

# SAFETY DATA SHEET

## NOROX<sup>®</sup> 500-90-AL3



Version 1.2      Revision Date: 06/24/2021      SDS Number: 600000000760      Date of last issue: 12/05/2019  
Date of first issue: 09/05/2019

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### SECTION 1. IDENTIFICATION

Trade name : NOROX<sup>®</sup> 500-90-AL3

Other means of identification : No data available

#### 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 : polymerization initiators

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### SECTION 2. HAZARDS IDENTIFICATION

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

Flammable liquids : Category 4

Organic peroxides : Type C

Aspiration hazard : Category 1

Long-term (chronic) aquatic hazard : Category 4

#### GHS label elements

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- Hazard pictograms :
- Signal Word : Danger
- Hazard Statements : H227 Combustible liquid.  
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:**  
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P234 Keep only in original packaging.  
P240 Ground and bond container and receiving equipment.  
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.
- Storage:**  
P403 Store in a well-ventilated place.  
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.

**Other hazards**  
None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

- Substance / Mixture : Mixture
- Chemical nature : Organic Peroxide  
Liquid mixture

#### Components

Chemical name	CAS-No.	Concentration (% w/w)
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di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide	6731-36-8	>= 85 - < 90 *
Naphta (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics)	64742-48-9	>= 10 - < 15 *

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

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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 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.
- 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.  
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.
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- 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 : 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

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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

< 86 °F

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 exposure)	Control parameters / Permissible concentration	Basis
Naphta (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics)	64742-48-9	TWA (Vapor)	171 ppm 1,200 mg/m <sup>3</sup> (total hydrocarbons)	Supplier data
		TWA	525 mg/m <sup>3</sup>	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 : 0.5 mm

Remarks : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work.  
For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

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- 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 : musty
- Odor Threshold : No data available
- pH : No data available
- Melting point/range : < -25 °C
- Boiling point/boiling range : Decomposition: Decomposes below the boiling point.
- Flash point : 72 °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

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Density : 0.892 g/cm<sup>3</sup> (20 °C)

Solubility(ies)  
Water solubility : insoluble

Partition coefficient: n-  
octanol/water : log Pow: 7.0 (25 °C)

Self-Accelerating decomposi-  
tion 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 : 17.3 mPa.s ( 20 °C)

Explosive properties : Not explosive

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

Refractive index : 1.438 (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 reac-  
tions : 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.



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### 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

#### **Naphta (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

### **Skin corrosion/irritation**

Not classified based on available information.

### Product:

- Remarks : May cause skin irritation and/or dermatitis.

### Components:

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

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

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

- Method : OECD Test Guideline 404  
Result : Mild skin irritation

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Remarks : May cause skin irritation and/or dermatitis.

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

Not classified based on available information.

### **Product:**

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

### **Components:**

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

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

#### **Naphta (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.

### **Respiratory or skin sensitization**

#### **Skin sensitization**

Not classified based on available information.

#### **Respiratory sensitization**

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 sensitization.

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

Result : Does not cause skin sensitization.

### **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

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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

Genotoxicity in vivo : Remarks: No data available

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

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

### **Carcinogenicity**

Not classified based on available information.

### **Components:**

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

Species : Mouse  
Application Route : Oral  
Result : negative

### **Naphta (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:**

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

Effects on fertility : Remarks: No data available

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

### **STOT-single exposure**

Not classified based on available information.

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### **STOT-repeated exposure**

Not classified based on available information.

### **Aspiration toxicity**

May be fatal if swallowed and enters airways.

### **Components:**

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

May be fatal if swallowed and enters airways.

### **Further information**

#### **Product:**

Remarks : Solvents may degrease the skin.

#### **Components:**

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

Remarks : Solvents may degrease the skin.

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## SECTION 12. ECOLOGICAL INFORMATION

### **Ecotoxicity**

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

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

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

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

### Ecotoxicology Assessment

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

### Naphta (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)): >= 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.

### Persistence and degradability

#### Components:

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

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

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

Biodegradability : Result: rapidly biodegradable

### Bioaccumulative potential

#### Components:

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

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Bioaccumulation : Bioconcentration factor (BCF): 443

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

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

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

**Mobility in soil**

No data available

**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.

**Components:**

**Naphta (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

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(1,1-DI-(tert-BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE)  
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-butylperoxy)-3,3,5-trimethylcyclohexane)  
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

### IMDG-Code

UN number : UN 3103  
Proper shipping name : ORGANIC PEROXIDE TYPE C, LIQUID  
(1,1-DI-(tert-BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE)  
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-BUTYLPEROXY)-3,3,5-TRIMETHYLCYCLOHEXANE)  
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

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**Canadian PBT Chemicals** : This product contains the following components on the DSL that are classified as Persistent, Bioaccumulative and/or Toxic (PBT) under CEPA:  
di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide

### International 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 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  
AICS (AU) : On the inventory, or in compliance with the inventory  
DSL (CA) : All components of this product are on the Canadian DSL  
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/>

Revision Date : 06/24/2021  
Date format : mm/dd/yyyy

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



# SAFETY DATA SHEET

## NOROX<sup>®</sup> 500-90-AL3



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

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### 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)

AICS - Australian Inventory of Chemical Substances; AIIC - 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 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; 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

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