

Safety data sheet
according to 1907/2006/EC, Article 31

Printing date 12.03.2020

V- 2.0

Revision: 12.03.2020

* **SECTION 1: Identification of the substance/mixture and of the company/
undertaking**

1.1 Product identifier**Trade name: BPO hardener for putty****1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses: professional use.

Application of the substance / the mixture Hardening agent/ Curing agent**1.3 Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

RADEX-Europe Ltd.

Uriekstes iela 3, Riga

LV-1005, Latvia

Tel: +371 67387778

Fax: +371 67387789

info@radex-europe.lv

Further information obtainable from: info@radex-europe.lv**1.4 Emergency telephone number:** Tel: +371 67387778 (9:00 – 18:00)

* **SECTION 2: Hazards identification**

2.1 Classification of the substance or mixture**Classification according to Regulation (EC) No 1272/2008**

GHS02

Org. Perox. E H242 Heating may cause a fire.



GHS09

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

Hazard pictograms

GHS02 GHS07 GHS09

Signal word Warning

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Hazard-determining components of labelling:

dibenzoyl peroxide

Hazard statements

H242 Heating may cause a fire.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Risk of fire on contact with combustible substances or other substances effective in promoting the decomposition reaction.

Thermal decomposition with temperatures above 50°C (SADT).

Flammable.

Results of PBT and vPvB assessment**PBT:** Not applicable.**vPvB:** Not applicable.* **SECTION 3: Composition/information on ingredients****3.2 Chemical characterisation: Mixtures****Description:** Mixture of substances listed below with nonhazardous additions.

Dangerous components:		
CAS: 94-36-0 EINECS: 202-327-6 Reg.nr.: 01-2119511472-50	dibenzoyl peroxide ----- ☠ ☠ Org. Perox. B, H241; ☠ Aquatic Acute 1, H400 (M=10); Aquatic Chronic 1, H410 (M=10); ☠ Eye Irrit. 2, H319; Skin Sens. 1, H317	25-55%
CAS: 131-11-3 EINECS: 205-011-6 Reg.nr.: 01-2119437229-36	dimethyl phthalate substance with a Community workplace exposure limit	25-50%
CAS: 107-21-1 EINECS: 203-473-3 Reg.nr.: 02-2119752517-33 01-2119456816-28	ethanediol ----- ☠ STOT RE 2, H373; ☠ Acute Tox. 4, H302	2.5-<10%

Additional information: For the wording of the listed hazard phrases refer to section 16.

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SECTION 4: First aid measures

4.1 Description of first aid measures**General information:**

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

Take affected persons out of danger area and lay down.

After inhalation:

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

If skin irritation continues, consult a doctor.

After eye contact:

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing: Do not induce vomiting; call for medical help immediately.**4.2 Most important symptoms and effects, both acute and delayed**

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

* **SECTION 5: Firefighting measures**

5.1 Extinguishing media**Suitable extinguishing agents:**CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.**5.2 Special hazards arising from the substance or mixture**

Can form explosive gas-air mixtures.

Formation of toxic gases is possible during heating or in case of fire.

5.3 Advice for firefighters**Protective equipment:**

Wear self-contained respiratory protective device.

Do not inhale explosion gases or combustion gases.

Additional information

Cool endangered receptacles with water spray.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

* **SECTION 6: Accidental release measures**

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources.

Avoid contact with the eyes and skin.

6.2 Environmental precautions:

Do not allow to enter sewers/ surface or ground water.

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Inform respective authorities in case of seepage into water course or sewage system.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Do not flush with water or aqueous cleansing agents.

Dispose of the material collected according to regulations.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7: Handling and storage
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7.1 Precautions for safe handling

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

Avoid contact with the eyes and skin.

Do not eat, drink, smoke or sniff while working.

Do not allow to enter sewers/ surface or ground water.

Keep apart from dirt, rust, chemicals, especially reducing substances, acids, alkaline solutions, amines and heavy metal compounds (such as accelerator, dessicative, metal soaps). Avoid naked flames, sparks, other ignition sources and sunlight.

Avoid any direct contact with accelerators.

Suitable materials: Stainless steel (DIN 1.4571), PVC, polyethylene, glass-lined apparatus.

Information about fire - and explosion protection:

Keep ignition sources away - Do not smoke.

Prevent impact and friction.

Fumes can combine with air to form an explosive mixture.

7.2 Conditions for safe storage, including any incompatibilities**Storage:****Requirements to be met by storerooms and receptacles:**

Store in a cool location.

Store only in the original receptacle.

Use only receptacles specifically permitted for this substance/product.

Information about storage in one common storage facility:

Store away from foodstuffs.

Store away from oxidising agents.

Further information about storage conditions:

Protect from frost.

Store in cool, dry conditions in well sealed receptacles.

Store receptacle in a well ventilated area.

Store under lock and key and out of the reach of children.

