

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by  
Commission Regulation (EU) 2020/878



## BENOX®C-50

Version	Revision Date:	SDS Number:	Date of last issue: 09.03.2023
5.0	25.10.2024	600000000300	Date of first issue: 12.04.2016

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

#### 1.1 Product identifier

Trade name : BENOX®C-50

Unique Formula Identifier (UFI) : WVA8-50T3-900F-7KNQ

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Sub-stance/Mixture : Hardener

#### 1.3 Details of the supplier of the safety data sheet

Company : United Initiators GmbH  
Dr.-Gustav-Adolph-Str. 3  
82049 Pullach

Telephone : +49 / 89 / 74422 – 0

E-mail address of person responsible for the SDS : contact@united-in.com

#### 1.4 Emergency telephone number

0800 000 7801 (toll-free, access from Germany only) +49 89 220 61012

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### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

##### Classification (REGULATION (EC) No 1272/2008)

Organic peroxides, Type D	H242: Heating may cause a fire.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Reproductive toxicity, Category 1B	H360D: May damage the unborn child.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

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### 2.2 Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :

H242	Heating may cause a fire.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H360D	May damage the unborn child.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P234	Keep only in original packaging.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

#### **Response:**

P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P370 + P378	In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.
P391	Collect spillage.

#### **Hazardous components which must be listed on the label:**

dicyclohexyl phthalate (CAS-No. 84-61-7)  
dibenzoyl peroxide (CAS-No. 94-36-0)

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: This substance/mixture contains components considered to have endocrine disrupting properties affecting human health, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

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### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures

Chemical nature : Organic Peroxide  
Solid mixture

#### Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
dicyclohexyl phthalate	84-61-7 201-545-9 607-719-00-4 01-2119978223-34	Skin Sens. 1; H317 Repr. 1B; H360D Aquatic Chronic 2; H411	>= 50 - < 55
dibenzoyl peroxide	94-36-0 202-327-6 617-008-00-0 01-2119511472-50	Org. Perox. B; H241 Eye Irrit. 2; H319 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	>= 45 - < 50

For explanation of abbreviations see section 16.

### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

General advice : Take off contaminated clothing and shoes immediately.  
Call a physician immediately.  
Never give anything by mouth to an unconscious person.  
If unconscious, place in recovery position and seek medical advice.  
Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.

Protection of first-aiders : First Aid responders should pay attention to self-protection  
and use the recommended protective clothing

If inhaled : Administer oxygen if breathing is difficult or cyanosis is ob-

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- served.  
If breathed in, move person into fresh air.  
If not breathing, give artificial respiration.  
If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.
- In case of skin contact : If symptoms persist, call a physician.  
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Wash contaminated clothing before re-use.  
If on skin, rinse well with water.  
If on clothes, remove clothes.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Call a physician immediately.  
Keep respiratory tract clear.  
If symptoms persist, call a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : sensitising effects
- Risks : May cause an allergic skin reaction.  
Causes serious eye irritation.  
May damage the unborn child.

### 4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically and supportively.
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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

- Suitable extinguishing media : Water spray jet  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Unsuitable extinguishing media : High volume water jet

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### 5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Risk of explosion if heated under confinement.  
Possible emission of gaseous decomposition products may lead to a dangerous pressure build-up.  
Avoid confinement.  
Contact with incompatible materials or exposure to temperatures exceeding SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which may auto-ignite.  
The product burns violently.  
Flash back possible over considerable distance.  
Do not allow run-off from fire fighting to enter drains or water courses.  
Vapours may form explosive mixtures with air.  
The product will float on water and can be reignited on surface water.  
Cool closed containers exposed to fire with water spray.

### 5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

Specific extinguishing methods : Do not use a solid water stream as it may scatter and spread fire.  
Remove undamaged containers from fire area if it is safe to do so.  
Use water spray to cool unopened containers.

Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use a water spray to cool fully closed containers.  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Follow safe handling advice and personal protective equipment recommendations.  
Use personal protective equipment.  
Avoid dust formation.  
Avoid breathing dust.  
Remove all sources of ignition.  
Never return spills in original containers for re-use.  
Treat recovered material as described in the section "Disposal considerations".

