

**MATERIAL SAFETY DATA SHEET**
**1. Identifications of the substance and of the company.**

1.1. Supplier.	<i>Oxytop Ltd Antoninek 2 62-060 Steszew, PL tel./fax. (0-48-61)898-53-00,01, biuro@oxytop.pl</i>
1.2. Trade name.	<b>CETOX-30-OE</b>
1.3. Intended use.	This product is a peroxide initiator for copolymerization of unsaturated polyester resins.
1.4. Information in case of emergency.	<i>tel./fax. (0-48-61)898-53-00,01</i>
1.5. Person responsible for material.	<i>mariusz.konieczynski@oxytop.pl</i>

**2. Hazards identification.**

Classification: <i>corrosive(C), oxidizing(O) and highly flammable (F) substance.</i>
2.1. May cause fire.
2.2. Vapours may cause drowsiness and dizziness.
2.3. Repeated exposure may cause skin dryness or cracking.
2.4. In closed containers without de-aerate valve may occur overpressure.
2.5. Causes burns.
2.6. Highly flammable.
2.7. Irritating to eyes.

**3. Composition and information about ingredients.**

Chemical description.	Cyclohexanone peroxide solution in dimethyl phthalate, diacetone alcohol and ethyl acetate.					
Composition's Name	Concentration [%]	CAS – number	Annex number	EC – number	Symbols	Risk – Phrases
Cyclohexanone peroxide.	13-15	12262-58-7	617-010-00-1	235-527-7	E; O; C; Xn	R:3-7-22-34
Dimethyl phthalate.	15-20	131-11-3	-	205-011-6	-	-
Diacetone alcohol.	20-25	123-42-2	603-016-00-1	204-626-7	Xi	R36
Ethyl acetate.	35-45	141-78-6	607-022-00-5	205-500-4	F; Xi;	R: 11-36-66-67

E – explosive; Xi – irritating; O – oxidizing; C – corrosive; Xn – harmful, F – highly flammable

**4. First aid.**

4.1. Inhalation.	Move to fresh air, rest in half upright position, loose clothing. Apply oxygen or artificial respiration, if there is difficulty in breathing. Remove contaminated clothing. Always seek medical advice.
4.2. Skin.	Remove all contaminated clothing immediately. Wash off with plenty of soap and water. Always seek medical advice. Launder clothes before reuse.
4.3. Eyes.	Rinse for at least 15 minutes. Eyelids should be held away from the eyeball. Seek medical advice immediately.

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4.4. Ingestion.	If the person is conscious, rinse mouth with plenty of water. Call a physician immediately. <b>Do not induce vomiting.</b>
4.5. Advice to physician.	Symptomatic treatment is advised.

**5. Fire – fighting measures.**

5.1 Extinguishing media.	Water, carbon dioxide, dry sand.
5.2. Protective equipment.	Wear suitable protective clothes. Wear self-contained breathing apparatus.
5.3. Special explosion hazards.	Self-ignition may occur. Decomposition under effect of heating. Supports combustion. In case of fire or explosion do not breathe fumes.
5.4. Other information.	Extinguish small fire with powder or carbon dioxide, then apply water to prevent re – ignition.
5.5. Decomposition products.	Carbon dioxide, adipic acid, cyclohexanone.

**6. Accidental release measures.**

<p>6.1. Cut off all sources of ignition. 6.2. Possibility of electrical discharge. Use proper grounding procedures. 6.3. Evacuate people from the dangerous area. 6.4. Wear respiration mask, goggles, gumboots and protective gloves. 6.5. Collect into a clean container to reuse or disposal. 6.6. Ventilate the area and clean the floor thoroughly. 6.7. Do not let to carry to the sewerage. 6.8. Vapours are heavier than air and may collect at floor levels.</p>
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**7. Handling and storage.**

<p>7.1. <i>Handling.</i></p> <p>7.1.1. Do not eat, drink or smoke, while using. 7.1.2. Avoid contamination of skin and eyes. 7.1.3. Use protective equipment (see point 8). 7.1.4. Wash hands thoroughly after handling or contact. 7.1.5. Do not mix with accelerators. 7.1.6. Store in the temperature below: 25°C.</p>
<p>7.2. <i>Storage.</i></p> <p>7.2.1. The maximum allowable quantity of peroxides per control area shall not exceed in amounts 2500 kg. 7.2.2. Store peroxides away from other materials in one storage room. 7.2.3. Segregate peroxides for proper storage cabinet and label with receiving date. Use secondary containment for all materials. 7.2.4. Do not open containers with peroxides, provided that test procedures are conducted by technical control. 7.2.5. Keep away from sunlight, all sources of heat, store in a well ventilated place. 7.2.6. Store peroxides away from other materials in one storage room. 7.2.7. Do not store peroxides in damaged containers. 7.2.8. Keep away from chemical reducing agents (e.g. amines), acids, bases and heavy metals compounds (accelerators, drying agents, metal soaps). 7.2.9. Indoor storage room shall be provided with fire extinguisher installation (sprinklers). 7.2.10. Keep away from open fire. No smoking. 7.2.11. For an indoor transport of peroxides, only appropriate, spark proof and explosion proof equipment is required. 7.2.12. Keep only in the original container. 7.2.13. Storage room in a production building is a separate area, where peroxides are maintained for a current use. 7.2.14. Peroxides stored in a storage room should be used within one shift.</p>

