



#### 4. FIRST AID MEASURES

In case of accident or if you feel unwell, seek medical advice immediately (Show the label where possible).

- |     |                        |   |
|-----|------------------------|---|
| 4.1 | First aid - Inhalation | Take the injured person away from the contaminated area. If the injured person shows any signs of breathing-insufficiency, give artificial respiration by means of a self-expanding balloon mask (AMBU). Immediately take the injured person to the nearest first-aid post. |
| 4.2 | First aid - Skin       | Remove the accidentally contaminated clothes immediately, wash any affected skin area with plenty of lukewarm water and soap. Should there be persistent skin reddening or irritation, take the injured person to the nearest first-aid post for burns treatment.           |
| 4.3 | First aid - Eyes       | Wash immediately with plenty of running keeping the eyelid always far from the eye. Immediately take the injured person to an oculist. Do not treat injured eyes with any ointments or oils.  |
| 4.4 | First aid - Ingestion  | Do not induce vomiting. Rinse mouth with water and immediately take him to the nearest first-aid post.  |

#### 5. FIRE-FIGHTING MEASURES

- |     |                      |   |
|-----|----------------------|---|
| 5.1 | Extinguishing media  | <b>Suitable Extinguishing Media: Water Spray, alcohol resistant foam, powder, CO<sub>2</sub>. Fight larger fires with Water Spray or alcohol resistant foam. Unsuitable Extinguishing Media: Halones, Water with full jet .</b><br>Always use water as an extinguisher, preferably broken up, keeping windward and at a safe distance. Cool down both the containers which have been involved in the fire and the surrounding area. Do not start cleaning the area or salvaging the goods before the whole area has completely cooled down. In case of product decomposition, this is detectable by the formation of fumes and by containers overheating, cool down with water. |
| 5.2 | Special hazards      | The fire can resume if it does not cool it. Decomposition may occur under effect of heating. The oxygen developed during the decomposition phase may support the combustion in case of fire. Decomposition products are: Oxygen, Hydrocarbons, Carbon dioxide, Carbon monoxide, Water. Traces of other toxic gases cannot be excluded. The main products of decomposition: see Point 10 - Stability and Reactivity. Exposure to products of combustion or decomposition can cause adverse health effects.   |
| 5.3 | Protective equipment | Wear suitable protective clothing and wear self container breathing equipment. See section 8.   |
| 5.4 | Other information    | Extinguish a small fire with alcohol resistance powder or carbon dioxide then apply water to prevent re-ignition. Cool closed containers with water, keeping windward and at a safe distance.   |

#### 6. SPILLAGE MEASURES – ACCIDENTAL RELEASE MEASURES

- |     |                           |   |
|-----|---------------------------|---|
| 6.1 | Personal precautions      | Keep away from ignition sources. Always use water as an extinguisher, preferably broken up, keeping windward and at a safe distance. Take precautionary measures against static discharges. Do not breathe fumes/vapours. Wear breathing apparatus with filter A during decomposition of materials. Avoid contact with skin and eyes. During the operation use the individual protective devices, see section 8.  |
| 6.2 | Environmental precautions | Do not allow to enter drains or water courses. Cover the remainder with inert absorbent (e.g. vermiculite) or hearth for disposal. Advise competent authority. See section 7.   |
| 6.3 | Methods for cleaning up   | Spilled material should be swept up with an inert, moist diluent such as perlite, vermiculite, or sand, and placed in a clean polyethylene drum or a polyethylene pail. Wet drum or pail with water prior to sealing containers. Never try to recover the discharged product, or reintroduce it into its original containers. Large quantities should be diluted with suitable desensitization agent to a concentration below 10 % before disposal. See Section 13. In case of large spillage the environmental authority should be informed. |