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### 6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform  
respective authorities.

### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contact with incompatible substances can cause decomposi-  
tion at or below SADT.  
Clear spills immediately.  
Suppress (knock down) gases/vapours/mists with a water  
spray jet.  
To clean the floor and all objects contaminated by this materi-  
al, use plenty of water.  
Soak up with inert absorbent material.  
Isolate waste and do not reuse.  
Non-sparking tools should be used.  
Local or national regulations may apply to releases and dis-  
posal of this material, as well as those materials and items  
employed in the cleanup of releases. You will need to deter-  
mine which regulations are applicable.

### 6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE  
CONTROLS/PERSONAL PROTECTION section.

Advice on safe handling : Open drum carefully as content may be under pressure.  
Avoid formation of respirable particles.  
Protect from contamination.  
Do not breathe vapours/dust.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.  
Take precautionary measures against static discharges.  
Never return any product to the container from which it was  
originally removed.  
Provide sufficient air exchange and/or exhaust in work rooms.  
Avoid confinement.  
Keep away from heat, hot surfaces, sparks, open flames and  
other ignition sources. No smoking.  
Smoking, eating and drinking should be prohibited in the ap-  
plication area.  
Wash thoroughly after handling.

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For personal protection see section 8.  
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from heat and sources of ignition. Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Keep away from combustible material. Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures : Avoid contact with skin, eyes and clothing. Keep away from food and drink. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Store in original container. Keep containers tightly closed in a cool, well-ventilated place. Store in cool place. Keep in a well-ventilated place. Contamination may result in dangerous pressure increases - closed containers may rupture. Observe label precautions. Store in accordance with the particular national regulations. Avoid impurities (e.g. rust, dust, ash), risk of decomposition. Electrical installations / working materials must comply with the technological safety standards. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Advice on common storage : Keep away from combustible materials.  
Keep away from strong acids, bases, heavy metal salts and other reducing substances.

Storage class (TRGS 510) : 5.2

Recommended storage temperature : < 30 °C

Further information on storage stability : Stable under recommended storage conditions.

### 7.3 Specific end use(s)

Specific use(s) : For further information, refer to the product technical data sheet.

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### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

##### Occupational Exposure Limits

Allgemeiner Staubgrenzwert      10 mg/m<sup>3</sup>  
Peak-limit: excursion factor (category): 2;(II)  
Value type (Form of exposure): AGW (Inhalable fraction)  
Basis: DE TRGS 900  
Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child

1,25 mg/m<sup>3</sup>  
Peak-limit: excursion factor (category): 2;(II)  
Value type (Form of exposure): AGW (Alveolate fraction)  
Basis: DE TRGS 900  
Further information: When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child

Dust      Basis: DE DFG MAK

0,3 mg/m<sup>3</sup>  
Peak-limit: excursion factor (category): 8; II  
Value type (Form of exposure): MAK (measured as the alveolate fraction)  
Basis: DE DFG MAK  
Further information: Substances that cause cancer in humans or animals or that are considered to be carcinogenic for humans and for which a MAK value can be derived., Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed

4 mg/m<sup>3</sup>  
Peak-limit: excursion factor (category): 8; II  
Value type (Form of exposure): MAK (inhalable fraction)  
Basis: DE DFG MAK  
Further information: Substances that cause cancer in humans or animals or that are considered to be carcinogenic for humans and for which a MAK value can be derived., Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed

Components	CAS-No.	Value type (Form	Control parameters	Basis
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		of exposure)		
dibenzoyl peroxide	94-36-0	AGW (Inhalable fraction)	5 mg/m <sup>3</sup>	DE TRGS 900
	Peak-limit: excursion factor (category): 1;(I)			
		MAK (measured as the alveolate fraction)	1 mg/m <sup>3</sup>	DE DFG MAK
	Peak-limit: excursion factor (category): 2; I			
	Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			
		MAK (inhalable fraction)	4 mg/m <sup>3</sup>	DE DFG MAK
	Peak-limit: excursion factor (category): 2; I			
	Further information: Damage to the embryo or foetus is unlikely when the MAK value or the BAT value is observed			

### Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
dibenzoyl peroxide	Workers	Inhalation	Long-term systemic effects	39 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	34,3 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	3,5 mg/m <sup>3</sup>
	Consumers	Skin contact	Long-term systemic effects	17 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	2 mg/kg bw/day
dicyclohexyl phthalate	Workers	Inhalation	Long-term systemic effects	35,2 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	0,5 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0,87 mg/m <sup>3</sup>
	Consumers	Skin contact	Long-term systemic effects	0,25 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	0,25 mg/kg bw/day
	Consumers	Ingestion	Acute systemic effects	0,25 mg/kg bw/day

### Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
dibenzoyl peroxide	Fresh water	0,02 µg/l
	Marine water	0,002 µg/l
	Sewage treatment plant	0,35 mg/l
	Fresh water sediment	0,013 mg/kg dry weight (d.w.)
	Marine sediment	0,001 mg/kg dry

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		weight (d.w.)
	Soil	0,003 mg/kg dry weight (d.w.)
dicyclohexyl phthalate	Fresh water	0,001 mg/l
	Marine water	0,0001 mg/l
	Sewage treatment plant	10 mg/l
	Fresh water sediment	1,06 mg/kg dry weight (d.w.)
	Marine sediment	0,106 mg/kg dry weight (d.w.)

### 8.2 Exposure controls

#### Engineering measures

Minimize workplace exposure concentrations.

#### Personal protective equipment

Eye/face protection : Ensure that eyewash stations and safety showers are close to the workstation location.  
Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.  
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.  
Tightly fitting safety goggles  
Please wear suitable protective goggles. Also wear face protection if there is a splash hazard.

Equipment should conform to EN 166

#### Hand protection

Material : butyl-rubber  
Break through time : 480 min  
Glove thickness : 0,47 mm  
Directive : Equipment should conform to EN 374

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0,40 mm  
Directive : Equipment should conform to EN 374

Remarks : The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove. Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

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- Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.  
Wear as appropriate:  
Flame retardant antistatic protective clothing.
- Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.  
Respirator with combination filter for vapour/particulate (EN 141)
- Filter type : Filter type P
- Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
- 

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Physical state : powder
- Colour : white
- Odour : aromatic
- Odour Threshold : not determined
- Melting point/ range : Decomposition: Decomposes below the melting point.
- Boiling point/boiling range : Not applicable
- Flammability : Organic peroxide
- Upper explosion limit / Upper flammability limit : Upper explosion limit  
No data available

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Lower explosion limit / Lower flammability limit	:	Lower explosion limit No data available
Flash point	:	Not applicable
Auto-ignition temperature	:	not determined
Self-Accelerating decomposition temperature (SADT)	:	60 °C Method: UN-Test H.4 SADT-Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction.
pH	:	substance/mixture is non-soluble (in water)
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	No data available
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	Solvent: Phthalates Description: soluble
Partition coefficient: n-octanol/water	:	Not applicable
Dispersion Stability	:	No data available
Vapour pressure	:	not determined
Relative density	:	not determined
Density	:	not determined
Bulk density	:	ca. 620 kg/m <sup>3</sup>

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Relative vapour density : not determined

### Particle characteristics

Particle size : not determined

Particle Size Distribution : No data available

Dustiness : Avoid dust formation.

Shape : not determined

Crystallinity : Not applicable

Surface treatment  
/Coatings : Not applicable

### 9.2 Other information

Explosives : Not explosive  
Avoid dust formation.

Oxidizing properties : The substance or mixture is not classified as oxidizing.  
Organic peroxide

Self-ignition : The substance or mixture is not classified as pyrophoric.

Self-heating substances : The substance or mixture is not classified as self heating.

Substances and mixtures,  
which in contact with water,  
emit flammable gases : The substance or mixture does not emit flammable gases in  
contact with water.

Desensitised explosives : Not applicable

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### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

Stable under recommended storage conditions.  
Heating may cause a fire or explosion.

#### 10.2 Chemical stability

Stable under recommended storage conditions.  
No decomposition if stored normally.

