

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

NOROX[®] MCP FRED



Version	Revision Date:	SDS Number:	Date of last issue: 21.09.2017
1.4	27.07.2020	600000000082	Date of first issue: 28.06.2016

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

1.1 Product identifier

Trade name : NOROX[®] MCP FRED

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

Use of the Sub-
stance/Mixture : polymerisation initiators

1.3 Details of the supplier of the safety data sheet

Company : United Initiators GmbH
Dr.-Gustav-Adolph-Str. 3
82049 Pullach

Telephone : +49 / 89 / 74422 – 0

E-mail address of person
responsible for the SDS : contact@united-in.com

1.4 Emergency telephone number

+49 / 89 / 74422 – 0 (24 h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Organic peroxides, Type D	H242: Heating may cause a fire.
Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 3	H331: Toxic if inhaled.
Skin corrosion, Sub-category 1B	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Specific target organ toxicity - single exposure, Category 3, Respiratory system	H335: May cause respiratory irritation.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Long-term (chronic) aquatic hazard, Category 2	H411: Toxic to aquatic life with long lasting effects.

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2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :

- H242 Heating may cause a fire.
- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H331 Toxic if inhaled.
- H335 May cause respiratory irritation.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P220 Keep/Store away from clothing/ strong acids, bases, heavy metal salts and other reducing substances /combustible materials.
P233 Keep container tightly closed.
P235 Keep cool.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P262 Do not get in eyes, on skin, or on clothing.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P314 Get medical advice/ attention if you feel unwell.
P315 Get immediate medical advice/ attention.
P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

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Cumene hydroperoxide (CAS-No. 80-15-9)

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.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Organic Peroxide
Liquid mixture

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Cumene hydroperoxide	80-15-9 201-254-7 617-002-00-8 01-2119475796-19	Flam. Liq. 3; H226 Org. Perox. E; H242 Acute Tox. 4; H302 Acute Tox. 3; H331 Acute Tox. 4; H312 Skin Corr. 1B; H314 Eye Dam. 1; H318 STOT RE 2; H373 Aquatic Chronic 2; H411	>= 40 - < 45
2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide	1338-23-4 700-954-4 01-2119514691-43-0000	Org. Perox. D; H242 Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Corr. 1B; H314 Eye Dam. 1; H318	>= 15 - < 20
Cumene	98-82-8 202-704-5 601-024-00-X 01-2119473983-24	Flam. Liq. 3; H226 STOT SE 3; H335 Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 5 - < 7.5
Benzenemethanol, alpha,alpha-dimethyl-	617-94-7 210-539-5 01-2119965145-35	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Irrit. 2; H319	>= 1 - < 5

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
Symptoms of poisoning may appear several hours later.

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No artificial respiration, mouth-to-mouth or mouth to nose. Use suitable instruments/apparatus.
Call a physician immediately.

- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
- If inhaled : Call a physician or poison control centre immediately.
If unconscious, place in recovery position and seek medical advice.
Keep respiratory tract clear.
Call a physician immediately.
If breathed in, move person into fresh air.
Contact a poison control center.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash contaminated clothing before re-use.
If on skin, rinse well with water.
If on clothes, remove clothes.
If symptoms persist, call a physician.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.
Call a physician immediately.
Rinse mouth thoroughly with water.

4.2 Most important symptoms and effects, both acute and delayed

- Risks : Harmful if swallowed.
Causes serious eye damage.
Toxic if inhaled.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.
Causes severe burns.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically and supportively.

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SECTION 5: Firefighting measures

5.1 Extinguishing media

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

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Contact with incompatible materials or exposure to temperatures exceeding SADT may result in a self-accelerating decomposition reaction with release of flammable vapours which may auto-ignite.
The product burns violently.
Flash back possible over considerable distance.
Vapours may form explosive mixtures with air.
Cool closed containers exposed to fire with water spray.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

Specific extinguishing methods : Do not use a solid water stream as it may scatter and spread fire.
Remove undamaged containers from fire area if it is safe to do so.
Use water spray to cool unopened containers.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

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

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Never return spills in original containers for re-use.
Treat recovered material as described in the section "Disposal considerations".