#### 7. HANDLING AND STORAGE

- |     |                 |  |
|-----|-----------------|--|
| 7.1 | Handling        | Apply the legislation regarding the Industrial Hygiene/Safety job. During the operation use the individual protective devices. See section 8. Do not allow operators to use naked flames, to produce sparks or to smoke inside the rooms where the product is handled and stored. Do not breathe fumes/vapours. Avoid loss and/or disperses. Keep container tightly sealed. Keep away from dirt, rust, chemicals in particular concentrated acids, alkalis and accelerators (e.g. heavy metal compounds and amines) those can cause the decomposition of the product. See Section 10. The containers used to collect and pour out the product are to be kept scrupulously clean. Avoid peroxide refilling into its original container. |
| 7.2 | Storage         | Restricting access to unauthorized persons. Pay attention to the special requirements of your local authorities for handling with dangerous goods. Keep the product: <ul style="list-style-type: none"> <li>✓ in observance with the local rules;</li> <li>✓ in the original closed containers and away from other inflammable materials.;</li> <li>✓ away from sources of ignition (steam lines, naked flames, sparks, direct sunlight, etc.);</li> </ul> In order to keep the product characteristics unaltered for a long time, store in a cool, well ventilated position.<br><b>Recommended storage Temperature: &lt; 30°C.</b>  |
| 7.3 | Particular uses | The materials which can bear the contact with peroxides, and which are consequently suitable for the construction of peroxides containers, dispensers, etc., are: glass or ceramic, polyethylene, AISI 304 or 316 stainless steel, pickled and passivated.<br><b>Incompatible Materials: Iron, Copper, Brass, Bronze, Aluminium, Zinc.</b>   |

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION (98/24/CE LEGISLATION)

### 8.1 Limit value for exposure to single components of the product.

**Additional information about design of technical facilities:** No further data; see item 7.

CUMENE HYDROPEROXIDE	ACGIH	-	TLV-TWA	mg/m3	250
ETHYL ACETOACETATE	ACGIH	-	TLV-TWA	mg/m3	n.d.
CUMENE	ACGIH	-	TLV-TWA	mg/m3	246

TLV- Threshold Limit value; TWA - Time Weighted Average; STEL - Short Term Exposure Limit; ACGH - American Conference of Governmental Industrial Hygienists.

### 8.2 Exposure controls and personal protection device.

The personal protection devices vary according to possible exposure and danger of the work conditions.

8.2.1	Personal Protective Equip. (PPE)	The working area shall be provided with suitable ventilation system in order to keep the product concentration rate in the air at a low level. It must be ensured a good local ventilation and a good system of air supply. If these measures are not sufficient to maintain concentrations of vapours below the exposure limit, it is necessary to use appropriate means of protection of the respiratory tract.
(a)	Respiratory protection	Avoid inhalation of vapours. Use suitable respiratory protective device in case of insufficient ventilation. Use self or masks with organic vapour filter, type "A" during the emergency. European Cartridges Draeger multipurpose type (A2B2E2K1P2), 3M Combination Cartridge/Filter: 60922, 60923 or 60926, 3M multipurpose type (ABEK2P3), 3M Acid Gas (AG) 6002, Organic Vapor/Acid gas (OV/AG) 6003, Multigas (MG/V) 6006.
(b)	Hand protection	Avoid contact with the eyes and skin. Wear suitable protective gloves of neoprene or synthetic rubber (Vinile rubber, Nitrile rubber) and check on their status before use. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. Only use chemical-protective gloves with CE-labelling of category III.
(c)	Eye protection	Avoid contact with the eyes and skin. Wear eye/face protection during pouring. Install emergency eye sources close to the Area of Use.
(d)	Skin protection	When high shoot out risks occur, rubber booths and waterproof clothes must be worn. Install emergency showers close to the zone of Use. Use gloves resistant to chemicals. Only use chemical-protective gloves with CE-labelling of category III. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. The gloves should be replaced immediately if you observe signs of degradation.
8.2.2	Environmental exposure controls	Where a chemical safety report for the exposure scenarios set out in the safety data sheet is required, an overview of risk management measures must be provided, that adequately control exposure of the substance to the environmental.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### General information

Characteristic	Unit of measure	Declared value
Appearance	-	Liquid, clear
Colour	-	Colourless
Odour	-	Distinctive

