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**METOX-50**

Date of issue: 30 of July 1998

Date of revision: 19 of August 2013

SECTION 1: Identification of the substance and of the company

1.1 Product identification

2-butanone peroxide (MEKP)	EC Number	215-661-2
	CAS Number	1338-23-4
Reaction mass of butane-2,2-diyl dihydroperoxide and di-sec-butylhexaoxidane		
EC Number	700-954-4	
Registration number	<b>01-2119514691-43-0004</b>	

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

Identified USE (IU)	Substance applied to the use	Use descriptors
Production	In mixture	<p>Process category (PROC):</p> <p>PROC 1: „Use in a closed technological process, no risk of emergency”</p> <p>PROC 2: „Use in a closed, continuous technological process, with occasional controlled exposure”</p> <p>PROC 3: „Use in a closed technological batch process (synthesis or production)”</p> <p>PROC 4: „Use in a batch process and in another process (synthesis), Zastosowanie w procesie wsadowym i innym procesie (synteza), where the risk of exposure arises”</p> <p>PROC 5: „Mixing in batch processes for producing preparations or products (multilevel /significant contact)”</p> <p>PROC 8a: „Transfer of substance or preparation (charging / discharging) from / to vessels / large containers at non-dedicated facilities”</p> <p>PROC 8b: „Transfer of substance or preparation (charging / discharging) from / to vessels / large containers at non-dedicated facilities”</p> <p>PROC 9: „Transfer of substance or preparation into small containers (dedicated filling line, including weighing)”</p> <p>Environmental release category (ERC):</p> <p>ERC 1:</p> <p>Production of the substance</p> <p>The next operational period appropriate for this application?</p> <p>Not.</p>
Production	In mixture	<p>Process category (PROC):</p> <p>PROC 1: „Use in a closed process, no likelihood of exposure ”</p> <p>PROC 2: „Use in closed, continuous process with occasional controlled exposure”</p> <p>PROC 3: „Use in closed batch process (synthesis or formulation)”</p> <p>PROC 4: „Use in batch and other process (synthesis) where opportunity for exposure arises”</p> <p>PROC 5: "Mixing in batch process for formulation of preparations and articles (multistage and / or significant contact)"</p> <p>PROC 8a: „Transfer of substance or preparation (charging / discharging) from / to vessels / large containers at non-dedicated facilities”</p>

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Identified USE (IU)	Substance applied to the use	Use descriptors
		<p>PROC 8b: „Transfer of substance or preparation (charging / discharging) from / to vessels / large containers at dedicated for this purpose ”</p> <p>PROC 9: "Transfer of substance or preparation into small containers (with dedicated filling line, including weighing)"</p> <p>Environmental release category (ERC): ERC 2: Preparation (formulation) production The next operational period appropriate for this application? Not.</p>
Industrial application	In mixture	<p>Process category (PROC):</p> <p>PROC 1: „Use in a closed technological process, no risk of emergency”</p> <p>PROC 2: „Use in a closed, continuous technological process, with occasional controlled exposure”</p> <p>PROC 3: „Use in a closed technological batch process (synthesis or production)”</p> <p>PROC 4: „Use in a batch process and in another process (synthesis), where the risk of exposure arises”</p> <p>PROC 5: „Mixing in batch processes for producing preparations or products (multilevel /significant contact)”</p> <p>PROC 8a: „Transfer of substance or preparation (charging / discharging) from / to vessels / large containers at non-dedicated facilities”</p> <p>PROC 8b: „Transfer of substance or preparation (charging / discharging) from / to vessels / large containers at non-dedicated facilities”</p> <p>PROC 9: „Transfer of substance or preparation into small containers (dedicated filling line, including weighing)”</p> <p>PROC 10: „Brushing or roller application”</p> <p>PROC 13: „Treatment of articles by dipping and pouring”</p> <p>PROC 14: „Production of preparations or articles by tableting, compression, extrusion, granulation”</p> <p>Environmental release category (ERC): ERC 6b: Industrial use of reactive processing aids. ERC 6d: Industrial use in polymerization processes for the production of resins, rubbers, polymers.</p> <p>Sector of end use (SU): SU 3: „Industrial application”</p> <p>The next operational period appropriate for this application? Not.</p>
Professional application	In mixture	<p>Process category (PROC)::</p> <p>PROC 1: „Use in a closed technological process, no risk of emergency”</p> <p>PROC 2: „Use in a closed, continuous technological process, with occasional controlled exposure”</p> <p>PROC 3: „Use in a closed technological batch process (synthesis or production)”</p> <p>PROC 4: „Use in a batch process and in another process (synthesis), where the risk of exposure arises”</p> <p>PROC 5: „Mixing in batch processes for producing preparations or products (multilevel /significant contact)”</p> <p>PROC 8a: „Transfer of substance or preparation (charging / discharging) from / to vessels / large containers at non-dedicated facilities”</p> <p>PROC 8b: „Transfer of substance or preparation (charging / discharging) from / to</p>

