

According to Regulation (EC) No. 1907/2006

## BUTANOX HBO-50

### 1. IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND THE COMPANY/UNDERTAKING

<b>Product label name</b> Methyl ethyl ketone peroxide, solution in dimethyl phthalate	
<b>Supplier</b> Akzo Nobel Polymer Chemicals B.V. Stationsstraat 77 PO Box 247 NL-3800 AE Amersfoort The Netherlands T +31 334676767	
<b>E-mail address of person responsible for safety data sheet</b> RegulatoryPC@akzonobel.com	
<b>Emergency telephone</b> T +31570679211 F +31570679801 Akzo Nobel Polymer Chemicals B.V.-Deventer-NL	
<b>Relevant identified uses of the substance or mixture</b> Curing agent.	
<b>Date of last issue / Revision number</b> 2010-03-30 / 3.41	

### 2. HAZARDS IDENTIFICATION

May cause fire. Harmful if swallowed. Causes burns.
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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a preparation in conformance to EC directives.			
Information on hazardous ingredients			
<b>Chemical description</b> Methyl ethyl ketone peroxide, solution in dimethyl phthalate			
<b>Composition / information on ingredients</b>			
Number	% w/w	CAS-number	Chemical name
1	5	000078-93-3	Methyl ethyl ketone
2	5	000111-46-6	Diethylene glycol
3	30 - 37	001338-23-4	Methyl ethyl ketone peroxide
4	45 - 60	000131-11-3	Dimethyl phthalate

	REACH Registra tion number	EC-number	Classification according to 1272/2008 as amended			Classification according to 67/548/EEC as amended
1		201-159-0				F Xi R11 R36 R66 R67
2		203-872-2				Xn R22
3		215-661-2	Organic peroxide	Type A	H240 H302 H312 H314 H331	C E R02 R07 R22 R34
			Acute toxicity (inhalation)	category 3		
			Acute toxicity (oral)	category 4		
			Acute toxicity (dermal)	category 4		

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			Eye irritation	category 1		
			Skin corrosion/ irritation	category 1B		
4		205-011-6	GHS classification	none		none

### Other information

Balance: non-hazardous ingredients

### 4. FIRST AID MEASURES

#### Most important symptoms and effects

Harmful if swallowed. Causes burns. Causes injury to the cornea and eyelids. Risk of serious damage to eyes.

#### Description of first aid measures

##### General

Call a physician immediately.

##### Inhalation

Move to fresh air, rest, half upright position, loosen clothing. Oxygen or artificial respiration if there is difficulty in breathing. Remove contaminated clothing. Always seek medical attention.

##### Skin

Remove all contaminated clothing immediately. Wash off with plenty of soap and water. Always seek medical advice. Launder clothes before reuse.

##### Eye

Rinse immediately and as long as possible with plenty of water. Eyelids should be held away from the eyeball to ensure thorough rinsing. Always seek medical advice.

##### Ingestion

Rinse mouth with water. Do NOT induce vomiting. Call a physician immediately !

#### Indication of any immediate medical attention and special treatment needed

Symptomatic treatment is advised.

### 5. FIRE-FIGHTING MEASURES

#### Extinguishing media

Carbon dioxide, dry chemical powder, dry sand, water, foam.

#### Unsuitable extinguishing media

halones.

#### Hazardous decomposition / combustion products

Carbon dioxide, Water, Acetic acid, Formic acid, Propanoic acid, Methyl ethyl ketone

#### Protective equipment

Wear suitable protective clothing. Wear self contained breathing apparatus.

#### Other information

Extinguish a small fire with powder or carbon dioxide then apply water to prevent re-ignition. Cool closed containers with water.

#### Fire and explosion hazard

CAUTION: reignition may occur. Decomposition under effect of heating. If involved in a fire, it will support combustion. In case of fire and/or explosion do not breathe fumes.

### 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions

Do not breathe fumes/vapour. Avoid contact with skin and eyes. For personal protection see Section 8.

#### Environmental precautions

Do not allow to enter drains or water courses.

