

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by  
Commission Regulation (EU) 2020/878



## CUROX<sup>®</sup>M-312

Version	Revision Date:	SDS Number:	Date of last issue: 13.02.2023
3.4	26.07.2024	600000000260	Date of first issue: 20.07.2016

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

#### 1.1 Product identifier

Trade name : CUROX<sup>®</sup>M-312

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

Use of the Sub-  
stance/Mixture : Hardener

#### 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

+44 1235 239670

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### 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 D	H242: Heating may cause a fire.
Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 4	H332: Harmful 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.
Reproductive toxicity, Category 2	H361: Suspected of damaging fertility or the un-born child.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful 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 : H226 Flammable liquid and vapour.  
H242 Heating may cause a fire.  
H302 + H332 Harmful if swallowed or if inhaled.  
H314 Causes severe skin burns and eye damage.  
H361 Suspected of damaging fertility or the unborn child.  
H412 Harmful 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.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

#### **Response:**

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.

Hazardous components which must be listed on the label:

Trimethylpentanediol isobutyrate (CAS-No. 6846-50-0)

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide (CAS-No. 1338-23-4)

### 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.



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Butanone	78-93-3 201-159-0 606-002-00-3 01-2119457290-43	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336 (Central nervous system) EUH066	>= 1 - < 5
hydrogen peroxide	7722-84-1 231-765-0 008-003-00-9 01-2119485845-22	Ox. Liq. 1; H271 Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Corr. 1A; H314 Eye Dam. 1; H318 STOT SE 3; H335 (Respiratory system) Aquatic Chronic 3; H412  specific concentration limit Ox. Liq. 1; H271 >= 70 % Ox. Liq. 2; H272 50 - < 70 % Skin Corr. 1A; H314 >= 70 % Skin Corr. 1B; H314 50 - < 70 % Skin Irrit. 2; H315 35 - < 50 % Eye Dam. 1; H318 8 - < 50 % Eye Irrit. 2; H319 5 - < 8 % STOT SE 3; H335 >= 35 % Aquatic Chronic 3; H412 >= 63 %  Acute toxicity esti- mate  Acute inhalation tox- icity (dust/mist): 1.5 mg/l	>= 2.5 - < 3

For explanation of abbreviations see section 16.

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### SECTION 4: First aid measures

#### 4.1 Description of first aid measures

- General advice : Take off contaminated clothing and shoes immediately.  
Call a physician immediately.  
Never give anything by mouth to an unconscious person.  
If unconscious, place in recovery position and seek medical advice.  
Move out of dangerous area.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.  
Symptoms of poisoning may appear several hours later.
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
- If inhaled : Administer oxygen if breathing is difficult or cyanosis is observed.  
Call a physician immediately.  
If breathed in, move person into fresh air.  
If not breathing, give artificial respiration.  
Respiratory tract burning possible if aerosols are inhaled.  
Call a physician or poison control centre immediately.  
If unconscious, place in recovery position and seek medical advice.  
Keep respiratory tract clear.
- In case of skin contact : If symptoms persist, call a physician.  
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.  
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.  
Wash contaminated clothing before re-use.  
If on skin, rinse well with water.  
If on clothes, remove clothes.
- In case of eye contact : 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 : Call a physician immediately.  
Rinse mouth thoroughly with water.

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Keep respiratory tract clear.  
Do NOT induce vomiting.  
If symptoms persist, call a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

Risks : Harmful if swallowed or if inhaled.  
Causes serious eye damage.  
Suspected of damaging fertility or the unborn child.  
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 (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : High volume water jet

### 5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Risk of explosion if heated under confinement.  
Possible emission of gaseous decomposition products may lead to a dangerous pressure build-up.  
Avoid confinement.  
Contact with incompatible materials or exposure to temperatures exceeding SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which may auto-ignite.  
The product burns violently.  
Flash back possible over considerable distance.  
Do not allow run-off from fire fighting to enter drains or water courses.  
Vapours may form explosive mixtures with air.  
The product will float on water and can be reignited on surface water.  
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.

