

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

TRIGONOX A-W70 (IBC)

| | | | |
|---------|----------------|---------|---------------------------------|
| Version | Revision Date: | BE / EN | Date of last issue: 14.10.2022 |
| 1.1 | 22.03.2023 | | Date of first issue: 14.10.2022 |

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : TRIGONOX A-W70 (IBC)

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Polymerization initiator

1.3 Details of the supplier of the safety data sheet

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

Telephone : +31889840367

E-mail address of person responsible for the SDS : polymer.emeia@nouryon.com

1.4 Emergency telephone number

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

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

| | |
|---------------------------------|------------------------------------------------|
| Flammable liquids, Category 3 | H226: Flammable liquid and vapour. |
| Organic peroxides, Type F | H242: Heating may cause a fire. |
| Acute toxicity, Category 4 | H302: Harmful if swallowed. |
| Acute toxicity, Category 2 | H330: Fatal if inhaled. |
| Acute toxicity, Category 3 | H311: Toxic in contact with skin. |
| Skin corrosion, Sub-category 1C | H314: Causes severe skin burns and eye damage. |

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| Serious eye damage, Category 1 | H318: Causes serious eye damage. |
| Skin sensitisation, Category 1 | H317: May cause an allergic skin reaction. |
| Germ cell mutagenicity, Category 2 | H341: Suspected of causing genetic defects. |
| Carcinogenicity, Category 2 | H351: Suspected of causing cancer. |
| Specific target organ toxicity - single exposure, Category 3, Respiratory system | H335: May cause respiratory irritation. |
| Long-term (chronic) aquatic hazard, Category 2 | H411: Toxic to aquatic life with long lasting effects. |

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :

- H226 Flammable liquid and vapour.
- H242 Heating may cause a fire.
- H302 Harmful if swallowed.
- H311 Toxic in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H317 May cause an allergic skin reaction.
- H330 Fatal if inhaled.
- H335 May cause respiratory irritation.
- H341 Suspected of causing genetic defects.
- H351 Suspected of causing cancer.
- H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P234 Keep only in original packaging.
- P260 Do not breathe mist, vapours or spray.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

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P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
 P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
 P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
 P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.
 P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Hazardous components which must be listed on the label:

tert-Butyl hydroperoxide

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

| Chemical name | CAS-No. EC-No. Index-No. Registration number | Classification | Concentration (% w/w) |
|--------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|--------------------------|
| tert-Butyl hydroperoxide | 75-91-2 200-915-7 617-023-00-2 01-2119446670-40 | Flam. Liq. 3; H226 Org. Perox. F; H242 Acute Tox. 4; H302 Acute Tox. 2; H330 Acute Tox. 3; H311 | >= 69 - <= 71 |

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| | | Skin Corr. 1C; H314 Eye Dam. 1; H318 Skin Sens. 1A; H317 Muta. 2; H341 Carc. 2; H351 STOT SE 3; H335 (Respiratory system) Aquatic Chronic 2; H411 |
| | | Acute toxicity estimate Acute oral toxicity: 560 mg/kg Acute inhalation toxicity (vapour): 0,84 mg/l Acute dermal toxicity: 440 mg/kg |

For explanation of abbreviations see section 16.

Remarks : tert-Butyl hydroperoxide, 70% solution in water

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Immediate medical attention is required.
 Move out of dangerous area.
 Show this safety data sheet to the doctor in attendance.
 Symptoms of poisoning may appear several hours later.
- If inhaled : If breathed in, move person into fresh air.
 Call a physician or poison control centre immediately.
 Remove to fresh air.
 Keep patient warm and at rest.
 If unconscious, place in recovery position and seek medical advice.
 Keep respiratory tract clear.
- In case of skin contact : Take off contaminated clothing and shoes immediately.
 Rinse immediately with plenty of water.
 Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
 Take victim immediately to hospital.

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- In case of eye contact : Rinse with plenty of water.
Get medical attention immediately. Continue to rinse during transport.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.
Do not induce vomiting! May cause chemical burns in mouth and throat.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.
- Risks : Harmful if swallowed.
Toxic in contact with skin.
May cause an allergic skin reaction.
Causes serious eye damage.
Fatal if inhaled.
May cause respiratory irritation.
Suspected of causing genetic defects.
Suspected of causing cancer.
Causes severe burns.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture

- Specific hazards during firefighting : CAUTION: reignition may occur.
Supports combustion.
Water spray may be ineffective unless used by experienced

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firefighters.
Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous decomposition products formed under fire conditions.