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Identified USE (IU)	Substance applied to the use	Use descriptors
		vessels / large containers at non-dedicated facilities" PROC 9: „Transfer of substance or preparation into small containers (dedicated filling line, including weighing)“ PROC 10: „Brushing or roller application“ PROC 11: „Outside spraying“ PROC 13: „Treatment of articles by dipping and pouring“ PROC 14: „Production of preparations or articles by tableting, compression, extrusion, granulation“ PROC 15: „Use as laboratory reagents“  Environmental release category (ERC): ERC 8b: Wide dispersive indoor use of reactive substances in open systems ERC 8e: Wide dispersive outdoor use of reactive substances in open systems Sector of end use (SU): SU 22: „Professional use“ The next operational period appropriate for this application? Not.

Uses advised against: no uses advised against.

1.3 Information on MSDS supplier.

**Oxytop Sp. z o.o.**

**Antoninek 2**

**62-060 Stęszew**

tel.: +48 61 898 53 00, 48 61 898 53 01

fax: +48 61 881 72 62

www.oxytop.pl

e-mail: dokumentacja@oxytop.pl

1.4 Emergency telephone number

+48 61 898 53 00 (Opening hours: Monday-Friday, 8.00 – 16.00)

SECTION 2: Hazards identification

2.1 Substance or mixture classification.

Classification in accordance with Regulation (EC) No 1272/2008

Org. Perox. D	Organic peroxides, type D	H242 Heating may cause a fire
Acute Tox. 4	Acute toxicity, cat. 4	H302 Harmful if swallowed.
Skin Corr. 1B	Corrosive/skin irritating, cat. 1B	H314 causes severe skin burns and eye damage
Eye Dam. 1	Severe eyes damage/irritating to eyes, cat.1	H318 Causes serious eye damage

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Classification in accordance with Directive 67/548/EEC

**O - Oxidizing**

R 7 – May cause fire.

**Xn - Harmful**

R 22 – Harmful if swallowed.

**C - Corrosive**

R 34 – Causes burns.

## 2.2 Labeling

Labeling in accordance with Regulation (EC) No 1272/2008

Signal word: **DANGER**

Hazard pictogram:

GHS02



GHS05



GHS07



Hazards Statements:

**H242** – Heating may cause fire.

**H302** – Harmful if swallowed.

**H314** – Causes severe skin burns and eye damage.

Precautionary statements:

**P102** – Keep out of reach of children.

**P210** – Keep away from heat/sparks/open flames/hot surfaces – No smoking.

**P280** – Wear protective gloves/protective clothing/eye protection/ face protection.

**P301+P310** – IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

**P303+P361+P353** – IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

**P305+P351+P338** – IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## 2.3 Other hazards

Based on the available studies MEKP can be regarded as a substance which is not PBT or vPvB.

## SECTION 3: Composition/Information on ingredients.

### 3.1 Substances

MEKP is the reaction product of 2-butanone with hydrogen peroxide. Stabilizing agents were used as the additives. Due to the explosive properties of the substance MEKP, these additives can not be separated. MEKP is a multiple substance

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consisting of two main components 2,2 - dihydroperoxybutane ("monomer") and 2,2'-Dihydroperoxy - 2,2' - dibutyl peroxide ("dimer").

The pure MEKP is not stable and the treatment of it is impossible; MEKP is produced only in solvents. The solvent is: dimethyl phthalate.

IUPAC component name	Identificator	Concentration range [%]
2,2 - dihydroperoxybutane	CAS 2625-67-4 EC 220-091-2	20,3-24,3
2,2' – Dihydroperoxy - 2,2' - dibutyl peroxide	CAS 126-76-1 EC 204-802-3	9,6-13,6
<b>Additives: stabilizier</b>		
Dimethyl phthalate	CAS 131-11-3 EC 205-011-6	56,4-60,4
<b>Impurities:</b>		
Other unidentified compounds	-	0-15%

## SECTION 4: First aid measures

### 4.1 First aid measures description

#### Inhalation:

Move to fresh air. Seek medical advise.