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- Specific extinguishing methods : Do not use a solid water stream as it may scatter and spread fire.  
Remove undamaged containers from fire area if it is safe to do so.  
Use water spray to cool unopened containers.
- Further information : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use a water spray to cool fully closed containers.  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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### SECTION 6: Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : Follow safe handling advice and personal protective equipment recommendations.  
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.  
Use personal protective equipment.  
Remove all sources of ignition.  
Evacuate personnel to safe areas.  
Never return spills in original containers for re-use.  
Treat recovered material as described in the section "Disposal considerations".

#### 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 deter-

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mine which regulations are applicable.

### 6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

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## 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 : Open drum carefully as content may be under pressure.  
Protect from contamination.  
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.  
For personal protection see section 8.
- Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from heat and sources of ignition. Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Keep away from combustible material. Do not spray on a naked flame or any incandescent material.
- 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 : Store in original container. Keep containers tightly closed in a cool, well-ventilated place. Store in cool place. Contamination may result in dangerous pressure increases - closed containers may rupture. Observe label precautions. Store in accordance with the particular national regulations. Avoid impurities (e.g. rust, dust, ash), risk of decomposition. Electrical installa-



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tions / working materials must comply with the technological safety standards. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

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

Recommended storage temperature : < 30 °C

Further information on storage stability : Stable under recommended storage conditions.

### 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
2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide	1338-23-4	OELV - 15 min (STEL)	0.2 ppm 1.5 mg/m <sup>3</sup>	IE OEL
Diacetone alcohol	123-42-2	OELV - 8 hrs (TWA)	50 ppm 240 mg/m <sup>3</sup>	IE OEL
Butanone	78-93-3	STEL	300 ppm 900 mg/m <sup>3</sup>	2000/39/EC
	Further information: Indicative			
		TWA	200 ppm 600 mg/m <sup>3</sup>	2000/39/EC
	Further information: Indicative			
		OELV - 8 hrs (TWA)	200 ppm 600 mg/m <sup>3</sup>	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			
		OELV - 15 min (STEL)	300 ppm 900 mg/m <sup>3</sup>	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			

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hydrogen peroxide	7722-84-1	OELV - 8 hrs (TWA)	1 ppm 1.5 mg/m <sup>3</sup>	IE OEL
		OELV - 15 min (STEL)	2 ppm 3 mg/m <sup>3</sup>	IE OEL

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Trimethylpentanediol isobutyrate	Workers	Inhalation	Long-term systemic effects	17.62 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term local effects	5 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	4.35 mg/m <sup>3</sup>
	Consumers	Skin contact	Long-term systemic effects	5 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	5 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 <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	1.33 mg/kg bw/day
	Workers	Inhalation	Acute systemic effects	7.05 mg/m <sup>3</sup>
Diacetone alcohol	Workers	Inhalation	Acute local effects	240 mg/m <sup>3</sup>
	Workers	Skin contact	Long-term systemic effects	9.4 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	66.4 mg/m <sup>3</sup>
	Workers	Inhalation	Long-term local effects	66.4 mg/m <sup>3</sup>
Butanone	Workers	Skin contact	Long-term systemic effects	1161 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	600 mg/m <sup>3</sup>
hydrogen peroxide	Workers	Inhalation	Acute local effects	3 mg/m <sup>3</sup>
	Workers	Inhalation	Long-term local effects	1.4 mg/m <sup>3</sup>

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

Substance name	Environmental Compartment	Value
2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxidibutane-2,2-diyl dihydroperoxide	Fresh water	0.0056 mg/l
	Marine water	0.00056 mg/l

