

# SAFETY DATA SHEET

## NOROX<sup>®</sup> 510-80-AL3



Version 2.2      Revision Date: 11/30/2022      SDS Number: 600000000672      Date of last issue: 06/24/2021  
Date of first issue: 09/27/2019

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### SECTION 1. IDENTIFICATION

Trade name : NOROX<sup>®</sup> 510-80-AL3

Other means of identification : No data available

CAS-No. : 15667-10-4

#### Manufacturer or supplier's details

Company name of supplier : United Initiators, Inc.

Address : 555 Garden Street  
Elyria OH 44035 USA

United Initiators Canada Ltd.  
2147 PG Pulp Mill Road  
Prince George, BC-V2N 2S6 CANADA

Telephone : +1-440-323-3112

Telefax : +1-440-323-2659

Emergency telephone : CHEMTREC US (24h): +1-800-424-9300  
CHEMTREC WORLD (24h): +1-703-527-3887  
CANUTEC (24h): 1-613-996-6666

For Transportation Incidents : TERRAPURE EMERGENCY RESPONSE SERVICES (24h):  
1-800-567-7455

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

#### Recommended use of the chemical and restrictions on use

Recommended use : Hardener

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the Hazardous Products Regulations

Flammable liquids : Category 3

Organic peroxides : Type C

Skin irritation : Category 2

Aspiration hazard : Category 1

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### GHS label elements

Hazard pictograms

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Signal Word

: Danger

Hazard Statements

: H226 Flammable liquid and vapor.  
H242 Heating may cause a fire.  
H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.

Precautionary Statements

: **Prevention:**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 Keep container tightly closed.  
P234 Keep only in original packaging.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
P242 Use non-sparking tools.  
P243 Take action to prevent static discharges.  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**Response:**  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.  
P331 Do NOT induce vomiting.  
P332 + P313 If skin irritation 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.  
P405 Store locked up.  
P410 Protect from sunlight.  
P411 Store at temperatures not exceeding < 30 °C/ < 86 °F.  
P420 Store separately.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

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### Other hazards

None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance  
Chemical nature : Organic Peroxide  
Substance name : 1,1-Di(tert-amylperoxy)cyclohexane  
CAS-No. : 15667-10-4  
Common Name/Synonym : No data available

### Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
1,1-Di(tert-amylperoxy)cyclohexane	1,1-Di(tert-amylperoxy)cyclohexane	15667-10-4	$\geq 75 - < 80$ *
Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics)	Naphtha (Petroleum), hydro-treated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics)	64742-48-9	$\geq 15 - < 20$ *
tert-pentyl hydroperoxide	tert-pentyl hydroperoxide	3425-61-4	$\geq 0.1 - < 1$ *

\* Actual concentration or concentration range is withheld as a trade secret

### SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.  
Show this material 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.

If inhaled : Call a physician or poison control center 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

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- 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.  
Do NOT induce vomiting.  
Call a physician immediately.  
Contact a poison control center.  
Rinse mouth thoroughly with water.
- Most important symptoms and effects, both acute and delayed : May be fatal if swallowed and enters airways.  
Causes skin irritation.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
- Notes to physician : Treat symptomatically and supportively.

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### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray jet  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Unsuitable extinguishing media : High volume water jet
- 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.  
Vapors 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.
- Specific extinguishing meth- : Do not use a solid water stream as it may scatter and spread

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

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### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures      :      Use personal protective equipment.  
Ensure adequate ventilation.  
Remove all sources of ignition.  
Evacuate personnel to safe areas.  
Follow safe handling advice and personal protective equipment recommendations.  
Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.  
Never return spills in original containers for re-use.  
Treat recovered material as described in the section "Disposal considerations".
- 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.
- Methods and materials for containment and cleaning up      :      Contact with incompatible substances can cause decomposition at or below SADT.  
Clear spills immediately.  
Suppress (knock down) gases/vapors/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.

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### SECTION 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).  
Keep away from heat and sources of ignition.  
Use only explosion-proof equipment.  
Keep away from combustible material.
- Advice on safe handling : Do not swallow.  
Do not breathe vapors/dust.  
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.  
Protect from contamination.
- Conditions for safe storage : 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.
- Materials to avoid : 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.