**8. Exposure control and personal protection.**

<b>The maximum admissible concentration (MAC) in mg/m<sup>3</sup> according to time of exposure during work in relay.</b>
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Component.	MAC	MIC	ACC
Ethyl acetate.	200	600	-
Dimethyl phthalate.	5	10	-
Diacetone alcohol.	240	-	-
Monitoring procedures.	PN – 68/Z-04051 Determination of ethyl acetate and butyl acetate in air. PN-89/Z-04208/02 Environmental air protection. Determination of contents of phthalic acid esters. Determination of dimethyl phthalate at work place by use of gas chromatography. NIOSH Manual of Analytical Methods. Fourth Edition 8/15/94. Alcohols III. Diacetone alcohol. Method 1402.		

### RESPIRATORY PROTECTION

In case of insufficient ventilation wear suitable respiratory equipment (respirator with filter AX).

### HANDS PROTECTION

Wear protective rubber or neoprene gloves.

### EYE / FACE PROTECTION

Wear eye / face protection ( protective glasses or goggles).

### SKIN PROTECTION

Wear protective clothing (acid resistant). Good general ventilation should be sufficient for most conditions. Explosion resistant ventilation is recommended.

**MAC – Maximum Admissible Concentration.**

**MIC – Maximum Instantaneous Concentration.**

**ACC - Acceptable Ceiling Concentration.**

### 9. Physical and chemical properties.

9.1. Appearance, color, odor.	Clear, colorless solution containing 15% of peroxides.
9.2. Density.	1.000 g/cm <sup>3</sup> .
9.3. pH value.	Slightly acid.
9.4. Active oxygen.	2.8 – 3,0%.
9.5. Ignition temperature.	- 4 °C (ethyl acetate).
9.6. SADT.	Approx. 60 °C.

### 10. Stability and reactivity.

10.1. Reactivity.	SADT (Self-accelerating decomposition temperature) is the lowest temperature, at which self-accelerating decomposition may occur during the transport. Contact with incompatible substances can cause decomposition at or below the SADT.
10.2. Incompatibilities.	Avoid contact with cooper, aluminium bronze, iron, aluminum, natural or synthetic rubber. Use only stainless steel, polyethylene, polypropylene, glass and teflon objects.

### 11. Toxicological information.

11.1 Reason for opinion.	Lack of experimental data, concerning this product. The opinion was prepared according to dates of components of the product.
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### Cyclohexanone peroxide.

Acute toxicity – oral.	LD50 mouse: 880 mg/kg
Acute toxicity – inhalation.	LC50 rat>5mg/litre
Eye.	Corrosive.
Skin.	Corrosive.

Side effects.	Causes eyes and skin irritation. Long lasting inhalation may cause headaches and throat irritation. Long lasting contact with skin causes irritation and burns.
<b>Dimethyl phthalate.</b>	
Acute toxicity – oral.	LD50 rat: >4800 mg/kg.
Acute toxicity – dermal.	LD50 rabbit: 10.0 ml/kg.
Eye.	Minimally irritating.
Skin.	Mildly irritating.
Side effects.	After swallowing, may cause stomach irritation, dizziness and fall unconscious. Contact with eye may cause pain.
<b>Diacetone alcohol.</b>	
Acute toxicity – oral.	LD50 rat:4.0g/kg
Acute toxicity – dermal.	LD50 rat:14.5 ml/kg
Eye.	Corrosive.
Skin.	Mildly irritating.
Side effects.	Long lasting exposure may cause acute conjunctivitis, breakage of cornea. Long lasting contact with skin may cause allergy. In higher concentrations may cause fever and dizziness. Long lasting exposure may cause liver and kidney damage.
<b>Ethyl acetate</b>	
Acute toxicity – oral	LD50 rat>5.6 g/kg
Acute toxicity – inhalation	LD50 rat>4000 ppm/4h
Eye	Moderately irritating.
Skin	Mildly irritating.
Side effects	Vapors may cause drowsiness and dizziness. Repeated exposure may cause skin dryness or cracking.
<b>12. Ecological information.</b>	
12.1 Reason for opinion.	No experimental toxicological data on the preparation as such available. The following data are applicable to the ingredients listed below.
<b>Cyclohexanone peroxide.</b>	
<i>Ecotoxicity.</i>	
LC50 – fish.	Brachydanio rerio – 48 mg/litre.
<i>Degradation Biotic.</i>	
Readily biodegradable.	
<b>Dimethyl phthalate.</b>	
<i>Ecotoxicity.</i>	
EC50 –algae.	Selenastrum capricorutum 39.800 µg/l/96h.
LC50 – fish.	Lepomis macrochirus 50mg/l/96h.
<i>Degradation Biotic.</i>	
Readily biodegradable.	
Bioconcentration factor	BCF(fish)=5.4 (24h.)
<b>Diacetone alcohol.</b>	
<i>Ecotoxicity.</i>	
LC50 – fish.	Lepomis macrochirus 420 ppm/96h
<i>Degradation biotic.</i>	
Biodegradable.	