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	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
Trimethylpentanediol isobutyrate	Fresh water	0.014 mg/l
	Marine water	0.001 mg/l
	Fresh water sediment	5.29 mg/kg dry weight (d.w.)
	Marine sediment	0.529 mg/kg dry weight (d.w.)
	Soil	1.05 mg/kg dry weight (d.w.)
	Sewage treatment plant	3 mg/l
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
Diacetone alcohol	Fresh water	2 mg/l
	Marine water	0.2 mg/l
	Sewage treatment plant	82 mg/l
	Fresh water sediment	9.06 mg/kg dry weight (d.w.)
	Marine sediment	0.91 mg/kg dry weight (d.w.)
	Soil	0.63 mg/kg dry weight (d.w.)
Butanone	Fresh water	55.8 mg/l
	Marine water	55.8 mg/l
	Intermittent use/release	55.8 mg/l
	Sewage treatment plant	709 mg/l
	Fresh water sediment	284.7 mg/kg dry weight (d.w.)
	Soil	22.5 mg/kg
hydrogen peroxide	Sewage treatment plant	4.66 mg/l
	Fresh water	0.0126 mg/l
	Marine sediment	0.047 mg/l
	Fresh water sediment	0.047 mg/l
	Marine water	0.0126 mg/l
	Soil	0.0023 mg/l

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### 8.2 Exposure controls

#### Engineering measures

Minimize workplace exposure concentrations.

#### Personal protective equipment

Eye/face protection : Ensure that eyewash stations and safety showers are close to the workstation location.  
Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.  
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.  
Tightly fitting safety goggles  
Please wear suitable protective goggles. Also wear face protection if there is a splash hazard.

Equipment should conform to EN 166

#### Hand protection

Material : Nitrile rubber  
Break through time : 30 min  
Glove thickness : 0.40 mm  
Directive : Equipment should conform to EN 374

Material : butyl-rubber  
Break through time : 480 min  
Glove thickness : 0.47 mm  
Directive : Equipment should conform to EN 374

Remarks : The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove. Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.  
Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.  
Wear as appropriate:  
Flame retardant antistatic protective clothing.

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

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approved filter.  
Respirator with combination filter for vapour/particulate (EN 141)

Filter type : ABEK-filter

Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : colourless

Odour : characteristic

Odour Threshold : not determined

Melting point/range : < -25 °C

Boiling point/boiling range : Decomposition: Decomposes below the boiling point.

Flammability : Not applicable

Upper explosion limit / Upper flammability limit : Upper explosion limit  
No data available

Lower explosion limit / Lower flammability limit : Lower explosion limit  
No data available

Flash point : 57 °C  
Method: ISO 3679, closed cup

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Auto-ignition temperature : not determined

Self-Accelerating decomposition temperature (SADT) : 60 °C  
Method: UN-Test H.4  
SADT-Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction.

pH : 6.5

Viscosity  
Viscosity, dynamic : 13 mPa.s (20 °C)

Viscosity, kinematic : not determined

Solubility(ies)  
Water solubility : ca. 6.5 g/l (20 °C)  
slightly soluble

Solubility in other solvents : Solvent: Phthalates  
Description: completely miscible

Partition coefficient: n-octanol/water : Not applicable

Vapour pressure : < 1.5 hPa (25 °C)  
(for a component of this mixture)

Relative density : not determined

Density : 1.01 g/cm<sup>3</sup> (20 °C)

Relative vapour density : not determined

### 9.2 Other information

Explosives : Not explosive  
In use, may form flammable/explosive vapour-air mixture.

Oxidizing properties : The substance or mixture is not classified as oxidizing.  
Organic peroxide

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Flammability (liquids) : Flammable liquid and vapour., Organic peroxide

Self-ignition : The substance or mixture is not classified as self heating. The substance or mixture is not classified as pyrophoric.  
The substance or mixture is not classified as pyrophoric.

Self-heating substances : Not applicable  
The substance or mixture is not classified as self heating.

Substances and mixtures, which in contact with water, emit flammable gases : The substance or mixture does not emit flammable gases in contact with water.

Desensitised explosives : Not applicable

Refractive index : 1.431 at 20 °C

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Stable under recommended storage conditions.  
Heating may cause a fire or explosion.

### 10.2 Chemical stability

Stable under recommended storage conditions.  
No decomposition if stored normally.

### 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.

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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

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## SECTION 11: Toxicological information

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

#### Acute toxicity

Harmful if swallowed or if inhaled.