Hazardous combustion products : No hazardous combustion products are known

5.3 Advice for firefighters

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.

SECTION 6: Accidental release measures

6.1 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 vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Evacuate personnel to safe areas.
Only qualified personnel equipped with suitable protective equipment may intervene.
Prevent unauthorised persons entering the zone.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Discharge into the environment must be avoided.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material and dispose of as hazardous waste.
Use only inert inorganic material such as vermiculite or perlite as absorbent.
Keep mixture of absorbent material and spilled product wetted with water.

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Confinement must be avoided.
Never return spills in original containers for re-use.

6.4 Reference to other sections

For disposal considerations see section 13.

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- | | | |
|-------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advice on safe handling | : | For personal protection see section 8. Avoid formation of aerosol. Do not breathe vapours or spray mist. Avoid contact with skin, eyes and clothing. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Container may be opened only under exhaust ventilation hood. 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. Avoid formation of aerosol. 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. Take measures to prevent the build up of electrostatic charge. Keep away from combustible material. |
| Hygiene measures | : | Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before re-use. |
| Temperature class | : | It is recommended to use electrical equipment of temperature group T3. However, autoignition can never be excluded. |

7.2 Conditions for safe storage, including any incompatibilities

- | | | |
|-----------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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. |
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Further information on storage stability : If product freezes or separates, contact the manufacturer.

Maximum storage temperature is for quality only.

Minimum storage temperature: : Avoid temperatures below:
0 °C

Maximum storage temperature: : 35 °C

7.3 Specific end use(s)

Specific use(s) : Consult the technical guidelines for the use of this substance/mixture.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Occupational exposure limits of decomposition products

| Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
|--------------|---------------------------------|-------------------------------|------------------------------------|------------|
| Methane | 74-82-8 | TLV 8 hr (gas) | 1.000 ppm | BE OEL |
| Acetone | 67-64-1 | TWA | 500 ppm 1.210 mg/m ³ | 2000/39/EC |
| | Further information: Indicative | | | |
| | | TLV 8 hr | 246 ppm 594 mg/m ³ | BE OEL |
| | | TLV 15 min | 492 ppm 1.187 mg/m ³ | BE OEL |
| tert-Butanol | 75-65-0 | TLV 8 hr | 100 ppm 307 mg/m ³ | BE OEL |

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

| Substance name | End Use | Exposure routes | Potential health effects | Value |
|--------------------------|---------|-----------------|----------------------------|-------------------------|
| tert-Butyl hydroperoxide | Workers | Inhalation | Long-term systemic effects | 3,08 mg/m ³ |
| | Workers | Inhalation | Acute systemic effects | 10,37 mg/m ³ |
| | Workers | Inhalation | Long-term local effects | 3,69 mg/m ³ |
| | Workers | Inhalation | Acute local effects | 21,34 mg/m ³ |

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| | Workers | Dermal | Long-term systemic effects | 12,5 mg/kg bw/day |
| | Consumers | Inhalation | Long-term systemic effects | 0,91 mg/m3 |
| | Consumers | Inhalation | Acute systemic effects | 3,22 mg/m3 |
| | Consumers | Inhalation | Long-term local effects | 0,75 mg/m3 |
| | Consumers | Inhalation | Acute local effects | 12,81 mg/m3 |
| | Consumers | Dermal | Long-term systemic effects | 7,5 mg/kg bw/day |
| | Consumers | Oral | Long-term systemic effects | 0,26 mg/kg bw/day |

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

| Substance name | Environmental Compartment | Value |
|--------------------------|---------------------------|------------------------|
| tert-Butyl hydroperoxide | Fresh water | 0,002 mg/l |
| | Marine water | 0 mg/l |
| | Intermittent water | 0,015 mg/l |
| | Sewage treatment plant | 0,17 mg/l |
| | Fresh water sediment | 0,006 mg/kg dry weight |
| | Marine sediment | 0,001 mg/kg dry weight |
| | Soil | 0,166 mg/kg dry weight |
| | Secondary Poisoning | 1,4 mg/kg food |

8.2 Exposure controls

Engineering measures

Explosion proof ventilation recommended.

