SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard

NOROX®500-75OMS

Version	Revision Date:	SDS Number:	Date of last issue: 11/02/2020
3.0	06/24/2025	600000000168	Date of first issue: 12/16/2016

SECTION 1. IDENTIFICATION

Trade name : NOROX®500-75OMS

Manufacturer or supplier's details

Company name of supplier : United Initiators, Inc.

Address : 555 Garden Street
Elyria OH 44035 USA

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

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

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids : Category 3

Organic peroxides : Type C

Skin sensitization : Category 1

Carcinogenicity : Category 2

Aspiration hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

Hazard pictograms :

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.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P220 Keep/Store away from clothing/ combustible materials.
P233 Keep container tightly closed.
P234 Keep only in original container.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing mist or vapors.
P272 Contaminated work clothing must not be allowed out of the workplace.
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.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P331 Do NOT induce vomiting.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.
P391 Collect spillage.

Storage:

P405 Store locked up.
P410 Protect from sunlight.
P411 + P235 Store at temperatures not exceeding < 30 °C/ < 86 °F. Keep cool.
P420 Store away from other materials.

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)
di-tert-butyl 3,3,5-trimethylcyclohexylidene diperoxide	6731-36-8	>= 70 - < 75
Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9)	64742-48-9 68551-19-9	>= 15 - < 20
Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics)	64742-48-9	>= 7.5 - < 10
tert-butyl hydroperoxide	75-91-2	>= 0.1 - < 1

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Take off contaminated clothing and shoes immediately.
Call a physician immediately.
Never give anything by mouth to an unconscious person.
If unconscious, place in recovery position and seek medical 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.
If inhaled	:	Administer oxygen if breathing is difficult or cyanosis is observed. If breathed in, move person into fresh air. If not breathing, give artificial respiration. Call a physician or poison control center immediately. If unconscious, place in recovery position and seek medical advice. Keep respiratory tract clear.
In case of skin contact	:	If symptoms persist, call a physician. 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.
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	:	Call a physician immediately. Contact a poison control center. Keep respiratory tract clear. Do NOT induce vomiting. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	:	May be fatal if swallowed and enters airways. May cause an allergic skin reaction. Suspected of causing cancer. sensitizing effects
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.

SECTION 5. FIRE-FIGHTING MEASURES

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

media

Specific hazards during fire fighting	:	Risk of explosion if heated under confinement. Possible emission of gaseous decomposition products may lead to a dangerous pressure build-up. Avoid confinement. 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. Do not allow run-off from fire fighting to enter drains or water courses. Vapors may form explosive mixtures with air. 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	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use a water spray to cool fully closed containers. 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.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Follow safe handling advice and personal protective equipment recommendations. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe 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.

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 open flames, hot surfaces and sources of ignition.
Keep away from combustible material.
Do not spray on a naked flame or any incandescent material.

Advice on safe handling : Open drum carefully as content may be under pressure.
Protect from contamination.
Do not swallow.
Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Avoid formation of aerosol.
Take precautionary measures against static discharges.
Never return any product to the container from which it was originally removed.
Provide sufficient air exchange and/or exhaust in work rooms.
Avoid confinement.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Smoking, eating and drinking should be prohibited in the application area.
Wash thoroughly after handling.
For personal protection see section 8.
Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage : Store in original container.
Keep containers tightly closed in a cool, well-ventilated place.
Store in cool place.
Contamination may result in dangerous pressure increases - closed containers may rupture.
Observe label precautions.
Store in accordance with the particular national regulations.
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.

Materials to avoid : Keep away from combustible materials.
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 : Stable under recommended storage conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9)	64742-48-9	TWA	400 ppm 1,600 mg/m3	OSHA P0
		TWA	500 ppm 2,000 mg/m3	OSHA Z-1
Naphtha (Petroleum),	64742-48-9	TWA (Vapor)	171 ppm	Supplier data

hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics)			1,200 mg/m3 (total hydrocarbons)	
		TWA	400 ppm 1,600 mg/m3	OSHA P0
tert-butyl hydroperoxide	75-91-2	TWA	0.1 ppm	ACGIH

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

Use NIOSH approved respiratory protection.

Hand protection
- Material : Nitrile rubber
- Break through time : <= 480 min
- Glove thickness : 0.4 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 : 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.
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.
Tightly fitting safety goggles
Please wear suitable protective goggles. Also wear face protection if there is a splash hazard.

