



# UNILAM INTERNATIONAL

## UNILAM INTERNATIONAL LIMITED

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## MATERIAL SAFETY DATA SHEET 2004: CATALYST B

### 1. Company Information

**Company:**

Unilam International Limited, Ravenscliffe Road, Calverley, Leeds, LS28 5RZ, United Kingdom

**Emergency Telephone No:** + 44 (0) 1274 615550 **Emergency Fax No:** + 44 (0) 1274 615540

### 2. Composition / Information On Ingredients

**Substance:** Methyl Ethyl Ketone Peroxide (MEKP), High Activity

<b>Ingredient:</b>	<b>CAS No:</b>	<b>Concentration %</b>	<b>EC No:</b>	<b>Symbol / R Phrases:</b>
Methyl Ethyl Ketone Peroxide	1338-23-4	35%	215-661-2	C - R34 Xn - R22
4 - Hydroxy-4 - Methyl - Penen-2-one-(Diacetone Alcohol)	123-42-2	10-20%	204-626-7	Xi - R36
Di-Iso-Butylphalate	84-69-5	40-50%	201-553-2	N - R50/53
Methyl Ethyl Ketone	78-93-3	< 5%	201-159-0	Xi - R36 R66 R67
Hydrogen Peroxide	7722-84-1	< 5%	231-765-0	C - R34

**Volatile Organic Compounds:**

Contains:

Up to 20% Diacetone Alcohol. Specific Gravity: 0.935 g/cm<sup>3</sup>  
Contents are measured at: 22% vol / vol

Up to 5% Methyl Ethyl Ketone. Specific Gravity: 0.805 g/cm<sup>3</sup>  
Contents are measured at: 6.2% vol / vol

### 3. Hazards Identification

**Main Hazards And Effects:**

May cause fire. Harmful if swallowed. Causes burns.

#### 4. First Aid Measures

- Swallowing:** Rinse mouth thoroughly with water and then drink copious amounts of water. Do not induce vomiting. Seek medical advice immediately.
- Inhalation:** Bring victim to the fresh air. In doing so, observe self-protection. Seek medical advice immediately.
- Skin Contact:** Wash with soap and plenty of water and remove all contaminated clothing.
- Eye Contact:** Rinse immediately with plenty of water to ensure adequate flushing of the eyes by separating the eyelids with fingers. Seek medical advice.

#### 5. Fire Fighting Measures

- Suitable Extinguishing Media:** Water mist, foam, dry powder (for small fires)
- Unsuitable Extinguishing Media:** Water Jet
- Protection Of Fire Fighters:** Wear self-contained breathing apparatus and fully protective clothing. Fight the blaze from a safe distance. Do not breathe fire gases.
- Hazardous Decomposition Products:** In case of fire and decomposition formation of inflammable, irritant, corrosive, harmful / toxic gases and vapours possible.

#### 6. Accidental Release Measures

**Personal Precautions:**

Avoid contact with the product. Wear personal protective equipment. Ensure good ventilation and exhaust ventilation. Do not breathe vapour. Use suitable respiratory protection. Keep away from sources of ignition – No smoking.

**Environmental Precautions:**

Bring product residues to a safe place and eliminate immediately in accordance with locally valid waste disposal regulations. Avoid release in the environment. Product must not be disposed of into sewerage system!

**Methods For Cleaning Up:**

Pick up cautiously (e.g. with a clean PE-shovel). Avoid friction. Alternatively or in addition, soak up with inert absorbent material (e.g. vermiculite, clean sand). Never add other substances or other waste to product residues.

#### 7. Handling And Storage

**Handling:**

Avoid contact with skin, eyes and clothing. Wear personal protective equipment. At the end of work and before breaks, hands should be washed. Prophylactic skin protection recommended. Use adequate ventilation. Suction off product vapours at their point of generation. Avoid formation of aerosols. Do not breathe vapour / aerosol. Wear suitable respiratory protection if necessary. Peroxide residues must not be returned into the original container. Danger of decomposition!

**Storage:**

The product should be stored in the closed supply container at temperatures below 30°C. Keep in a dry well ventilated place. Keep away from ignition and heat sources (e.g. direct sunlight). Keep separated from other dangerous and incompatible substances. Avoid contamination with e.g. rust, dust, ash (danger of decomposition).

## 7. Handling And Storage (continued)

Under recommended storage conditions in the original container no explosion risk.  
Flammable liquid. Protect burns violently. Formation of ignitable / explosive vapour – air – mixtures possible. Keep away from sources of ignition – No smoking. Take precautionary measures against static discharges.  
In case of decomposition without flames, explosion risk exists due to developing gas – air – mixture.

## 8. Exposure Controls / Personal Protection

### Exposure Limits:

#### **Methyl Ethyl Ketone Peroxide(s):**

TLV (USA), STEL (Literature data, April 1998): 0.2 ppm (1.5 mg/m<sup>3</sup>).

4-Hydroxy-4-methyl-pentan-2-one (Diacetone alcohol):

TRGS 900 (Nov 1998): 50 ppm (240 mg/m<sup>3</sup>).

#### **Methyl Ethyl Ketone:**

TRGS 900 (Nov 1998): 200 ppm (600 mg/m<sup>3</sup>); H= danger of percutaneous absorption; Y; DFG

TRGS 903 (Sept 1999): BAT-Value: 5mg/l (urine)

TRGS 905 (Nov 1999) TRGS 906 no. 38 (Sept 1998).

