

Jotun Peroxide 13

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

1.1 Product identifier

Product name	: Jotun Peroxide 13
UFI	: 98P8-E0A4-C00A-8W5H
Product code	: 21780
Product description	: Oxidising material.
Product type	: Liquid.
Other means of identification	: Not available.

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

Use in coatings - Industrial use
Use in coatings - Professional use

1.3 Details of the supplier of the safety data sheet

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1.4 Emergency telephone number

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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Org. Perox. D, H242
Acute Tox. 4, H302
Skin Corr. 1B, H314
Eye Dam. 1, H318
Skin Sens. 1, H317
Repr. 2, H361d

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

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SECTION 2: Hazards identification

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

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.
- H317 - May cause an allergic skin reaction.
- H361d - Suspected of damaging the unborn child.

Precautionary statements

General :

Not applicable.

Prevention :

- P201 - Obtain special instructions before use.
- P280 - Wear protective gloves, protective clothing and eye or face protection.
- P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P234 - Keep only in original packaging.
- P261 - Avoid breathing vapour.
- P270 - Do not eat, drink or smoke when using this product.

Response :

- P308 + P313 - IF exposed or concerned: Get medical advice or attention.
- P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor.
- P301 + P310, P330, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor.
- P363 - Wash contaminated clothing before reuse.
- P302 + P352 - IF ON SKIN: Wash with plenty of water.
- P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
- 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 or doctor.

Storage :

- P403 - Store in a well-ventilated place.
- P420 - Store separately.

Disposal :

- P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients :

- methyl ethyl ketone peroxide
- 3,5-dimethyl-1,2-dioxolane-3,5-diol
- 4-hydroxy-4-methylpentan-2-one

Supplemental label elements :

Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles :

Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings :

Not applicable.

Tactile warning of danger :

Not applicable.

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SECTION 2: Hazards identification**2.3 Other hazards**

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients**3.2 Mixtures** : Mixture

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
methyl ethyl ketone peroxide	REACH #: 01-2119514691-43 EC: 215-661-2 CAS: 1338-23-4	≥25 - ≤46	Org. Perox. D, H242 Acute Tox. 4, H302 Acute Tox. 4, H332 Skin Corr. 1B, H314 Eye Dam. 1, H318	ATE [Oral] = 470 mg/kg ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]
3,5-dimethyl-1,2-dioxolane-3,5-diol	REACH #: 01-2119965139-28 EC: 237-438-9 CAS: 13784-51-5	≤10	Org. Perox. D, H242 Eye Irrit. 2, H319 Skin Sens. 1, H317	-	[1]
4-hydroxy-4-methylpentan-2-one	REACH #: 01-2119473975-21 EC: 204-626-7 CAS: 123-42-2	≤10	Eye Irrit. 2, H319 Repr. 2, H361d STOT SE 3, H335	-	[1] [2]
Hydrogen peroxide solution	REACH #: 01-2119485845-22 EC: 231-765-0 CAS: 7722-84-1	≤1.8	Ox. Liq. 1, H271 Acute Tox. 4, H302 Acute Tox. 4, H332 Skin Corr. 1A, H314 Eye Dam. 1, H318	ATE [Oral] = 500 mg/kg ATE [Inhalation (vapours)] = 11 mg/l	[1] [2]
pentane-2,4-dione	REACH #: 01-2119458968-15 EC: 204-634-0 CAS: 123-54-6 Index: 606-029-00-0	<1	Flam. Liq. 3, H226 Acute Tox. 4, H302 Acute Tox. 3, H311 Acute Tox. 3, H331 See Section 16 for the full text of the H statements declared above.	ATE [Oral] = 500 mg/kg ATE [Dermal] = 300 mg/kg ATE [Inhalation (vapours)] = 3 mg/l	[1] [2]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General** : In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical advice.
- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Seek immediate medical attention.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Do NOT use solvents or thinners. Wash clothing before reuse.
- Ingestion** : If swallowed, seek medical advice immediately and show the container or label. Keep person warm and at rest. Do NOT induce vomiting.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Contains 3,5-dimethyl-1,2-dioxolane-3,5-diol. May produce an allergic reaction.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
stomach pains
reduced foetal weight
increase in foetal deaths
skeletal malformations

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SECTION 4: First aid measures