#### Methods and material for containment and cleaning up

Transfer remaining product from leaking container to a clean and suitable container. Cover the remainder with inert absorbent (e.g. vermiculite) for disposal. Keep contents moist. The waste should NOT be confined.

#### Other information

CAUTION: reignition may occur.

### 7. HANDLING AND STORAGE

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<p><b>Precautions for safe handling</b> Never weigh out in the storage room. When using do not eat, drink or smoke. Do not pipet by mouth. Do not breathe fumes/vapour. Handle in well ventilated areas. Keep away from reducing agents (e.g. amines), acids, alkalies and heavy metal compounds (e.g. accelerators, driers, metal soaps). Keep product and emptied container away from heat and sources of ignition. Confinement must be avoided. Avoid contact with skin and eyes.</p>
<p><b>Fire and explosion prevention</b> Use explosion protected equipment. Keep away from sources of ignition - No smoking.</p>
<p><b>Conditions for safe storage</b> Store in accordance with local/national regulations. Keep away from food, drink and animal feedingstuffs. Store in a dry well ventilated place away from sources of heat and direct sunlight. Keep only in the original container. Keep container upright to prevent leakage.</p>
<p><b>Storage</b> For maximum quality store below: 25 °C.</p>
<p><b>Other information</b> It is recommended to use electrical equipment of temperature group T3. However, autoignition can never be excluded. Wash hands thoroughly after handling or contact. Keep working clothing separately and do not take them home.</p>

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

<p><b>Control parameters</b> Ensure good ventilation and local exhaustion of the working area. Explosion proof ventilation recommended.</p>
<p><b>Personal protection</b></p>
<p><b>Respiratory</b> In case of insufficient ventilation wear suitable respiratory equipment (respirator with Filter AX).</p>
<p><b>Hand</b> Wear suitable protective gloves of neoprene or synthetic rubber.</p>
<p><b>Eye</b> Wear eye/face protection.</p>
<p><b>Skin and body</b> Wear suitable protective clothing.</p>
<p><b>Other information</b> Launder clothes before reuse.</p>

<b>Methyl ethyl ketone</b>		
skin		Potential for cutaneous absorption
Short Term Exposure Limit (STEL)	300 ppm	
Short Term Exposure Limit (STEL)	899 mg/m <sup>3</sup>	
Time Weighted Average (TWA)	200 ppm	
Time Weighted Average (TWA)	600 mg/m <sup>3</sup>	
<b>Diethylene glycol</b>		
Short Term Exposure Limit (STEL)	303 mg/m <sup>3</sup>	
Short Term Exposure Limit (STEL)	69 ppm	
Time Weighted Average (TWA)	101 mg/m <sup>3</sup>	
Time Weighted Average (TWA)	23 ppm	
<b>Methyl ethyl ketone peroxide</b>		
Short Term Exposure Limit (STEL)	1.5 mg/m <sup>3</sup>	
<b>Dimethyl phthalate</b>		
Short Term Exposure Limit (STEL)	10 mg/m <sup>3</sup>	
Time Weighted Average (TWA)	5 mg/m <sup>3</sup>	

### 9. PHYSICAL AND CHEMICAL PROPERTIES

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## BUTANOX HBO-50

<b>Appearance</b> liquid
<b>Colour</b> clear and colourless
<b>Odour</b> faint
<b>Boiling point/range</b> Do not distill ( Decomposes )
<b>Melting point/freezing point</b> turbid < -10 °C
<b>Flash point</b> Above the SADT value
<b>Flammability</b> not determined
<b>Explosive properties</b> no
<b>Oxidising properties</b> not applicable
<b>Vapour pressure</b> not determined
<b>Density</b> 1180 kg/m <sup>3</sup> (20 °C )
<b>Bulk density</b> not applicable
<b>Solubility in water</b> Partly miscible with water.
<b>Solubility in other solvents</b> phthalates
<b>pH value</b> weak acid
<b>Partition coefficient n-octanol/water</b> not determined
<b>Relative vapour density (air=1)</b> not determined
<b>Viscosity</b> approx. 16 mPa.s (20 °C )
<b>Active oxygen content</b> 9.8-10.0 %
<b>Peroxide content</b> 33 %
<b>Autoignition temperature</b> Test method not applicable. (See Section 7)
<b>SADT</b> 60 °C. See also Section 10.
<b>Upper/lower flammability or explosive limits</b> not applicable
<b>Specific conductivity</b> not determined

