

SAFETY DATA SHEET

EHPC-60-ENF1



Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	28.03.2023	600000000650	Date of first issue: 28.03.2023

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

1.1 Product identifier

Trade name : EHPC-60-ENF1

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

Use of the Sub-stance/Mixture : polymerisation initiators

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

+44 1235 239670

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Flammable liquids, Category 3	H226: Flammable liquid and vapour.
Organic peroxides, Type F	H242: Heating may cause a fire.
Acute toxicity, Category 4	H302: Harmful if swallowed.
Skin irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Specific target organ toxicity - single exposure, Category 1	H370: Causes damage to organs.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard pictograms :



Signal word : Danger

Hazard statements :

- H226 Flammable liquid and vapour.
- H242 Heating may cause a fire.
- H302 Harmful if swallowed.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H370 Causes damage to organs.

Precautionary statements :

Prevention:

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P220 Keep/Store away from clothing/ strong acids, bases, heavy metal salts and other reducing substances /combustible materials.
P233 Keep container tightly closed.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P262 Do not get in eyes, on skin, or on clothing.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.
P315 Get immediate medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.
P411 Store at temperatures not exceeding -15 °C.

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Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:
bis(2-ethylhexyl) peroxydicarbonate (CAS-No. 16111-62-9)
Methanol (CAS-No. 67-56-1)
tert-butyl hydroperoxide (CAS-No. 75-91-2)

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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Organic Peroxide
Liquid mixture

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
bis(2-ethylhexyl) peroxydicarbonate	16111-62-9 240-282-4 01-2119964452-35-0003	Flam. Liq. 3; H226 Org. Perox. C; H242 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1; H317	>= 55 - < 65
Methanol	67-56-1 200-659-6 01-2119433307-44	Flam. Liq. 2; H225 Acute Tox. 3; H301 Acute Tox. 3; H331 Acute Tox. 3; H311 STOT SE 1; H370	>= 10 - < 15
tert-butyl hydroperoxide	75-91-2 200-915-7 617-023-00-2 01-2119446670-40-0001	Flam. Liq. 3; H226 Org. Perox. F; H242 Acute Tox. 4; H302 Acute Tox. 2; H330 Acute Tox. 3; H311 Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1; H317 Muta. 2; H341 Carc. 2; H351 STOT SE 3; H335 (Respiratory sys-	>= 0.25 - < 1

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		tem) Aquatic Chronic 2; H411	
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For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
Symptoms of poisoning may appear several hours later.
Call a physician immediately.
- Protection of first-aiders : First Aid responders should pay attention to self-protection
and use the recommended protective clothing
- If inhaled : Call a physician or poison control centre immediately.
If unconscious, place in recovery position and seek medical
advice.
Keep respiratory tract clear.
If breathed in, move person into fresh air.
- In case of skin contact : 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.
If symptoms persist, call a physician.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tis-
sue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty
of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Do NOT induce vomiting.
Call a physician immediately.
Rinse mouth thoroughly with water.

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4.2 Most important symptoms and effects, both acute and delayed

Risks : Harmful if swallowed.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
Causes damage to organs.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray jet
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : 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.
Vapours may form explosive mixtures with air.
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 : 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.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Remove all sources of ignition.
Evacuate personnel to safe areas.
Follow safe handling advice and personal protective equipment recommendations.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Never return spills in original containers for re-use.
Treat recovered material as described in the section "Disposal considerations".

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 decomposition 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 material, 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 disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.

6.4 Reference to other sections

For personal protection see section 8.

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 : Do not swallow.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.

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Avoid contact with skin and eyes.
Avoid formation of aerosol.
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 application area.
Wash thoroughly after handling.
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.
Protect from contamination.

- 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 combustible material.
- Hygiene measures : 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 : 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. Store in original container. Keep containers tightly closed in a cool, well-ventilated place. Store in accordance with the particular national regulations.
- Advice on common storage : Keep away from strong acids, bases, heavy metal salts and other reducing substances.
- Recommended storage temperature : < -15 °C
- Further information on storage stability : No decomposition if stored normally.