Maximum storage temperature: +25 °C

7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

Additional information about design of technical facilities: No further data; see item 7.

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8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:	
94-36-0 dibenzoyl peroxide	
WEL (Great Britain)	Long-term value: 5 mg/m ³
131-11-3 dimethyl phthalate	
WEL (Great Britain)	Short-term value: 10 mg/m ³ Long-term value: 5 mg/m ³
107-21-1 ethanediol	
WEL (Great Britain)	Short-term value: 104** mg/m ³ , 40** ppm Long-term value: 10* 52** mg/m ³ , 20** ppm Sk *particulate **vapour
IOELV (EU)	Short-term value: 104 mg/m ³ , 40 ppm Long-term value: 52 mg/m ³ , 20 ppm Skin

Regulatory information

WEL (Great Britain): EH40/2018

IOELV (EU): (EU) 2019/1831

DNELs

131-11-3 dimethyl phthalate		
Dermal	DNEL	100 mg/kg bw/day (long-term - systemic effects, workers)
Inhalative	DNEL	294 mg/m ³ (long-term - systemic effects, workers)

PNECs

131-11-3 dimethyl phthalate	
PNEC	0.192 mg/l (freshwater environment) 0.0192 mg/l (marine environment) 0.39 mg/l (intermittent releases) 4 mg/l (sewage treatment plants)
PNEC	1.403 mg/kg (freshwater sediment environment) 3.16 mg/kg (soil)

Additional information: The lists valid during the making were used as basis.**8.2 Exposure controls****Personal protective equipment:****General protective and hygienic measures:**

Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).

Keep ignition sources away - Do not smoke.

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the eyes and skin.

Do not eat or drink while working.

Respiratory protection:

Filter A2/P2

Use suitable respiratory protective device in case of insufficient ventilation.

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Protection of hands:

Protective gloves

Check the permeability prior to each renewed use of the glove.

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation (EN 374).

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Synthetic rubber gloves

Neoprene gloves

Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tightly sealed goggles

Body protection: Protective work clothing

* **SECTION 9: Physical and chemical properties**

9.1 Information on basic physical and chemical properties**General Information****Appearance:**

Form:	Pasty
Colour:	Red
Odour:	Characteristic
Odour threshold:	Not determined.

pH-value: Not applicable.

Change in condition

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	Undetermined.

Flash point: >50 °C

Flammability (solid, gas): Not applicable.

Decomposition temperature: SADT = 50 °C

Auto-ignition temperature: Not determined.

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Explosive properties:	Product does not present an explosion hazard. Extreme risk of explosion by shock, friction, fire or other sources of ignition.
Explosion limits:	
Lower:	0.0 Vol %
Upper:	0.0 Vol %
Vapour pressure at 20 °C:	<1 hPa
Density:	1.15-1.25 g/cm ³
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with water:	Not miscible or difficult to mix.
Partition coefficient: n-octanol/water:	Not determined.
Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
9.2 Other information	No further relevant information available.

* **SECTION 10: Stability and reactivity**

10.1 Reactivity No decomposition if used according to specifications.

10.2 Chemical stability

Thermal decomposition with temperatures above 50°C (SADT).

Suitable materials: Stainless steel (DIN 1.4571), PVC, polyethylene, glass-lined apparatus.

10.3 Possibility of hazardous reactions

Fumes can combine with air to form an explosive mixture.

To avoid thermal decomposition do not overheat. Thermal decomposition or direct contact with numerous additives, such as reducing agents (i.e. amine accelerator), heavy metal compounds (in particular cobalt accelerators), acids and alkaline solutions, may lead to hazardous, autoaccelerating decomposition reactions, and possibly, to explosion or fire.

10.4 Conditions to avoid

Protect from heat and direct sunlight.

To avoid thermal decomposition do not overheat.

10.5 Incompatible materials:

Keep apart from dirt, rust, chemicals, especially reducing substances, acids, alkaline solutions, amines and heavy metal compounds (such as accelerator, dessicative, metal soaps). Avoid naked flames, sparks, other ignition sources and sunlight.

10.6 Hazardous decomposition products:

Danger of forming toxic pyrolysis products.

Formation of toxic gases is possible during heating or in case of fire.

* **SECTION 11: Toxicological information**

11.1 Information on toxicological effects

Acute toxicity Based on available data, the classification criteria are not met.

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LD/LC50 values relevant for classification:		
94-36-0 dibenzoyl peroxide		
Oral	LD50	>5,000 mg/kg (rat)
Inhalative	LC50/4 h	24.3 mg/l (rat)
131-11-3 dimethyl phthalate		
Oral	LD50	6,800 mg/kg (rat)
107-21-1 ethanediol		
Oral	LD50	5,840 mg/kg (rat)
Dermal	LD50	9,530 mg/kg (rabbit)

Primary irritant effect:**Skin corrosion/irritation** Based on available data, the classification criteria are not met.**Serious eye damage/irritation**

Causes serious eye irritation.

