable under recommended storage conditions. (Refer to section 7) Hazardous, self-accelerating decomposition reaction is possible. Under certain conditions an explosion or fire may occur as a result of direct contact with incompatible substances or through thermal decomposition. Critical temperature: 55 °C.
Possibility of hazardous reactions:	Danger of dust explosion!
Conditions to avoid:	Avoid shock and friction. Protect from heat and direct sunlight.
Incompatible materials:	Violent reactions may be expected with contact with acids, lyes, heavy metals and reducing agents. Avoid contact with rust. Do not mix with peroxide accelerants. Do not mix with reducing agents. Avoid contact with heavy metals and metal salts . Avoid contact with amines.
Hazardous decomposition products:	No hazardous decomposition products when regulations for storage and handling are observed.

## 11 Toxicological information

### Information on the likely routes of exposure

No data available

### Health hazard information

Acute toxicity (oral): Based on available data, the classification criteria are not met.

Acute toxicity (dermal): Based on available data, the classification criteria are not met.

Acute toxicity (inhalative): Based on available data, the classification criteria are not met.

Skin corrosion/irritation: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: Eye Irritation 2A = Causes serious eye irritation.

Sensitisation to the respiratory tract: Lack of data.

Skin sensitisation: Sensitization - skin 1 = May cause an allergic skin reaction.

Germ cell mutagenicity/Genotoxicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met.

Reproductive toxicity: Reproductive toxicity 1B = May damage the unborn child.

Effects on or via lactation: Lack of data.

Specific target organ toxicity (single exposure): Based on available data, the classification criteria are not met.

Specific target organ toxicity (repeated exposure): Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

Other information:

Information about dibenzoyl peroxide:

Acute toxicity:

LD50 Rat, oral: >5,000 mg/kg bw

LC50 Rat, inhalative: > 24.3 mg/L/4h (OECD 403)

Information about Dicyclohexyl phthalate:

Acute toxicity:

LD50 Rat, oral: > 2,000 mg/kg bw

LD50 Rat, dermal: > 2,000 mg/kg (OECD 402)

For carcinogenic effects:

Information about CAS No. 94-36-0

Carcinogen Status:

IARC Rating: Group 3

OSHA Carcinogen: not listed

NTP Rating: not listed

### Symptoms

In case of inhalation: Irritant effects are possible.

After contact with skin: Dibenzoyl peroxide (78%): mild irritant.

## 12 Ecological information

### Ecotoxicity

Aquatic toxicity: Very toxic to aquatic life with long lasting effects.

Information about Dibenzoyl peroxide:

Algae toxicity: *Pseudokirchneriella subcapitata* (green algae) EC50: 0.06 mg/L /72h.

Bacterial toxicity: activated sludge EC50: 35 mg/L. (OECD 209)

Daphnia toxicity: EC50 *Daphnia magna*: 0.11 mg/L /48 h. (OECD 202)

Daphnia toxicity: EC10 *Daphnia magna*: 0.001 mg/L /21d.

Fish toxicity: *Oncorhynchus mykiss* LC50: 0.06 mg/L /96 h. (OECD 203)

Information about Dicyclohexyl phthalate:

Algae toxicity: *Pseudokirchneriella subcapitata* (green algae) EC50: > 2 mg/L /72h.(OECD 201)

Bacterial toxicity: activated sludge EC50:> 100 mg/L. (OECD 209)

Daphnia toxicity: NOEC *Daphnia magna*: 0.18 mg/L /21d. (OECD 211)

Fish toxicity: *Oryzias latipes* LC50: > 2 mg/L /96 h. (OECD 203)

### Persistence and degradability

Further details: Product is biodegradable. The statement is derived from the properties of the single components.

### Bioaccumulative potential

Partition coefficient — n-octanol/water:  
not determined

### Mobility in soil

No data available

### Other adverse effects

General information: Do not allow to penetrate into soil, waterbodies or drains.

## 13 Disposal considerations

### Waste treatment methods

#### Product

Recommendation: Incinerate as hazardous waste according to applicable local, state, and federal regulations.

#### Package

Recommendation: Dispose of waste according to applicable legislation.  
Attention: Empty containers will retain product residue and are to handle as though they are full.