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.
Protective measures	:	The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.
Hygiene measures	:	Avoid contact with skin, eyes and clothing. 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	colorless
pH	:	No data available
Melting point/ range	:	< -25 °C
Boiling point/boiling range	:	Decomposition: Decomposes below the boiling point.
Flash point	:	57 °C Method: ISO 3679
Flammability (solid, gas)	:	Not applicable
Self-ignition	:	The substance or mixture is not classified as self heating. The substance or mixture is not classified as pyrophoric.
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Density	:	0.87 g/cm3 (20 °C)
Partition coefficient: n-octanol/water	:	No data available

Self-Accelerating decomposition temperature (SADT)	:	60 °C SADT-Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction.
Viscosity		
Viscosity, dynamic	:	8 mPa.s (20 °C)
Viscosity, kinematic	:	No data available
Oxidizing properties	:	The substance or mixture is not classified as oxidizing. Organic peroxide

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable under recommended storage conditions. Heating may cause a fire or explosion.
Chemical stability	:	Stable under recommended storage conditions. No decomposition if stored normally.
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

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Based on available data, the classification criteria are not met.

Product:

Acute inhalation toxicity	:	Acute toxicity estimate: 142.29 mg/l Exposure time: 4 h Test atmosphere: vapor Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg

Method: Calculation method

Components:

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

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

Acute inhalation toxicity : LC50 (Rat, male and female): > 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, male): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5000 ppm
Exposure time: 8 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Insufficient Data to Classify
Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

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): > 5,000 mg/m3
Exposure time: 8 h
Test atmosphere: vapor
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Remarks: Based on data from similar materials
No mortality observed at this dose.

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

tert-butyl hydroperoxide:

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

Acute inhalation toxicity : LC50 (Rat): 0.83 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: OECD Test Guideline 403
Remarks: The value is calculated

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

Skin corrosion/irritation

Not classified due to lack of data.

Product:

Remarks : May cause skin irritation in susceptible persons.

Components:

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

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

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

Assessment : Repeated exposure may cause skin dryness or cracking.
Result : Repeated exposure may cause skin dryness or cracking.

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.

Result : Repeated exposure may cause skin dryness or cracking.

tert-butyl hydroperoxide:

Species : Rabbit

Method	:	Draize Test
Result	:	Corrosive, category 1C - where responses occur after exposures between 1 hour and 4 hours and observations up to 14 days.
Remarks	:	Extremely corrosive and destructive to tissue.

Serious eye damage/eye irritation

Not classified due to lack of data.

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

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

Remarks	:	No eye irritation

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.

tert-butyl hydroperoxide:

Species	:	Rabbit
Result	:	Irreversible effects on the eye
Method	:	OECD Test Guideline 405
Remarks	:	May cause irreversible eye damage.

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified due to lack of data.

Product:

Remarks : Causes sensitization.

Components:

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

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

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

Remarks : Did not cause sensitization on laboratory animals.

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

Result : Does not cause skin sensitization.

tert-butyl hydroperoxide:

Routes of exposure : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : May cause sensitization by skin contact.

Remarks : Causes sensitization.

Germ cell mutagenicity

Not classified due to lack of data.

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

Genotoxicity in vivo : Result: negative
Remarks: No data available

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

Assessment

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

Germ cell mutagenicity - Assessment : Classified based on benzene content < 0.1% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note P)

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

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

tert-butyl hydroperoxide:

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

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

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

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

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

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

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

Carcinogenicity

Suspected of causing cancer.

Components:

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

Species	:	Mouse, male and female
Application Route	:	Oral
Exposure time	:	78 weeks
Dose	:	0 - 1056 mg/kg bw/day
Result	:	negative

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

Carcinogenicity - Assessment	:	Classified based on benzene content < 0.1% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note P)

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

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

tert-butyl hydroperoxide:

Species	:	Rat, male and female
Application Route	:	inhalation (vapor)
NOAEC	:	15 mg/l
Method	:	OECD Test Guideline 451
Result	:	Suspected of causing cancer if inhaled.
GLP	:	yes
Carcinogenicity - Assessment	:	Limited evidence of carcinogenicity in animal studies, Suspected of causing cancer if inhaled.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified due to lack of data.

Components:

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

Effects on fertility	:	Species: Rat

Application Route: oral (gavage)
Dose: 0, 30, 100, 300, 1000 mg/kg bw/day
General Toxicity Parent: NOAEL: 1,000 mg/kg bw/day
GLP: yes

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

Effects on fetal development : Species: Rat
Application Route: Oral
Teratogenicity: NOAEL: 1,000
Method: OECD Test Guideline 414
Remarks: Based on data from similar materials

tert-butyl hydroperoxide:

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

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

STOT-single exposure

Not classified due to lack of data.

Components:

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

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

tert-butyl hydroperoxide:

Routes of exposure : Inhalation
Assessment : May cause respiratory irritation.

STOT-repeated exposure

Not classified due to lack of data.

Components:

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

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

tert-butyl hydroperoxide:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Remarks	:	Not classified due to data which are conclusive although insufficient for classification.