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

See toxicological information (Section 11)

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Recommended: alcohol-resistant foam, CO₂, powders, water spray.
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Fire will produce dense black smoke. CAUTION: May re-ignite itself after fire is extinguished. Material supports combustion. In case of fire and/or explosion do not breathe fumes. Exposure to decomposition products may cause a health hazard.
- Hazardous combustion products** : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses.
- Special protective equipment for fire-fighters** : Appropriate breathing apparatus may be required.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Exclude sources of ignition and ventilate the area. Avoid breathing vapour or mist. Refer to protective measures listed in sections 7 and 8.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

- : Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.3 Methods and material for containment and cleaning up

- : Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). The waste should NOT be confined. Preferably clean with a detergent. Avoid using solvents.

6.4 Reference to other sections

- : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

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SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Prevent the creation of flammable or explosive concentrations of vapours in air and avoid vapour concentrations higher than the occupational exposure limits.
 In addition, the product should only be used in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard.
 Mixture may charge electrostatically: always use earthing leads when transferring from one container to another. Operators should wear antistatic footwear and clothing and floors should be of the conducting type.
 Keep away from heat, sparks and flame. No sparking tools should be used.
 Avoid contact with skin and eyes. Avoid the inhalation of dust, particulates, spray or mist arising from the application of this mixture. Avoid inhalation of dust from sanding.
 Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.
 Put on appropriate personal protective equipment (see Section 8).
 Never use pressure to empty. Container is not a pressure vessel.
 Always keep in containers made from the same material as the original one.
 Comply with the health and safety at work laws.
 Do not allow to enter drains or watercourses.
 Avoid confinement. Do not allow to dry out. Avoid shock and friction. Explosive when dry.

Information on fire and explosion protection

Vapours are heavier than air and may spread along floors. Vapours may form explosive mixtures with air. Use explosion-proof electrical (ventilating and lighting) equipment.

When operators, whether spraying or not, have to work inside the spray booth, ventilation is unlikely to be sufficient to control particulates and solvent vapour in all cases. In such circumstances they should wear a compressed air-fed respirator during the spraying process and until such time as the particulates and solvent vapour concentration has fallen below the exposure limits.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations.

Notes on joint storage

Keep away from reducing agents, heavy metal compounds and alkaline and acidic materials.

Additional information on storage conditions

Observe label precautions. Do not store above the following temperature: 25°C (77°F). Store in a dry, cool and well-ventilated area. Keep away from heat and direct sunlight.

Keep container tightly closed.

Keep away from sources of ignition. No smoking. Prevent unauthorised access. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Keep only in the original container.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
P6b	50 tonne	200 tonne

See Technical Data Sheet / packaging for further information.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

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SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters**Occupational exposure limits**

Product/ingredient name	Exposure limit values
methyl ethyl ketone peroxide	National institute of occupational safety and health (Spain, 4/2022). STEL: 0.2 ppm 15 minutes. STEL: 1.5 mg/m ³ 15 minutes.
4-hydroxy-4-methylpentan-2-one	National institute of occupational safety and health (Spain, 4/2022). TWA: 241 mg/m ³ 8 hours. TWA: 50 ppm 8 hours.
Hydrogen peroxide solution	National institute of occupational safety and health (Spain, 4/2022). TWA: 1 ppm 8 hours. TWA: 1.4 mg/m ³ 8 hours.
pentane-2,4-dione	National institute of occupational safety and health (Spain, 4/2022). Absorbed through skin. STEL: 166 mg/m ³ 15 minutes. STEL: 40 ppm 15 minutes. TWA: 83 mg/m ³ 8 hours. TWA: 20 ppm 8 hours.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
methyl ethyl ketone peroxide	DNEL	Long term Oral	0.75 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	1.125 mg/m ³	General population	Systemic
	DNEL	Long term Dermal	1.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	3 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	5.288 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	15.864 mg/m ³	Workers	Systemic
3,5-dimethyl-1,2-dioxolane-3,5-diol	DNEL	Long term Inhalation	4.41 mg/m ³	Workers	Systemic
	DNEL	Long term Dermal	5 mg/kg bw/day	Workers	Systemic
4-hydroxy-4-methylpentan-2-one	DNEL	Long term Oral	1.67 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	5.8 mg/m ³	General population	Systemic
	DNEL	Long term Inhalation	32.6 mg/m ³	Workers	Systemic