## 14 Transport information

### UN number

TDG: UN3106  
IMDG, IATA-DGR: UN 3106

## UN proper shipping name

TDG, IMDG, IATA-DGR: UN 3106, ORGANIC PEROXIDE TYPE D, SOLID (dibenzoyl peroxide)

## Transport hazard class

TDG: 5.2  
IMDG: Class 5.2, Subrisk -  
IATA-DGR: Class 5.2

## Packing group

TDG: II  
IMDG: -

## Environmental hazards

Marine pollutant: yes

## Special precautions in connection with transport or conveyance either within or outside the premises

### Canada: Transportation of Dangerous Goods (TDG)

Special Provisions: 16, 38  
Explosive limit and limited quantity index: 0.5 kg  
Passenger carrying ship index: Forbidden  
Passenger carrying road or rail index: 5 kg

### Sea transport (IMDG)

EmS: F-J, S-R  
Special Provisions: 122 274  
Limited quantities: 500 g  
Excepted quantities: E0  
Package - Instructions: P520  
Package - Provisions: -  
IBC - Instructions: -  
IBC - Provisions: -  
Tank instructions - IMO: -  
Tank instructions - UN: -  
Tank instructions - Provisions: -  
Stowage and handling: Category D. SW1  
Segregation: SG35 SG36 SG72  
Properties and observations: Decomposes at elevated temperatures or in a fire. Burns vigorously. Insoluble in water except for 3-chloroperoxybenzoic acid. Contact with the eyes and skin should be avoided. May evolve irritant or toxic fumes.

Marine pollutant: yes  
Segregation group: none



### Air transport (IATA)

Proper shipping name:	UN 3106, ORGANIC PEROXIDE TYPE D, SOLID (dibenzoyl peroxide)
Hazard label:	Organic peroxide
Excepted Quantity Code:	E0
Passenger and Cargo Aircraft: Ltd.Qty.:	Forbidden
Passenger and Cargo Aircraft:	Pack.Instr. 570 - Max. Net Qty/Pkg. 5 kg
Cargo Aircraft only:	Pack.Instr. 570 - Max. Net Qty/Pkg. 10 kg
Special Provisions:	A20 A802
Emergency Response Guide-Code (ERG):	5L

## 15 Regulatory information

### National regulations - Canada

Dicyclohexyl phthalate:	DSL: listed
Dibenzoyl peroxide:	DSL: listed
Silicon dioxide:	DSL: listed

### Further regulations, limitations and legal requirements

No data available

## 16 Other information

Text for labelling:	Contains dibenzoyl peroxide and Dicyclohexyl phthalate. For commercial user only.
Revision date:	17/12/2025
Date of first version:	19/10/1994
Reason of change:	General revision: Safety Data Sheet according to Hazardous Products Regulations (HPR) 2022 General revision: Safety Data Sheet according to HCS 2024 (29 CFR 1910.1200)

### Abbreviations and acronyms:

Aquatic toxicity - acute: Hazardous to the aquatic environment - acute  
 Aquatic toxicity - chronic: Hazardous to the aquatic environment - chronic  
 AS/NZS: Australian Standards/New Zealand Standards  
 CAS: Chemical Abstracts Service  
 CFR: Code of Federal Regulations  
 CLP: Classification, Labelling and Packaging  
 DIN: German Institute for Standardization  
 DMEL: Derived minimal effect level  
 DNEL: Derived no-effect level  
 DSL: Domestic Substances List  
 EC: European Community  
 EC50: Effective Concentration 50%  
 EmS: Emergency Response Procedures for Ships Carrying Dangerous Goods  
 EN: European Standard  
 EQ: Excepted quantities  
 Eye Irritation: Eye irritation  
 IATA: International Air Transport Association  
 IATA-DGR: International Air Transport Association – Dangerous Goods Regulations  
 IBC Code: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk  
 IMDG Code: International Maritime Dangerous Goods Code  
 IMO: International Maritime Organization  
 LC50: Median lethal concentration  
 LD50: Lethal dose 50%  
 LEL: Lower Explosion Limit  
 MARPOL: Maritime Pollution: The International Convention for the Prevention of Pollution from Ships  
 M-factor: Multiplication factor  
 NOEC: No Observed Effect Concentration  
 OECD: Organisation for Economic Co-operation and Development  
 OEL: Occupational Exposure Limit Value  
 Organic Peroxide: Organic peroxide  
 OSHA: Occupational Safety and Health Administration  
 PBT: Persistent, bioaccumulative and toxic  
 PNEC: Predicted no-effect concentration  
 PVC: Polyvinyl chloride  
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals  
 Reproductive toxicity: Reproductive toxicity  
 SADT: Self-Accelerating Decomposition Temperature  
 Sensitization - skin: Skin sensitisation  
 SVHC: Substance of very high concern  
 TDG: Transportation of Dangerous Goods Regulation in Canada  
 TLV: Threshold Limit Value  
 TRGS: Technical Rules for Hazardous Substances  
 UN: United Nations  
 vPvB: Very persistent and very bioaccumulative  
 WEL: Workplace Exposure Limit

Literature: The SADT (self-accelerating decomposition temperature) is an experimentally determined temperature at which the product, in its conventional packaging, will decompose in a self-accelerating reaction.

### Department issuing data sheet

Contact person: see section 1: Department responsible for information

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.