Effective exhaust ventilation system

Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face protection : Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Hand protection

Material : Neoprene

Material : Nitrile rubber

Skin and body protection : Protective suit

Respiratory protection : In the case of vapour or aerosol formation use a respirator

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with an approved filter.
Filter A

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | | |
|----------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical state | : | liquid |
| Colour | : | colourless |
| Odour | : | Faint. |
| Odour Threshold | : | No data available |
| Melting point | : | <= 0 °C |
| Boiling point/boiling range | : | Decomposes below the boiling point. |
| Upper explosion limit / Upper flammability limit | : | No data available |
| Lower explosion limit / Lower flammability limit | : | No data available |
| Flash point | : | 43 °C Method: closed cup |
| 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) | : | 65 °C |
| pH | : | 3,6 (20 - 30 °C) |
| Viscosity | : | |

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| Viscosity, dynamic | : | 4,1 mPa.s (20 °C) |
| Viscosity, kinematic | : | No data available |
| Solubility(ies) | | |
| Water solubility | : | (20 °C) miscible |
| Solubility in other solvents | : | No data available |
| Partition coefficient: n-octanol/water | : | No data available |
| Vapour pressure | : | not determined |
| Relative density | : | 0,935 (25 °C) |
| Bulk density | : | Not applicable |
| Relative vapour density | : | No data available |

9.2 Other information

| | | |
|------------------------|---|-----------------------------------------------------------------------------------|
| Explosives | : | Not explosive |
| Oxidizing properties | : | Not classified as oxidising. |
| Flammability (liquids) | : | Flammable liquid and vapour. Remarks: Decomposition products may be flammable. |
| Evaporation rate | : | No data available |
| Active Oxygen Content | : | 12,16 - 12,61 % |
| Organic peroxides | : | 68,5 - 71 % |

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

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10.4 Conditions to avoid

Conditions to avoid : A high degree of confinement must be avoided.
Heat, flames and sparks.

10.5 Incompatible materials

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.

10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

Hazardous decomposition products : Methane
Acetone
tert-Butanol

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.

Self-Accelerating decomposition temperature (SADT) : 65 °C

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Harmful if swallowed.
Toxic in contact with skin.

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Fatal if inhaled.

Product:

Acute oral toxicity : Acute toxicity estimate: 800 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 1,2 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: 628,57 mg/kg
Method: Calculation method

Components:

tert-Butyl hydroperoxide:

Acute oral toxicity : LD50 (Rat, male and female): 560 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): 1,85 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

LC50 (Rat, male): 0,84 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
GLP: yes

Acute dermal toxicity : LD50 (Rabbit, male and female): 440 mg/kg
Method: OECD Test Guideline 402
GLP: yes

Skin corrosion/irritation

Causes severe burns.

Components:

tert-Butyl hydroperoxide:

Species : Rabbit
Result : Corrosive, category 1C - where responses occur after exposures between 1 hour and 4 hours and observations up to 14 days.

Serious eye damage/eye irritation

Causes serious eye damage.

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Components:

tert-Butyl hydroperoxide:

Species : Rabbit
 Result : Risk of serious damage to eyes.

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Components:

tert-Butyl hydroperoxide:

Test Type : Maximisation Test
 Species : Guinea pig
 Method : OECD Test Guideline 406
 Result : The product is a skin sensitiser, sub-category 1A.
 GLP : yes

Germ cell mutagenicity

Suspected of causing genetic defects.

Components:

tert-Butyl hydroperoxide:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
 Test system: Chinese hamster ovary cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: positive
 GLP: yes

Test Type: In vitro gene mutation study in mammalian cells
 Test system: mouse lymphoma cells
 Metabolic activation: with and without metabolic activation
 Method: Regulation (EC) No. 440/2008, Annex, B.17
 Result: positive
 GLP: yes

Test Type: reverse mutation assay
 Test system: Salmonella typhimurium
 Metabolic activation: Metabolic activation
 Method: Regulation (EC) No. 440/2008, Annex, B.13/14

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| | (Ames test) Result: positive GLP: yes |
| Genotoxicity in vivo | : Test Type: Micronucleus test Species: Mouse (male and female) Application Route: Intravenous Method: Regulation (EC) No. 440/2008, Annex, B.12 Result: negative GLP: yes |
| | Test Type: dominant lethal test Species: Mouse (male) Application Route: Intraperitoneal Method: Regulation (EC) No. 440/2008, Annex, B.22 Result: positive GLP: no |
| | Test Type: In vivo mammalian alkaline comet assay Species: Rat (male) Application Route: Inhalation Method: OECD Test Guideline 489 Result: negative GLP: yes |
| Germ cell mutagenicity- Assessment | : In vitro tests showed mutagenic effects which were not observed with in vivo test. |

Carcinogenicity

Suspected of causing cancer.

