

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

1.1. Supplier	<b>Oxytop Ltd Zamysłowo-Antonin 2 PL 62-060 Stęszew</b> tel./fax. (0-48-61)898-53-00,01, biuro@oxytop.pl
1.2. Trade name	<b>METOX-50/METOX-50R*</b>
1.3. Intended use	This product is a peroxide initiator for copolymerization of unsaturated polyester resins.
1.4. Information in case of emergency.	tel./fax. (0-48-61)898-53-00,01

**2. Hazards identification**

Classification: corrosive(C) and oxidizing(O) substance.

- 2.1. May cause fire.
- 2.2. Harmful if swallowed.
- 2.3. In closed containers without de-aerate valve may occur overpressure.
- 2.4. Causes burns.
- 2.5. Strong oxidant.
- 2.6. May cause hard breakage of eye.

**3. Composition and information about ingredients**

Chemical description	Methyl ethyl ketone peroxides, solution in dimethyl phthalate					
Composition's Name	Concentration %	CAS – number	Annex number	EC – number	Symbols	Risk – Phrases
Methyl ethyl ketone peroxides	34-36	1338-23-4.	-	215-661-2.	E; Xn; C	R:2-22-34
Dimethyl phthalate	56-61	131-11-3	-	205-011-6.	-	-
Hydrogen peroxide	<3	7722-84-1	008-003-00-9	231-765-0	O; C; Xn	R:5-8-35 R20/22
Methyl ethyl ketone	<=1	78-93-3	606-002-00-3	201-159-0	F, Xi	R11, R36, R66, R67

**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 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.

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.

### 6. Accidental release measures

- 6.1. Cut off all sources of ignition.
- 6.2. Evacuate people from the dangerous area.
- 6.3. Wear respiration mask, goggles, gumboots and protective gloves.
- 6.4. Collect into a clean container to reuse or disposal.
- 6.5. Ventilate the area and clean the floor thoroughly.
- 6.6. Do not let to carry to the sewerage.

### 7. Handling and storage

#### 7.1. Handling

- 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.

#### 7.2. Storage

- 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.

### 8. Exposure control and personal protection

**The maximum admissible concentration (MAC) in mg/m<sup>3</sup> according to time of exposure during work in relay.**

Component	MAC	MIC	ACC
Methyl ethyl ketone peroxides	-	1,5	-
Dimethyl phthalate	5	10	-
Hydrogen peroxide	1.5	4	-
Methyl ethyl ketone	200	850	-
Monitoring procedures	<i>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.            Methyl ethyl ketone peroxide: Method 3508.            Workplace (Health, Safety and. Welfare) Regulations, 1997/17.            Hydrogen peroxide.            PN-79/Z-04107/02. Environmental air protection. Determination of contents of methyl ethyl ketone. The determination of methyl ethyl ketone at work place by use of gas chromatography.</i>		

### 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.**

**The highest admissible concentration in mg/m<sup>3</sup> according to time of exposure during work in relay.**

**ACC - Acceptable Ceiling Concentration.**

### 9. Physical and chemical properties

9.1. Appearance, color, odor	Clear, colorless liquid containing 39% of peroxides */ Clear, red liquid containing 39% of peroxides.
9.2. Solubility	Phthalate.
9.3. pH value	Slightly acid.

9.4. Density	1.170-1.176g/cm <sup>3</sup>
9.5. Viscosity	20mPa x s
9.6. Active oxygen	9.3-9.8%
9.7. Ignition temperature	71 °C
9.8. Auto-ignition temperature	>200 °C
9.9. SADT	60 °C

### 10. Stability and reactivity

10.1. Stability	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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#### Methyl ethyl ketone peroxides (40% solution in dimethyl phthalate)

Acute toxicity – oral	LD50 rat: 484 mg/kg
Acute toxicity – inhalation	LC50 rat:200 ppm/4 h
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.

#### Dimethyl phthalate

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.

#### Hydrogen peroxide

Acute toxicity – oral	LD50 rat: >1230 mg/kg
Eye	May cause acute conjunctivitis, breakage of cornea, it can cause non-reversible changes. Symptoms may occur with time lag.
Skin	Irritating. Long lasting contact with skin cause burn or white

	irritation with blister.
<b>Methyl ethyl ketone</b>	
Acute toxicity – oral	LD50 rat: 2.9 g/kg
Acute toxicity – inhalation	LC50 rat: 11.700 ppm/4h
Acute toxicity – dermal	LD50 rabbit: >8 g/kg
Eye	Moderately irritating.
Skin	Moderately irritating.
Side effects	Fumes may cause sleepiness and dizziness. Repeated exposure may cause dryness or skin chapping. In higher concentrations, irritating to eyes, nose and throat.

## 12. Ecological information

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.
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### **Methyl ethyl ketone peroxides (40% solution in dimethyl phthalate)**

#### *Ecotoxicity*

LC50 – fish	44.2mg/l (96h) (Poecilia recitulata)
Bioconcentration factor	BCF=13
<i>Degradation Biotic</i>	Readily biodegradable.