### Important information about human health and environmental safety

Characteristic	Unit of measure	Declared value
pH (in aqueous solution)	-	Acid
Boiling point/ interval	°C	100°C decomposes
Flash point (open cup)	°C	60
Flash point (closed cup) - EN ISO 3680	°C	Not determined
Flammability ASTM D-4206-96(2001)	-	Not sustain combustion
Explosive properties	-	Product is not explosive.
Oxidizing properties	-	Not applicable
Vapour pressure	-	Not determined
Relative density UNI EN ISO 12185:1999 at 20°C	d 20/20	1,020
Solubility in water	-	Partly soluble
Liposolubility	-	Soluble in polar solvents
Partition coefficient	logPow	Not determined
Viscosity at 20 °C UNI EN ISO 3104:2000 at 20°C	mm <sup>2</sup> /s	05
Steam density	aria=1	Not determined
Refractive Index	-	Not determined
VOC Content	%	Not determined

### Other information

Characteristic	Unit of measure	Declared value
Auto ignition	°C	Not determined
Melting point/ interval	°C	< - 10
SADT (Self Accelerated Decomposition Temperature)	°C	> + 60
Active oxygen content	%	4,6
Solubility in other solvents	-	See section 10

### 10. STABILITY AND REACTIVITY

10.1	Stability	The product is stable under normal storage conditions for at least six months from the date of production.
10.2	Conditions to avoid	The product is stable under normal storage conditions. Product decomposition is detected by temperature increase and fumes emission. The oxygen developed during the decomposition phase, in case of fire, may support the combustion of flammable products.
10.3	Material to avoid	To use only compatible materials, see section 7. It can rapidly decompose if heated or mixed with other incompatible chemical compounds. It is therefore necessary to avoid the product coming into contact with all kinds of metallic salts; acids and alkalis, especially if in a concentrated form; any reducers and all organic and flammable compounds. Store in a well ventilated place away from sources of heat and direct sunlight.
10.4	Decomposition products	The main products of the decomposition process are: Oxygen, Hydrocarbons, carbon dioxide and carbon monoxide, water. No hazardous decomposition products if used and stored according to specifications. Emergency procedures will vary depending on conditions. The customer should have an emergency response plane in place.

### 11. TOXICOLOGICAL INFORMATION

#### **CUMENE HYDROPEROXIDE - CUMIL HYDROPEROXIDE**

Acute toxicity - Oral	LD50 oral - (lethal dose rat)	382 mg/Kg
Acute toxicity - Inhalation	LC50 (lethal concentration rat)	220 ppm/4h
Eye irritation	(rabbit)	Severely Irritating
Skin irritation	(rabbit)	Severely Irritating
Genotoxicity "in vitro" (Ames test)		Not Mutagenic
Skin sensitization		Not sensitizing

#### **ETHYLACETOACETATE**

Acute toxicity - Oral	LD50 oral - (lethal dose rat)	3980 mg/Kg
Acute toxicity - Inhalation	LC50 (lethal concentration rat)	200 ppm/l/4h
Acute toxicity - Dermal	LD50 (lethal dose rat)	> 5000 mg/Kg
Eye irritation	(rabbit)	Moderately Irritating
Skin irritation	(rabbit)	Irritating
Genotoxicity "in vitro" (Ames test)		Not Mutagenic
Skin sensitization		Not sensitizing

#### **CUMENE - PROPYLBENZENE**

Acute toxicity - Oral	LD50 oral - (lethal dose rat)	1400 mg/Kg
Acute toxicity - Inhalation	LC50 (lethal concentration mouse)	8000 ppm/l/4h
Acute toxicity - Dermal	LD50 dermal - (lethal dose rat)	12300 mg/Kg
Eye irritation	(rabbit)	Irritating
Skin irritation	(rabbit)	Irritating
Genotoxicity "in vitro" (Ames test)		Not Mutagenic
Skin sensitization		Not sensitizing

For more information about hazardous to health, see step 2 and 8.