### 10. STABILITY AND REACTIVITY

<b>Chemical stability</b>
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SADT - (Self accelerating decomposition temperature) is the lowest temperature at which self accelerating decomposition may occur with a substance in the packaging as used in transport.  
A dangerous self-accelerating decomposition reaction and, under certain circumstances, explosion or fire can be caused by thermal decomposition at and above the following temperature: 60 °C. Contact with incompatible substances can cause decomposition at or below the SADT 60 °C.

### Conditions to avoid

To maintain quality store in original closed container below: 25 °C.

Avoid shock and friction. Confinement must be avoided.

### Incompatible materials

Avoid contact with rust, iron and copper. Contact with incompatible materials such as acids, alkalies, heavy metals and reducing agents will result in hazardous decomposition. Do not mix with peroxide accelerators. Use only Stainless steel 316, PP, polyethylene or glass-lined equipment. Contact Akzo Nobel for more information.

### Hazardous decomposition products

Acetic acid, Formic acid, Propanoic acid, Methyl ethyl ketone

### Other information

Emergency procedures will vary depending on conditions. The customer must have an emergency response plan in place. Contact Akzo Nobel for assistance with developing an emergency response plan.

## 11. TOXICOLOGICAL INFORMATION

### Methyl ethyl ketone

#### Acute toxicity

##### Oral LD50

rat: 2737 mg/kg

##### Dermal LD50

rabbit 6480 mg/kg

##### Inhalation LC50

rat 23.5000 mg/m<sup>3</sup>

#### Irritation

##### Skin

Moderately irritating

##### Eye

Moderately irritating

### Diethylene glycol

#### Acute toxicity

##### Oral LD50

Harmful if swallowed.

#### Other toxicological information

The mandatory EU labelling has been followed.

### Methyl ethyl ketone peroxide, 40 % in Dimethyl phthalate

#### Acute toxicity

##### Oral LD50

rat:1017 mg/kg

##### Dermal LD50

rat:4000 mg/kg

##### Inhalation LC50

rat:17 mg/l ; 4 hours exposure time

#### Irritation

##### Skin

Corrosive

##### Eye

Corrosive

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<b>Sensitization</b> Not sensitizing
<b>Genotoxicity</b> Ames test: Not mutagenic
<b>Dimethyl phthalate</b>
<b>Acute toxicity</b>
<b>Oral LD50</b> rat: >2400 mg/kg
<b>Dermal LD50</b> rabbit: >10.000 mg/kg
<b>Inhalation LC50</b> 9300 mg/m <sup>3</sup> (6.5 hours )
<b>Irritation</b>
<b>Skin</b> Mildly irritating
<b>Eye</b> Minimally irritating

### 12. ECOLOGICAL INFORMATION

<b>Methyl ethyl ketone</b>
<b>Ecotoxicity</b>
<b>fish</b> Lepomis macrochirus: 96h-LC50: 3.22 g/l
<b>Fate</b>
<b>Degradation Biotic</b> Readily biodegradable.
<b>Other information</b> Naturally occurring substance
<b>Methyl ethyl ketone peroxide, 40 % in Dimethyl phthalate</b>
<b>Ecotoxicity</b>
<b>fish</b> Acute toxicity, 96h-LC50 = 44.2 mg/l. ( Poecilia reticulata.)
<b>bacteria</b> Activated sludge respiration inhibition test EC50 = 48.0 mg/l.
<b>Fate</b>
<b>Degradation Biotic</b> Readily biodegradable ( Closed bottle test ).
<b>Dimethyl phthalate</b>
<b>Ecotoxicity</b>
<b>fish</b> Lepomis macrochirus: 96h-LC50: 420 ppm
<b>algae</b> Selenastrum capricornutum: 39.8 mg/l ( 96h-IC50 )
<b>Fate</b>
<b>Degradation Biotic</b> Readily biodegradable.
<b>Other information</b> Bio Concentration Factor (BCF) fish 5.4 (24 hours )

