

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

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

#### 1.1 Product identifier

Trade name : TMCH-90-AL

#### 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)

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

Aspiration hazard, Category 1 H304: May be fatal if swallowed and enters air-ways.

Long-term (chronic) aquatic hazard, Category 4 H413: May cause long lasting harmful effects to aquatic life.

#### 2.2 Label elements

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

Hazard pictograms :



Signal word : Danger

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version 2.1      Revision Date: 08.03.2023      SDS Number: 600000000196      Date of last issue: 25.11.2022  
Date of first issue: 14.08.2020

---

Hazard statements : H242 Heating may cause a fire.  
H304 May be fatal if swallowed and enters airways.  
H413 May cause long lasting harmful effects to aquatic life.

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.  
P235 Keep cool.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P331 Do NOT induce vomiting.

P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

**Disposal:**

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

Hazardous components which must be listed on the label:  
2,2,4,6,6-pentamethylheptane (CAS-No. 13475-82-6)

### 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: 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.

---

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Chemical nature : Organic Peroxide  
Liquid mixture

#### Components

Chemical name	CAS-No.	Classification	Concentration
---------------	---------	----------------	---------------

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

## TMCH-90-AL



Version 2.1      Revision Date: 08.03.2023      SDS Number: 600000000196      Date of last issue: 25.11.2022  
Date of first issue: 14.08.2020

	EC-No. Index-No. Registration number		(% w/w)
di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide	6731-36-8 229-782-3 01-2119735694-30-0002	Org. Perox. B; H241 Aquatic Chronic 4; H413	>= 85 - < 90
2,2,4,6,6-pentamethylheptane	13475-82-6 236-757-0 01-2119490725-29	Flam. Liq. 3; H226 Asp. Tox. 1; H304 Aquatic Chronic 4; H413 EUH066	>= 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.  
Symptoms of poisoning may appear several hours later.  
No artificial respiration, mouth-to-mouth or mouth to nose. Use suitable instruments/apparatus.  
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 : 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.  
Do NOT induce vomiting.

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

Call a physician immediately.  
Contact a poison control center.

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

Risks : May be fatal if swallowed and enters airways.

### 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 (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.  
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.

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

## TMCH-90-AL



Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

---

### SECTION 6: Accidental release measures

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

Personal precautions : Use personal protective equipment.  
Ensure adequate ventilation.  
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.  
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

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

### CONTROLS/PERSONAL PROTECTION section.

- Advice on safe handling : Do not swallow.  
Do not breathe vapours/dust.  
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.  
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 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 : < 30 °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.

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version 2.1      Revision Date: 08.03.2023      SDS Number: 600000000196      Date of last issue: 25.11.2022  
Date of first issue: 14.08.2020

### SECTION 8: Exposure controls/personal protection

#### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

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

Substance name	End Use	Exposure routes	Potential health effects	Value
di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide	Workers	Inhalation	Long-term systemic effects	1.4 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	2 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide	Fresh water sediment	0.102 mg/kg dry weight (d.w.)
	Marine sediment	0.01 mg/kg dry weight (d.w.)
	Sewage treatment plant	100 mg/l
	Soil	5.29 mg/kg dry weight (d.w.)

#### 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.

Equipment should conform to EN 166

##### Hand protection

Material : butyl-rubber  
Break through time : < 30 min  
Glove thickness : 0.47 mm  
Directive : Equipment should conform to EN 374

Material : Nitrile rubber  
Break through time : 480 min

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

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.
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	:	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

Physical state	:	liquid
Colour	:	colourless
Odour	:	musty
Odour Threshold	:	not determined
Melting point/range	:	< -25 °C
Boiling point/boiling range	:	Decomposition: Decomposes below the boiling point.