#### Product:

Acute oral toxicity : Acute toxicity estimate: 1,515 mg/kg  
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 4.6 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

#### Components:

##### **Trimethylpentanediol isobutyrate:**

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: Expert judgement  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LCLo (Rat): > 0.12 mg/l  
Exposure time: 6 h  
Test atmosphere: vapour  
Method: Expert judgement  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: No mortality observed at this dose.

Acute dermal toxicity : LD50 (Guinea pig): > 2,000 mg/kg  
Method: Expert judgement  
Assessment: The substance or mixture has no acute dermal toxicity



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### **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

### **Diacetone alcohol:**

- Acute oral toxicity : LD50 (Rat): 3,002 mg/kg  
Method: OECD Test Guideline 401
- Acute inhalation toxicity : LC0 (Rat, male and female): >= 7.6 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: OECD Test Guideline 403  
Assessment: The substance or mixture has no acute inhalation toxicity  
Remarks: No mortality observed at this dose.
- Acute dermal toxicity : LD0 (Rat): > 1,875 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity  
Remarks: No mortality observed at this dose.

### **Butanone:**

- Acute oral toxicity : LD50 (Rat): 2,193 mg/kg  
Method: OECD Test Guideline 423
- Acute inhalation toxicity : Remarks: No data available
- Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
Remarks: Based on available data, the classification criteria are not met.

### **hydrogen peroxide:**

- Acute oral toxicity : LD50 (Rat, male and female): 431 mg/kg  
Method: Expert judgement

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Assessment: The component/mixture is moderately toxic after single ingestion.

Acute inhalation toxicity : Acute toxicity estimate: 1.5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The component/mixture is moderately toxic after short term inhalation.  
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute dermal toxicity : LD50 (Rabbit): 9,200 mg/kg  
Remarks: No adverse effect has been observed in acute toxicity tests.

### Skin corrosion/irritation

Causes severe burns.

#### Product:

Remarks : Extremely corrosive and destructive to tissue.

#### Components:

##### **Trimethylpentanediol isobutyrate:**

Species : Guinea pig  
Exposure time : 24 h  
Result : No skin irritation  
Remarks : Based on available data, the classification criteria are not met.

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

Species : Rabbit  
Result : Causes burns.

##### **Diacetone alcohol:**

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

##### **Butanone:**

Species : Rabbit  
Assessment : Repeated exposure may cause skin dryness or cracking.  
Method : OECD Test Guideline 404  
Result : No skin irritation

##### **hydrogen peroxide:**

Result : Corrosive

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### Serious eye damage/eye irritation

Causes serious eye damage.

#### Product:

Remarks : May cause irreversible eye damage.

#### Components:

##### Trimethylpentanediol isobutyrate:

Species : Rabbit  
Exposure time : 24 h  
Result : No eye irritation

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

Result : Irreversible effects on the eye

##### Diacetone alcohol:

Species : Rabbit  
Method : OECD Test Guideline 405  
Result : Irritation to eyes, reversing within 21 days

##### Butanone:

Species : Rabbit  
Method : OECD Test Guideline 405  
Result : Eye irritation

##### hydrogen peroxide:

Result : Irreversible effects on the eye  
Remarks : hydrogen peroxide, 35%

### Respiratory or skin sensitisation

#### Skin sensitisation

Not classified due to lack of data.

#### Respiratory sensitisation

Not classified due to lack of data.

#### Components:

##### Trimethylpentanediol isobutyrate:

Species : Guinea pig  
Result : Does not cause skin sensitisation.

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### **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.

### **Diacetone alcohol:**

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

### **Butanone:**

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

### **Germ cell mutagenicity**

Not classified due to lack of data.