#### Ingestion:

Do not provoke vomiting. If the person is unconscious do not provide anything to swallow.

Keep the injured calm, warm. Seek medical advise immediately.

#### Eyes:

Remove contact lenses. Wash eyes for 15 minutes, eyelids should be held away from from the eyeballs. Avoid strong stream of water due to the possibility of damage to the cornea; If necessary provide assistance of an ophthalmologist.

#### Skin:

Remove all contaminated clothing. Clean contaminated skin with stream of water and then with water with mild soap. If skin irritation remains, seek dermatologist advise.

### 4.2 The most important acute and delayed effects of exposure.

In case of exposure to vapors of substances, symptoms of respiratory irritation, headaches and dizziness may appear. Ingestion of this product may cause severe ulceration, inflammation and even perforation of the upper gastrointestinal tract. Contact with eyes may cause consequences in form of a damaged cornea and contact with skin may cause sensitization and even severe burns.

### 4.3 Indication of any immediate attention and special treatment of the injured.

Means for immediate premedical help should be available in the workplace. Normal prescribed rinsing eye for 15 minutes may be difficult due to the severe pain of the surgery. Before applying local anesthetic, it is important to wash your eyes thoroughly. Any additional ailments should be treated symptomatically.

## SEKCJA 5: Fire-fighting measures

### 5.1 Extinguishing media.

Proper: water spray, carbon dioxide, dry chemical, foam, sand.

Improper: halons.

Do not use condensed streams of water onto the surface of the burning product. This causes spreading of the burning of the product, and thus the spread of the fire.

## 5.2 Special explosion hazards.

Heating may cause fire.

Possible decomposition products: acetic acid, ethyl acetate, methyl ethyl ketone.

## 5.3 Information for firebrigade.

Firefighters protective equipment:

Fireproof, full protective equipment.

Contained breathing apparatus.

Use standard methods of fire extinguishing chemicals. Evacuate workers. Small fire can be extinguished with the use of powder or carbon dioxide, then apply water to prevent re-ignition. Containers exposed to high temperature, cool with water and if possible remove from the danger zone.

Water used to extinguish fire should not be allowed to enter drains or watercourses.

**ATTENTION:** Re-ignition may occur. Decomposes while heated. Vapours may form explosive mixtures with air. In the event of fire and / or explosion do not breathe fumes.

## SECTION 6: Accidental release measures

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

Inform on the failure. If necessary organise evacuation. Remove all possible sources of ignition. Avoid prolonged direct contact with the released liquid. Apply adequate ventilation. Wear protective clothing and equipment (see section 8).

### 6.2 Measures for environmental protection.

Prevent pollution of the environment. Secure gullies. In case of serious pollution of the watercourse, drainage system or soil contamination, inform the appropriate administrative authority, control and rescue organizations.

### 6.3 Methods and materials for containment of contamination and removing the pollution.

Secure the damaged packaging. If necessary, pump out previously collected amounts of liquid.

Small amounts of spilled liquid sprinkle with absorbent material (vermiculite) and collect to appropriate, labeled container for disposal. Keep the contents in humid.

Wastes should NOT be closed. Rinse the environment with plenty of water.

### 6.4 Reference to other sections.

Personal protection measures: section 8

Methods of disposal: section 13

## SECTION 7: Handling and storage.

### 7.1 Precautions and handling.

During all operations with product:

Do not allow for the emergency and spread of fire. Avoid direct contact with the mixture. Avoid inhalation of vapors and aerosols. Prevent from the leakage. Prevent from entering into the sewage system. Apply the general rules of industrial

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hygiene. Do not eat, drink or smoke when using this product. Replace the contaminated clothing. Wash hands with soap and water before breaks and after work. Wash contaminated clothing before reuse.

## 7.2 Conditions for safe storage, including information of any incompatibilities.

Storage areas must be effectively ventilated.

