

SAFETY DATA SHEET

according to GB/T 16483 and GB/T 17519

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

Date of first issue: 2015/01/19

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Information
 Trade name : TRIGONOX 29-C90

Use of the Substance/Mixture : Specific use(s): Polymerization initiator

Company : Nouryon Functional Chemicals B.V.
 Haaksbergweg 88
 NL 1101 BZ Amsterdam
 Netherlands

Telephone : +31889840367
 Telefax :
 E-mail address : polymer.emeia@nouryon.com
 Emergency telephone number : 24 hours:+31 57 06 79211, US-CHEMTREC:1-800-424-9300,
 CA-CANUTEC:1-613-996-6666, JP: +81 (836) 74 8810, CN:
 化学事故应急咨询电话 : +86 532 8388 9090

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance	
Form	liquid
Colour	colourless
Odour	Faint.
GB 6944/12268	
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
Hazard Summary	
General advice	Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.
Physical and chemical hazards	Heating may cause a fire.
Health hazards	

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

Inhalation	Contains organic solvents. May be fatal if swallowed and enters airways. Inhalation may cause central nervous system effects.
Skin	Causes mild skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be fatal if swallowed and enters airways.
Environmental hazards	None known.

GHS Classification

Organic peroxides, Type C

Skin corrosion/irritation, Category 3

Specific target organ toxicity - repeated exposure, Category 2

Aspiration hazard, Category 1

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.
H316 Causes mild skin irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

: **Prevention:**
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.
P260 Do not breathe mist, vapours or spray.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P314 Get medical advice/ attention if you feel unwell.
P331 Do NOT induce vomiting.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.
Storage:
P405 Store locked up.
P410 Protect from sunlight.
P420 Store away from other materials.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Physical and chemical hazards

Heating may cause a fire.

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

Health hazards

Inhalation : Contains organic solvents.
May be fatal if swallowed and enters airways.
Inhalation may cause central nervous system effects.

Skin : Causes mild skin irritation.

Eyes : May cause eye irritation.

Ingestion : May be fatal if swallowed and enters airways.

Further information : Solvents may degrease the skin.

Environmental hazards

None known.

Other hazards

No further data available.

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

3. COMPOSITION/INFORMATION ON INGREDIENTS

Common Name : Organic peroxide
Chemical nature : Mixture

Hazardous substance

Chemical name	CAS-No.	Classification	Concentration [%]
1,1-Di(tert-butylperoxy)-3,3,5-trimethylcyclohexane	6731-36-8	Org. Perox. B; H241 STOT RE 2; H373	88 - 90
Petroleum naphtha	64742-48-9	Skin Corr./Irrit. 3; H316 Asp. Tox. 1; H304 Aquatic Chronic 4; H413	10 - 12

Remarks : 1,1-Di(tert-butylperoxy)-3,3,5-trimethylcyclohexane, 90%
solution in aromatic free mineral spirit

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 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.

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.

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.
Causes mild skin irritation.
May cause damage to organs through prolonged or repeated
exposure.

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

Treatment : Treat symptomatically.

5. FIREFIGHTING 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 firefighting / 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 firefighters : 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.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Remove all sources of ignition.
Beware of vapours accumulating to form explosive concentrations. Vapours 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 unauthorised persons entering the zone.
- Environmental precautions : Prevent product from entering drains.
Discharge into the environment must be avoided.
- Methods for cleaning up / Methods for containment : Soak up with inert absorbent material and dispose of as hazardous waste.
Use only inert inorganic material such as vermiculite or perlite as absorbent.

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

Keep mixture of absorbent material and spilled product 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.
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.

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.
Electrical installations / working materials must comply with the technological safety standards.
Keep only in original container.
Store away from other materials.

Maximum storage temperature: : 25 °C

Other data : Maximum storage temperature is for quality only.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of	Control parameters /	Basis
------------	---------	------------------------	-------------------------	-------

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

		exposure)	Permissible concentration	
tert-Butanol	75-65-0	TWA	100 ppm	ACGIH
		TWA	100 ppm	ACGIH
Acetone	67-64-1	PC-TWA	300 mg/m ³	CN OEL
		PC-STEL	450 mg/m ³	CN OEL
		TWA	250 ppm	ACGIH
		STEL	500 ppm	ACGIH
		TWA	250 ppm	ACGIH
		STEL	500 ppm	ACGIH
Carbon dioxide	124-38-9	PC-TWA	9,000 mg/m ³	CN OEL
		PC-STEL	18,000 mg/m ³	CN OEL
		TWA	5,000 ppm	ACGIH
		STEL	30,000 ppm	ACGIH

Engineering measures : Explosion proof ventilation recommended.
Effective exhaust ventilation system

Personal protective equipment

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

Eye/face protection : Tightly fitting safety goggles

Skin and body protection : Protective suit

Hand protection

Material : Neoprene

Material : Nitrile rubber

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.

Environmental exposure controls

General advice : Prevent product from entering drains.
Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : colourless

Odour : Faint.

Odour Threshold : No data available

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

pH	:	Not applicable
Melting point	:	No data available
Boiling point/boiling range	:	Decomposes below the boiling point.
Flash point	:	Above the SADT value Not applicable
Evaporation rate	:	No data available
Flammability (liquids)	:	Decomposition products may be flammable.
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	not determined
Relative vapour density	:	No data available
Relative density	:	0.895 (20 °C)
Bulk density	:	Not applicable
Solubility(ies)		
Water solubility	:	immiscible (20 °C)
Solubility in other solvents	:	Soluble in aromatic solvents.
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition 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)	:	60 °C
Viscosity		
Viscosity, dynamic	:	21 mPa.s (20 °C)
Viscosity, kinematic	:	23.46 mm ² /s (20 °C)
Explosive properties	:	Not explosive

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

Oxidizing properties : Not classified as oxidising.