### 12. ECOLOGICAL INFORMATION

Use this product appropriately and avoid product dispersion in the environment. The available EcoToxicity data about single components of the preparation, are as follows:

#### **CUMENE HYDROPEROXIDE - CUMIL HYDROPEROXIDE**

Acute toxicity EC3 bacteria	n.d.	
Acute toxicity EC50 crustaceans (daphnia magna 24h)	7 mg/l	
Acute toxicity LC50 fish	n.d.	
Mobility	Air	Little volatile
	Water	Not Soluble
	Soil	Possible strong absorption – Koc = 59,16
Persistence and degradation	n.d.	
Bioaccumulation potential	Not bioaccumulable	

#### **ETHYLACETOACETATE**

Acute toxicity LC50 (scenedesmus subspicatus 72h)	> 500 mg/l	
Acute toxicity EC50 crustaceans (daphnia magna 24h)	790 mg/l	
Acute toxicity LC50 fish (leuciscus idus 48h)	515 mg/l	
Mobility	Air	N.d.
	Water	N.d.
	Soil	N.d.
Persistence and degradation	Readily biodegradable	
Bioaccumulation potential	Not bioaccumulable – log Pow = < 3.0	

### CUMENE - PROPYL BENZENE

Acute toxicity EC3 bacteria	n.d.
Acute toxicity EC50 crustaceans (daphnia magna 24h)	0,6 mg/l
Acute toxicity LC50 fish (pimephales promelas 96h)	6.32 mg/l
Mobility	Air Highly volatile Water Soluble Soil Possible absorption – Koc = 458
Persistence and degradation (Mod. MITI test)	40% of teoric value in water
Bioaccumulation potential	Not bioaccumulable

### 13. DISPOSAL CONSIDERATIONS

For safety measures about handling of excess and residuals see section 7 and 8. It is advisable to dispose the product and the packaging in strict observance with the local rules.

- 13.1 Handling of Waste Waste must be handled and disposed of as provided by local and national regulations. Do not discharge into drains and/or into the environment. This material must be disposed of as hazardous waste into an authorized waste collection. Directive 94/62/EC, D.L. 22/1997, Act 152/2006. Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- 13.2 Uncleaned packaging The empty containers must be disposed of as hazardous waste in strict observance with the local and national rules. 94/62/CE Directive, D.L. 22/1997, DLgs. 152/2006.
- 13.3 Waste disposal key It is advisable to dispose of the product by combustion in authorized structure. Before starting the combustion procedure, it is recommended to dilute the peroxide with adequate plasticizers. If the product is correctly ignite, it decomposes itself in carbon dioxide and water.

### 14. TRANSPORT INFORMATION

	ADR/RID	ADN/ADNR	IMDG	IATA
14.1 UN Number	UN 3109	UN 3109	UN 3109	UN 3109
14.2 UN proper Shipping Name	UN 3109, Organic Peroxide Type F, Liquid, Cumene Hydroperoxide, 5,2(8), G.I. II, (D), Dangerous to the Environment			
14.3 Transport Class(es)	5.2(8)			
14.4 Packing Group	II			
14.5 Enviromental Hazards	Yes	Yes	Marine Pollutant	Yes
14.6 Special precautions for user	Not Available			
16.7 Tunnel code	Tunnel Code: <b>D</b>	----	----	----
16.8 Additional Information	----	----	EmS: F-J, S-R	----

### 15. REGULATORY INFORMATION

#### Information on labelling:

Commercial name	see section 1
Responsible for intake on market of the UE	see section 1
Chemical name of the preparation and the contained substances	see section 1 e 3
Classification carried out according to the Ministerial Decree 28th February 2006 (29° adaptation of the Directive 67/548/CEE) and 2004/73/CE.	

#### Warning Symbols:



O - Oxidizing



T - Toxic



N - Dangerous to the Environment

#### Risk phrases

**R7:** May cause fire. **R21/22:** Harmful in contact with skin and if swallowed. **R23:** Toxic by inhalation. **R34:** Causes burns. **R48/20/22:** Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. **R51/53:** Toxic to aquatic organism, may cause long-term adverse effects in the aquatic environmental.

