SAFETY DATA SHEET

according to the Globally Harmonized System and US regulation

TRIGONOX 21-CH50

Version 5 | Revision Date 01/14/2020 | Print Date 07/21/2021 | US / Z8

1. IDENTIFICATION

Product name	:	TRIGONOX 21-CH50
Product Use Description	:	Specific use(s): Polymerization initiator
Company	:	Nouryon Functional Chemicals LLC 131 S Dearborn St, Suite 1000 Chicago IL 60603-5566 US
Telephone	:	+18008287929
Fax	:	+13125447188
E-mail address	:	polymer.amer@nouryon.com
Emergency telephone	:	24 hours:+31 57 06 79211, CHEMTREC-USA:1-800-424-9300, CANUTEC-CANADA:1-613-996-6666, 化学事故应急咨询电话：国家化学事故应急响应中心 +86 532 8388 9090

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	liquid
Color	colorless
Odor	Faint.

GHS Classification

Organic peroxides, Type F
Skin sensitization, Category 1
Reproductive toxicity, Category 1B
Aspiration hazard, Category 1
Short-term (acute) aquatic hazard, Category 1
Long-term (chronic) aquatic hazard, Category 2

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H242 Heating may cause a fire.
H304 May be fatal if swallowed and enters airways.
H317 May cause an allergic skin reaction.
H360F May damage fertility.

H400 Very toxic to aquatic life.
H411 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.
P234 Keep only in original container.
P235 Keep cool.
P261 Avoid breathing mist, vapours or spray.
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.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
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 Store at temperatures not exceeding 30°C/ 86°F.
P420 Store away from other materials.
Disposal:
P501 Dispose of contents/container in accordance with local regulation.

Carcinogenicity:

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 component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name : Organic peroxide
Pure substance/mixture : Mixture

Hazardous ingredients

Chemical name	CAS-No.	Classification	Concentration [% W/W]
tert-Butyl peroxy-2-ethylhexanoate	3006-82-4	Org. Perox. C; H242 Skin Sens. 1; H317 Repr. 1B; H360F Aquatic Acute 1; H400 Aquatic Chronic 2; H411 M-Factor (Acute): 1	49 - 51
Petroleum naphtha	64742-48-9	Asp. Tox. 1; H304 Aquatic Chronic 4; H413	49 - 51

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.

Inhalation : If breathed in, move person into fresh air.
Consult a physician after significant exposure.

Skin contact : Take off contaminated clothing and shoes immediately.
Rinse immediately with plenty of water.
If skin irritation persists, call a physician.

Eye contact : Rinse with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

Ingestion : Clean mouth with water and drink afterwards plenty of water.
Do NOT induce vomiting.
Never give anything by mouth to an unconscious person.
Obtain medical attention.

Notes to physician

Symptoms : The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.

Risks : May be fatal if swallowed and enters airways.

May cause an allergic skin reaction.
May damage fertility.

Treatment : Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media : High volume water jet

Specific hazards during fire fighting / Specific hazards arising from the chemical : CAUTION: reignition may occur.
Supports combustion.
Do not use a solid water stream as it may scatter and spread fire.
Water spray may be ineffective unless used by experienced firefighters.
Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous decomposition products formed under fire conditions.

Combustion products : Fire will produce smoke containing hazardous combustion products (see section 10).

Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

Further information : Use water spray to cool unopened 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.

See also Section 9. Physical and chemical properties: Safety data

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Wear respiratory protection.
Ensure adequate ventilation.
Remove all sources of ignition.
Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Emergency measures on accidental release : Evacuate personnel to safe areas.
Only qualified personnel equipped with suitable protective equipment may intervene.
Prevent unauthorized persons entering the zone.

Environmental precautions : Prevent product from entering drains.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for cleaning up / Methods for containment	:	Soak up with inert absorbent material and dispose of as hazardous waste. Keep wetted with water. Confinement must be avoided. Never return spills in original containers for re-use.
Reference to other sections	:	For disposal considerations see section 13. For personal protection see section 8.