Active Oxygen Content : 9.5 %

Organic peroxides : 90 %

This 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 : 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 : tert-Butanol
Acetone
Methane
3,3,5-trimethylcyclohexanone
Carbon dioxide
Poly(3,3,5-trimethyl ϵ -caprolacton

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) : 60 °C

11. TOXICOLOGICAL INFORMATION

PRODUCT INFORMATION:

Hazard Summary

- Acute toxicity : Not classified based on available information.
- Skin corrosion/irritation : Causes mild skin irritation.
- Serious eye damage/eye irritation : Not classified based on available information.
- Respiratory or skin sensitisation : Respiratory sensitisation: Not classified based on available information.
Skin sensitisation: Not classified based on available information.
- Germ cell mutagenicity : Not classified based on available information.
- Carcinogenicity : Not classified based on available information.
- Reproductive toxicity : Not classified based on available information.
- STOT - single exposure : Not classified based on available information.
- STOT - repeated exposure : May cause damage to organs through prolonged or repeated exposure.
- 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.
- 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.

Component: Petroleum naphtha

- CMR effects : Carcinogenicity: Not carcinogenic.
Mutagenicity: Not mutagenic.
Teratogenicity: No effects on or via lactation

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

Reproductive toxicity: No toxicity to reproduction

Component: 1,1-Di(tert-butylperoxy)-3,3,5-trimethylcyclohexane

- Acute oral toxicity : LD50: > 2,000 mg/kg
Species: Rat
- Acute inhalation toxicity : LC50 (Rat): > 5.6 mg/l
Exposure time: 4 h
Test atmosphere: aerosol
- Acute dermal toxicity : LD50: > 2,000 mg/kg
Species: Rat
- Skin irritation : Species: Rabbit
Result: No skin irritation
- Eye irritation : Species: Rabbit
Result: No eye irritation
- Sensitisation : Species: Guinea pig
Classification: Does not cause skin sensitisation.
- Germ cell mutagenicity
Genotoxicity in vitro : Ames test
Result: negative
- Genotoxicity in vivo : Result: Not mutagenic.
- Carcinogenicity : Species: Mouse, (male and female)
Application Route: Oral
Exposure time: 78 weeks
Dose: 0 - 1056 mg/kg bw/day
Result: Not carcinogenic on laboratory animals.
- Reproductive toxicity/Fertility : Species: Rat
Application Route: Oral
Dose: 0, 30, 100, 300, 1000 milligram per kilogram
General Toxicity - Parent: No observed adverse effect level:
1,000 mg/kg bw/day
GLP: yes
- Aspiration toxicity : No aspiration toxicity classification

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.
Sensitisation	: Classification: Does not cause skin sensitisation. 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 : None known.

Component: 1,1-Di(tert-butylperoxy)-3,3,5-trimethylcyclohexane

Short-term (acute) aquatic hazard : No toxicity at the limit of solubility

Long-term (chronic) aquatic hazard : This product has no known ecotoxicological effects.

Component: Petroleum naphtha

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

Component: 1,1-Di(tert-butylperoxy)-3,3,5-trimethylcyclohexane

Ecotoxicity effects

Toxicity to daphnia and other aquatic invertebrates : EC50: 0.133 mg/l
Exposure time: 48 h
No toxicity at the limit of solubility

Toxicity to algae : NOEC: > 0.11 mg/l
Exposure time: 72 h
Species: Pseudokirchneriella subcapitata (green algae)
Test Type: Growth inhibition
Method: OECD Test Guideline 201
No toxicity at the limit of solubility

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

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

Elimination information (persistence and degradability)

Bioaccumulation : Bioconcentration factor (BCF): 443 - 766

Biodegradability : Result: Inherently biodegradable.

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 : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
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.

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

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 3103
Proper shipping name : Organic peroxide type C, liquid
(1,1-Di(tert-butylperoxy)-3,3,5-trimethylcyclohexane)
Class : 5.2
Subsidiary risk : HEAT
Packing group : Not Assigned
Labels : 5.2 (HEAT)
Packing instruction (cargo aircraft) : 570
Packing instruction (passenger aircraft) : 570
Environmentally hazardous : no

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
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.

National Regulations

GB 6944/12268

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
Labels : 5.2
Environmentally hazardous : no

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
AIIC : 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

TRIGONOX 29-C90

Version 4

Revision Date: 2022/05/25

Print Date: 2023/03/14

CN / EN

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
TECI : YES. On the inventory, or in compliance with the inventory

For explanation of abbreviation see section 16.

National regulatory information

Hazardous Chemicals for Priority Management under SAWS : Not applicable
China Severely Restricted Toxic Chemicals for Import and Export : Not applicable
Catalogue of Hazardous Chemicals : 1,1-Di(tert-butylperoxy)-3,3,5-trimethylcyclohexane Listed

Regulations on Safety Management of Hazardous Chemicals

Catalogue of Hazardous Chemicals : Listed
Identification of Major Hazard Installations for Hazardous Chemicals (GB 18218)
Category Threshold quantity
Organic peroxides 50 t
Further information : none

16. OTHER INFORMATION

Full text of H-Statements

H241 : Heating may cause a fire or explosion.
H304 : May be fatal if swallowed and enters airways.
H316 : Causes mild skin irritation.
H373 : May cause damage to organs through prolonged or repeated exposure.
H413 : May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
CN OEL : Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.
ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
CN OEL / PC-TWA : Permissible concentration - time weighted average
CN OEL / PC-STEEL : Permissible concentration - short term exposure limit

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; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Further information

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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

Handling and storage

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.