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contact with incompatible substances can cause decomposition at or below SADT.
Clear spills immediately.
Suppress (knock down) gases/vapours/mists with a water spray jet.
To clean the floor and all objects contaminated by this material, use plenty of water.
Soak up with inert absorbent material.
Isolate waste and do not reuse.
Non-sparking tools should be used.
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.

6.4 Reference to other sections

For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Advice on safe handling : Do not swallow.
Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
Avoid formation of aerosol.
Take precautionary measures against static discharges.
Never return any product to the container from which it was originally removed.
Provide sufficient air exchange and/or exhaust in work rooms.
Avoid confinement.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Smoking, eating and drinking should be prohibited in the application area.
Wash thoroughly after handling.

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For personal protection see section 8.
Protect from contamination.

Advice on protection against fire and explosion : Keep away from heat and sources of ignition. Use only explosion-proof equipment. Keep away from combustible material.

Hygiene measures : Avoid contact with skin, eyes and clothing. Keep away from food and drink. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Avoid impurities (e.g. rust, dust, ash), risk of decomposition. Electrical installations / working materials must comply with the technological safety standards. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in original container. Keep containers tightly closed in a cool, well-ventilated place. Store in accordance with the particular national regulations.

Advice on common storage : Keep away from strong acids, bases, heavy metal salts and other reducing substances.

Recommended storage temperature : < 30 °C

Further information on storage stability : No decomposition if stored normally.

7.3 Specific end use(s)

Specific use(s) : For further information, refer to the product technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
dimethyl phthalate	131-11-3	OELV - 8 hrs (TWA)	5 mg/m ³	IE OEL
		OELV - 15 min (STEL)	10 mg/m ³	IE OEL
2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-	1338-23-4	OELV - 15 min (STEL)	0.2 ppm 1.5 mg/m ³	IE OEL

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2,2-diyl dihydroperoxide				
Cumene	98-82-8	TWA	20 ppm 100 mg/m ³	2000/39/EC
Further information	Identifies the possibility of significant uptake through the skin, Indicative			
		STEL	50 ppm 250 mg/m ³	2000/39/EC
		OELV - 15 min (STEL)	50 ppm 250 mg/m ³	IE OEL
Further information	Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body, Indicative Occupational Exposure Limit Value			
		OELV - 8 hrs (TWA)	20 ppm 100 mg/m ³	IE OEL

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Cumene hydroperoxide	Workers	Inhalation	Long-term systemic effects	6 mg/m ³
dimethyl phthalate	Workers	Inhalation	Long-term systemic effects	66.1 mg/m ³
	Workers	Skin contact	Long-term systemic effects	135 mg/kg bw/day
2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxidibutane-2,2-diyl dihydroperoxide	Workers	Inhalation	Long-term systemic effects	2.35 mg/m ³
	Workers	Skin contact	Long-term systemic effects	1.33 mg/kg bw/day
	Workers	Inhalation	Acute systemic effects	7.05 mg/m ³

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

Substance name	Environmental Compartment	Value
Cumene hydroperoxide	Fresh water	0.0031 mg/l
	Marine water	0.00031 mg/l
	Intermittent use/release	0.031 mg/l
	Sewage treatment plant	0.35 mg/l
	Fresh water sediment	0.023 mg/kg
	Marine sediment	0.0023 mg/kg
	Soil	0.0029 mg/kg
dimethyl phthalate	Fresh water	0.192 mg/l
	Marine water	0.0192 mg/l
	Sewage treatment plant	4 mg/l
	Fresh water sediment	1.3 mg/kg dry weight (d.w.)
	Soil	3.16 mg/kg dry

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		weight (d.w.)
	Marine sediment	0.13 mg/kg dry weight (d.w.)
2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide	Fresh water	0.0056 mg/l
	Marine water	0.00056 mg/l
	Intermittent use/release	0.056 mg/l
	Sewage treatment plant	1.2 mg/l
	Fresh water sediment	0.0876 mg/kg
	Marine sediment	0.00876 mg/kg
	Soil	0.0142 mg/kg

8.2 Exposure controls

Engineering measures

Minimize workplace exposure concentrations.

Personal protective equipment

Eye protection : Tightly fitting safety goggles
Please wear suitable protective goggles. Also wear face protection if there is a splash hazard.
Ensure that eyewash stations and safety showers are close to the workstation location.