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### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of	Control parameters / Permissible	Basis
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		exposure)	concentration	
Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics)	64742-48-9	TWA (Vapor)	171 ppm 1,200 mg/m3 (total hydrocarbons)	Supplier data
		TWA	525 mg/m3	CA ON OEL

**Engineering measures** : Minimize workplace exposure concentrations.

### Personal protective equipment

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Filter type : ABEK-filter

#### Hand protection

Material : Nitrile rubber  
Break through time : 480 min  
Glove thickness : 0.40 mm

Material : butyl-rubber  
Break through time : 10 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.

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.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.

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.

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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : colorless

Odor : characteristic

pH : No data available

Melting point/range : < -25 °C

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

Flash point : 51 °C  
Method: closed cup

Flammability (solid, gas) : Not applicable

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : No data available

Density : 0.905 g/cm<sup>3</sup> (20 °C)

Solubility(ies)  
Water solubility : immiscible  
Solubility in other solvents : Solvent: Hydrocarbons  
Solvent: Alcohol

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

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.

Viscosity  
Viscosity, dynamic : 6.7 mPa.s (20 °C)



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Explosive properties : Not explosive

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

Refractive index : 1.441 (20 °C)

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable under recommended storage conditions.

Chemical stability : Stable under recommended storage conditions.

Possibility of hazardous reactions : Vapors may form explosive mixture with air.

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

Incompatible materials : Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents

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

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

Not classified based on available information.

#### Product:

Acute oral toxicity : LD0 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
Remarks: No mortality observed at this dose.

Acute inhalation toxicity : Remarks: study scientifically unjustified  
No data available

Acute toxicity estimate: > 40 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: Calculation method

Acute dermal toxicity : LD0 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: No mortality observed at this dose.

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Acute toxicity estimate: > 5,000 mg/kg  
Method: Calculation method

### Components:

#### **1,1-Di(tert-amylperoxy)cyclohexane:**

- Acute oral toxicity : LD0 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
Remarks: No mortality observed at this dose.
- Acute inhalation toxicity : Remarks: study scientifically unjustified  
No data available
- Acute dermal toxicity : LD0 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: Based on available data, the classification criteria are not met.

#### **Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):**

- Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 401
- Acute inhalation toxicity : LC50 (Rat): > 5 mg/l  
Exposure time: 8 h  
Test atmosphere: vapor  
Method: OECD Test Guideline 403
- Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402

#### **tert-pentyl hydroperoxide:**

- Acute oral toxicity : LD50 (Rat): 500 mg/kg  
Method: OECD Test Guideline 401
- Acute inhalation toxicity : LC50 (Rat): 2.4 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: OECD Test Guideline 403
- Acute dermal toxicity : LD50 (Rat): 446 mg/kg  
Method: OECD Test Guideline 402

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

Causes skin irritation.

#### **Product:**

- Species : Rabbit  
Method : OECD Test Guideline 404

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Result : Skin irritation  
Remarks : May cause skin irritation in susceptible persons.

### **Components:**

#### **1,1-Di(tert-amylperoxy)cyclohexane:**

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

#### **Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):**

Method : OECD Test Guideline 404  
Result : Mild skin irritation  
Remarks : May cause skin irritation and/or dermatitis.

#### **tert-pentyl hydroperoxide:**

Species : Rabbit  
Method : OECD Test Guideline 404  
Result : Causes burns.

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

Not classified based on available information.

### **Product:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405  
Remarks : Based on available data, the classification criteria are not met.

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

### **Components:**

#### **1,1-Di(tert-amylperoxy)cyclohexane:**

Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405  
Remarks : Based on available data, the classification criteria are not met.

#### **Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):**

Remarks : No data available  
Remarks : Vapors may cause irritation to the eyes, respiratory system and the skin.

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### **tert-pentyl hydroperoxide:**

Species : Rabbit  
Result : Irreversible effects on the eye

### **Respiratory or skin sensitization**

#### **Skin sensitization**

Not classified based on available information.

#### **Respiratory sensitization**

Not classified based on available information.

#### **Product:**

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

#### **Components:**

##### **1,1-Di(tert-amylperoxy)cyclohexane:**

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

##### **Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):**

Result : Does not cause skin sensitization.

