

# SAFETY DATA SHEET

## TBPEH-LA-M3



Version	Revision Date:	SDS Number:	Date of last issue: 29.03.2023
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### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Trade name : TBPEH-LA-M3

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

Use of the Sub- : polymerisation initiators  
stance/Mixture

#### 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 : contact@united-in.com  
responsible for the SDS

#### 1.4 Emergency telephone number

+44 1235 239670

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### 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)**

Organic peroxides, Type C H242: Heating may cause a fire.

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.

Reproductive toxicity, Category 1B H360F: May damage fertility.

Short-term (acute) aquatic hazard, Category 1 H400: Very toxic to aquatic life.

Long-term (chronic) aquatic hazard, Category 2 H411: Toxic to aquatic life with long lasting effects.

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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 :  
H242 Heating may cause a fire.  
H317 May cause an allergic skin reaction.  
H360F May damage fertility.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :  
**Prevention:**  
P220 Keep/Store away from clothing/ strong acids, bases, heavy metal salts and other reducing substances /combustible materials.  
P233 Keep container tightly closed.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P308 + P313 IF exposed or concerned: Get 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:**

P411 Store at temperatures not exceeding 20 °C.

**Disposal:**

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

Hazardous components which must be listed on the label:  
tert-Butyl 2-ethylperoxyhexanoate (CAS-No. 3006-82-4)

### 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.

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### 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)
tert-Butyl 2-ethylperoxyhexanoate	3006-82-4 221-110-7 01-2119498310-40-0000	Org. Perox. C; H242 Skin Sens. 1; H317 Repr. 1B; H360F Aquatic Acute 1; H400 Aquatic Chronic 2; H411  M-Factor (Acute aquatic toxicity): 1	>= 85 - < 90
Substances with a workplace exposure limit :			
2,6-di-tert-butyl-p-cresol	128-37-0 204-881-4 01-2119555270-46	Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 10 - < 15

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.  
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 : If unconscious, place in recovery position and seek medical

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- advice.  
If symptoms persist, call a physician.  
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 : 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 : Keep respiratory tract clear.  
Call a physician immediately.

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

- Risks : May cause an allergic skin reaction.  
May damage fertility.

### 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

### 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.

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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 : 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.  
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.

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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.

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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                         | : | Do not breathe vapours/dust.<br>Avoid exposure - obtain special instructions before use.<br>Avoid contact with skin and eyes.<br>Avoid formation of aerosol.<br>Take precautionary measures against static discharges.<br>Never return any product to the container from which it was originally removed.<br>Provide sufficient air exchange and/or exhaust in work rooms.<br>Avoid confinement.<br>Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.<br>Smoking, eating and drinking should be prohibited in the application area.<br>Wash thoroughly after handling.<br>For personal protection see section 8.<br>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.<br>Protect from contamination. |
| Advice on protection against fire and explosion | : | 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 | : | Avoid impurities (e.g. rust, dust, ash), risk of decomposition. |
|--------------------------|---|---|

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areas and containers      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.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
2,6-di-tert-butyl-p-cresol	128-37-0	TWA	10 mg/m <sup>3</sup>	GB EH40

#### Derived No Effect Level (DNEL):

Substance name	End Use	Exposure routes	Potential health effects	Value
tert-Butyl 2-ethylperoxyhexanoate	Workers	Inhalation	Long-term systemic effects	9.8 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	5.6 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	1.74 mg/m <sup>3</sup>
	Consumers	Oral	Long-term systemic effects	1 mg/kg bw/day
2,6-di-tert-butyl-p-cresol	Workers	Inhalation	Long-term systemic effects	4.4 mg/m <sup>3</sup>
	Workers	Inhalation	Systemic effects, Short-term exposure	18 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	4.7 mg/kg bw/day
	Workers	Skin contact	Systemic effects,	19 mg/kg

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			Short-term exposure	bw/day
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### Predicted No Effect Concentration (PNEC):

Substance name	Environmental Compartment	Value
tert-Butyl 2-ethylperoxyhexanoate	Fresh water	0.002 mg/l
	Marine water	0 mg/l
	Sewage treatment plant	0.64 mg/l
	Fresh water sediment	0.622 mg/kg dry weight (d.w.)
	Marine sediment	0.062 mg/kg dry weight (d.w.)
2,6-di-tert-butyl-p-cresol	Fresh water	0.0023 mg/l
	Intermittent use/release	0.004 mg/l
	Marine water	0.00023 mg/l
	Sewage treatment plant	100 mg/l
	Fresh water sediment	3.4 mg/kg dry weight (d.w.)
	Marine sediment	0.34 mg/kg dry weight (d.w.)
	Soil	0.24 mg/kg dry weight (d.w.)
	Secondary poisoning	16.7 mg/kg

## 8.2 Exposure controls

### Engineering measures

Minimize workplace exposure concentrations.