Hand protection

Material : butyl-rubber
Break through time : 480 min
Glove thickness : 0.5 mm

Material : Nitrile rubber
Break through time : 240 min
Glove thickness : 0.4 mm

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

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Filter type : ABEK-filter

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	red
Odour	:	slight
pH	:	Not applicable
Melting point/range	:	No data available
Boiling point/boiling range	:	not determined
Flash point	:	> 65 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	> 1
Density	:	1.0 g/cm ³
Solubility(ies)		
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	not determined
Oxidizing properties	:	The substance or mixture is not classified as oxidizing. Organic peroxide

9.2 Other information

Self-Accelerating decomposition temperature (SADT)	:	60 °C SADT-Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a
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self-accelerating decomposition reaction.

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid : Protect from contamination.
Contact with incompatible substances can cause decomposition at or below SADT.
Heat, flames and sparks.
Avoid confinement.

10.5 Incompatible materials

Materials to avoid : Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents

10.6 Hazardous decomposition products

Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Harmful if swallowed.

Toxic if inhaled.

Product:

Acute oral toxicity : Acute toxicity estimate: 690.26 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 4.57 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

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Components:

Cumene hydroperoxide:

- Acute oral toxicity : LD50 Oral (Rat): 382 mg/kg
- Acute inhalation toxicity : Acute toxicity estimate: 2.01 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Expert judgement
Assessment: The component/mixture is toxic after short term inhalation.
- Acute dermal toxicity : Acute toxicity estimate: 1,100 mg/kg
Method: Converted acute toxicity point estimate
Assessment: The component/mixture is moderately toxic after single contact with skin.

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

- Acute oral toxicity : Acute toxicity estimate: 500 mg/kg
Method: Expert judgement
- Acute inhalation toxicity : Acute toxicity estimate: 1.5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Expert judgement
Assessment: The component/mixture is moderately toxic after short term inhalation.
Remarks: Based on data from similar materials
- Acute dermal toxicity : Acute toxicity estimate: 2,500 mg/kg
Method: Expert judgement

Cumene:

- Acute oral toxicity : LD50 (Rat): 2,700 mg/kg
Method: OECD Test Guideline 401
- Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: No mortality observed at this dose.

Benzenemethanol, alpha,alpha-dimethyl-:

- Acute oral toxicity : LD50: Method: Expert judgement
Assessment: The component/mixture is moderately toxic after single ingestion.
- Acute inhalation toxicity : Remarks: No data available
- Acute dermal toxicity : LD50: Method: Expert judgement
Assessment: The substance or mixture has no acute dermal

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

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : Extremely corrosive and destructive to tissue.

Components:

Cumene hydroperoxide:

Species : Rabbit
Result : Causes burns.

Remarks : Extremely corrosive and destructive to tissue.

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Species : Rabbit
Result : Causes burns.

Cumene:

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

Benzenemethanol, alpha,alpha-dimethyl-:

Species : Rabbit
Result : Severe skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks : May cause irreversible eye damage.

Components:

Cumene hydroperoxide:

Species : Rabbit
Result : Corrosive

Remarks : May cause irreversible eye damage.

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

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Result : Irreversible effects on the eye

Cumene:

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

Benzenemethanol, alpha,alpha-dimethyl-:

Result : Irritating to eyes.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Cumene hydroperoxide:

Result : Does not cause skin sensitisation.

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

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

Assessment : Harmful if swallowed., Harmful if inhaled.

Cumene:

Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Does not cause skin sensitisation.

Germ cell mutagenicity

Not classified based on available information.

Components:

Cumene hydroperoxide:

Genotoxicity in vitro : Result: positive
Remarks: In vitro tests have shown mutagenic effects.

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Application Route: Skin contact
Result: negative

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2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Genotoxicity in vitro : Method: OECD Test Guideline 473
Result: negative

Method: OECD Test Guideline 471
Result: negative

Method: OECD Test Guideline 476
Result: negative

Cumene:

Genotoxicity in vitro : Method: OECD Test Guideline 473
Result: negative

Method: OECD Test Guideline 471
Result: negative

Method: OECD Test Guideline 476
Result: negative

Method: OECD Test Guideline 482
Result: negative

Test Type: Ames test
Result: positive

Genotoxicity in vivo : Species: Rat
Application Route: Intraperitoneal
Exposure time: 72 h
Method: OECD Test Guideline 474
Result: Equivocal

Species: Mouse
Application Route: inhalation (gas)
Exposure time: 14 w
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

Not classified based on available information.