### **tert-pentyl hydroperoxide:**

Result : May cause sensitization by skin contact.  
Remarks : Based on data from similar materials

### **Germ cell mutagenicity**

Not classified based on available information.

#### **Product:**

Genotoxicity in vitro : Test Type: Mutagenicity (Escherichia coli - reverse mutation assay)  
Method: OECD Test Guideline 471  
Result: negative  
  
Test Type: Micronucleus test  
Method: OECD Test Guideline 487  
Result: negative

Genotoxicity in vivo : Remarks: No data available

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### Components:

#### **1,1-Di(tert-amylperoxy)cyclohexane:**

Genotoxicity in vitro : Test Type: Mutagenicity (Escherichia coli - reverse mutation assay)  
Method: OECD Test Guideline 471  
Result: negative

Test Type: Micronucleus test  
Method: OECD Test Guideline 487  
Result: negative

Genotoxicity in vivo : Remarks: No data available

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

#### **Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):**

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

#### **tert-pentyl hydroperoxide:**

Genotoxicity in vitro : Test Type: Ames test  
Method: OECD Test Guideline 471  
Result: Equivocal

Test Type: Micronucleus test  
Method: OECD Test Guideline 487  
Result: positive

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

Genotoxicity in vivo : Test Type: In vivo mammalian alkaline comet assay  
Method: OECD Test Guideline 489  
Result: negative

Germ cell mutagenicity - Assessment : In vitro tests showed mutagenic effects

### **Carcinogenicity**

Not classified based on available information.

### Product:

Remarks : This information is not available.

### Components:

#### **1,1-Di(tert-amylperoxy)cyclohexane:**

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Remarks : This information is not available.

**Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):**

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

**Reproductive toxicity**

Not classified based on available information.

**Components:**

**1,1-Di(tert-amylperoxy)cyclohexane:**

Effects on fetal development : Remarks: No data available

**tert-pentyl hydroperoxide:**

Effects on fertility : Remarks: No data available

Effects on fetal development : Remarks: No data available

**STOT-single exposure**

Not classified based on available information.

**Components:**

**tert-pentyl hydroperoxide:**

Remarks : No data available

**STOT-repeated exposure**

Not classified based on available information.

**Product:**

Remarks : No data available

**Components:**

**1,1-Di(tert-amylperoxy)cyclohexane:**

Remarks : No data available

**tert-pentyl hydroperoxide:**

Remarks : No data available

**Repeated dose toxicity**

**Product:**

Species : Rat  
NOAEL : 200 mg/kg  
Application Route : Oral

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Method : OECD Test Guideline 422

### **Components:**

#### **1,1-Di(tert-amylperoxy)cyclohexane:**

Species : Rat  
NOAEL : 200 mg/kg  
Application Route : Oral  
Method : OECD Test Guideline 422

#### **tert-pentyl hydroperoxide:**

Species : Rat  
NOAEL : 100 mg/kg  
Application Route : oral (gavage)  
Method : OECD Test Guideline 421

#### **Aspiration toxicity**

May be fatal if swallowed and enters airways.

#### **Product:**

May be fatal if swallowed and enters airways.

### **Components:**

#### **Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):**

May be fatal if swallowed and enters airways.

#### **tert-pentyl hydroperoxide:**

No data available

#### **Further information**

#### **Product:**

Remarks : Solvents may degrease the skin.

### **Components:**

#### **Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):**

Remarks : Solvents may degrease the skin.

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### SECTION 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

##### Product:

- Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 0.64 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
Remarks: Information given is based on data obtained from similar substances.
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
Remarks: Information given is based on data obtained from similar substances.
- Toxicity to algae/aquatic plants : (Pseudokirchneriella subcapitata (green algae)):  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: No toxicity at the limit of solubility.

#### Ecotoxicology Assessment

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

##### Components:

##### **1,1-Di(tert-amylperoxy)cyclohexane:**

- Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 0.64 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
Remarks: Information given is based on data obtained from similar substances.
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
Remarks: Information given is based on data obtained from similar substances.
- Toxicity to algae/aquatic plants : (Pseudokirchneriella subcapitata (green algae)): Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: No toxicity at the limit of solubility.