Repeated dose toxicity

Components:

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

Species	:	Rat
	:	1000 mg/kg
NOAEL	:	1,000 mg/kg
Application Route	:	Oral
Exposure time	:	4 wk
Remarks	:	Based on data from similar materials

tert-butyl hydroperoxide:

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

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

Aspiration toxicity

May be fatal if swallowed and enters airways.

Components:

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

No aspiration toxicity classification

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

May be fatal if swallowed and enters airways.

Naphtha (Petroleum), hydrotreated heavy (Hydrocarbons, C11-C12, isoalkanes, <2% aromatics):
May be fatal if swallowed and enters airways.

tert-butyl hydroperoxide:
Not classified due to data which are conclusive although insufficient for classification.

Experience with human exposure

Components:

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

Skin contact : Remarks: Prolonged skin contact may defat the skin and produce dermatitis.

Further information

Product:

Remarks : Solvents may degrease the skin.

Components:

tert-butyl hydroperoxide:

Remarks : Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

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

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.133 mg/l Exposure time: 48 h Remarks: No toxicity at the limit of solubility.
Toxicity to algae/aquatic plants	:	NOEC (Pseudokirchneriella subcapitata (green algae)): > 0.11 mg/l Exposure time: 72 h Test Type: Growth inhibition Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility.
Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): 0.018 mg/l Method: OECD Test Guideline 210 GLP: yes

Toxicity to microorganisms	:	EC10 (activated sludge): > 1,000 mg/l Exposure time: 3 h Test Type: Respiration inhibition Method: OECD Test Guideline 209

Ecotoxicology Assessment

Acute aquatic toxicity	:	No toxicity at the limit of solubility.
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

Toxicity to fish	:	LL50 (Oncorhynchus mykiss (rainbow trout)): > 1,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EL50 (Pseudokirchneriella subcapitata (green algae)): > 1,000 mg/l Exposure time: 72 h
Toxicity to fish (Chronic toxicity)	:	NOELR (Oncorhynchus mykiss (rainbow trout)): 316 mg/l Exposure time: 28 d

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)): >= 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 ingredi-

ents and the ecotoxicology of similar products.

tert-butyl hydroperoxide:

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 29.61 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 14.07 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 1.47 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (green algae)): 0.22 mg/l Method: OECD Test Guideline 201
Toxicity to microorganisms	:	EC50 (Bacteria): 17 mg/l Method: OECD Test Guideline 209

Ecotoxicology Assessment

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

Persistence and degradability

Components:

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

Biodegradability	:	Result: Inherently biodegradable. Method: OECD Test Guideline 301D

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

Biodegradability	:	Result: Readily biodegradable.

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

Biodegradability	:	Result: rapidly biodegradable

tert-butyl hydroperoxide:

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

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

Bioaccumulative potential

Components:

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

Bioaccumulation	:	Bioconcentration factor (BCF): 443 - 766
Partition coefficient: n-octanol/water	:	log Pow: 7 (25 °C)

Contains one or both isoparaffinic hydrocarbons (Naphtha hydrotreated heavy CAS 64742-48-9, Alkanes, C10-13-iso CAS 68551-19-9):

Partition coefficient: n-octanol/water	:	Pow: > 4

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

Partition coefficient: n-octanol/water	:	log Pow: > 4

Mobility in soil

No data available

Other adverse effects

Product:

Ozone-Depletion Potential	:	Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
Additional ecological information	:	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

Components:

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

Additional ecological information	:	No data available

tert-butyl hydroperoxide:

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

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Dispose of wastes in an approved waste disposal facility. 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.
Contaminated packaging	:	Dispose of in accordance with local regulations. Clean container with water. Dispose of contents/ container to an approved waste disposal plant. 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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

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
Environmentally hazardous	:	yes

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
Environmentally hazardous	:	yes

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	:	yes

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

Not applicable for product as supplied.

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 3103
Proper shipping name	:	Organic peroxide type C, liquid (1,1-Di-(tert-butylperoxy)-3,3,5-trimethylcyclohexane, 75%)
Class	:	5.2
Packing group	:	Not assigned by regulation
Labels	:	ORGANIC PEROXIDE
ERG Code	:	146
Marine pollutant	:	yes

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.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards	:	Flammable (gases, aerosols, liquids, or solids) Organic peroxides Respiratory or skin sensitization Carcinogenicity Aspiration hazard
SARA 313	:	This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).
This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.
This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.
This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307
This product does not contain any priority pollutants related to the U.S. Clean Water Act

California Prop. 65

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

International Regulations

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

TSCA (US)	:	All substances listed as active on the TSCA inventory
AIIC (AU)	:	On the inventory, or in compliance with the inventory
DSL (CA)	:	All components of this product are on the Canadian DSL
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

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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. The hazards on the label also apply to residues in the container.

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 : 06/24/2025

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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