Components:

Cumene hydroperoxide:

Remarks : This information is not available.

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

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Remarks : This information is not available.

Cumene:

Species : Rat
Application Route : inhalation (gas)
Exposure time : 2 Years
LOEC : 250
Method : OECD Test Guideline 451
Result : negative

Species : Mouse
Application Route : inhalation (gas)
Exposure time : 2 Years
LOEC : 125
Method : OECD Test Guideline 451
Result : negative

Reproductive toxicity

Not classified based on available information.

Components:

Cumene hydroperoxide:

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Effects on fertility : Species: Rat
Application Route: oral (gavage)
General Toxicity - Parent: NOAEL: 50 mg/kg body weight
Method: OECD Test Guideline 421
Result: negative

Cumene:

Effects on foetal development : Species: Rabbit
Application Route: inhalation (vapour)
General Toxicity Maternal: LOAEL: 500
Developmental Toxicity: NOAEL: 2,300
Method: OECD Test Guideline 414

STOT - single exposure

May cause respiratory irritation.

Components:

Cumene:

Assessment : May cause respiratory irritation.

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STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Components:

Cumene hydroperoxide:

Assessment : May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

Cumene hydroperoxide:

Species : Rat
NOAEL : 0.031 mg/l
Application Route : inhalation (dust/mist/fume)
Exposure time : 90 d

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Species : Rat
NOAEL : 200 mg/kg
Application Route : oral (gavage)
Exposure time : 28 d
Method : OECD Test Guideline 407

Cumene:

Species : Rat
NOAEL : 154 mg/kg
Application Route : Oral
Method : OECD Test Guideline 413

Aspiration toxicity

Not classified based on available information.

Components:

Cumene:

May be fatal if swallowed and enters airways.

Further information

Product:

Remarks : No data available

Components:

Cumene hydroperoxide:

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Remarks : Solvents may degrease the skin.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Cumene hydroperoxide:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 3.9 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 18 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 1.6 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 44.2 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

NOEC (Poecilia reticulata (guppy)): 18 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 39 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

NOEC (Daphnia magna (Water flea)): 26.7 mg/l
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 5.6 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 2.1 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Bacteria): 48 mg/l
Exposure time: 0.5 h
Method: OECD Test Guideline 209

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Cumene:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4.8 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.14 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 2.01 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
- Toxicity to microorganisms : EC50 : > 2,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.35 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

Ecotoxicology Assessment

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

Benzenemethanol, alpha,alpha-dimethyl-:

Ecotoxicology Assessment

- Acute aquatic toxicity : This product has no known ecotoxicological effects.
- Chronic aquatic toxicity : This product has no known ecotoxicological effects.

12.2 Persistence and degradability

Components:

Cumene hydroperoxide:

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

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

- Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301D

Cumene:

- Biodegradability : Result: Readily biodegradable.

Benzenemethanol, alpha,alpha-dimethyl-:

- Biodegradability : Remarks: No data available

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12.3 Bioaccumulative potential

Components:

Cumene hydroperoxide:

Partition coefficient: n-octanol/water : log Pow: 1.6

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Partition coefficient: n-octanol/water : log Pow: < 0.3 (25 °C)

Cumene:

Bioaccumulation : Bioconcentration factor (BCF): 94.69
Remarks: Calculation

Partition coefficient: n-octanol/water : log Pow: 3.55 (23 °C)

Benzenemethanol, alpha,alpha-dimethyl-:

Partition coefficient: n-octanol/water : Remarks: 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 Other adverse effects

Product:

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

Components:

Cumene hydroperoxide:

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

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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 wastes in an approved waste disposal facility.
- Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.
Dispose of in accordance with local regulations.
-