Store only in originally sealed containers properly labeled in accordance with the Polish law, in a cool (not exceeding 25 ° C), ventilated area. Protect from sunlight and heat sources. The maximum allowable quantity of peroxides in one chamber does not exceed 2500 kg. It is forbidden to store peroxides in the same room with other materials. Do not open the storage containers with peroxides, with exceptions of sampling by technical control. Do not store peroxides with damaged containers. Keep away from combustible materials, reducing agents (amines), acids, alkalis and heavy metal compounds such as accelerators, driers, metal soaps. Avoid contact with objects made of copper, bronze, steel, aluminum, natural or synthetic rubber. Use items made of stainless steel, polyethylene, polypropylene, glass and teflon. In warehouse do not smoke, eat, use an open flame and sparking devices. In peroxides transport within area of the company, only intrinsically safe and proof devices can be used, specially designed for the transport of such materials. Read Material Safety Data Sheet or label.

## 7.3 Specific final use.

Lack of information about other applications than those listed in subsection 1.2.

## SECTION 8: Exposure control and personal protection

### 8.1 Parameters on control.

#### **Employee's DNEL**

##### Determination of DNEL extended, dermal

NOAEL extended, dermal was 130 mg / kg body weight / day, calculated of a NOAEL extended, the amount of the oral 65 mg / kg body weight / day, assuming 50% absorption through the skin. 4 assessment factor was used to allimetric scale from rat to human, factor 5 for intraspecific differences (employees) and the scaling factor 6 from subacute to chronic risk.

DNEL extended, dermal = 1,08 mg/kg body weight/day

##### Determination of DNEL extended, inhalation

NOAEC extended, inhalation at 56.88 mg / m<sup>3</sup> was calculated of NOAEL extended, oral at 65 mg / kg body weight / day. Assessment factor of 5 was used for intraspecific differences (employees) and the scaling factor 6 from subacute to chronic exposure.

DNEL extended, inhalation= 1,90 mg/m<sup>3</sup>

DNEL of total population.

##### Determination of DNEL extended, dermal

NOAEL extended, dermal was 130 mg / kg body weight / day, calculated of NOAEL extended, an oral of 65 mg / kg body weight / day, assuming 50% absorption through the skin. 4 assessment factor was used to allimetric scale from rat to man, a factor of 10 for intraspecies differences (general population), and the scaling factor 6 from subacute to chronic exposure.

##### Determination of DNEL extended, dermal

NOAEL extended, dermal was 130 mg / kg body weight / day, calculated of NOAEL extended, an oral of 65 mg / kg body weight / day, assuming 50% absorption through the skin. 4 assessment factor was used to allimetric scale from rat to

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human, a factor of 10 for intraspecies differences (general population), and the scaling factor 6 from subacute to chronic exposure.

DNEL extended = 0,54 mg/kg body weight/day

Determination of DNEL extended, inhalation.

Determination extended DNEL, inhalation.

NOAEC extended, inhalation at 24.38 mg / m<sup>3</sup> was calculated of OAEL extended, an oral of 65 mg / kg body weight / day. Assessment factor of 10 was used for intraspecific differences (general population) and the scaling factor 6 from subacute to chronic exposure.

DNEL extended, inhalation= 0,41 mg/m<sup>3</sup>

Determinatio of DNEL extended, oral.

NOAEL extended dermal was 65 mg / kg body weight / day, determined in a 28-day toxicity study in rats. 4 assessment factor was used to alimetric scale from rat to human, a factor of 10 for intraspecies differences (general population) and the scaling factor 6 from subacute to chronic exposure.

DNEL extended, dermal= 0,27 mg/kg body weight/day

PNEC values have been set for fresh water, sea water and periodically release at the level of 5,6E-03 mg / l, 5,6E-04 mg / l, 5,6E-02 mg / l.

PNECgleba monomer MEKP was calculated as 2,95E-02 mg / kg WWT, and for dimer MEKP-02 as 1.26 mg / kg dw.

PNECSTP for MEKP was set at 1.2 mg / l.

PNEC oral was not required due to the low log Pow value (<3.0).

## 8.2 Risk control

Annex to the Safety Data Sheet: EXPOSURE SCENARIO.

## SECTION 9: Information on basic physical and chemical properties.

### 9.1 Information on basic physical and chemical properties

#### **a/ apperance**

liquid, clear

#### **b/ odor**

ketone odor

#### **c/ odor thresold**

no information

#### **d/ pH**

3,5 – 5,0



**e/ melting point**

Experimental determination of the melting point / freezing as described in Method EC A.1 was technically not feasible, because MEKP is stable only after dissolution in stabilizing additives.