7. HANDLING AND STORAGE

Handling

Advice on safe handling	:	For personal protection see section 8. Avoid formation of aerosol. Do not breathe vapors or spray mist. Avoid contact with skin. Smoking, eating and drinking should be prohibited in the application area. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations. Obtain special instructions before use.
Advice on protection against fire and explosion	:	Use explosion protected equipment. Keep away from sources of ignition - No smoking. No sparking tools should be used. Keep away from reducing agents (e.g. amines), acids, alkalies and heavy metal compounds (e.g. accelerators, driers, metal soaps). Do not cut or weld on or near this container even when empty. Keep away from combustible material.
Temperature class	:	It is recommended to use electrical equipment of temperature group T3. However, autoignition can never be excluded.

Storage

Requirements for storage areas and containers	:	Prevent unauthorized access. No smoking. Keep in a well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards. Keep only in original container. Store away from other materials.
Minimum storage temperature:	:	Avoid temperatures below: -30 °C (-22 °F)
Maximum storage temperature:	:	10 °C (50 °F)
Other data	:	If product freezes or separates, contact the manufacturer. No decomposition if stored and applied as directed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Ingredients with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis	Form of exposure
Petroleum naphtha	64742-48-9	TWA	500 ppm 2,000 mg/m3	2007-01-01	OSHA Z-1	
	Further information	:	(b): The value in mg/m3 is approximate.			
		TWA	400 ppm 1,600 mg/m3	1989-01-19	OSHA P0	

ACGIH: American Conference of Governmental Industrial Hygienists
BEI: Biological Exposure Index
MAC: Maximum Allowable Concentration
NIOSH: National Institute for Occupational Safety and Health
OEL: OEL: Occupational exposure limit.
STEL: Short term exposure limit
TWA: Time Weighted Average

Occupational exposure limits of decomposition products

Decomposition products	CAS-No.	Value	Control parameters	Update	Basis	Form of exposure
Carbon dioxide	124-38-9	TWA	5,000 ppm	2007-01-01	ACGIH	
	Further information	:	asphyxia: Asphyxia			
		STEL	30,000 ppm	2007-01-01	ACGIH	
	Further information	:	asphyxia: Asphyxia			
		TWA	5,000 ppm 9,000 mg/m3	2013-10-08	NIOSH REL	
	Further information	:	Normal constituent of air (about 300 ppm).			
		ST	30,000 ppm 54,000 mg/m3	2013-10-08	NIOSH REL	
	Further information	:	Normal constituent of air (about 300 ppm).			
		TWA	5,000 ppm 9,000 mg/m3	1997-08-04	OSHA Z-1	
	Further information	:	(b): The value in mg/m3 is approximate.			
		TWA	10,000 ppm 18,000 mg/m3	1989-01-19	OSHA P0	
	Further information	:	e: Exposures under 10,000 ppm to be cited as de minimus.			
		STEL	30,000 ppm 54,000 mg/m3	1989-01-19	OSHA P0	
		PEL	5,000 ppm 9,000 mg/m3	2014-11-26	CAL PEL	
		STEL	30,000 ppm 54,000 mg/m3	2014-11-26	CAL PEL	
tert-Butanol	75-65-0, 75-65-0	TWA	100 ppm	2007-01-01	ACGIH	
	Further information	:	CNS impair: Central Nervous System impairment A4: Not classifiable as a human carcinogen			
		TWA	100 ppm 300 mg/m3	2013-10-08	NIOSH REL	
		ST	150 ppm 450 mg/m3	2013-10-08	NIOSH REL	
		TWA	100 ppm	1997-08-04	OSHA Z-1	