### **Dimethyl phthalate**

#### *Ecotoxicity*

EC50 –algae	Selenastrum capricorutum 39.800 µg/l/96h
LC50 – fish	Lepomis macrochirus 50mg/l/96h
Degradation Biotic	Readily biodegradable.
Bioconcentration factor	BCF(fish)=5.4 (24h.)

### **Hydrogen peroxide**

#### *Ecotoxicity*

LC50 – fish	appx. 16-37 mg/l/ 96h
LC95 – algae	> 1.7mg/l / 48h
Biodegradation	Hydrogen peroxide decomposes immediately in contact with soil (water, oxygen).
	Hydrogen peroxide does not bioaccumulate.

### **Methyl ethyl ketone**

#### *Ecotoxicity*

LC50- fish	Lepomis macrochirus 5.640-1.690 mg/l 24 to 96h
<i>Degradation Biotic</i>	Readily biodegradable.
Bioconcentration factor	BCF=1

## 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.
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**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**

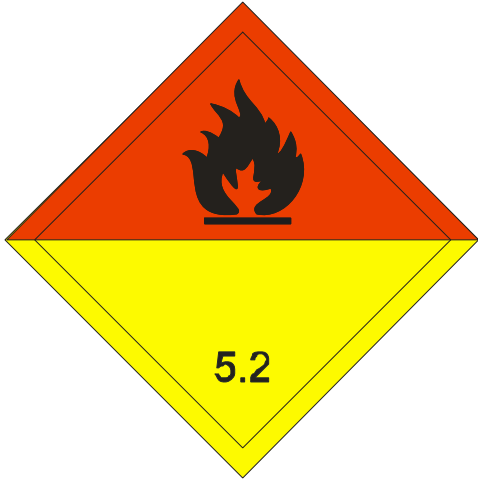
**Packages: 15 01 10** Packages containing wastes of hazardous substances.

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 (methyl ethyl ketone peroxides).
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>
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### 15. Regulatory information

Labeling according to directives.

Labeling prepared in compliance with the regulation of Ministry of Health, issued on the 2 September 2003 concerning Safety Data Sheet (Dz. U. From 2003, Nr 173, item 1679 and Dz. U. From 2004, Nr 260, item 2595).



**Corrosive**



**Oxidizing**

Contains: **Methyl ethyl ketone peroxides**

15.1. Risk phrases:	R7 – May cause fire. R22 – Harmful if swallowed. R34 – Causes burns.
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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).
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15.3. Risk phrases:	R2 - Risk of explosion by shock, friction, fire or other sources of ignition. R22 - Harmful if swallowed. R34 - Causes burns. R5 – Heating may cause an explosion. R8 - Contact with combustible material may cause fire. R35 - Causes severe burns. R20/22 - Harmful by inhalation and if swallowed. R11 - Highly flammable. R36 - Irritating to eyes. R66 - Repeated exposure may cause skin dryness or cracking. R67 - Vapors may cause drowsiness and dizziness.
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#### 15.4. Safety Data Sheet preparation.

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

- Classification of dangerous substances, prepared on the basis of European Treaty, concerning International Transport of Dangerous Substances ADR (valid from 1 January 2007).
- Regulation concerning dangerous substances and dangerous chemical preparations, issued on 11 of January 2001 (Dz. U. Nr 11, item 84, with later alterations)
- Regulation of the Minister of Health issued on 28 of September 2005, concerning register of dangerous substances with classification and labeling (Dz. U. Nr 201, item 1674)
- Regulation of the Minister of Health on labeling of the packaging of dangerous substances and preparations and on the wording of phrases and design of symbols, issued on 9 November 2004 (Dz. U. Nr 260, item 2595).
- Regulation of the Minister of Health, issued on 4 of September 2007 on the criteria and methods of classification of chemical substances and preparations.
- 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. Nr 128, item 1348).
- 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, Nr161, item 1142).
- Regulation of the Minister of Health, concerning safety data sheet of dangerous substances and dangerous preparations, issued on 13 of November 2007 (Dz. U. From 2007, Nr. 215, item 1588).
- 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. Nr. 37, item 181).
- Regulation of 27 April 2001, concerning disposal (Dz. U. Nr. 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, Nr. 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, Nr 11, item 86).

#### 16. Other information

16.1. Dangerous chemical product, submitted to Register of Dangerous Chemical Substances.  
Registration number: Rej/3280/2004.

16.1.a. Metox-50/Metox-50R has a hygienic atest, 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.

<p>16.3. Amended points:</p> <ul style="list-style-type: none"><li>- point 2 has been changed of point 3, together with the name of point 9.</li><li>- data has been updated for point 3 (10.07.2007)</li><li>- data has been updated for point 8 (10.07.2007)</li><li>- point 16.4 has been added (10.07.2007).</li><li>- point 16.5 has been added (10.07.2007).</li><li>- point 14.8 has been added for point 14 (10.07.2007).</li><li>- the list of regulations has been updated for point 15.4 (04.10.2007).</li></ul>	<ul style="list-style-type: none"><li>- data has been modified for point 14 (04.10.2007).</li><li>- MEK has been added to the classification (05.12.2007).</li><li>- regulations from point 15.4 have been updated (05.12.2007).</li><li>- pattern of label has been modified for point 14.5 (18.03.2008).</li></ul>
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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.