Instead, the melting point was calculated using the US EPA EPIWIN (v. 4.00). Based on the data available to MEKP and stabilizers, comprising the calculated melting temperature in the range -10 ° C - 5.5 ° C at 1013 hPa.

**f/ initial boiling point and boiling range**

The boiling temperature has not been determined since MEKP started to decompose at 60 ° C (self-accelerating decomposition temperature SADT).

**g/ flash point**

84°C (357,15) w 101300 Pa

Flash point is determined according to ISO 3679 (closed cup method) using the apparatus "SETAFLASH".

**h/ evaporation rate**

Not determined.

**i/ flammability (solid, gas)****Flammability (contact with water)**

**Rationale:** Based on molecular structure, as well as experience with the procedure and application, MEKP was not considered flammable in contact with water. MEKP was not considered a highly flammable substance and therefore experimental determination of the flammable point was not carried out.

**Flammability (pyrophoric properties)**

**Rationale:** Based on molecular structure, as well as experience with the procedure and application, MEKP was considered not having pyrophoric properties and a non-flammable substance. The chemical structure of methyl ethyl ketone peroxide indicates that it does not contain groups associated with pyrophoric properties. Test substance does not contain any chemical group that could lead to self-ignition in a short time after coming into contact with air at room temperature. In summary, MEKP was not considered a highly flammable substance and therefore experimental determination of the flammable point was not carried out.

**j/upper / lower flammability limit or upper / lower explosion limit**

MEKP is classified as a Type D organic peroxide. MEKP was considered to be devoid of explosive properties. Therefore, in accordance with column 2, Section 7.11 of Annex VII of the REACH study was omitted.

**k/ vapor pressure**

Not determined.

**l/ vapor density**

Not determined.

**m/ relative density**

1,171 g/cm<sup>3</sup> w 20 ± 0,2°C

MEKP density was determined using a pycnometer method in accordance with DIN ISO 3507.

**n/ solubility**

Partially miscible with water, entirely with phthalates (20 ° C +/- 1 ° C)

**o/ partition ratio: n-octanol / water**

Not determined.

**p/ ignition temperature**

The test method was not applicable because MEKP decomposed under the test conditions. Self-accelerating decomposition temperature (SADT) for MEKP was measured at 60 ° C. According to this, the test was omitted.

**q/ decomposition temperature**

Not determined

**r/ viscosity**

25 mPa·s at 20°C

The study was equivalent to the method described in the OECD Guidelines 114 (Standardization: ISO 3105).

**s/ explosive properties**

MEKP was considered not presenting explosive properties.

**t/ oxidizing properties**

In accordance with column 2 of the Annex VII of the REACH study oxidizing properties (as required in Section 7.13) has been omitted because the test substance (MEKP) is an organic peroxide.

MEKP is classified as organic peroxide Type D.

## 9.2 Other information

Active oxygen: 9,3 – 9,8%

Peroxides: 33 – 36%

## SECTION 10: Stability and reactivity.

### 10.1 Reactivity

Oxidizing agent.

### 10.2 Chemical stability

Stable in appropriate solvents (diacetone alcohol (DAA), TXIB, and dimethyl phthalate (DMP)). These solvents have been assigned to the solvents Type A (as defined in 2.5.3.5.2, "Recommendations concerning Transport of Dangerous Goods UN") and the solvents were considered suitable for MEKP.

### 10.3 Possibility of hazardous reactions

Due to the unstable chemical nature of the organic peroxide and a high reactivity, it is assumed that in contact with the organic matter, metals, reducing agents, etc., the substance undergoes a rapid decay.

### 10.4 Not recommended

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It is forbidden to store peroxides in one room with other materials. Avoid direct sunlight, heat sources. Store at temperature not exceeding 25°C.

### 10.5 Incompatibilities

Contact with incompatible materials such as acids, bases, heavy metals and reducing agents will result in hazardous decomposition. Do not mix with peroxide accelerators. Use only stainless steel 316, PVC, polyethylene or glass.

### 10.6 Dangerous decomposition products

It was confirmed that MEKP undergoes rapid hydrolytic degradation onto acetic acid, ethyl acetate, methyl ethyl ketone. Therefore, it was concluded that the substance is hydrolyzed in the environment to the corresponding products of decomposition. These MEKP decomposition products are not considered permanent. MEKP was rated as readily biodegradable in the study of CO<sub>2</sub> separation and by closed vessel test.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### a) acute toxicity

MEKP was tested for acute toxicity by oral, inhalation, and dermal at the fixed dose studies on rats.  
Irritation / Corrosion Skin: corrosive.