#### Safety phrases

**S3/7:** Keep container tightly closed in a cool place. **S14:** Keep away from reducing agents, alkali and compounds with heavy metal bases (e.g. accelerators). **S16:** Keep away from sources of ignitions. No smoking. **S26:** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. **S36/37/39:** Wear suitable protective clothing, gloves and eye/face protection. **S45:** In case of accident or if you feel unwell, seek medical advice immediately (Show the label where possible). **S50:** Do not mix with accelerating agents, promoters or reducing agents.

**Nominal quantitative of the contents:** the product is markets in packing till 25 Kg. capacity.

**National Relevant Regulations:** (Take care of the respective local regulations):

**Legislative Decree 334/99**

Unless local restriction the product is submitted to the requirements for storage facilities above 50 tons.

**D.Lg.vo 81/08**

Art. 72 decies - Sanitary Controls are obligatory periodically when the risk is not moderated for chemical agents which are dangerous for the health and when they answer to the criteria for the classification like: - toxic, much toxic. - Injurious, - sensibilising, - irritant. The biological monitoring is obligatory when the workers are exposed to agents for which a value for biological limit has been fixed.

**Substances of very high concern (SVHC) according to REACH, Article 57**

None of the ingredients is listed.

### 16. OTHER INFORMATION

Chemical Name	Directive 67/548/EEC [DSD]	Directive (CE) No 1907/2006
<b>CUMYL HYDROPEROXIDE (CAS 80-15-9)</b>	<b>R7, R21/22, R23, R34, R48/20/22, R51/53</b> May cause fire. Harmful in contact with skin and if swallowed. Toxic by inhalation. Causes burns. Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Toxic to aquatic organism, may cause long-term adverse effects in the aquatic environmental.	<b>H242, H331, H312, H302, H373, H314, H411.</b> Heating may cause a fire. Toxic if inhaled. Harmful in contact with skin. Harmful if swallowed. May cause damage to organs through prolonged or repeated exposure. Causes severe skin burns and eye damage. Toxic to aquatic life with long lasting effects.
<b>ETHYLACETOACETATE (CAS 141-97-9)</b>	Not dangerous	Not dangerous
<b>CUMYL (CAS 98-82-8)</b>	<b>R10, R37, R51/53, R65.</b> Flammable. Irritating by inhalation. Toxic to aquatic organism, may cause long-term adverse effects in the aquatic environmental. Harmful: can cause damages to the bellows in case of ingestion.	<b>H226, H304, H411, H335.</b> Flammable liquid and vapour. May be fatal if swallowed and enters airways. Toxic to aquatic life with long lasting effects. May cause respiratory irritation.

**REACH REGULATION:** This MSDS has been written on 30.11.2010 on the base of how much decided by the Regulation n. 1907/2006 of the 18 December 2006 (REACH), according to the Italian legislation 6<sup>th</sup> April 2007, n°. 46 and on the base of how much decided by the Regulation (EC) N°. 1272/2008 Annex VI. The aim of REACH is to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. Promox has activated the PRE REGISTRATION procedures, as requested by this regulations, for all the products of their own interest (MIBKP Reference number: 05-2115513326-55-0000). At the same time Promox has verified that all the suppliers of raw materials, which are involved into their own productive cycles, have carried out same pre registration iter.

Bibliographical references: IUCLID Data set; NIOSH, The Registry of Toxic Effects.

This product is registered in the Prepared Archives for Dangerous product of the Advanced Institute of Health (ISS) coded: P600.

All suggestions included in this safety information card are the summary of the most reliable data available at the moment. It is however impossible to guarantee that these instructions are sufficient and/or valid for any application, some data are still in review. They are informative, they do not represent any guarantee of the characteristics of the product and they do not motivate any contractual legal relationship. The directory of the law witnesses and regulations does is not to be considered like exhausting.

For any further information, users may directly contact the Promox Technical Service.

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