### **Components:**

#### **Trimethylpentanediol isobutyrate:**

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: negative  
  
Test Type: Ames test  
Method: Regulation (EC) No. 440/2008, Annex, B.13/14  
(Ames test)  
Result: negative  
  
Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: negative

### **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

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### **Diacetone alcohol:**

- Genotoxicity in vitro : Method: OECD Test Guideline 476  
Result: negative
- Method: OECD Test Guideline 471  
Result: negative
- Method: OECD Test Guideline 473  
Result: negative
- Genotoxicity in vivo : Remarks: Not classified due to data which are conclusive  
although insufficient for classification.
- Germ cell mutagenicity- Assessment : Tests on bacterial or mammalian cell cultures did not show  
mutagenic effects.

### **Butanone:**

- Genotoxicity in vitro : Method: OECD Test Guideline 471  
Result: negative
- Method: OECD Test Guideline 476  
Result: negative
- Method: OECD Test Guideline 473  
Result: negative
- Genotoxicity in vivo : Species: Mouse  
Application Route: Intraperitoneal  
Method: OECD Test Guideline 474  
Result: negative

### **hydrogen peroxide:**

- Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative  
positive  
Remarks: Information taken from reference works and the  
literature.
- Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: positive  
Remarks: Information taken from reference works and the  
literature.
- Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo  
cytogenetic assay)  
Species: Mouse (male and female)  
Method: OECD Test Guideline 474

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Result: negative  
Remarks: hydrogen peroxide, 35%

Germ cell mutagenicity- Assessment : Based on available data, the classification criteria are not met.

### **Carcinogenicity**

Not classified due to lack of data.

#### **Components:**

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

Remarks : This information is not available.

#### **Diacetone alcohol:**

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

#### **hydrogen peroxide:**

Carcinogenicity - Assessment : Carcinogenicity classification not possible from current data.

### **Reproductive toxicity**

Suspected of damaging fertility or the unborn child.

#### **Components:**

#### **Trimethylpentanediol isobutyrate:**

Effects on foetal development : Test Type: One-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 414  
Result: negative

Reproductive toxicity - Assessment : Suspected of damaging fertility or the unborn child., Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

#### **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

#### **Diacetone alcohol:**

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- Effects on fertility : Species: Rat  
Application Route: oral (gavage)  
General Toxicity - Parent: NOAEL: 300 mg/kg body weight  
General Toxicity F1: NOAEL: 300 mg/kg body weight  
Method: OECD Test Guideline 422
- Effects on foetal development : Species: Rat  
Application Route: inhalation (vapour)  
General Toxicity Maternal: NOAEL: 4.106  
Embryo-foetal toxicity: NOAEL: 12,292  
Method: OECD Test Guideline 414
- Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

### Butanone:

- Effects on fertility : Species: Rat  
Application Route: oral (drinking water)  
General Toxicity - Parent: NOAEL: 10,000 mg/l  
General Toxicity F1: NOAEL: 10,000 mg/l  
Method: OECD Test Guideline 416  
Remarks: Based on data from similar materials
- Species: Rat  
Application Route: oral (drinking water)  
General Toxicity - Parent: LOAEL: 20,000 mg/l  
Method: OECD Test Guideline 416  
Remarks: Based on data from similar materials
- Effects on foetal development : Species: Rat  
Application Route: Inhalation  
General Toxicity Maternal: NOAEC: ca. 1,002 mg/kg body weight  
Teratogenicity: NOAEC Parent: ca. 1,002 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: negative

### hydrogen peroxide:

- Reproductive toxicity - Assessment : No data available

### STOT - single exposure

Not classified due to lack of data.

### Components:

#### Diacetone alcohol:

- Target Organs : Respiratory system  
Assessment : May cause respiratory irritation.

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### Butanone:

Assessment : May cause drowsiness or dizziness.

### hydrogen peroxide:

Target Organs : Respiratory Tract  
Assessment : May cause respiratory irritation.

### STOT - repeated exposure

Not classified due to lack of data.