### 13. DISPOSAL CONSIDERATIONS

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<b>Product</b> Waste disposal in accordance with regulations (most probably controlled incineration).
<b>Contaminated packaging</b> According to local regulations.
<b>Other information</b> For further advice contact manufacturer.

### 14. TRANSPORT INFORMATION

<i>Land transport</i>
<b>Transport hazard class</b> 5.2
<b>Classification Code</b> P1
<b>RID class</b> 5.2
<b>Substance Identification No.</b> 3105
<b>UN number</b> 3105
<b>Proper Shipping Name</b> ORGANIC PEROXIDE, TYPE D, LIQUID; ( Methyl ethyl ketone peroxide.)
<b>Tunnel code</b> D
<b>Required labels</b> 5.2

<i>Sea transport (IMO / IMDG-code)</i>
<b>Transport hazard class</b> 5.2
<b>UN number</b> 3105
<b>EMS</b> F-J, S-R
<b>Marine pollutant</b> no
<b>Proper Shipping Name</b> Organic peroxide type d, liquid ; ( Methyl ethyl ketone peroxide (s) )
<b>Other information</b> Label(s); 5.2

<i>Air transport (ICAO-TI / IATA-DGR)</i>
<b>UN number</b> 3105
<b>Transport hazard class</b> 5.2
<b>Proper Shipping Name</b> Organic peroxide type d, liquid ; ( Methyl ethyl ketone peroxide (s) )
<b>Other information</b> Label(s); 5.2

### 15. REGULATORY INFORMATION



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<b>Product label name</b> Methyl ethyl ketone peroxide, solution in dimethyl phthalate
<b>Labelling according to EC directives</b>
<b>EC-number</b> not applicable

R(isk) phrase(s) (EU classification)	
Code	Description
R07.	May cause fire.
R22.	Harmful if swallowed.
R34.	Causes burns.

S(safety) phrase(s) (EU classification)	
Code	Description
S03/07.	Keep container tightly closed in a cool place.
S14B.	Keep away from reducing agents (e.g. amines), acids, alkalies and heavy metal compounds (e.g. accelerators, driers, metal soaps).
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).
S50D.	Do not mix with peroxide-accelerators or reducing agents.

Classification according to 67/548/EC as ammended		
		
CORROSIVE (C)	OXIDISING (O)	

<b>Other information</b> Substance and/or product listed in Directive 96/82/EC.
<b>German Water Hazard Class (WGK)</b> 1 (VwVwS Anhang 4 Nr. 3)

### 16. OTHER INFORMATION

Relevant hazard statements		
Chemical name	Hazard statement(s) (GHS-classification)	
Methyl ethyl ketone peroxide	H240.	Heating may cause an explosion.



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	H302.	Harmful if swallowed.
	H312.	Harmful in contact with skin.
	H314.	Causes severe skin burns and eye damage.
	H331.	Toxic if inhaled.

R-pharse information		
Chemical name	R(isk) phrase(s) (EU classification)	
Methyl ethyl ketone	R11	Highly flammable
	R36	Irritating to eyes
	R66	Repeated exposure may cause skin dryness or cracking
	R67	Vapours may cause drowsiness and dizziness
Diethylene glycol	R22	Harmful if swallowed
Methyl ethyl ketone peroxide	R02	Risk of explosion by shock, friction, fire or other sources of ignition
	R07	May cause fire
	R22	Harmful if swallowed
	R34	Causes burns
Dimethyl phthalate	none	none

History	
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Composed by	J.W. Wessels - Regulatory Affairs - Europe. J.M.G.M. Reijnders.
Changes were made in section	14, Land transport
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