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SECTION 8: Exposure controls/personal protection

Hydrogen peroxide solution	DNEL	Long term Dermal	33 mg/kg bw/day	General population	Systemic
	DNEL	Short term Inhalation	240 mg/m ³	Workers	Local
	DNEL	Long term Dermal	467 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	0.21 mg/m ³	General population	Local
	DNEL	Long term Inhalation	1.4 mg/m ³	Workers	Local
	DNEL	Short term Inhalation	1.93 mg/m ³	General population	Local
pentane-2,4-dione	DNEL	Short term Inhalation	3 mg/m ³	Workers	Local
	DNEL	Long term Oral	7 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	12 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	84 mg/m ³	Workers	Systemic

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapours below the OEL, suitable respiratory protection must be worn. Use explosion-proof ventilation equipment.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying to ISO 16321-1:2022 should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection

There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals.

The breakthrough time must be greater than the end use time of the product.

The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed.

Gloves should be replaced regularly and if there is any sign of damage to the glove material.

Always ensure that gloves are free from defects and that they are stored and used correctly.

The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance.

Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred.

Gloves

SECTION 8: Exposure controls/personal protection

Wear suitable gloves tested to ISO 374-1:2016.

Recommended, gloves(breakthrough time) > 8 hours: butyl rubber (> 0.4 mm)

May be used, gloves(breakthrough time) 4 - 8 hours: nitrile rubber (> 0.75 mm), Viton® (> 0.7 mm), PVC (> 0.5 mm), 4H/Silver Shield® (> 0.07 mm), neoprene (> 0.35 mm), polyvinyl alcohol (PVA) (> 0.3 mm)

For right choice of glove materials, with focus on chemical resistance and time of penetration, seek advice by the supplier of chemical resistant gloves.

The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.

- Body protection** : Personnel should wear antistatic clothing made of natural fibres or of high-temperature-resistant synthetic fibres. Wash clothing before reuse.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : If workers are exposed to concentrations above the exposure limit, they must use a respirator according to EN 140. Use respiratory mask with charcoal and dust filter when spraying this product, according to EN 14387 (as filter combination A2-P2). In confined spaces, use compressed-air or fresh-air respiratory equipment. When use of roller or brush, consider use of charcoalfilter.
- Environmental exposure controls** : Do not allow to enter drains or watercourses.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties**Appearance**

- Physical state** : Liquid.
- Colour** : Clear.
- Odour** : Characteristic.
- Odour threshold** : Not applicable.
- Melting point/freezing point** : Not applicable.
- Initial boiling point and boiling range** : Lowest known value: 108°C (226.4°F) (Hydrogen peroxide solution). Weighted average: 161.91°C (323.4°F)
- Flammability** : Not applicable.
- Lower and upper explosion limit** : 1.8 - 6.9%
- Flash point** : Closed cup: 65°C
- Auto-ignition temperature** : Lowest known value: 603°C (1117.4°F) (4-hydroxy-4-methylpentan-2-one).
- Decomposition temperature** : Not available.
- pH** : Not applicable.
- Viscosity** : Dynamic (room temperature): 28 mPa·s
Kinematic (40°C): >20.5 mm²/s
- Solubility in water** : Cold water Very slightly soluble
hot water Very slightly soluble
- Partition coefficient: n-octanol/water** : Not available.
- Vapour pressure** : Highest known value: 0.8 kPa (6.3 mm Hg) (at 20°C) (3,5-dimethyl-1,2-dioxolane-3,5-diol). Weighted average: 0.23 kPa (1.73 mm Hg) (at 20°C)
- Evaporation rate** : 0.12 (4-hydroxy-4-methylpentan-2-one) compared with butyl acetate
- Density** : 1.13 g/cm³
- Vapour density** : Highest known value: 4 (Air = 1) (4-hydroxy-4-methylpentan-2-one). Weighted average: 3.7 (Air = 1)

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SECTION 9: Physical and chemical properties

- Explosive properties** : Not available.
Oxidising properties : Not available.
Particle characteristics
Median particle size : Not applicable.

9.2 Other information

- SADT** : 60°C

No additional information.