			300 mg/m3			
	Further information	:	(b): The value in mg/m3 is approximate.			
		TWA	100 ppm 300 mg/m3	1989-01-19	OSHA P0	
		STEL	150 ppm 450 mg/m3	1989-01-19	OSHA P0	
		PEL	100 ppm 300 mg/m3	2014-11-26	CAL PEL	
		STEL	150 ppm 450 mg/m3	2014-11-26	CAL PEL	
Heptane	142-82-5, 142-82-5	TWA	85 ppm 350 mg/m3	2013-10-08	NIOSH REL	
		C	440 ppm 1,800 mg/m3	2013-10-08	NIOSH REL	
	Further information	:	15 minute ceiling value			
		TWA	500 ppm 2,000 mg/m3	1997-08-04	OSHA Z-1	
	Further information	:	(b): The value in mg/m3 is approximate.			
		TWA	400 ppm 1,600 mg/m3	1989-01-19	OSHA P0	
		STEL	500 ppm 2,000 mg/m3	1989-01-19	OSHA P0	
		TWA	400 ppm	2017-03-01	ACGIH	
	Further information	:	CNS impair: Central Nervous System impairment URT irr: Upper Respiratory Tract irritation			
		STEL	500 ppm	2017-03-01	ACGIH	
	Further information	:	CNS impair: Central Nervous System impairment URT irr: Upper Respiratory Tract irritation			
		PEL	400 ppm 1,600 mg/m3	2014-11-26	CAL PEL	
		STEL	500 ppm 2,000 mg/m3	2014-11-26	CAL PEL	

Appropriate engineering controls
Explosion proof ventilation recommended.
Effective exhaust ventilation system

Personal protective equipment

Eye/face protection : Tightly fitting safety goggles

Hand protection : Glove material: Neoprene

: Glove material: Nitrile rubber

Skin and body protection : Protective suit

Respiratory protection : In the case of vapor or aerosol formation use a respirator with an approved filter.
Filter A

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.
Wash contaminated clothing before re-use.

Environmental exposure controls

General advice	:	Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	:	liquid
Color	:	colorless
Odor	:	Faint.
Odor Threshold	:	No data available

Safety data

pH	:	neutral
Melting point	:	<= -30 °C
Boiling point/boiling range	:	Decomposes below the boiling point.
Flash point	:	Above the SADT value
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Flammability (liquids)	:	Decomposition products may be flammable.
Lower explosion limit	:	No data available
Upper explosion limit	:	No data available
Vapor pressure	:	not determined
Relative vapor density	:	No data available
Relative density	:	0.90 at 10 °C
Bulk density	:	Not applicable
Water solubility	:	at 10 °C immiscible
Solubility in other solvents	:	miscible with most organic solvents
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	Test method not applicable

Decomposition temperature	:	SADT - (Self accelerating decomposition temperature) is the lowest temperature at which self accelerating decomposition may occur with a substance in the packaging as used in transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at and above the SADT. Contact with incompatible substances can cause decomposition below the SADT.
Self-Accelerating decomposition temperature (SADT)	:	40 °C
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	Not classified as oxidizing.
Active Oxygen Content	:	3.75 %
Organic peroxides	:	50 %

This material safety datasheet only contains information relating to safety and does not replace any product information or product specification.

10. STABILITY AND REACTIVITY

Conditions to avoid	:	A high degree of confinement must be avoided. Heat, flames and sparks.
Materials to avoid	:	Contact with the following incompatible materials will result in hazardous decomposition: Acids and bases Iron Copper Reducing agents Heavy metals Rust Do not mix with peroxide accelerators, unless under controlled processing. Use only stainless steel 316, PP, polyethylene or glass-lined equipment. For queries regarding the suitability of other materials please contact the supplier.
Hazardous decomposition products	:	Carbon dioxide tert-Butanol Heptane 3-tert-Butoxyheptane

Thermal decomposition	:	SADT - (Self accelerating decomposition temperature) is the lowest temperature at which self accelerating decomposition may occur with a substance in the packaging as used in transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at and above the SADT. Contact with incompatible substances can cause decomposition below the SADT.
Reactivity	:	Stable under normal conditions.
Chemical stability	:	Stable under recommended storage conditions.
Hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Self-Accelerating decomposition temperature (SADT)	:	40 °C (104 °F)

11. TOXICOLOGICAL INFORMATION

PRODUCT INFORMATION:

Hazard Summary

Acute toxicity	:	Not classified based on available information.
Skin corrosion/irritation	:	Not classified based on available information.
Serious eye damage/eye irritation	:	Not classified based on available information.
Respiratory or skin sensitization	:	Respiratory sensitization: Not classified based on available information. Skin sensitization: May cause an allergic skin reaction.
Germ cell mutagenicity	:	Not classified based on available information.
Carcinogenicity	:	Not classified based on available information.
Reproductive toxicity	:	May damage fertility.
STOT-single exposure	:	Not classified based on available information.
STOT-repeated exposure	:	Not classified based on available information.
Aspiration hazard	:	May be fatal if swallowed and enters airways.