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

Flammability : Not applicable

Upper explosion limit / Upper flammability limit : Upper explosion limit  
4 %(V)  
(for a component of this mixture)

Lower explosion limit / Lower flammability limit : Lower explosion limit  
0.5 %(V)  
(for a component of this mixture)

Flash point : 63 °C  
Method: ISO 3679, open cup

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 : 18 mPa.s (20 °C)

    Viscosity, kinematic : not determined

Solubility(ies)

    Water solubility : insoluble

Partition coefficient: n-octanol/water : Not applicable

Vapour pressure : < 0.09 hPa (20 °C)

Relative density : not determined

Density : 0.895 g/cm<sup>3</sup> (20 °C)

Relative vapour density : not determined

### 9.2 Other information

Explosives : Not explosive  
In use, may form flammable/explosive vapour-air mixture.

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

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

Flammability (liquids)	:	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
Evaporation rate	:	No data available
Refractive index	:	1.438 at 20 °C

---

## 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

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

---

### SECTION 11: Toxicological information

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

##### Acute toxicity

Not classified based on available information.

##### Components:

###### **di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 5.6 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 436  
Assessment: The substance or mixture has no acute inhalation 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

###### **2,2,4,6,6-pentamethylheptane:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
Assessment: The substance or mixture has no acute oral toxicity  
Remarks: Based on data from similar materials

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : LD50 Dermal (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402

##### **Skin corrosion/irritation**

Not classified based on available information.

##### Components:

###### **di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide:**

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

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

### **2,2,4,6,6-pentamethylheptane:**

Result : Repeated exposure may cause skin dryness or cracking.

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

Not classified based on available information.

### **Components:**

#### **di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide:**

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

### **2,2,4,6,6-pentamethylheptane:**

Result : No eye irritation

### **Respiratory or skin sensitisation**

#### **Skin sensitisation**

Not classified based on available information.

#### **Respiratory sensitisation**

Not classified based on available information.

### **Components:**

#### **di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide:**

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

### **Germ cell mutagenicity**

Not classified based on available information.

### **Components:**

#### **di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide:**

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

Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

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

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

Genotoxicity in vivo : Remarks: No data available

### **2,2,4,6,6-pentamethylheptane:**

Germ cell mutagenicity- Assessment : No known effect.

### **Carcinogenicity**

Not classified based on available information.

### **Components:**

#### **di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide:**

Species : Mouse  
Application Route : Oral  
Result : negative

### **2,2,4,6,6-pentamethylheptane:**

Carcinogenicity - Assessment : No known effect.

### **Reproductive toxicity**

Not classified based on available information.

### **Components:**

#### **di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide:**

Effects on fertility : Remarks: No data available

Effects on foetal development : Species: Rat  
Application Route: oral (gavage)  
General Toxicity Maternal: NOAEL: 1,000 mg/kg body weight  
Method: OECD Test Guideline 414

### **2,2,4,6,6-pentamethylheptane:**

Reproductive toxicity - Assessment : No known effect.

### **STOT - single exposure**

Not classified based on available information.

### **STOT - repeated exposure**

Not classified based on available information.

### **Aspiration toxicity**

May be fatal if swallowed and enters airways.

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

## TMCH-90-AL



Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

### Components:

#### **2,2,4,6,6-pentamethylheptane:**

May be fatal if swallowed and enters airways.

### 11.2 Information on other hazards

#### **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 levels of 0.1% or higher.

#### **Further information**

##### Product:

Remarks : Solvents may degrease the skin.

##### Components:

#### **2,2,4,6,6-pentamethylheptane:**

Remarks : May cause headache and dizziness.

---

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

##### **di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide:**

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 0.043 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203  
Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 1 mg/l  
aquatic invertebrates : Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: No toxicity at the limit of solubility

Toxicity to algae/aquatic : EC10 (Pseudokirchneriella subcapitata (green algae)): 0.11  
plants : mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: No toxicity at the limit of solubility

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

Toxicity to microorganisms : EC50 (Bacteria): > 1,000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.0128 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211  
Remarks: No toxicity at the limit of solubility

### Ecotoxicology Assessment

Chronic aquatic toxicity : May cause long lasting harmful effects to aquatic life.

### 2,2,4,6,6-pentamethylheptane:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): > 0.04 mg/l  
Exposure time: 48 h  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae/aquatic plants : IC50 (algae): > 0.04 mg/l  
Exposure time: 72 h  
Remarks: Information given is based on data obtained from similar substances.

### Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : May cause long lasting harmful effects to aquatic life.

## 12.2 Persistence and degradability

### Components:

#### di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide:

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

#### 2,2,4,6,6-pentamethylheptane:

Biodegradability : Result: Not readily biodegradable.

## 12.3 Bioaccumulative potential

### Components:

#### di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide:

Bioaccumulation : Bioconcentration factor (BCF): 443

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

Partition coefficient: n-octanol/water : log Pow: 6.53

### 2,2,4,6,6-pentamethylheptane:

Partition coefficient: n-octanol/water : log Pow: 5.94 - 6.16 (20 °C)  
Remarks: The value is calculated

### 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 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.  
May cause long lasting harmful effects 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.



# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

Do not burn, or use a cutting torch on, the empty drum.  
Dispose of in accordance with local regulations.

---

### SECTION 14: Transport information

#### 14.1 UN number or ID number

ADR	:	UN 3103
RID	:	UN 3103
IMDG	:	UN 3103
IATA	:	UN 3103

#### 14.2 UN proper shipping name

ADR	:	ORGANIC PEROXIDE TYPE C, LIQUID (1,1-DI-(tert-BUTYLPEROXY)-3,3,5- TRIMETHYLCYCLOHEXANE)
RID	:	ORGANIC PEROXIDE TYPE C, LIQUID (1,1-DI-(tert-BUTYLPEROXY)-3,3,5- TRIMETHYLCYCLOHEXANE)
IMDG	:	ORGANIC PEROXIDE TYPE C, LIQUID (1,1-DI-(tert-BUTYLPEROXY)-3,3,5- TRIMETHYLCYCLOHEXANE)
IATA	:	Organic peroxide type C, liquid (1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane)

#### 14.3 Transport hazard class(es)

ADR	:	5.2
RID	:	5.2
IMDG	:	5.2
IATA	:	5.2

#### 14.4 Packing group

<b>ADR</b>		
Packing group	:	Not assigned by regulation
Classification Code	:	P1
Labels	:	5.2
Tunnel restriction code	:	(D)
<b>RID</b>		
Packing group	:	Not assigned by regulation
Classification Code	:	P1
Hazard Identification Number	:	539
Labels	:	5.2
<b>IMDG</b>		

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

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 (passenger aircraft) : 570  
Packing group : Not assigned by regulation  
Labels : Organic Peroxides, Keep Away From Heat

## 14.5 Environmental hazards

### ADR

Environmentally hazardous : no

### RID

Environmentally hazardous : no

### IMDG

Marine pollutant : no

## 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.

---

## 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, preparations and articles (Annex XVII) : Conditions of restriction for the following entries should be considered: Number on list 3

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

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006



## TMCH-90-AL

Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

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

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	Quantity 1 50 t	Quantity 2 200 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

DSL (CA) : All components of this product are on the Canadian DSL

PICCS (PH) : On the inventory, or in compliance with the inventory

IECSC (CN) : On the inventory, or in compliance with the inventory

### 15.2 Chemical safety assessment

This information is not available.

---

## SECTION 16: Other information

### Full text of H-Statements

H226 : Flammable liquid and vapour.

H241 : Heating may cause a fire or explosion.

H304 : May be fatal if swallowed and enters airways.

H413 : May cause long lasting harmful effects to aquatic life.

EUH066 : Repeated exposure may cause skin dryness or cracking.

### Full text of other abbreviations

Aquatic Chronic : Long-term (chronic) aquatic hazard

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

## TMCH-90-AL



Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

Asp. Tox. : Aspiration hazard  
Flam. Liq. : Flammable liquids  
Org. Perox. : Organic peroxides

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; 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.

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

### Classification procedure:

Based on product data or assessment

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

## TMCH-90-AL



Version	Revision Date:	SDS Number:	Date of last issue: 25.11.2022
2.1	08.03.2023	600000000196	Date of first issue: 14.08.2020

---

Asp. Tox. 1	H304	Calculation method
Aquatic Chronic 4	H413	Calculation method

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.

IE / EN