### Personal protective equipment

Eye/face 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 : 480 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 protec-



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tive 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 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.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- Appearance : liquid
- Colour : light yellow
- Odour : ester-like
- Odour Threshold : not determined
- pH : No data available
- Melting point/range : not determined
- Boiling point/boiling range : Decomposition: Decomposes below the boiling point.
- Flash point : 88 °C  
Method: ISO 3679
- Evaporation rate : No data available
- Flammability (solid, gas) : Not applicable

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Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	not determined
Relative density	:	not determined
Density	:	0.9 g/cm <sup>3</sup> (20 °C)
Solubility(ies)	:	
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	not determined
	:	Decomposition
Viscosity	:	
Viscosity, dynamic	:	4.5 mPa.s (20 °C)
Viscosity, kinematic	:	not determined
Explosive properties	:	Not explosive In use, may form flammable/explosive vapour-air mixture.
Oxidizing properties	:	The substance or mixture is not classified as oxidizing. Organic peroxide

### 9.2 Other information

Self-Accelerating decomposition temperature (SADT)	:	45 °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.
Flammability (liquids)	:	Organic peroxide
Self-heating substances	:	The substance or mixture is not classified as self heating.
Refractive index	:	1.435 at 20 °C
Self-ignition	:	The substance or mixture is not classified as pyrophoric.

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### 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

Not classified based on available information.

##### Components:

##### **tert-Butyl 2-ethylperoxyhexanoate:**

Acute oral toxicity	: LD50 (Rat): $\geq 10,000$ mg/kg Method: OECD Test Guideline 401 Assessment: The substance or mixture has no acute oral toxicity Remarks: No mortality observed at this dose.
Acute inhalation toxicity	: LC50 (Rat): $> 42.2$ mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	: LD50 (Rabbit): 16,820 mg/kg Method: OECD Test Guideline 402

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### 2,6-di-tert-butyl-p-cresol:

Acute oral toxicity : LD50 (Rat, male and female): > 2,930 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity  
Remarks: No mortality observed at this dose.

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: No mortality observed at this dose.

### Skin corrosion/irritation

Not classified based on available information.

### Product:

Remarks : May cause skin irritation in susceptible persons.

### Components:

#### tert-Butyl 2-ethylperoxyhexanoate:

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation

#### 2,6-di-tert-butyl-p-cresol:

Species : Rabbit  
Result : No skin irritation  
Remarks : Based on available data, the classification criteria are not met.

### Serious eye damage/eye irritation

Not classified based on available information.

### Product:

Remarks : Vapours may cause irritation to the eyes, respiratory system and the skin.

### Components:

#### tert-Butyl 2-ethylperoxyhexanoate:

Species : Rabbit  
Method : OECD Test Guideline 405  
Result : No eye irritation

#### 2,6-di-tert-butyl-p-cresol:

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Species : Rabbit  
Result : No eye irritation  
Remarks : Based on available data, the classification criteria are not met.

### Respiratory or skin sensitisation

#### Skin sensitisation

May cause an allergic skin reaction.

#### Respiratory sensitisation

Not classified based on available information.

#### Product:

Remarks : Causes sensitisation.

#### Components:

##### **tert-Butyl 2-ethylperoxyhexanoate:**

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

##### **2,6-di-tert-butyl-p-cresol:**

Exposure routes : Skin contact  
Species : Humans  
Remarks : No known sensitising effect.

### Germ cell mutagenicity

Not classified based on available information.

#### Components:

##### **tert-Butyl 2-ethylperoxyhexanoate:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: positive

Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: positive

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

##### **2,6-di-tert-butyl-p-cresol:**

Genotoxicity in vitro : Test Type: Ames test

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Test system: Salmonella typhimurium  
Metabolic activation: Metabolic activation  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Test system: rat hepatocytes  
Result: negative

Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster ovary cells  
Metabolic activation: Metabolic activation  
Result: negative

Genotoxicity in vivo : Test Type: Cytogenetic assay  
Species: Rat (male)  
Cell type: Bone marrow  
Application Route: Oral  
Result: negative

Test Type: Micronucleus test  
Species: Mouse (male and female)  
Cell type: Bone marrow  
Application Route: Intraperitoneal injection  
Result: negative

### Carcinogenicity

Not classified based on available information.