Potential Health Effects

Inhalation	:	Contains organic solvents. May be fatal if swallowed and enters airways. Inhalation may cause central nervous system effects.
Skin	:	Causes mild skin irritation. May cause an allergic skin reaction.
Eyes	:	May cause eye irritation.

Ingestion	:	May be fatal if swallowed and enters airways.
Aggravated Medical Condition	:	None known.
Symptoms of Overexposure	:	The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.

Toxicology Assessment

Further information	:	Solvents may degrease the skin. May damage fertility or the unborn child.

Carcinogenicity:

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 component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

TOXICOLOGY DATA FOR THE INGREDIENTS:

Toxicology Assessment

Component: tert-Butyl peroxy-2-ethylhexanoate

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

Component: Petroleum naphtha

CMR effects	:	Carcinogenicity: Classified based on benzene content < 0.1% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note P) Mutagenicity: Classified based on benzene content < 0.1% (Regulation (EC) 1272/2008, Annex VI, Part 3, Note P) Teratogenicity: No effects on or via lactation Reproductive toxicity: No toxicity to reproduction

Test result

Component: tert-Butyl peroxy-2-ethylhexanoate

Skin irritation	:	Species: Rabbit Result: No skin irritation Method: OECD Test Guideline 404
Eye irritation	:	Species: Rabbit Result: No eye irritation Method: OECD Test Guideline 405
Sensitization	:	Species: Guinea pig Classification: May cause sensitization by skin contact.

Result: Causes sensitization.
Method: OECD Test Guideline 406

Repeated dose toxicity : Species: Rat, male and female
NOAEL: mg/kg bw/day, 450
Method: OECD Test Guideline 408

Germ cell mutagenicity

Genotoxicity in vitro : In vitro mammalian cell gene mutation test
Chinese hamster lung fibroblasts
Result: positive
Method: OECD Test Guideline 476

Ames test
Bacteria
Result: Positive results in some in vitro tests.
Method: OECD Test Guideline 471

Genotoxicity in vivo : In vivo micronucleus test
Species: Mouse
Method: OECD Test Guideline 474
Result: negative

Transgenic rodent germ cell gene mutation assay
Species: Mouse
Method: OECD Test Guideline 488
Result: negative

Carcinogenicity : study scientifically unjustified

Reproductive toxicity/Fertility : Test Type: reproductive and developmental toxicity study
Species: Rat, male and female
Strain: wistar
Application Route: Oral
General Toxicity Parent: No-observed-effect level: 300 mg/kg bw/day
Method: OECD Test Guideline 421

Species: Rat, male and female
Strain: wistar
Application Route: Oral
General Toxicity Parent: NOAEL (No observed adverse effect level): 300 mg/kg bw/day
General Toxicity F1: NOAEL (No observed adverse effect level): 300 mg/kg bw/day
Fertility: NOAEL (No observed adverse effect level): 100 mg/kg bw/day
Method: OECD Test Guideline 443

Reproductive toxicity/Development/Teratogenicity : Species: Rabbit
Application Route: Oral
General Toxicity Maternal: NOAEL (No observed adverse effect level): 30 mg/kg bw/day
Developmental Toxicity: NOAEL (No observed adverse effect level): 100 mg/kg bw/day
Method: OECD Test Guideline 414