SECTION 10: Stability and reactivity

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability : Hazardous reactions or instability may occur under certain conditions of storage or use.
10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid : When exposed to high temperatures may produce hazardous decomposition products.
SADT (Self-Accelerating Decomposition Temperature) is the lowest temperature at which self-accelerating decomposition may occur with a substance in the packaging as used for transport. A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at or above the SADT. Contact with incompatible substances can cause decomposition at or below the SADT.
Avoid shock and friction.
10.5 Incompatible materials : Keep away from rust, iron and copper. Contact with incompatible materials, such as acids, alkalis, heavy metal compounds and reducing agents, will result in hazardous decomposition. Do not mix with peroxide accelerators.
10.6 Hazardous decomposition products : Decomposition products may include the following materials: carbon monoxide, carbon dioxide, smoke, oxides of nitrogen.

SECTION 11: Toxicological information**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

There are no data available on the mixture itself. The mixture has been assessed following the conventional method of the CLP Regulation (EC) No 1272/2008 and is classified for toxicological properties accordingly. See Sections 2 and 3 for details.

Exposure to component solvent vapour concentrations in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness.

Solvents may cause some of the above effects by absorption through the skin. Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin.

If splashed in the eyes, the liquid may cause irritation and reversible damage.

Contains 3,5-dimethyl-1,2-dioxolane-3,5-diol. May produce an allergic reaction.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Methyl ethyl ketone peroxide 4-hydroxy-4-methylpentan-2-one	LD50 Oral	Rat	470 mg/kg	-
	LD50 Dermal	Rabbit	13500 mg/kg	-
pentane-2,4-dione	LD50 Dermal	Rabbit	13500 mg/kg	-
	LD50 Oral	Rat	2520 mg/kg	-
	LD50 Oral	Mouse	951 mg/kg	-

Acute toxicity estimates

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SECTION 11: Toxicological information

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Jotun Peroxide 13	1811.9	33333.3	N/A	37.5	N/A
methyl ethyl ketone peroxide	470	N/A	N/A	11	N/A
4-hydroxy-4-methylpentan-2-one	2520	13500	N/A	N/A	N/A
Hydrogen peroxide solution	500	N/A	N/A	11	N/A
pentane-2,4-dione	500	300	N/A	3	N/A

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
4-hydroxy-4-methylpentan-2-one	Eyes - Mild irritant	Mammal - species unspecified	-	-	-
	Eyes - Severe irritant	Rabbit	-	24 hours 100 microliters	-
Hydrogen peroxide solution pentane-2,4-dione	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-
	Eyes - Severe irritant	Rabbit	-	1 milligrams	-
	Eyes - Severe irritant	Rabbit	-	20 milligrams	-
	Skin - Mild irritant	Rabbit	-	6 hours 11.2 Milliliters Intermittent	-
	Skin - Mild irritant	Rabbit	-	488 milligrams	-
	Skin - Moderate irritant	Rabbit	-	48 hours 11.2 Milliliters Intermittent	-
	Skin - Moderate irritant	Rabbit	-	6 hours 33.6 Milliliters Intermittent	-

Sensitisation

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

Mutagenicity

No known significant effects or critical hazards.

Carcinogenicity

No known significant effects or critical hazards.

Reproductive toxicity

Developmental effects : Suspected of damaging the unborn child.

Fertility effects : No known significant effects or critical hazards.

Teratogenicity

Suspected of damaging the unborn child.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
4-hydroxy-4-methylpentan-2-one	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

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

Aspiration hazard

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

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SECTION 11: Toxicological information**11.2 Information on other hazards****11.2.1 Endocrine disrupting properties**

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information**12.1 Toxicity**

There are no data available on the mixture itself.
Do not allow to enter drains or watercourses.

The mixture has been assessed following the summation method of the CLP Regulation (EC) No 1272/2008 and is not classified as hazardous to the environment.

Product/ingredient name	Result	Species	Exposure
Hydrogen peroxide solution pentane-2,4-dione	Acute EC50 1.2 mg/l Marine water	Algae - Dunaliella tertiolecta - Exponential growth phase	72 hours
	Acute EC50 5.38 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 2320 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 30 mg/l Fresh water	Fish - Siluriformes - Fingerling	96 hours
	Chronic NOEC 989.7 ppm Fresh water	Fish - Oncorhynchus tshawytscha - Egg	43 days
	Acute EC50 75000 µg/l Fresh water	Crustaceans - Ceriodaphnia reticulata - Larvae	48 hours
	Acute LC50 47600 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
Acute LC50 60100 µg/l Fresh water	Fish - Lepomis macrochirus	96 hours	

Conclusion/Summary : No known significant effects or critical hazards.