### Components:

#### **tert-Butyl 2-ethylperoxyhexanoate:**

Remarks : This information is not available.

#### **2,6-di-tert-butyl-p-cresol:**

Species : Rat, male and female  
: 247 mg/kg bw/day  
Target Organs : Liver

### Reproductive toxicity

May damage fertility.

### Components:

#### **tert-Butyl 2-ethylperoxyhexanoate:**

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test  
Species: Rat  
Application Route: Oral  
General Toxicity - Parent: NOEL: 300 mg/kg body weight

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Method: OECD Test Guideline 421

Test Type: One-generation reproduction toxicity study

Species: Rat

Application Route: Oral

General Toxicity - Parent: NOAEL: 300 mg/kg body weight

General Toxicity F1: NOAEL: 300 mg/kg body weight

Fertility: NOAEL Mating/Fertility: 100 mg/kg body weight

Early Embryonic Development: NOAEL F2: 300 mg/kg body weight

Method: OECD Test Guideline 443

GLP: yes

Effects on foetal development

: Species: Rabbit

Application Route: Oral

General Toxicity Maternal: NOAEL: 30 mg/kg body weight

Developmental Toxicity: NOAEL: 100 mg/kg body weight

Method: OECD Test Guideline 414

Species: Rat

Application Route: Oral

General Toxicity Maternal: NOEL: 400 mg/kg body weight

Developmental Toxicity: NOEL: 400 mg/kg body weight

Method: OECD Test Guideline 414

Reproductive toxicity - Assessment

: Clear evidence of adverse effects on sexual function and fertility, based on animal experiments.

### 2,6-di-tert-butyl-p-cresol:

Effects on fertility

: Test Type: Two-generation study

Species: Rat, male and female

Application Route: Oral

Fertility: NOAEL: 500 mg/kg body weight

Effects on foetal development

: Test Type: Two-generation study

Species: Rat, male and female

General Toxicity Maternal: NOAEL: 100 mg/kg body weight

Developmental Toxicity: NOAEL: 100 mg/kg body weight

### STOT - single exposure

Not classified based on available information.

### Components:

#### tert-Butyl 2-ethylperoxyhexanoate:

Remarks : No data available

### STOT - repeated exposure

Not classified based on available information.

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### Components:

#### **tert-Butyl 2-ethylperoxyhexanoate:**

Remarks : No data available

### **Repeated dose toxicity**

### Components:

#### **tert-Butyl 2-ethylperoxyhexanoate:**

Species : Rat, male  
NOAEL : 316 mg/kg  
Exposure time : 28 d  
Method : OECD Test Guideline 407

Species : Rat, female  
NOAEL : 100 mg/kg  
Exposure time : 28 d  
Method : OECD Test Guideline 407

Species : Rat  
NOAEL : 450 mg/kg  
Method : OECD Test Guideline 408

#### **2,6-di-tert-butyl-p-cresol:**

Species : Rat, male  
NOAEL : 25 mg/kg  
Application Route : Oral  
Exposure time : 35 - 56 d  
Target Organs : Liver  
Symptoms : alteration in liver enzymes

### **Aspiration toxicity**

Not classified based on available information.

### **Further information**

### Product:

Remarks : No data available

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## SECTION 12: Ecological information

### 12.1 Toxicity

### Components:

#### **tert-Butyl 2-ethylperoxyhexanoate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 8.66 mg/l



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	Exposure time: 96 h Method: OECD Test Guideline 203
	NOEC (Poecilia reticulata (guppy)): 2.10 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): 7.5 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: EC50 (Raphidocelis subcapitata (freshwater green alga)): 0.44 mg/l Exposure time: 72 h Test Type: Growth inhibition Method: OECD Test Guideline 201 GLP: yes
	NOEC (Raphidocelis subcapitata (freshwater green alga)): 0.018 mg/l Exposure time: 72 h Test Type: Growth inhibition Method: OECD Test Guideline 201 GLP: yes
M-Factor (Acute aquatic toxicity)	: 1
Toxicity to microorganisms	: EC50 : 64 mg/l Exposure time: 0.5 h Method: OECD Test Guideline 209
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC: 0.45 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211
	LOEC: 0.87 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

### Ecotoxicology Assessment

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

### 2,6-di-tert-butyl-p-cresol:

Toxicity to fish	: NOEC (Oryzias latipes (Orange-red killifish)): 0.053 mg/l
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Exposure time: 42 d