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### Ecotoxicology Assessment

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

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

### Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):

Toxicity to fish : LC0 (Oncorhynchus mykiss (rainbow trout)): 1,000 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC0 (Daphnia magna (Water flea)): 1,000 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC0 (Pseudokirchneriella subcapitata (green algae)): 1,000 mg/l  
Exposure time: 72 h

NOELR (Pseudokirchneriella subcapitata (green algae)): 1,000 mg/l  
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR (Daphnia magna (Water flea)):  $\geq 1$  mg/l  
Exposure time: 21 d

### Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.  
Remarks: Information given is based on data on the ingredients and the ecotoxicology of similar products.

### tert-pentyl hydroperoxide:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 6.7 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: Information given is based on data obtained from similar substances.

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 1.2 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Bacteria): 138 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

EC10 (Bacteria): 33 mg/l

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Exposure time: 3 h  
Method: OECD Test Guideline 209  
Remarks: Based on data from similar materials

### Persistence and degradability

#### Product:

Biodegradability : Result: Not readily biodegradable.  
Remarks: Information given is based on data obtained from similar substances.

#### Components:

##### **1,1-Di(tert-amylperoxy)cyclohexane:**

Biodegradability : Result: Not readily biodegradable.  
Remarks: Information given is based on data obtained from similar substances.

##### **Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):**

Biodegradability : Result: rapidly biodegradable

##### **tert-pentyl hydroperoxide:**

Biodegradability : Result: Not readily biodegradable.  
Method: OECD Test Guideline 301D  
Remarks: Based on data from similar materials

### Bioaccumulative potential

#### Components:

##### **1,1-Di(tert-amylperoxy)cyclohexane:**

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

##### **Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):**

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

##### **tert-pentyl hydroperoxide:**

Partition coefficient: n-octanol/water : log Pow: 2.9  
Remarks: Based on data from similar materials

### Mobility in soil

No data available

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### Other adverse effects

#### **Product:**

Additional ecological information : No data available

#### **Components:**

#### **Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):**

Additional ecological information : No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : 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

### International Regulations

#### **UNRTDG**

UN number : UN 3103  
Proper shipping name : ORGANIC PEROXIDE TYPE C, LIQUID  
(1,1-DI-(tert-AMYLPEROXY)CYCLOHEXANE)  
Class : 5.2  
Packing group : Not assigned by regulation  
Labels : 5.2

#### **IATA-DGR**

UN/ID No. : UN 3103  
Proper shipping name : Organic peroxide type C, liquid  
(1,1-Di-(tert-Amylperoxy) cyclohexane)  
Class : 5.2  
Packing group : Not assigned by regulation  
Labels : Organic Peroxides, Keep Away From Heat  
Packing instruction (cargo aircraft) : 570  
Packing instruction (passenger aircraft) : 570

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ger aircraft)

### IMDG-Code

UN number : UN 3103  
Proper shipping name : ORGANIC PEROXIDE TYPE C, LIQUID  
(1,1-DI-(tert-AMYLPEROXY)CYCLOHEXANE)  
Class : 5.2  
Packing group : Not assigned by regulation  
Labels : 5.2  
EmS Code : F-J, S-R  
Marine pollutant : no

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

### Domestic regulation

#### TDG

UN number : UN 3103  
Proper shipping name : ORGANIC PEROXIDE TYPE C, LIQUID  
(1,1-DI-(tert-AMYLPEROXY)CYCLOHEXANE)  
Class : 5.2  
Packing group : II  
Labels : 5.2  
ERG Code : 146  
Marine pollutant : no

### 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.

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## SECTION 15. REGULATORY INFORMATION

**NPRI Components** : Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics)

### International Regulations

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

### The ingredients 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  
DSL (CA) : This product contains the following components listed on the Canadian NDSL. All other components are on the Canadian DSL.  
  
1,1-Di(tert-amylperoxy)cyclohexane  
tert-pentyl hydroperoxide

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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

### Canadian lists

No substances are subject to a Significant New Activity Notification.

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## SECTION 16. OTHER INFORMATION

### Further information

This material 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 Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

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### Full text of other abbreviations

CA ON OEL : Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.

CA ON OEL / TWA : Time-Weighted Average Limit (TWA)

AIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; ERG - Emergency Response Guide; 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; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect

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Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; 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; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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; WHMIS - Workplace Hazardous Materials Information System

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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