Respiratory or skin sensitisation

May cause an allergic skin reaction.

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**Germ cell mutagenicity** Based on available data, the classification criteria are not met.**Carcinogenicity** Based on available data, the classification criteria are not met.**Reproductive toxicity** Based on available data, the classification criteria are not met.**STOT-single exposure** Based on available data, the classification criteria are not met.**STOT-repeated exposure** Based on available data, the classification criteria are not met.**Aspiration hazard** Based on available data, the classification criteria are not met.* **SECTION 12: Ecological information****12.1 Toxicity****Aquatic toxicity:****94-36-0 dibenzoyl peroxide**

LC50/96 h	0.0602 mg/l (Oncorhynchus mykiss)
EC50/48 h	0.11 mg/l (Daphnia magna)
EC50/72 h	0.0711 mg/l (Pseudokirchnerella subcapitata)

12.2 Persistence and degradability**94-36-0 dibenzoyl peroxide**

Biodegradation | 68 % (readily biodegradable) (OECD 301 D, aerobic)

131-11-3 dimethyl phthalate

Biodegradation | 96-98 % (readily biodegradable) (OECD 301 E, 28 d)

12.3 Bioaccumulative potential**94-36-0 dibenzoyl peroxide**

log Kow | 3.2 (OECD 117)

131-11-3 dimethyl phthalate

BCF | 57 (-)

log Pow | 1.56

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12.4 Mobility in soil**131-11-3 dimethyl phthalate**

log Koc | 1.57

Additional ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Also poisonous for fish and plankton in water bodies.

12.5 Results of PBT and vPvB assessment**PBT:** Not applicable.**vPvB:** Not applicable.**12.6 Other adverse effects** No further relevant information available.**SECTION 13: Disposal considerations****13.1 Waste treatment methods****Recommendation**

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

European waste catalogue

16 05 06*	laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals
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Uncleaned packaging:**Recommendation:** Disposal must be made according to official regulations.*** SECTION 14: Transport information****14.1 UN-Number****ADR, IMDG, IATA**

UN3108

14.2 UN proper shipping name**ADR****IMDG****IATA**

3108 ORGANIC PEROXIDE TYPE E, SOLID
 ORGANIC PEROXIDE TYPE E, SOLID,
 MARINE POLLUTANT
 ORGANIC PEROXIDE TYPE E, SOLID

14.3 Transport hazard class(es)**ADR, IMDG****Class**

5.2

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Label	5.2
IATA	
	
Class	5.2
Label	5.2
14.4 Packing group	
ADR	Void
14.5 Environmental hazards:	Environmentally hazardous substance, liquid
Marine pollutant (IMDG):	Yes
	Symbol (fish and tree)
Special marking (ADR):	Symbol (fish and tree)
14.6 Special precautions for user	Warning: Organic peroxides.
EMS Number:	F-J,S-R
Stowage Category	D
Stowage Code	SW1 Protected from sources of heat.
Segregation Code	SG35 Stow "separated from" SGG1-acids SG36 Stow "separated from" SGG18-alkalis.
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
Transport/Additional information:	
ADR	
Limited quantities (LQ)	500 g
Tunnel restriction code	D
IMDG	
Limited quantities (LQ)	500 g
UN "Model Regulation":	UN 3108 ORGANIC PEROXIDE TYPE E, SOLID, 5.2

* **SECTION 15: Regulatory information**

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Directive 2012/18/EU

Named dangerous substances - ANNEX I None of the ingredients is listed.

Seveso category

P6b SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES

E1 Hazardous to the Aquatic Environment

Qualifying quantity (tonnes) for the application of lower-tier requirements 50 t

Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

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National regulations:**Information about limitation of use:**

Employment restrictions concerning juveniles must be observed.

Employment restrictions concerning pregnant and lactating women must be observed.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Relevant phrases

H241 Heating may cause a fire or explosion.

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H373 May cause damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

Classification according to Regulation (EC) No 1272/2008

Organic peroxides	On basis of test data
Serious eye damage/eye irritation Skin sensitisation Hazardous to the aquatic environment - short-term (acute) aquatic hazard Hazardous to the aquatic environment - long-term (chronic) aquatic hazard	The classification of the mixture is generally based on the calculation method using substance data according to Regulation (EC) No 1272/2008.

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Org. Perox. B: Organic peroxides – Type B

Org. Perox. E: Organic peroxides – Type E/F

Acute Tox. 4: Acute toxicity - oral – Category 4

Eye Irrit. 2: Serious eye damage/eye irritation – Category 2

Skin Sens. 1: Sensitisation - Skin. Hazard Category 1

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard – Category 1

Sources European Chemicals Agency, <http://echa.europa.eu/>*** Data compared to the previous version altered.**