LD50 (oral): 1017 mg/kg body weight

LD50 (dermal): 4000 mg/kg body weight

LC50 (inhalation): 17 mg/l (17000 mg/m<sup>3</sup>)

#### b) skin corrosion / irritation; serious eye damage / eye irritation

MEKP been tested for irritating / corrosive to the skin and eyes properties on rabbits according to the method B.4 and EU guidelines similar or equivalent to the EU method B.5. The results showed that MEKP is corrosive to skin and eyes.

Eye Irritation: Corrosive

#### c) Sensitization to respiratory or skin

MEKP was tested in guinea pigs for skin sensitization in the study according to the EU method B.6. and the OECD Guidelines 406. Based on the findings, MEKP was considered non-sensitizing.

No signs of respiratory sensitization resulting from the use of training.

#### d) Mutagenic effects on reproductive cells

Genetic toxicity: negative

#### e) carcinogenicity

For MEKP no carcinogenicity studies were available. In accordance with column 2 of the Annex X of REACH, carcinogenicity studies (required in section 8.9.1) do not need to be carried out because MEKP does not show any indications of mutagenic / genotoxic in the whole battery of in vitro and some in vivo mutagenicity tests. In addition, repeated dose study is not clear evidence that the substance is able to induce hyperplasia and / or pre-neoplastic lesions.

#### f) reproductive toxicity

(route: Oral): NOAEL: 50 mg / kg body weight / day for systemic toxicity of the parental

g) toxic effects on target organs - single exposure

No information.

h) toxic effects on target organs - repeated exposure

NOAEL (oral) : 65 mg/kg body weight/day

NOAEL (dermal): 130 mg/kg body weight/day

NOAEL (inhalation): 57.30 mg / m<sup>3</sup> / day (for employees) and 24.47 mg / m<sup>3</sup> / day (for the general population)

i) Aspiration hazard

No information.

## SECTION 12: Ecological information

### 12.1 Toxicity

96 hours. LC50 for freshwater fish: 44.2 mg / l (nominal)

96 hours. NOEC for freshwater fish: 18.0 mg / l (nominal)

48 hours. EC50 for freshwater invertebrates: 39.0 mg / l (nominal concentration)

72 hours. EC50 for freshwater algae EC50: 5.6 mg / l (nominal concentration)

72 hours. NOEC for freshwater algae: 2.1 mg / l (nominal concentration)

PNECosad freshwater MEKP monomer was calculated as 6.18-03 mg / kg wwt

PNECosad saltwater MEKP monomer was calculated as 6.18-04 mg / kg wwt

PNECosad freshwater MEKP dimer was calculated as 1,9E-02 mg / kg wwt

PNECosad saltwater MEKP dimer was calculated as 1,9E-03 mg / kg wwt(lne)

PNEC soil for monomer MEKP 2.95-02 mg / kg WWT, and for dimer MEKP 1.26-02 mg / kg dw

EC50 aquatic microorganisms: 48 mg / l (nominal concentration)

EC10 for aquatic microorganisms: 12 mg / l (nominal concentration)

PNEC<sub>STP</sub> = 1,2 mg/l

### 12.2 Degradation biotic

Readily biodegradable.

### 12.3 Bioaccumulation properties

MEKP term bioaccumulation in aquatic species was scientifically unjustified and therefore was not required in accordance with section 9.3.2, column 2 of Annex IX of REACH. Bioaccumulation factors (BCF) MEKP was calculated at 10.3 l / kg or log BCF 1,013 EPIWIN with the program. Due to its low bioaccumulation factor, MEKP was considered lacking accumulative potential, and direct and indirect exposure of the aquatic environment is highly unlikely.

MEKP log Pow value was estimated to be <2.04. In addition, the representative BCF value of decomposition products for MEKP showed no tendency to bioaccumulate. In summary, MEKP was found not to meet the bioaccumulation criterion.

### 12.4 Mobility in soil

No information.

### 12.5 Results of assessment of PBT and vPvB properties.

Based on available studies, MEKP may be considered not be PBT or vPvB substance.

## 12.6 Other adverse effects.

Not determined.