#### 10.3 Possibility of hazardous reactions

Hazardous reactions : Dust may form explosive mixture in air.

#### 10.4 Conditions to avoid

Conditions to avoid : Protect from contamination.  
Contact with incompatible substances can cause decomposition at or below SADT.  
Heat, flames and sparks.  
Avoid confinement.

#### 10.5 Incompatible materials

Materials to avoid : Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents

#### 10.6 Hazardous decomposition products

Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition

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### SECTION 11: Toxicological information

#### 11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

##### Acute toxicity

Not classified due to lack of data.

##### Components:

##### **dicyclohexyl phthalate:**

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg  
Method: OECD Test Guideline 423  
Assessment: The substance or mixture has no acute oral toxicity

Acute dermal toxicity : LD50 (Rat): > 2.000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

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### **dibenzoyl peroxide:**

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 24,3 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : Remarks: No data available

### **Skin corrosion/irritation**

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

#### **Product:**

Remarks : May cause skin irritation in susceptible persons.

#### **Components:**

##### **dicyclohexyl phthalate:**

Result : No skin irritation

Remarks : May cause skin irritation in susceptible persons.

##### **dibenzoyl peroxide:**

Species : Rabbit  
Exposure time : 4 h  
Method : OECD Test Guideline 404  
Result : No skin irritation

### **Serious eye damage/eye irritation**

Causes serious eye irritation.

#### **Product:**

Remarks : Product dust may be irritating to eyes, skin and respiratory system.

#### **Components:**

##### **dicyclohexyl phthalate:**

Result : No eye irritation

Remarks : Product dust may be irritating to eyes, skin and respiratory system.

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### **dibenzoyl peroxide:**

Species : Rabbit  
Result : Irritation to eyes, reversing within 7 days

### **Respiratory or skin sensitisation**

#### **Skin sensitisation**

May cause an allergic skin reaction.

#### **Respiratory sensitisation**

Not classified due to lack of data.

#### **Product:**

Remarks : Causes sensitisation.

### **Components:**

#### **dicyclohexyl phthalate:**

Exposure routes : Skin contact  
Species : Mouse  
Result : May cause sensitisation by skin contact.

Remarks : Causes sensitisation.

### **dibenzoyl peroxide:**

Exposure routes : Skin contact  
Species : Mouse  
Method : Local lymph node assay (LLNA)  
Result : May cause sensitisation by skin contact.

### **Germ cell mutagenicity**

Not classified due to lack of data.

### **Components:**

#### **dicyclohexyl phthalate:**

Genotoxicity in vitro : Result: negative  
Remarks: In vitro tests did not show mutagenic effects

Genotoxicity in vivo : Remarks: No data available

Germ cell mutagenicity- Assessment :  
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

### **dibenzoyl peroxide:**

Genotoxicity in vitro : Method: OECD Test Guideline 471



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Result: negative

Method: OECD Test Guideline 476

Result: negative

Genotoxicity in vivo : Test Type: dominant lethal test  
Species: Mouse  
Result: negative

### **Carcinogenicity**

Not classified due to lack of data.

#### **Components:**

##### **dicyclohexyl phthalate:**

Remarks : This information is not available.

Carcinogenicity - Assessment :  
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

##### **dibenzoyl peroxide:**

Remarks : This information is not available.

### **Reproductive toxicity**

May damage the unborn child.

#### **Components:**

##### **dicyclohexyl phthalate:**

Reproductive toxicity - Assessment : Clear evidence of adverse effects on development, based on animal experiments.  
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

##### **dibenzoyl peroxide:**

Effects on fertility : Species: Rat, male  
Application Route: Oral  
General Toxicity - Parent: NOAEL: 1.000 mg/kg body weight  
Method: OECD Test Guideline 422

Species: Rat, female  
Application Route: Oral  
General Toxicity - Parent: NOAEL: 500 mg/kg body weight  
Method: OECD Test Guideline 422

Reproductive toxicity - Assessment : No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

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### STOT - single exposure

Not classified due to lack of data.

#### Components:

##### **dibenzoyl peroxide:**

Exposure routes	:	Ingestion
Assessment	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.

### STOT - repeated exposure

Not classified due to lack of data.