Components:

tert-Butyl hydroperoxide:

| | |
|-------------------|---------------------------|
| Species | : Rat, male and female |
| Application Route | : inhalation (vapour) |
| Method | : OECD Test Guideline 451 |
| GLP | : yes |

| | |
|---------------------------------|---------------------------------------------------------|
| Carcinogenicity - Assessment | : Limited evidence of carcinogenicity in animal studies |
|---------------------------------|---------------------------------------------------------|

Reproductive toxicity

Not classified based on available information.

Components:

tert-Butyl hydroperoxide:

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Effects on foetal development : Species: Rat
 Strain: wistar
 Application Route: Oral
 General Toxicity Maternal: NOAEL: 35 mg/kg bw/day
 Method: OECD Test Guideline 414
 GLP: yes

STOT - single exposure

May cause respiratory irritation.

Components:

tert-Butyl hydroperoxide:

Assessment : May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

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
 NOAEL : 22,2 mg/m3
 Application Route : Inhalation
 Test atmosphere : vapour
 Method : OECD Test Guideline 412
 GLP : yes

Species : Rat, male and female
 NOAEC : 22,2 mg/m3
 Application Route : Inhalation
 Test atmosphere : vapour
 Method : OECD Test Guideline 413
 GLP : yes

Aspiration toxicity

Not classified based on available information.

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11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

Remarks : Solvents may degrease the skin.

Remarks : No further data available.

SECTION 12: Ecological information

12.1 Toxicity

Components:

tert-Butyl hydroperoxide:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 29,61 mg/l
 Exposure time: 96 h
 Test Type: semi-static test
 Method: OECD Test Guideline 203
 GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 14,07 mg/l
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202
 GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 1,47 mg/l
 Exposure time: 72 h
 Test Type: static test
 Method: OECD Test Guideline 201
 GLP: yes

NOEC (Pseudokirchneriella subcapitata (green algae)): 0,22 mg/l

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Exposure time: 72 h
 Test Type: static test
 Method: OECD Test Guideline 201
 GLP: yes

12.2 Persistence and degradability

Components:

tert-Butyl hydroperoxide:

Biodegradability : Test Type: Ready biodegradability
 Inoculum: activated sludge, non-adapted
 Result: Not readily biodegradable.
 Biodegradation: 0 %
 Exposure time: 28 d
 Method: OECD Test Guideline 301B
 GLP: yes

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

- | | | |
|------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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. 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. |

SECTION 14: Transport information

14.1 UN number or ID number

- | | | |
|-------------|---|---------|
| ADN | : | UN 3109 |
| ADR | : | UN 3109 |
| RID | : | UN 3109 |
| IMDG | : | UN 3109 |
| IATA | : | UN 3109 |

14.2 UN proper shipping name

- | | | |
|-------------|---|---------------------------------------------------------------|
| ADN | : | ORGANIC PEROXIDE TYPE F, LIQUID (tert-Butyl hydroperoxide) |
| ADR | : | ORGANIC PEROXIDE TYPE F, LIQUID (tert-Butyl hydroperoxide) |
| RID | : | ORGANIC PEROXIDE TYPE F, LIQUID (tert-Butyl hydroperoxide) |
| IMDG | : | ORGANIC PEROXIDE TYPE F, LIQUID (tert-Butyl hydroperoxide) |
| IATA | : | Organic peroxide type F, liquid (tert-Butyl hydroperoxide) |

14.3 Transport hazard class(es)

| | |
|-------|------------------|
| Class | Subsidiary risks |
|-------|------------------|

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| | | | |
|-------------|---|-----|---------|
| ADN | : | 5.2 | 8 |
| ADR | : | 5.2 | 8 |
| RID | : | 5.2 | 8 |
| IMDG | : | 5.2 | 8 |
| IATA | : | 5.2 | 8, HEAT |