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

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Methanol	67-56-1	TWA	200 ppm 266 mg/m ³	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		STEL	250 ppm 333 mg/m ³	GB EH40
	Further information: Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.			
		TWA	200 ppm 260 mg/m ³	2006/15/EC
	Further information: Indicative, Identifies the possibility of significant uptake through the skin			

Derived No Effect Level (DNEL):

Substance name	End Use	Exposure routes	Potential health effects	Value
bis(2-ethylhexyl) peroxycarbonate	Workers	Inhalation	Long-term systemic effects	11.75 mg/m ³
	Workers	Skin contact	Long-term systemic effects	6.67 mg/kg bw/day
Methanol	Workers	Inhalation	Long-term systemic effects	130 mg/m ³
	Workers	Inhalation	Acute systemic effects	130 mg/m ³
	Workers	Inhalation	Long-term local effects	130 mg/m ³
	Workers	Inhalation	Acute local effects	130 mg/m ³
	Workers	Skin contact	Long-term systemic effects	20 mg/m ³
	Workers	Skin contact	Acute systemic effects	20 mg/m ³
	Workers	Skin contact	Long-term local effects	
Remarks:	No hazard identified			
	Workers	Skin contact	Acute local effects	
Remarks:	No hazard identified			
	Consumers	Inhalation	Long-term systemic effects	26 mg/m ³
	Consumers	Inhalation	Acute systemic effects	26 mg/m ³
	Consumers	Inhalation	Long-term local effects	26 mg/m ³

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			fects	
	Consumers	Inhalation	Acute local effects	26 mg/m3
	Consumers	Skin contact	Acute systemic effects	4 mg/kg bw/day
	Consumers	Skin contact	Long-term systemic effects	4 mg/kg bw/day
	Consumers	Skin contact	Acute local effects	
Remarks:	No hazard identified			
	Consumers	Skin contact	Long-term local effects	
Remarks:	No hazard identified			
	Consumers	Ingestion	Long-term systemic effects	4 mg/kg bw/day
	Consumers	Ingestion	Acute systemic effects	4 mg/kg bw/day
tert-butyl hydroperoxide	Workers	Inhalation	Long-term systemic effects	2.2 mg/m3
Remarks:	Derived minimal effect level (DMEL)			
	Workers	Inhalation	Acute systemic effects	85.2 mg/m3
Remarks:	Derived minimal effect level (DMEL)			
	Workers	Inhalation	Long-term local effects	0.58 mg/m3
Remarks:	Derived minimal effect level (DMEL)			
	Workers	Inhalation	Acute local effects	28.4 mg/m3
Remarks:	Derived minimal effect level (DMEL)			
	Workers	Skin contact	Long-term systemic effects	0.21 mg/m3
Remarks:	Derived minimal effect level (DMEL)			

Predicted No Effect Concentration (PNEC):

Substance name	Environmental Compartment	Value
bis(2-ethylhexyl) peroxydicarbonate	Fresh water	0.032 mg/l
	Marine water	0.0032 mg/l
	Intermittent use/release	0.094 mg/l
	Sewage treatment plant	1.5 mg/l
	Fresh water sediment	0.228 mg/kg
	Marine sediment	0.0228 mg/kg
Methanol	Soil	0.0269 mg/kg
	Fresh water	20.8 mg/l
	Marine water	2.08 mg/l
	Intermittent use/release	100 mg/l
	Fresh water sediment	77 mg/kg
	Marine sediment	7.7 mg/kg
tert-butyl hydroperoxide	Soil	100 mg/kg
	Fresh water	0.0015 mg/l
	Marine water	0.00015 mg/l
	Fresh water sediment	0.00621 mg/kg dry weight (d.w.)

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	Marine sediment	0.000621 mg/kg dry weight (d.w.)
	Agricultural soil	0.166 mg/kg dry weight (d.w.)
	Sewage treatment plant	0.17 mg/l
	Secondary poisoning	1.4 mg/kg food

8.2 Exposure controls

Engineering measures

Minimize workplace exposure concentrations.

Personal protective equipment

Eye protection : Tightly fitting safety goggles
Please wear suitable protective goggles. Also wear face protection if there is a splash hazard.
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.