#### Components:

##### **dibenzoyl peroxide:**

Exposure routes	:	Ingestion
Assessment	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

### Repeated dose toxicity

#### Components:

##### **dicyclohexyl phthalate:**

Species	:	Rat
NOAEL	:	50 mg/kg
Application Route	:	Ingestion
Exposure time	:	90 d
Method	:	OECD Test Guideline 408

##### **dibenzoyl peroxide:**

Species	:	Rat
NOAEL	:	1.000 mg/kg
Application Route	:	Oral
Exposure time	:	28 d
Method	:	OECD Test Guideline 422

### Aspiration toxicity

Not classified due to lack of data.

#### Components:

##### **dibenzoyl peroxide:**

No aspiration toxicity classification

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### 11.2 Information on other hazards

#### Endocrine disrupting properties

**Product:**

Assessment : This substance/mixture contains components considered to have endocrine disrupting properties affecting human health, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

**Components:**

**dicyclohexyl phthalate:**

Assessment : The substance is considered to have endocrine disrupting properties according to REACH Article 57(f) for human health.

#### Further information

**Product:**

Remarks : No data available

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## SECTION 12: Ecological information

### 12.1 Toxicity

**Product:**

#### Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

**Components:**

**dicyclohexyl phthalate:**

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): > 2 mg/l  
Exposure time: 96 h  
Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates : NOEC (Daphnia magna (Water flea)): > 2 mg/l  
Exposure time: 48 h  
Remarks: No toxicity at the limit of solubility

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 2 mg/l  
Exposure time: 72 h  
Test Type: Growth inhibition

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Method: OECD Test Guideline 201  
Remarks: No toxicity at the limit of solubility

Toxicity to microorganisms : NOEC : > 100 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition  
Method: OECD Test Guideline 209

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,181 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211

### Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

#### dibenzoyl peroxide:

Toxicity to fish : EC50 (Oncorhynchus mykiss (rainbow trout)): 0,06 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,11 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 0,071 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,02 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 10

Toxicity to microorganisms : EC50 (Bacteria): 35 mg/l  
Exposure time: 30 min  
Method: OECD Test Guideline 209

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10: 0,001 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: semi-static test  
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 10

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### Ecotoxicology Assessment

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

### 12.2 Persistence and degradability

#### Components:

##### **dicyclohexyl phthalate:**

Biodegradability : Result: Readily biodegradable.

##### **dibenzoyl peroxide:**

Biodegradability : Result: Biodegradable  
Method: OECD Test Guideline 301D

### 12.3 Bioaccumulative potential

#### Components:

##### **dicyclohexyl phthalate:**

Partition coefficient: n-octanol/water : log Pow: 4,82 (25 °C)

##### **dibenzoyl peroxide:**

Partition coefficient: n-octanol/water : log Pow: 3,2 (20 °C)

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

#### Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

#### Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

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levels of 0.1% or higher.

### 12.7 Other adverse effects

**Product:**

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Very toxic to aquatic life with long lasting effects.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product : Dispose of wastes in an approved waste disposal facility.  
The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.  
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

Contaminated packaging : Dispose of in accordance with local regulations.  
Clean container with water.  
Dispose of contents/ container to an approved waste disposal plant.  
Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.  
Do not burn, or use a cutting torch on, the empty drum.

---

## SECTION 14: Transport information

### 14.1 UN number or ID number

ADN : UN 3106  
ADR : UN 3106  
RID : UN 3106  
IMDG : UN 3106  
IATA : UN 3106

### 14.2 UN proper shipping name

ADN : ORGANIC PEROXIDE TYPE D, SOLID  
(DIBENZOYL PEROXIDE)

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**ADR** : ORGANIC PEROXIDE TYPE D, SOLID (DIBENZOYL PEROXIDE)  
**RID** : ORGANIC PEROXIDE TYPE D, SOLID (DIBENZOYL PEROXIDE)  
**IMDG** : ORGANIC PEROXIDE TYPE D, SOLID (DIBENZOYL PEROXIDE)  
**IATA** : Organic peroxide type D, solid (Dibenzoyl peroxide)