SECTION 14: Transport information

14.1 UN number

- ADN : UN 3105
ADR : UN 3105
RID : UN 3105
IMDG : UN 3105
IATA : UN 3105

14.2 UN proper shipping name

- ADN : ORGANIC PEROXIDE TYPE D, LIQUID
(METHYL ETHYL KETONE PEROXIDE(S), CUMYL HYDROPEROXIDE)
- ADR : ORGANIC PEROXIDE TYPE D, LIQUID
(METHYL ETHYL KETONE PEROXIDE(S), CUMYL HYDROPEROXIDE)
- RID : ORGANIC PEROXIDE TYPE D, LIQUID
(METHYL ETHYL KETONE PEROXIDE(S), CUMYL HYDROPEROXIDE)
- IMDG : ORGANIC PEROXIDE TYPE D, LIQUID
(METHYL ETHYL KETONE PEROXIDE(S), CUMYL HYDROPEROXIDE)
- IATA : Organic peroxide type D, liquid
(Methyl ethyl ketone peroxide(s), Cumyl hydroperoxide)

14.3 Transport hazard class(es)

- ADN : 5.2
ADR : 5.2

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RID : 5.2
IMDG : 5.2
IATA : 5.2

14.4 Packing group

ADN

Packing group : Not assigned by regulation
Classification Code : P1
Labels : 5.2

ADR

Packing group : Not assigned by regulation
Classification Code : P1
Labels : 5.2
Tunnel restriction code : (D)

RID

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

IMDG

Packing group : Not assigned by regulation
Labels : 5.2
EmS Code : F-J, S-R

IATA (Cargo)

Packing instruction (cargo aircraft) : 570
Packing group : Not assigned by regulation
Labels : Division 5.2 - Organic peroxides, Handling Label - Keep Away From Heat

IATA (Passenger)

Packing instruction (passenger aircraft) : 570
Packing group : Not assigned by regulation
Labels : Division 5.2 - Organic peroxides, Handling Label - Keep Away From Heat

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

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14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

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

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

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

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Cumene hydroperoxide

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

Cumene hydroperoxide (Number on list 3)

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

		Quantity 1	Quantity 2
H2	ACUTE TOXIC	50 t	200 t
P6b	SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES	50 t	200 t

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E2	ENVIRONMENTAL HAZARDS	200 t	500 t
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Other regulations:

Gefahrgruppe nach § 3 BGV B4: Ib (German regulatory requirements)

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

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

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Further information

Other information	:	This safety datasheet only contains information relating to safety and does not replace any product information or product specification. These safety instructions also apply to empty packaging which may still contain product residues.
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Sources of key data used to compile the Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/
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Classification of the mixture:

Org. Perox. D	H242
Acute Tox. 4	H302

Classification procedure:

Based on product data or assessment
Calculation method

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Acute Tox. 3	H331	Calculation method
Skin Corr. 1B	H314	Calculation method
Eye Dam. 1	H318	Calculation method
STOT SE 3	H335	Calculation method
STOT RE 2	H373	Calculation method
Aquatic Chronic 2	H411	Calculation method

Full text of H-Statements

H226	: Flammable liquid and vapour.
H242	: Heating may cause a fire.
H302	: Harmful if swallowed.
H304	: May be fatal if swallowed and enters airways.
H312	: Harmful in contact with skin.
H314	: Causes severe skin burns and eye damage.
H315	: Causes skin irritation.
H318	: Causes serious eye damage.
H319	: Causes serious eye irritation.
H331	: Toxic if inhaled.
H332	: Harmful if inhaled.
H335	: May cause respiratory irritation.
H373	: May cause damage to organs through prolonged or repeated exposure.
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
Asp. Tox.	: Aspiration hazard
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Flam. Liq.	: Flammable liquids
Org. Perox.	: Organic peroxides
Skin Corr.	: Skin corrosion
Skin Irrit.	: Skin irritation
STOT RE	: Specific target organ toxicity - repeated exposure
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
IE OEL	: Ireland. List of Chemical Agents and Occupational Exposure Limit Values - Schedule 1
2000/39/EC / TWA	: Limit Value - eight hours
2000/39/EC / STEL	: Short term exposure limit
IE OEL / OELV - 8 hrs (TWA)	: Occupational exposure limit value (8-hour reference period)
IE OEL / OELV - 15 min (STEL)	: Occupational exposure limit value (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; 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

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- 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 - 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; 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

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