Hand protection

Material : Nitrile rubber
Break through time : 30 min
Glove thickness : 0.40 mm

Material : butyl-rubber
Break through time : 480 min
Glove thickness : 0.47 mm

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.

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

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approved filter.

Filter type : ABEK-filter

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

Appearance : liquid

Colour : white

Odour : aromatic

pH : No data available

Melting point/range : No data available

Boiling point/boiling range : Decomposition: Decomposes below the boiling point.

Flash point : 31 °C
Method: ISO 3679

Flammability (solid, gas) : Not applicable

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : No data available

Density : 0.98 g/cm³ (20 °C)

Solubility(ies)

Water solubility : No data available

Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Viscosity

Viscosity, dynamic : 200 mPa.s (20 °C)

Explosive properties : Not explosive

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

9.2 Other information

Self-Accelerating decomposition temperature (SADT) : 5 °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.

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Vapours may form explosive mixture with 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

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate: 800 mg/kg
Method: Calculation method

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Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Components:

bis(2-ethylhexyl) peroxydicarbonate:

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 (Rabbit): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Methanol:

Acute oral toxicity : Acute toxicity estimate: 100.0 mg/kg
Method: Converted acute toxicity point estimate
Assessment: The component/mixture is toxic after single ingestion.
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute inhalation toxicity : Acute toxicity estimate: 3 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Expert judgement
Assessment: The component/mixture is toxic after short term inhalation.
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute dermal toxicity : Acute toxicity estimate: 300 mg/kg
Method: Converted acute toxicity point estimate
Assessment: The component/mixture is toxic after single contact with skin.
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

tert-butyl hydroperoxide:

Acute oral toxicity : LD50 (Rat): 560 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): 1.29 mg/l

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Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
Remarks: The value is calculated

Acute dermal toxicity : LD50 (Rabbit): 440 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation

Product:

Remarks : May cause skin irritation in susceptible persons.

Components:

bis(2-ethylhexyl) peroxydicarbonate:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation

Methanol:

Species : Rabbit
Result : No skin irritation

tert-butyl hydroperoxide:

Species : Rabbit
Method : Draize Test
Result : Corrosive, category 1C - where responses occur after exposures between 1 hour and 4 hours and observations up to 14 days.

Serious eye damage/eye irritation

Product:

Remarks : May cause irreversible eye damage.

Components:

bis(2-ethylhexyl) peroxydicarbonate:

Species : Rabbit
Result : Risk of serious damage to eyes.
Remarks : Risk of serious damage to eyes.

Methanol:

Species : Rabbit
Result : No eye irritation

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tert-butyl hydroperoxide:

Species : Rabbit
Method : OECD Test Guideline 405
Result : Irreversible effects on the eye

Respiratory or skin sensitisation

Product:

Remarks : Causes sensitisation.

Components:

bis(2-ethylhexyl) peroxydicarbonate:

Species : Guinea pig
Method : OECD Test Guideline 406
Result : May cause sensitisation by skin contact.

Methanol:

Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Does not cause skin sensitisation.

Assessment : Toxic if swallowed, in contact with skin or if inhaled.

tert-butyl hydroperoxide:

Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : May cause sensitisation by skin contact.

Germ cell mutagenicity

Components:

bis(2-ethylhexyl) peroxydicarbonate:

Genotoxicity in vitro : Method: OECD Test Guideline 471
Result: negative

Method: OECD Test Guideline 487
Result: negative

Genotoxicity in vivo : Remarks: No data available

Methanol:

Genotoxicity in vitro : Method: OECD Test Guideline 471
Result: negative

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Genotoxicity in vivo : Species: Mouse
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: negative

tert-butyl hydroperoxide:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: Directive 67/548/EEC, Annex, B.13/14
Result: positive

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: positive

Test Type: In vitro mammalian cell gene mutation test
Method: Directive 67/548/EEC, Annex, B.17
Result: positive

Genotoxicity in vivo : Test Type: Chromosomal aberration
Species: Mouse (male and female)
Application Route: Intravenous
Method: Directive 67/548/EEC, Annex V, B.12.
Result: negative

Test Type: Rodent dominant lethal test (germ cell) (in vivo)
Species: Mouse (males)
Application Route: Intraperitoneal
Method: Directive 67/548/EEC, Annex, B.22
Result: positive