### 14.3 Transport hazard class(es)

	Class	Subsidiary risks
<b>ADN</b>	: 5.2	
<b>ADR</b>	: 5.2	
<b>RID</b>	: 5.2	
<b>IMDG</b>	: 5.2	
<b>IATA</b>	: 5.2	HEAT

### 14.4 Packing group

**ADN**  
Packing group : Not assigned by regulation  
Classification Code : P1  
Labels : 5.2

**ADR**  
Packing group : Not assigned by regulation  
Classification Code : P1  
Labels : 5.2  
Tunnel restriction code : (D)

**RID**  
Packing group : Not assigned by regulation  
Classification Code : P1  
Hazard Identification Number : 539  
Labels : 5.2

**IMDG**  
Packing group : Not assigned by regulation  
Labels : 5.2  
EmS Code : F-J, S-R

**IATA (Cargo)**  
Packing instruction (cargo aircraft) : 570  
Packing group : Not assigned by regulation  
Labels : Organic Peroxides, Keep Away From Heat

**IATA (Passenger)**  
Packing instruction (passen- : 570

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ger aircraft)  
Packing group : Not assigned by regulation  
Labels : Organic Peroxides, Keep Away From Heat

### 14.5 Environmental hazards

**ADN**  
Environmentally hazardous : yes

**ADR**  
Environmentally hazardous : yes

**RID**  
Environmentally hazardous : yes

**IMDG**  
Marine pollutant : yes

### 14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

### 14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

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## SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	dicyclohexyl phthalate
Regulation (EC) on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Regulation (EU) No 649/2012 of the European Parlia-	:	Not applicable



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ment and the Council concerning the export and import  
of dangerous chemicals

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

P6b SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES

E1 ENVIRONMENTAL HAZARDS

Water hazard class (Germany) : WGK 2 obviously hazardous to water  
Classification according to AwSV, Annex 1 (5.2)

### Other regulations:

The product is subject to the supply restrictions of the Ordinance on the Prohibition of Chemicals.

Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

Gefahrgruppe nach TRGS 741: II (German regulatory requirements)

### The components of this product are reported in the following inventories:

TCSI (TW)	: On the inventory, or in compliance with the inventory
TSCA (US)	: All substances listed as active on the TSCA inventory
AIIC (AU)	: On the inventory, or in compliance with the inventory
DSL (CA)	: All components of this product are on the Canadian DSL
ENCS (JP)	: On the inventory, or in compliance with the inventory
ISHL (JP)	: On the inventory, or in compliance with the inventory
PICCS (PH)	: On the inventory, or in compliance with the inventory
IECSC (CN)	: On the inventory, or in compliance with the inventory
TECI (TH)	: On the inventory, or in compliance with the inventory

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### 15.2 Chemical safety assessment

This information is not available.

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### SECTION 16: Other information

#### Full text of H-Statements

H241	:	Heating may cause a fire or explosion.
H317	:	May cause an allergic skin reaction.
H319	:	Causes serious eye irritation.
H360D	:	May damage the unborn child.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.
H411	:	Toxic to aquatic life with long lasting effects.

#### Full text of other abbreviations

Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Irrit.	:	Eye irritation
Org. Perox.	:	Organic peroxides
Repr.	:	Reproductive toxicity
Skin Sens.	:	Skin sensitisation
DE DFG MAK	:	Germany. MAK BAT Annex IIa
DE TRGS 900	:	Germany. TRGS 900 - Occupational exposure limit values.
DE DFG MAK / MAK	:	MAK value
DE TRGS 900 / AGW	:	Time Weighted Average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure-Activity Relationship

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tative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

### Further information

Other information : This safety datasheet only contains information relating to safety and does not replace any product information or product specification.  
These safety instructions also apply to empty packaging which may still contain product residues.  
The hazards on the label also apply to residues in the container.

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

### Classification of the mixture:

Org. Perox. D	H242
Eye Irrit. 2	H319
Skin Sens. 1	H317
Repr. 1B	H360D
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

### Classification procedure:

Based on product data or assessment
Calculation method
Calculation method
Calculation method
Based on product data or assessment
Based on product data or assessment

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