14.4 Packing group

ADN

Packing group : Not assigned by regulation
 Classification Code : P1
 Hazard Identification Number : 539
 Labels : 5.2 (8)

ADR

Packing group : Not assigned by regulation
 Classification Code : P1
 Hazard Identification Number : 539
 Labels : 5.2 (8)
 Tunnel restriction code : (D)

RID

Packing group : Not assigned by regulation
 Classification Code : P1
 Hazard Identification Number : 539
 Labels : 5.2 (8)

IMDG

Packing group : Not assigned by regulation
 Labels : 5.2 (8)
 EmS Code : F-J, S-R
 Remarks : SP-12886.

IATA (Cargo)

Packing instruction (cargo aircraft) : 570
 Packing group : Not assigned by regulation
 Labels : Organic Peroxides, Corrosives, Keep Away From Heat

IATA (Passenger)

Packing instruction (passenger aircraft) : 570
 Packing group : Not assigned by regulation
 Labels : Organic Peroxides, Corrosives, Keep Away From Heat

14.5 Environmental hazards

ADN

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Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

IATA (Passenger)

Environmentally hazardous : yes

IATA (Cargo)

Environmentally hazardous : yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) : Conditions of restriction for the following entries should be considered:
Number on list 75, 3

If you intend to use this product as tattoo ink, please contact your vendor.

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and : Not applicable

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import of dangerous chemicals

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. H2 ACUTE TOXIC

P6b SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES

E2 ENVIRONMENTAL HAZARDS

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

TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

AIIC : On the inventory, or in compliance with the inventory

DSL : All components of this product are on the Canadian DSL

ENCS : On the inventory, or in compliance with the inventory

ISHL : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

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

15.2 Chemical safety assessment

Product information : No information available.

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tert-Butyl hydroperoxide : A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of H-Statements

| | |
|------|----------------------------------------------------|
| H226 | : Flammable liquid and vapour. |
| H242 | : Heating may cause a fire. |
| H302 | : Harmful if swallowed. |
| H311 | : Toxic in contact with skin. |
| H314 | : Causes severe skin burns and eye damage. |
| H317 | : May cause an allergic skin reaction. |
| H318 | : Causes serious eye damage. |
| H330 | : Fatal if inhaled. |
| H335 | : May cause respiratory irritation. |
| H341 | : Suspected of causing genetic defects. |
| H351 | : Suspected of causing cancer. |
| H411 | : Toxic to aquatic life with long lasting effects. |

Full text of other abbreviations

| | |
|---------------------|----------------------------------------------------------------------------------------------------------------------|
| Acute Tox. | : Acute toxicity |
| Aquatic Chronic | : Long-term (chronic) aquatic hazard |
| Carc. | : Carcinogenicity |
| Eye Dam. | : Serious eye damage |
| Flam. Liq. | : Flammable liquids |
| Muta. | : Germ cell mutagenicity |
| Org. Perox. | : Organic peroxides |
| Skin Corr. | : Skin corrosion |
| Skin Sens. | : Skin sensitisation |
| STOT SE | : Specific target organ toxicity - single exposure |
| 2000/39/EC | : Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values |
| BE OEL | : Belgium. Occupational exposure limit values |
| 2000/39/EC / TWA | : Limit Value - eight hours |
| BE OEL / TLV 8 hr | : Long term exposure limit |
| BE OEL / TLV 15 min | : Short term exposure limit |

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx -

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Concentration associated with x% growth rate response; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information : This data sheet contains changes from the previous version in section(s):
 Hazards identification
 Composition/information on ingredients
 Toxicological information

Classification of the mixture:

| | |
|---------------|------|
| Flam. Liq. 3 | H226 |
| Org. Perox. F | H242 |
| Acute Tox. 4 | H302 |
| Acute Tox. 2 | H330 |
| Acute Tox. 3 | H311 |
| Skin Corr. 1C | H314 |
| Eye Dam. 1 | H318 |
| Skin Sens. 1 | H317 |
| Muta. 2 | H341 |
| Carc. 2 | H351 |
| STOT SE 3 | H335 |

Classification procedure:

| |
|-------------------------------------|
| Based on product data or assessment |
| Based on product data or assessment |
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |
| Calculation method |

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Aquatic Chronic 2

H411

Calculation method

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

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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