Test Type: In vivo mammalian alkaline comet assay
Species: Rat (male)
Application Route: inhalation (vapour)
Method: OECD Test Guideline 489
Result: negative

Germ cell mutagenicity- Assessment : Positive result(s) from in vivo somatic cell mutagenicity tests supported by positive results from in vitro mutagenicity assays or chemical structure activity relationship to known germ cell mutagens

Carcinogenicity

Components:

Methanol:

Species : Mouse
Application Route : inhalation (vapour)
Exposure time : 18 Months
Method : OECD Test Guideline 453
Result : negative

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tert-butyl hydroperoxide:

Species : Rat, male and female
Application Route : inhalation (vapour)
NOAEC : 15 mg/l
Method : OECD Test Guideline 451
GLP : yes

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Reproductive toxicity

Components:

Methanol:

Effects on fertility : Species: Rat
Application Route: inhalation (vapour)
Method: OECD Test Guideline 416
Result: negative

tert-butyl hydroperoxide:

Effects on fertility : Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat, male and female
Application Route: Oral
General Toxicity F1: NOAEL: 21 mg/kg body weight
Method: OECD Test Guideline 422
GLP: yes

Effects on foetal development : Test Type: Prenatal development toxicity study (teratogenicity)
Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOAEL: 35 mg/kg body weight
Developmental Toxicity: NOAEL: \geq 35 mg/kg body weight
Method: OECD Test Guideline 414
GLP: yes

STOT - single exposure

Components:

Methanol:

Assessment : Causes damage to organs.

tert-butyl hydroperoxide:

Exposure routes : Inhalation
Assessment : May cause respiratory irritation.

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STOT - repeated exposure

Components:

tert-butyl hydroperoxide:

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

Remarks : Not classified due to data which are conclusive although insufficient for classification.

Repeated dose toxicity

Components:

Methanol:

Species : Rat
NOAEL : 1.06 mg/l
Application Route : inhalation (vapour)
Exposure time : 90 d

Species : Monkey
LOAEL : 2,340 mg/kg
Application Route : Oral
Exposure time : 3 d

tert-butyl hydroperoxide:

Species : Rat, male and female
NOAEL : 21 mg/kg bw/day
Application Route : Oral
Method : OECD Test Guideline 422
GLP : yes

Species : Rat, male and female
NOAEC : 22.2 mg/m³
Application Route : inhalation (vapour)
Method : OECD Test Guideline 412
GLP : yes

Aspiration toxicity

Components:

tert-butyl hydroperoxide:

Not classified due to data which are conclusive although insufficient for classification.

Further information

Product:

Remarks : Solvents may degrease the skin.

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SECTION 12: Ecological information

12.1 Toxicity

Components:

bis(2-ethylhexyl) peroxydicarbonate:

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 28.3 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 9.4 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
- Toxicity to microorganisms : EC10 (Bacteria): > 20 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 1.6 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Methanol:

- Toxicity to fish : NOEC (Danio rerio (zebra fish)): 3,950 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 212
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 18,260 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (Scenedesmus quadricauda (Green algae)): ca. 22,000 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201
- Toxicity to microorganisms : IC50 : > 1,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
- Toxicity to fish (Chronic toxicity) : NOEC: 15,800 mg/l
Exposure time: 200 h
Species: Oryzias latipes (Orange-red killifish)

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 208 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.

tert-butyl hydroperoxide:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 29.61 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 14.07 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 1.47 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.22 mg/l
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Bacteria): 17 mg/l
Method: OECD Test Guideline 209

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

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

12.2 Persistence and degradability

Components:

bis(2-ethylhexyl) peroxydicarbonate:

Biodegradability : Result: rapidly biodegradable
Method: OECD Test Guideline 301B

Methanol:

Biodegradability : Result: Readily biodegradable.

tert-butyl hydroperoxide:

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301B

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Result: Not readily biodegradable.
Method: OECD Test Guideline 301D

12.3 Bioaccumulative potential

Components:

bis(2-ethylhexyl) peroxydicarbonate:

Partition coefficient: n-
octanol/water : log Pow: 2.73

Methanol:

Partition coefficient: n-
octanol/water : log Pow: -0.77

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 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : 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.
Dispose of wastes in an approved waste disposal facility.