## SECTION 13: Disposal considerations

### 13.1 Methods of disposal

Due to the high risk, the recovery is not recommended. Dispose of waste and packaging in accordance with the provisions of the relevant regulatory authorities, waste management and waste disposal regulations (probably burning). Empty containers may contain product residues. Follow all warnings, even after emptying the container.

If the product is used in any further operations / processes, the end user should define the resulting waste and assign the appropriate code. Do not empty into drains. Prevent pollution of surface and ground water. Do not store at municipal landfills.

## SECTION 14: Information on transport

### 14.1 UN number - **3105**

### 14.2 Proper shipping name UN – Organic peroxide **Type D, liquid**

### 14.3 Class (es) dangers in transport – **5.2**

### 14.4 Packing group – lacking; packing instruction **P520**

### 14.5 Dangers to the environment - **NO**

### 14.6 Special precautionary measures for users – **Not available**

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code – **not permitted in bulk transport.**

## SECTION 15: Regulatory information

### 15.1 Regulatory information on safety, health and environmental protection, specific for the substance or mixture.

- European Union Regulation 1907/ 2006 of 18 December 2006 on Registration, Evaluation, Authorisation, issuing permissions and limitations of chemicals (REACH)
- Regulation (EC) NO 1272/2008 (CLP) of the European Parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixture
  
- Commission Regulation (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
- Regulation of Minister of Trade and Industry of 1 March 1995 on occupational safety and health in the production, use, storage and internal transport of organic peroxides. (Journal of Laws 1995 NO 37 item 181).
- Regulation of the Minister of Economy, Labour and Social Policy of 31 March 2003 on essential requirements for personal protective equipment (Journal of Laws 03.80.725) with later amendments.

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- Regulation of the Minister of Labor and Social Policy of 29 November 2002 on maximum permissible concentration and intensity of agents harmful to health, (Journal of Laws 02.217.1833) with later amendments.
- Regulation of the Minister of Environment of 27 September 2001 wastes catalogue. (Journal of Laws NO 112/2001, item. 1206)
- Regulation of the Minister of Work and Social Policy of 20 April 2005 on testing and measurements of factors hazardous to health at the workplace (Journal of Laws 2005 No.73, item 645)
- Regulation of Minister of Health of 30 December 2004 on hygiene and safety at work related to chemical factors present at the workplace (Journal of Laws 05.11.86)
- Regulation of the Minister of Health of 5 March 2009 on the labeling of packaging for dangerous substances and preparations and some chemical preparations (Journal of Laws 09.53.439)
- Act of 5 October 2010 on wastes (Journal of Laws 10.185.1243) with later amendments.
- Act of 11 May 2001 on packaging and packaging waste (Journal of Laws 01 NO 63, item 638) with later amendments.
- Act of 25 February 2015 on substances and their mixtures (Journal of Laws NO 63, item 322)
- Regulation by the Minister of Health of 20 April 2012 on labeling of packaging of hazardous substances and mixtures as well as some preparations. (Journal of Laws 12, item 445).

## 15.2 Chemical safety assessment

Chemical safety assessment has been carried out.

## SECTION 16: Other information

### Full text of abbreviations mentioned in MSDS.

PBT (substance) Persistent, bioaccumulative and toxic

vPvB (substance) very persistent and very bioaccumulative

DNEL Derived no-effect level

NOAEL level at which no adverse effects are observed

NOAEC highest concentration of a substance that is not observed effects

PNEC Predicted concentration causing changes in the environment

LD50 Dose at which observed the death of 50% of the test animals

LC50 concentration at which observed the death of 50% of the test animals

ECX concentration at which the observed X% reduction in growth or growth rate

STOT- activities specific target organ toxicity

SADT self-accelerating decomposition

M A T E R I A L   S A F E T Y   D A T A   S H E E T

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Information contained herein are based on our current knowledge and come up with the data contained in the CSR. The above information is believed to be correct but may prove to be inadequate and should be treated only as help in safe transport, distribution, use and storage of the product.

MSDS does not relieve the user from the knowledge of the provisions relating to the application of the product.

The recipient remains responsible for creating the conditions for the safe use of the product for the staff and the environment. This product should be stored, transported and used in accordance with good industrial hygiene principles and in compliance with all applicable laws.

*Amendments:*

*MSDS has been expanded to include additional information contained in the Chemical Safety Report.*