### Components:

#### hydrogen peroxide:

Remarks : No data available

### Repeated dose toxicity

### Components:

#### 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

#### Diacetone alcohol:

Species : Rat  
NOAEL : 1.04 mg/l  
LOAEL : 4.685 mg/l  
Application Route : inhalation (vapour)  
Exposure time : 6 w  
Method : OECD Test Guideline 412

Species : Rat  
NOAEL : 100 mg/kg  
Application Route : oral (gavage)  
Method : OECD Test Guideline 422

#### hydrogen peroxide:

Species : Mouse, female  
NOAEL : 37 mg/kg  
Application Route : oral (drinking water)  
Exposure time : 90 d  
Remarks : hydrogen peroxide, 35%



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Species : Mouse, males  
NOAEL : 26 mg/kg  
Application Route : oral (drinking water)  
Exposure time : 90  
Remarks : hydrogen peroxide, 35%

### Aspiration toxicity

Not classified due to lack of data.

### Components:

#### Trimethylpentanediol isobutyrate:

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

#### hydrogen peroxide:

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

## 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.

### Components:

#### Trimethylpentanediol isobutyrate:

Remarks : No data available

---

## SECTION 12: Ecological information

### 12.1 Toxicity

#### Components:

#### Trimethylpentanediol isobutyrate:

Toxicity to fish : NOEC (Fish): >= 6 mg/l

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Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)):  $\geq 1.46$  mg/l  
Exposure time: 48 h

NOEC (Daphnia (water flea)): 0.7 mg/l  
Exposure time: 21 d

Toxicity to algae/aquatic plants : EC50 (Chlorella pyrenoidosa (algae)):  $> 7.49$  mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : LOEC: 0.7 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)

### Ecotoxicology Assessment

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

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

### 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

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Exposure time: 0.5 h  
Method: OECD Test Guideline 209

### Diacetone alcohol:

Toxicity to fish : LC50 (*Oryzias latipes* (Orange-red killifish)): > 100 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 1,000 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EbC50 (*Pseudokirchneriella subcapitata* (green algae)): > 1,000 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (*Pseudokirchneriella subcapitata* (green algae)): 1,000 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

### Butanone:

Toxicity to fish : LC50 (*Pimephales promelas* (fathead minnow)): 2,993 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 308 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (*Pseudokirchneriella subcapitata* (green algae)): 2,029 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 201

Toxicity to microorganisms : NOEC (*Pseudomonas putida*): 1,150 mg/l  
Exposure time: 16 h  
Method: DIN 38 412 Part 8

### hydrogen peroxide:

Toxicity to fish : LC50 (*Pimephales promelas* (fathead minnow)): 16.4 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (*Daphnia pulex* (Water flea)): 2.4 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (*Skeletonema costatum* (marine diatom)): 1.38 mg/l  
Exposure time: 72 h

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NOEC (Skeletonema costatum (marine diatom)): 0.63 mg/l  
Exposure time: 72 h

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

Toxicity to daphnia and other : NOEC: 0.63 mg/l  
aquatic invertebrates (Chronic toxicity) Exposure time: 21 d  
Species: Daphnia magna (Water flea)

### 12.2 Persistence and degradability

#### Components:

##### **Trimethylpentanediol isobutyrate:**

Biodegradability : Result: rapidly biodegradable  
Exposure time: 28 d  
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

##### **Diacetone alcohol:**

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

##### **Butanone:**

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

##### **hydrogen peroxide:**

Biodegradability : Result: Readily biodegradable.

### 12.3 Bioaccumulative potential

#### Components:

##### **Trimethylpentanediol isobutyrate:**

Bioaccumulation : Species: Fish  
Bioconcentration factor (BCF): 1.95

Partition coefficient: n-octanol/water : log Pow: 4.91 (25 °C)

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### **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)

### **Diacetone alcohol:**

Partition coefficient: n-octanol/water : log Pow: -0.09 (20 °C)

### **Butanone:**

Partition coefficient: n-octanol/water : log Pow: 0.3 (40 °C)

### **hydrogen peroxide:**

Partition coefficient: n-octanol/water : log Pow: -1.57 (20 °C)  
Remarks: Information refers to the main component.  
Calculation

## **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.  
Toxic to aquatic life.  
Harmful to aquatic life with long lasting effects.

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### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

Product : Dispose of wastes in an approved waste disposal facility.  
The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.