Component: Petroleum naphtha

Acute oral toxicity	:	LD50: > 5,000 mg/kg Species: Rat Information taken from reference works and the literature.
Acute dermal toxicity	:	LD50: > 5,000 mg/kg Species: Rabbit Information taken from reference works and the literature.
Skin irritation	:	Result: Repeated exposure may cause skin dryness or cracking. Method: OECD Test Guideline 404 Information taken from reference works and the literature. Result: Mild skin irritation Information taken from reference works and the literature.
Sensitization	:	Classification: Does not cause skin sensitization. Method: OECD Test Guideline 406 Information taken from reference works and the literature.
Carcinogenicity	:	Result: no effects
Target Organ Systemic Toxicant - Single exposure	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.
Target Organ Systemic Toxicant - Repeated exposure	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Aspiration toxicity	:	May be fatal if swallowed and enters airways.

12. ECOLOGICAL INFORMATION

PRODUCT INFORMATION:

Ecotoxicology Assessment

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. Toxic to aquatic life with long lasting effects.

Further information on ecology

Hazardous to the ozone layer

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).

COMPONENTS:

Ecotoxicology Assessment

Component: Petroleum naphtha

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

Test result

Component: tert-Butyl peroxy-2-ethylhexanoate

Ecotoxicity effects

Toxicity to fish : LC50: 8.66 mg/l
Exposure time: 96 h
Species: Poecilia reticulata (guppy)
Test Type: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50: 7.5 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Test Type: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae : NOEC: 0.018 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Test Type: Fresh water
Method: OECD Test Guideline 201

EC50: 0.44 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Test Type: Fresh water
Method: OECD Test Guideline 201

M-Factor (Acute) : 1

Toxicity to bacteria : EC50: 64 mg/l
Exposure time: 0.5 h
Species: activated sludge
Test Type: static test
Method: OECD Test Guideline 209

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.45 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

Elimination information (persistence and degradability)

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

Biodegradability : Test Type: aerobic
Result: Readily biodegradable.

Biodegradation: 65 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Component: Petroleum naphtha

Ecotoxicity effects

Toxicity to fish : LC0: 1,000 mg/l
Exposure time: 96 h
Species: Oncorhynchus mykiss (rainbow trout)
Information taken from reference works and the literature.

Toxicity to daphnia and other aquatic invertebrates : EC0: 1,000 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
Information taken from reference works and the literature.

Toxicity to algae : EC0: 1,000 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Information taken from reference works and the literature.

Elimination information (persistence and degradability)

Bioaccumulation : No data available

Mobility : Disperses rapidly in air.

Biodegradability : Test Type: Ready biodegradability
Biodegradation: 80 %
Exposure time: 28 d
Information taken from reference works and the literature.

13. DISPOSAL CONSIDERATIONS

Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Hazardous waste
Dispose of contents/container in accordance with local regulation.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not burn, or use a cutting torch on, the empty drum.
Due to the high risk of contamination recycling/recovery is not recommended.
Follow all warnings even after the container is emptied.

14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 3119
Class	:	5.2 Not permitted for transport

IMDG-Code

UN number	:	UN 3119
Proper shipping name	:	ORGANIC PEROXIDE TYPE F, LIQUID, TEMPERATURE CONTROLLED (tert-Butyl peroxy-2-ethylhexanoate)
Class	:	5.2
Packing group	:	Not Assigned
Labels	:	5.2
EmS Code	:	F-F, S-R
Marine pollutant	:	yes (tert-Butyl peroxy-2-ethylhexanoate)
Remarks	:	The control temperature is the maximum temperature at which the formulation can be transported safely during a prolonged period of time. (ILT/RW/VV/15-4599)CA-2013070013

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

Not applicable for product as supplied.