#### **Hydrogen Peroxide:**

TRGS 900 (Nov 1999): 1 ppm (1.4mg/m<sup>3</sup>)

TRGS 905 (March 2000) TRGS 906 (Dec 1999) no.63

TRGS = Technische Regeln Fur Gefahrstoffe (Germany)

#### **Personal Protection:**

Do not eat, drink or smoke while handling the product. Wear suitable protective clothing, gloves, eye / face protection and suitable respiratory protection.

## 9. Physical And Chemical Properties

<b>Appearance:</b>	Liquid
<b>Colour:</b>	Colourless
<b>Odour:</b>	Stinging, Ketone-like
<b>Boiling Point:</b>	Not applicable. Decomposition occurs
<b>Melting Point:</b>	Liquid to below – 25 °C
<b>Flash Point:</b>	Approx 52 °C (ISO 3679 / 80, SETAFLASH)
<b>Ignition Temperature:</b>	Not applicable. Decomposition occurs
<b>Density:</b>	1.05 g/cm <sup>3</sup> at 20°C
<b>Solubility:</b>	Not miscible with water; miscible with phthalate
<b>Partition Coefficient (Log Pow):</b>	n.d.a.
<b>Viscosity:</b>	18.00 mPas at 20°C
<b>Refraction Index:</b>	1.442 at 20°C

## 10. Stability And Reactivity

### Conditions And Materials To Avoid:

Keep away from sources of ignition and heat. At or above 60°C self-accelerating decomposition is possible.

Heavy metal (salts), strong acids and bases, reducing agents, accelerators. Contaminants (e.g. rust, dust, ash) Combustible materials.

### Hazardous Decomposition Products:

In case of fire and decomposition, formation of inflammable irritant, corrosive, harmful / toxic gases and vapours.

### Thermal Decomposition:

SADT (UN-Test H.4): Approximately 60°C

## 11. Toxicological Information

### Methyl Ethyl Ketone Peroxide(s):

LD50 (oral: rat):	1017 mg/kg	(MEKP-40% in Dimethylphthalate: 1976)
LD50 (oral: rat):	484 mg/kg	(MEKP-60% in Dimethylphthalate: 1958)
LD50 (dermal: rat):	>>1.8ml/kg < 3.6ml/kg	(MEKP-40% in Dimethylphthalate: 1979)
LC50 (inhalation: rat):	17(13-22)mg/l	(MEKP-40% in Dimethylphthalate: 1976)
LC33:	26-41mg/l	(MEKP-40% in Dimethylphthalate: 1976)
LC50:	40-63mg/l	(MEKP-33% in Dimethylphthalate: 1977)

Severely irritating / corrosive to skin and eyes.

Sensitization: Some cases reported (humans) in literature.

GPMT: Not sensitising (MEKP-40% in Dimethylphthalate / Diacetone alcohol).

### AMESTests:

Not mutagenic in TA 98, 100 1535, 1537: + / - rat and hamster S9.

Not mutagenic in TA 98, 100, 1535, 1537, 1538: + / - (MEKP-33% in Dimethylphthalate).

Not mutagenic in TA 98, 100, 1535, 1537, 1538, + / - (MEKP -35% in Di-iso-butylphthalate).

Weakly mutagenic in TA 102, + / - rat S9.

In vitro gene mutations assay (Mouse Lymphoma Cells, -S9): Mutagenic at cytotoxic concentrations.

Clastogenic (+ / - rat S9; in vitro chromosomal aberration; CHO-cells).

Not Clastogenic (in vivo micronucleus assay, mouse).

Weakly genotoxic (+ / - rat S9; in vitro sister chromatid exchange assay, CHO-cells).

## 12. Ecological Information

### Methyl Ethyl Ketone Peroxide(s):

(MEKP-33% in Dimethyl Ethyl):

Fish toxicity (*P. reticulata*): LC50 (96h) = 44.2mg/l.

Activated sludge respiration inhibition test: EC50 = 48mg/l

Biodegradability (Closed Bottle Test, OECD 301D): Readily biodegradable.

### Di-Iso-Butylphthalate:

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

The product has to be classified as being dangerous to water. Avoid release to the environment. In case of spillage or leakage appropriate measures have to be taken immediately.

### 13. Disposal Considerations

Eliminate in accordance with locally valid waste disposal regulations

### 14. Transport Information

**Land (Road / Rail):**  
**Proper Shipping Name:** Organic Peroxide Type D, liquid (Contains: Methyl Ethyl Ketone Peroxide(s))  
**U.N. No:** 3105  
**ADR / RID Class:** 5.2 Item 5b

**Sea:**  
**Proper Shipping Name:** Organic Peroxide Type D, liquid (Contains: Methyl Ethyl Ketone Peroxide(s))  
**U.N. No:** 3105  
**IMDG Class:** 5.2  
**IMDG Page Number (GB):** 5225  
**Package Group:** II

**Medical First Aid Guide (MFAG):** 735

**Air:**  
**Proper Shipping Name:** Organic Peroxide Type D, liquid (Contains: Methyl Ethyl Ketone Peroxide(s))  
**U.N./ ID No:** 3105  
**ICAO / IATA Class:** 3105, 5.2  
**Packaging Group:** II

### 15. Regulatory Information

**Symbols:** O: Oxidizing  
C: Corrosive

**Risk Phrases:** R7: May cause fire  
R22: Harmful by inhalation if swallowed  
R34: Causes burns

**Safety Phrases:** S3/7: Keep container tightly closed in a cool place.  
S14: Keep away from strong acids, bases, heavy metal salts and reducing agents.  
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice  
S36)S37)S39: Wear suitable protective clothing, gloves, eye and 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 accelerators or promoters

### 16. Other Information

#### DISCLAIMER:

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.

01 September 2004