According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.

Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

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

---

### SECTION 14: Transport information

#### 14.1 UN number or ID number

ADR : UN 3105  
RID : UN 3105  
IMDG : UN 3105  
IATA : UN 3105

#### 14.2 UN proper shipping name

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

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### 14.3 Transport hazard class(es)

	Class	Subsidiary risks
<b>ADR</b>	: 5.2	
<b>RID</b>	: 5.2	
<b>IMDG</b>	: 5.2	
<b>IATA</b>	: 5.2	HEAT

### 14.4 Packing group

<b>ADR</b>	
Packing group	: Not assigned by regulation
Classification Code	: P1
Labels	: 5.2
Tunnel restriction code	: (D)
<b>RID</b>	
Packing group	: Not assigned by regulation
Classification Code	: P1
Hazard Identification Number	: 539
Labels	: 5.2
<b>IMDG</b>	
Packing group	: Not assigned by regulation
Labels	: 5.2
EmS Code	: F-J, S-R
<b>IATA (Cargo)</b>	
Packing instruction (cargo aircraft)	: 570
Packing group	: Not assigned by regulation
Labels	: Organic Peroxides, Keep Away From Heat
<b>IATA (Passenger)</b>	
Packing instruction (passenger aircraft)	: 570
Packing group	: Not assigned by regulation
Labels	: Organic Peroxides, Keep Away From Heat

### 14.5 Environmental hazards

<b>ADR</b>	
Environmentally hazardous	: no
<b>RID</b>	
Environmentally hazardous	: no
<b>IMDG</b>	
Marine pollutant	: no

### 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

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Sheet. 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.

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## 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 import of dangerous chemicals : Not applicable

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

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors

This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point. hydrogen peroxide (ANNEX I)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the P6b SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC



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control of major-accident hazards involving  
dangerous substances.

PEROXIDES

### Other regulations:

Gefahrgruppe nach TRGS 741: II (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
AIC (AU)	:	On the inventory, or in compliance with the inventory
DSL (CA)	:	All components of this product are on the Canadian DSL
ENCS (JP)	:	On the inventory, or in compliance with the inventory
ISHL (JP)	:	On the inventory, or in compliance with the inventory
KECI (KR)	:	On the inventory, or in compliance with the inventory
PICCS (PH)	:	On the inventory, or in compliance with the inventory
IECSC (CN)	:	On the inventory, or in compliance with the inventory
TECI (TH)	:	On the inventory, or in compliance with the inventory

### 15.2 Chemical safety assessment

This information is not available.

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## 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.

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These safety instructions also apply to empty packaging which may still contain product residues.

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

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

### Classification of the mixture:

Flam. Liq. 3	H226
Org. Perox. D	H242
Acute Tox. 4	H302
Acute Tox. 4	H332
Skin Corr. 1B	H314
Eye Dam. 1	H318
Repr. 2	H361
Aquatic Chronic 3	H412

### 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

### Full text of H-Statements

H225	: Highly flammable liquid and vapour.
H242	: Heating may cause a fire.
H271	: May cause fire or explosion; strong oxidizer.
H302	: Harmful if swallowed.
H314	: Causes severe skin burns and eye damage.
H318	: Causes serious eye damage.
H319	: Causes serious eye irritation.
H332	: Harmful if inhaled.
H335	: May cause respiratory irritation.
H336	: May cause drowsiness or dizziness.
H361	: Suspected of damaging fertility or the unborn child.
H412	: Harmful to aquatic life with long lasting effects.
EUH066	: Repeated exposure may cause skin dryness or cracking.

### Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Flam. Liq.	: Flammable liquids
Org. Perox.	: Organic peroxides
Ox. Liq.	: Oxidizing liquids
Repr.	: Reproductive toxicity
Skin Corr.	: Skin corrosion
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

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IE OEL : List of Chemical Agents and Carcinogens with Occupational Exposure Limit Values - Code of Practice, Schedule 1 and 2  
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 - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - 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 - 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; TECL - 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

### Disclaimer

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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IE / EN