Further information for transport

Control temperature	:	30 °C (86 °F)
Emergency temperature	:	35 °C (95 °F)

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 3119
Proper shipping name	:	Organic peroxide type F, liquid, temperature controlled
	:	(tert-Butyl peroxy-2-ethylhexanoate, 50%)
Class	:	5.2
Packing group	:	Not Assigned
Labels	:	5.2
ERG Code	:	148
Marine pollutant	:	yes (tert-Butyl peroxy-2-ethylhexanoate)
Reportable Quantity	:	This product does not contain an environmentally hazardous substance per 49 CFR 172.101, Appendix A.
Remarks	:	The control temperature is the maximum temperature at which the formulation can be transported safely during a prolonged period of time. CA-2013070013

15. REGULATORY INFORMATION

Notification status

TCSI	:	YES. On the inventory, or in compliance with the inventory
TSCA	:	YES. All substances listed as active on the TSCA inventory
AICS	:	YES. On the inventory, or in compliance with the inventory
DSL	:	YES. All components of this product are on the Canadian DSL
ENCS	:	YES. On the inventory, or in compliance with the inventory
ISHL	:	YES. On the inventory, or in compliance with the inventory

KECI	:	YES. On the inventory, or in compliance with the inventory
PICCS	:	YES. On the inventory, or in compliance with the inventory
IECSC	:	YES. On the inventory, or in compliance with the inventory
NZIoC	:	YES. On the inventory, or in compliance with the inventory

For explanation of abbreviations, see section 16.

TSCA list

TSCA 5(a)(2)	:	No substances are subject to a Significant New Use Rule.
TSCA 12(b)	:	No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know

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 311/312 Hazards	:	Organic peroxides Respiratory or skin sensitization Reproductive toxicity Aspiration hazard
SARA 302	:	This material does not contain any components with a section 302 EHS TPQ.
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 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 subject to disclosure and 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

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

tert-Butyl peroxy-2-ethylhexanoate	3006-82-4
Petroleum naphtha	64742-48-9

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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.

16. OTHER INFORMATION

Full text of H-Statements

H242	:	Heating may cause a fire.
H304	:	May be fatal if swallowed and enters airways.
H317	:	May cause an allergic skin reaction.
H360F	:	May damage fertility.
H400	:	Very toxic to aquatic life.
H411	:	Toxic to aquatic life with long lasting effects.
H413	:	May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CAL PEL	:	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
CAL PEL / STEL	:	Short term exposure limit
CAL PEL / PEL	:	Permissible exposure limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
NIOSH REL / C	:	Ceiling value not be exceeded at any time.
OSHA P0 / TWA	:	8-hour time weighted average
OSHA P0 / STEL	:	Short-term exposure limit
OSHA Z-1 / TWA	:	8-hour time weighted average

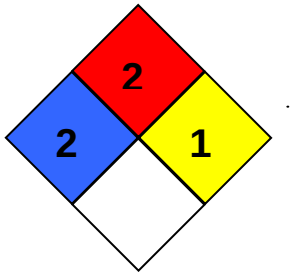
AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic 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

Further information

HMIS Classification : Health Hazard: 2
Chronic Health Hazard: *
Flammability: 2
Physical hazards: 1

NFPA Classification : Health Hazard: 2
Fire Hazard: 2
Reactivity Hazard: 1



Notification status explanation

TCSI	Taiwan Chemical Substance Inventory (TCSI)
TSCA	United States TSCA Inventory
AICS	Australia Inventory of Chemical Substances (AICS)
DSL	Canadian Domestic Substances List (DSL)
ENCS	Japan. ENCS - Existing and New Chemical Substances Inventory
ISHL	Japan. ISHL - Inventory of Chemical Substances
KECI	Korea. Korean Existing Chemicals Inventory (KECI)
PICCS	Philippines Inventory of Chemicals and Chemical Substances (PICCS)
IECSC	China. Inventory of Existing Chemical Substances in China (IECSC)
NZIoC	New Zealand. Inventory of Chemical Substances

Further information

Revision Date	01/14/2020

This data sheet contains changes from the previous version in section(s):
Transport information
Other information

The information in this safety data sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. The user must determine the appropriate measures that need to be implemented for the use and handling of this product in the c ontext of the user's operations and use of this product. The information contained herein supersedes all previously issued bulletins on the subject matter covered. If the date on this document is more than three years old,call to make certain that this sheet is current. No warranty is made as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. User must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. Nothing contained herein shall be construed as granting or extending any license under any patent.

The information provided in this Material 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.