LC50 (Danio rerio (zebra fish)): > 0.57 mg/l

Exposure time: 96 h

Method: Regulation (EC) No. 440/2008, Annex, C.1

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.48 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 0.4 mg/l  
Exposure time: 72 h  
Test Type: Growth inhibition  
Method: Regulation (EC) No. 440/2008, Annex, C.3

NOEC (Desmodesmus subspicatus (green algae)): 0.4 mg/l

Exposure time: 72 h

Test Type: Growth inhibition

Method: Regulation (EC) No. 440/2008, Annex, C.3

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 : > 10,000 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition of activated sludge  
Method: OECD Test Guideline 209

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.023 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity) : 1

### 12.2 Persistence and degradability

#### Components:

##### **tert-Butyl 2-ethylperoxyhexanoate:**

Biodegradability : Result: rapidly biodegradable  
Biodegradation: 65 %  
Related to: Theoretical oxygen demand  
Exposure time: 28 d  
Method: OECD Test Guideline 301D  
GLP: yes  
Remarks: According to the results of tests of biodegradability this product is considered as being readily biodegradable.

##### **2,6-di-tert-butyl-p-cresol:**

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Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 4.5 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301

### 12.3 Bioaccumulative potential

#### Components:

##### **tert-Butyl 2-ethylperoxyhexanoate:**

Bioaccumulation : Bioconcentration factor (BCF): 202.4  
Method: QSAR

##### **2,6-di-tert-butyl-p-cresol:**

Bioaccumulation : Bioconcentration factor (BCF): > 2,000

Partition coefficient: n-octanol/water : log Pow: 5.1

### 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:

Endocrine disrupting potential : 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.

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

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### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

- |                        |   |
|------------------------|---|
| Product                | : The product should not be allowed to enter drains, water courses or the soil.<br>Do not contaminate ponds, waterways or ditches with chemical or used container.<br>Dispose of wastes in an approved waste disposal facility. |
| Contaminated packaging | : Empty remaining contents.<br>Dispose of as unused product.<br>Do not re-use empty containers.<br>Do not burn, or use a cutting torch on, the empty drum.<br>Dispose of in accordance with local regulations.                  |

### SECTION 14: Transport information

#### 14.1 UN number

- |      |  |
|------|--|
| ADR  | : UN 3113                                |
| RID  | : UN 3113<br>Not permitted for transport |
| IMDG | : UN 3113                                |
| IATA | : UN 3113<br>Not permitted for transport |

#### 14.2 UN proper shipping name

- |      |   |
|------|---|
| ADR  | : ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED<br>(tert-BUTYL PEROXY-2-ETHYLHEXANOATE) |
| RID  | : ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED<br>Not permitted for transport          |
| IMDG | : ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED<br>(tert-BUTYL PEROXY-2-ETHYLHEXANOATE) |
| IATA | : ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED<br>Not permitted for transport          |

#### 14.3 Transport hazard class(es)

- |      |                               |
|------|-------------------------------|
| ADR  | : 5.2                         |
| RID  | : Not permitted for transport |
| IMDG | : 5.2                         |

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**IATA** : Not permitted for transport

### 14.4 Packing group

#### ADR

Packing group : Not assigned by regulation  
Classification Code : P2  
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

**IATA (Cargo)** : Not permitted for transport

**IATA (Passenger)** : Not permitted for transport

### 14.5 Environmental hazards

#### ADR

Environmentally hazardous : yes

**RID** : Not permitted for transport

#### IMDG

Marine pollutant : yes

### 14.6 Special precautions for user

#### Additional advice

Temperature controlled transport.:  
Control temperature : 20 °C  
Emergency temperature : 25 °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.

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## 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

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : 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
P6b	SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES	50 t	200 t
E1	ENVIRONMENTAL HAZARDS	100 t	200 t

### Other regulations:

Gefahrgruppe nach DGUV 13 Vorschrift 13 (bisher BGV B4): Ib, S+ (German regulatory requirements)

Produkt unterliegt dem Sprengstoffgesetz (SprengG; Stoffgruppe C). (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
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
TECI (TH)	: On the inventory, or in compliance with the inventory

### 15.2 Chemical safety assessment

This information is not available.

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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:

Org. Perox. C	H242
Skin Sens. 1	H317
Repr. 1B	H360F
Aquatic Acute 1	H400
Aquatic Chronic 2	H411

#### Classification procedure:

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

#### Full text of H-Statements

H242	: Heating may cause a fire.
H317	: May cause an allergic skin reaction.
H360F	: May damage fertility.
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
Org. Perox.	: Organic peroxides
Repr.	: Reproductive toxicity
Skin Sens.	: Skin sensitisation
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - 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

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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; TECl - 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 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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