12.2 Persistence and degradability

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Methyl ethyl ketone peroxide	<0.3	-	low
4-hydroxy-4-methylpentan-2-one	-0.14 to 1.03	-	low
Hydrogen peroxide solution	-1.36	-	low
pentane-2,4-dione	0.68	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

12.6 Endocrine disrupting properties

Not available.

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SECTION 12: Ecological information**12.7 Other adverse effects**

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods**Product**

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

Disposal considerations : Do not allow to enter drains or watercourses. Dispose of according to all federal, state and local applicable regulations. If this product is mixed with other wastes, the original waste product code may no longer apply and the appropriate code should be assigned. For further information, contact your local waste authority.

European waste catalogue (EWC)

The European Waste Catalogue classification of this product, when disposed of as waste, is:

Waste code	Waste designation
08 01 11*	Waste paint and varnish containing organic solvents or other dangerous substances

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Disposal considerations : Using information provided in this safety data sheet, advice should be obtained from the relevant waste authority on the classification of empty containers. Empty containers must be scrapped or reconditioned. Dispose of containers contaminated by the product in accordance with local or national legal provisions.

Type of packaging	European waste catalogue (EWC)
CEPE Guidelines	15 01 10* packaging containing residues of or contaminated by hazardous substances





Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	UN3105	UN3105	UN3105	UN3105
14.2 UN proper shipping name	Organic peroxide type D, liquid (methyl ethyl ketone peroxide)	Organic peroxide type D, liquid (methyl ethyl ketone peroxide)	Organic peroxide type D, liquid (methyl ethyl ketone peroxide)	Organic peroxide type D, liquid (methyl ethyl ketone peroxide)

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SECTION 14: Transport information

14.3 Transport hazard class(es)	5.2 	5.2 	5.2 	5.2 
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.

Additional information

ADR/RID : **Hazard identification number** 539
Tunnel code (D)

IMDG : **Emergency schedules** F-J, S-R

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

VOC : The provisions of Directive 2004/42/EC on VOC apply to this product. Refer to the product label and/or technical data sheet for further information.

VOC for Ready-for-Use Mixture : Not available.

Industrial emissions (integrated pollution prevention and control) - Air : Not listed

Industrial emissions (integrated pollution prevention and control) - Water : Not listed

Ozone depleting substances (1005/2009/EU)

Not listed.

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SECTION 15: Regulatory information**Prior Informed Consent (PIC) (649/2012/EU)**

Not listed.

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product may add to the calculation for determining whether a site is within the scope of the Seveso Directive on major accident hazards.

National regulations**Industrial use**

: The information contained in this safety data sheet does not constitute the user's own assessment of workplace risks, as required by other health and safety legislation. The provisions of the national health and safety at work regulations apply to the use of this product at work.

International regulations**Chemical Weapon Convention List Schedules I, II & III Chemicals**

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical safety assessment

: No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

: ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 N/A = Not available
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 SGG = Segregation Group
 vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Org. Perox. D, H242	Expert judgment
Acute Tox. 4, H302	Calculation method
Skin Corr. 1B, H314	Calculation method
Eye Dam. 1, H318	Calculation method
Skin Sens. 1, H317	Calculation method
Repr. 2, H361d	Calculation method

Full text of abbreviated H statements

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SECTION 16: Other information

H226	Flammable liquid and vapour.
H242	Heating may cause a fire.
H271	May cause fire or explosion; strong oxidiser.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H361d	Suspected of damaging the unborn child.

Full text of classifications [CLP/GHS]

Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 3	FLAMMABLE LIQUIDS - Category 3
Org. Perox. D	ORGANIC PEROXIDES - Type D
Ox. Liq. 1	OXIDISING LIQUIDS - Category 1
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Corr. 1A	SKIN CORROSION/IRRITATION - Category 1A
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Sens. 1	SKIN SENSITISATION - Category 1
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

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