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Biocentration factor.	BCF = 0.5
<b>Ethyl acetate.</b>	
<i>Ecotoxicity.</i>	
LC50- fish.	Pimephales promelas 230 mg/l/96 h.
<i>Degradation Biotic.</i>	Biodegradable.
Biocentration factor.	BCF=3.2

**13. Disposal considerations.**

13.1. Contact with professional service or observe local regulations. Waste may be disposed by burning or chemical decomposition. Burn according to local regulations. Neutralize in 10% solution of sodium hydroxide, constantly mixing.

13.2. Waste codes

Residues or waste: **16 09 03 \* Peroxides**

Collect as much as possible and use to harden unsaturated polyester resin, as plastic is not anymore hazardous waste. **07 02**

**13 Plastic waste.**

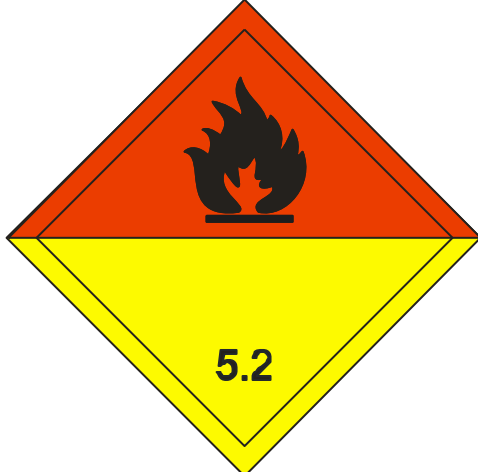
Packages: **15 01 10 \*Packages containing wastes of hazardous substances.**

Contact licensed waste disposal company.




Absorbents, filtration materials, wiping cloths and protective clothing, contaminated with hazardous substances.: **15 02 02\***

Contact licensed waste disposal company.

**14. Transport information.**

<i>Land transport.</i>	
14.1. UN Number.	<b>3105</b>
14.2. ADR Classification Code.	<b>5.2</b>
14.3. Proper shipping name.	Organic peroxide type D, liquid (cyclohexanone peroxide).
14.4. Classification Code.	P1(Organic Peroxide without controlled temperature).
14.5 Labeling.	
14.6. Packing instruction.	<b>P520</b>
14.7. Packing group.	<b>OP7</b>
14.8. Code for transport limitations in tunneling	<b>D</b>
14.9. Regulations on transport of the substance	The containers should be transported in a covered vehicle.
14. 10. Limitation on transport in a railcar	The product can be transported in a railcar in an amount not exceeding <b>20 000kg.</b>
14.11. The maximum amount of product not requiring the car to be legibly marked.	<b>333 kg</b>

**15. Regulatory information.**

Labeling according to directives.	
Labeling prepared in compliance with the regulation of Ministry of Health, issued on 5 March 2009 concerning Safety Data Sheet (Dz. U. From 2009, Nr 53, item 439).	
  	
<b>Corrosive                      Oxidizing                      Highly flammable</b>	
Contains: <b>Cyclohexanone peroxide in diacetone alcohol and ethyl acetate.</b>	
15.1. Risk phrases:	R7 – May cause fire. R34 – Causes burns. R66 - Repeated exposure may cause skin dryness or cracking. R67 - Vapours may cause drowsiness and dizziness.
15.2. Safety phrases:	S2 – Keep out of reach of children. S3/7– Keep container tightly closed in a cool place. S14 – Keep away from reducing agents (amines), acids, alkalis, driers, soaps and heavy metal compounds e.g. accelerators. 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 label where possible).
15.3. Risk phrases mentioned in point 3.	
R3 - Extreme risk of explosion by shock, friction, fire or other sources of ignition. R7 - May cause fire. R22 - Harmful if swallowed. R34 - Causes burns. R11 - Highly flammable. R36 - Irritating to eyes. R66 – Repeated exposure may cause skin dryness or cracking. R67 - Vapours may cause drowsiness and dizziness.	
15.4. Safety Data Sheet preparation.	