Contaminated packaging : 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.
Dispose of in accordance with local regulations.

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SECTION 14: Transport information

14.1 UN number

ADR	:	UN 3119
RID	:	UN 3119 Not permitted for transport
IMDG	:	UN 3119
IATA	:	UN 3119 Not permitted for transport

14.2 UN proper shipping name

ADR	:	ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED (DI-(2-ETHYLHEXYL) PEROXYDICARBONATE)
RID	:	ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED Not permitted for transport
IMDG	:	ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED (DI-(2-ETHYLHEXYL)PEROXYDICARBONATE)
IATA	:	ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED Not permitted for transport

14.3 Transport hazard class(es)

ADR	:	5.2
RID	:	Not permitted for transport
IMDG	:	5.2
IATA	:	Not permitted for transport

14.4 Packing group

ADR	:	
Packing group	:	Not assigned by regulation
Classification Code	:	P2
Hazard Identification Number	:	539
Labels	:	5.2
Tunnel restriction code	:	(D)
RID	:	Not permitted for transport
IMDG	:	
Packing group	:	Not assigned by regulation
Labels	:	5.2
EmS Code	:	F-F, S-R

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IATA (Cargo) : Not permitted for transport

IATA (Passenger) : Not permitted for transport

14.5 Environmental hazards

ADR

Environmentally hazardous : no

RID : Not permitted for transport

IMDG

Marine pollutant : no

14.6 Special precautions for user

Additional advice

Temperature controlled transport.:

Control temperature : -15 °C

Emergency temperature : -5 °C

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 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Relevant EU provisions transposed through retained EU law

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Conditions of restriction for the following entries should be considered: Number on list 3

Methanol (Number on list 69)

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Not applicable

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

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

		Quantity 1	Quantity 2
H3	STOT SPECIFIC TARGET ORGAN TOXICITY – SINGLE EXPOSURE	50 t	200 t
P6b	SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES	50 t	200 t

Other regulations:

Gefahrgruppe nach DGUV 13 Vorschrift 13 (bisher BGV B4): III (German regulatory requirements)

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

DSL (CA)	: All components of this product are on the Canadian DSL
AICS (AU)	: On the inventory, or in compliance with the inventory
ENCS (JP)	: On the inventory, or in compliance with the inventory
ISHL (JP)	: On the inventory, or in compliance with the inventory
KECI (KR)	: 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
TCSI (TW)	: On the inventory, or in compliance with the inventory
TSCA (US)	: On TSCA Inventory

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.
For further information see eSDS.

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SECTION 16: Other information

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.

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:

Flam. Liq. 3	H226
Org. Perox. F	H242
Acute Tox. 4	H302
Skin Irrit. 2	H315
Eye Dam. 1	H318
Skin Sens. 1	H317
STOT SE 1	H370

Classification procedure:

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

Full text of H-Statements

H225	: Highly flammable liquid and vapour.
H226	: Flammable liquid and vapour.
H242	: Heating may cause a fire.
H301	: Toxic if swallowed.
H302	: Harmful if swallowed.
H311	: Toxic in contact with skin.
H314	: Causes severe skin burns and eye damage.
H315	: Causes skin irritation.
H317	: May cause an allergic skin reaction.
H318	: Causes serious eye damage.
H330	: Fatal if inhaled.
H331	: Toxic if inhaled.
H335	: May cause respiratory irritation.
H341	: Suspected of causing genetic defects.
H351	: Suspected of causing cancer.
H370	: Causes damage to organs.
H411	: Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Chronic	: Long-term (chronic) aquatic hazard

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Carc.	: Carcinogenicity
Eye Dam.	: Serious eye damage
Flam. Liq.	: Flammable liquids
Muta.	: Germ cell mutagenicity
Org. Perox.	: Organic peroxides
Skin Corr.	: Skin corrosion
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT SE	: Specific target organ toxicity - single exposure
2006/15/EC	: Europe. Indicative occupational exposure limit values
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
2006/15/EC / TWA	: Limit Value - eight hours
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL	: Short-term exposure limit (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - 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; 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; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not

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to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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