**Safety Data Sheet was prepared according to following regulations:**

- European Union Regulation 1907/ 2006 of 18 December 2006 on Registration Evaluation, Authorisation and Restriction of Chemicals (REACH).
- Regulation of 9 January 2009 on change of the regulation on dangerous substances and dangerous chemical preparations and some other regulations (Dz. U. No 20, item 106).
- Regulation of the Minister of Health issued on 28 of September 2005, concerning register of dangerous substances with classification and labeling (Dz. U. No 201, item 1674).
- Regulation of the Minister of Health issued on 9 November 2004 changing the regulation on labeling of the packaging of dangerous substances and preparations (Dz. U. No 260, item 2595).
- Regulation of the Minister of Health issued on 5 March 2009 changing the regulation on the criteria and methods of classification of chemical substances and preparations (Dz. U. No 43, item 353).
- Regulation of the Minister of Health, issued on 30 of April 2004 on the substances and preparations whose packaging sold to general public must be fitted with child resistant fastening and tactile warning of danger (Dz. U. No 128, item 1348).
- Regulation of the Minister of Health, of 13 November 2007 on material safety data sheet (Dz. U. From 2007, No 215, item 1588).
- Regulation of Minister of Labor and Social Policy, concerning the highest admissible concentrations and intensities of factors unwholesome in working area (Dz. U. From 2007, No 161, item 1142).
- Regulation of the Minister of Economics of 1 March 1995, on the prohibitions, restrictions or terms of the production, placing on the market and use of dangerous substances and preparations causing an unreasonable risk to man or the environment (Dz. U. No 37, item 181).
- Regulation of 27 April 2001, concerning disposal (Dz. U. No 62, item 628 with later alterations).
- Regulation of the Minister of Environment of 27 September 2001 on the catalogue of wastes (Dz. U. From 2001, No 112, item 1206).
- Regulation of the Minister of Health, of 30 December on safety and hygiene at work in relation to the existence of chemical agents (Dz. U. From 2005, No 11, item 86).
- Regulation of the Minister of Health of 18 December 2007 changing the regulation on the tests and measurements of health harmful factors at work environment (Dz. U. From 2007, No 241, item 1772).
- Commission Directive 2008/58/EC of 21 August 2008 amending, for the purpose of its adaptation to technical progress, for the 31st time, Council Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions.
- Regulation of 20 April 2005 on tests and measurements of health harmful factors at work environment (Dz. U. From 28 April 2005, No 73, item 645).
- Regulation of 18 December 2008 changing the regulation on labeling and disposal of packages (Dz. U. From 2004, No 11, item 97).
- Classification of dangerous substances, prepared on the basis of European Treaty, concerning International Transport of Dangerous Substances ADR (valid from 1 January 2009).

**16. Other information.**

16.1. Dangerous chemical product, submitted to Register of Dangerous Chemical Substances. Registration number: Reg/5629/2004.

16.1.a. Cetox-30-OE has a hygienic certificate, issued by National Institute of Hygiene.

16.2. The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.

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16.3. Amended points:

- point 2 has been changed of point 3, together with the name of point 9.
- data has been modified for point 14 (04.10.2007).
- regulations from point 15.4 have been updated (05.12.2007).
- pattern of label has been modified for point 14.5 (18.03.2008).
- change of classification for point 3 (29.09.2009).
- person responsible for SDS has been added for point 1.5. (29.09.2008).
- point 15.3. has been updated.
- regulations for point 15 (29.09.2008) have been updated.

16.4. This Safety Data Sheet was prepared on the basis of following data:

- Regulations mentioned in point 15.
- Guide for people preparing Safety Data Sheet –Dr. Karin Kratz, June 2005.
- Guide for people preparing Safety Data Sheet. Guide to Material Safety Data Sheet has been prepared by Austrians experts in terms of the project “Information on the Implementation of Reach legislation”.
- Websites: <http://ciop.pl>, <http://toxnet.nlm.nih.gov>, <http://www.chemikalia.gov.pl>

16.5. Training:

- In case of road transportation of this preparation, ADR training for drivers is required.
- The employer is obliged to inform all the employees, who handle this preparation, on the risks and safety measures, mentioned in the safety data sheet.