BUTANOX M-60

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

Product label name Methyl ethyl ketone peroxide, solution in dimethyl phthalate
Supplier Akzo Nobel Functional Chemicals B.V. Stationsstraat 77 PO Box 247 NL-3800 AE Amersfoort The Netherlands T +31 334676767
E-mail address of person responsible for safety data sheet RegulatoryPC@akzonobel.com
Emergency telephone T +31570679211 F +31570679801 Akzo Nobel Functional Chemicals B.V.-Deventer-NL
Relevant identified uses of the substance or mixture Curing agent
Date of last issue / Revision number 2013-05-14 / 3.45
Chemical family peroxides

2. HAZARDS IDENTIFICATION

May cause fire. Harmful if swallowed. Causes burns.

Hazard classes	
Description	**Applicable**
Organic peroxide	Type D
Acute toxicity (inhalation)	category 4
Acute toxicity (oral)	category 4
Acute toxicity (dermal)	category 5
Eye irritation	category 1
Skin corrosion/ irritation	category 1B
Aquatic environment, acute	category 3

Pictogram(s) (GHS)



Signal word/Hazard statement(s) GHS	
Code	**Description**

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Signal word: DANGER	
H242.	Heating may cause a fire.
H302.	Harmful if swallowed.
H313.	May be harmful in contact with skin.
H314.	Causes severe skin burns and eye damage.
H332.	Harmful if inhaled.
H402.	Harmful to aquatic life.

Precautionary statement(s) (GHS)	
Code	**Description**
P210.	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P220d.	Keep away from dirt, rust, chemicals in particular.
P234.	Keep only in original container.
P260e.	Do not breathe vapours.
P264a.	Wash hands and contaminated skin thoroughly after handling.
P270.	Do not eat, drink or smoke when using this product.
P271.	Use only outdoors or in a well-ventilated area.
P273.	Avoid release to the environment.
P280d.	Wear protective gloves, eye/face protection and protective clothing.
P301+P330+P331.	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353.	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340.	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338.	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310.	Immediately call a POISON CENTER or doctor/physician.
P378d.	Use waterspray, foam, sand, dry chemical powder or CO2 for extinction.
P403+P235.	Store in a well-ventilated place. Keep cool.
P410.	Protect from sunlight.
P501a.	Dispose of contents and container according to local regulation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is to be considered as a preparation in conformance to EC directives.

Information on hazardous ingredients

Chemical description
Methyl ethyl ketone peroxide, solution in dimethyl phthalate

Composition / information on ingredients

Number	**% w/w**	**CAS-number**	**Chemical name**
1	55 - 70	000131-11-3	Dimethyl phthalate
2	30 - 39	001338-23-4	Methyl ethyl ketone peroxide
3	1 - 5	000078-93-3	Methyl ethyl ketone

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		EC-number	Classification according to 1272/2008 as amended			Classification according to 67/548/EEC as amended
1		205-011-6				none
2		215-661-2				C O R07 R22 R34
3		201-159-0				F Xi R11 R36 R66 R67

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
Remove to fresh air. If not breathing, give artificial respiration. Oxygen may additionally be given, by trained personnel, if it is available. Get medical attention immediately.

Skin
Immediately start continuous flushing of skin with water for at least 15 minutes, while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean or destroy contaminated shoes.

Eye
Immediately start continuous flushing of eyes with water for at least 15 minutes. If easy to do, contact lenses should be removed during the flushing, by trained personnel. Hold the eyelids apart during the flushing to ensure rinsing the entire surface of the eye and lids with water. Get medical attention immediately.

Ingestion
DO NOT induce vomiting. Get medical attention immediately by calling a physician or a poison control center. If victim is conscious and alert, give a cupful of water. Never give anything by mouth to an unconscious or convulsing person. If vomiting occurs, the patient should lie on their left side while vomiting to reduce the risk of aspiration.

Indication of any immediate medical attention and special treatment needed
Persons with pre-existing skin, respiratory, and/or central nervous system disease may be at increased risk if exposed to this material.
This material is severely corrosive to the eyes and may cause delayed keratitis. The normally prescribed 15 minute eye irrigation after exposure may be difficult because of the severe pain. The prior installation of a topical ocular anesthetic is essential to facilitate a comprehensive ocular lavage. If swallowed, do not induce vomiting. Give patient plenty of water to drink. Ingestion of this corrosive material may result in severe ulceration, inflammation, and possible perforation of the upper alimentary tract, with hemorrhage and fluid loss. Aspiration of this material during induced emesis can result in severe lung injury. Contact a Poison Control Center for additional treatment information. Treat any additional effects symptomatically.

5. FIRE-FIGHTING MEASURES

Extinguishing media
waterspray, alcohol resistant foam, sand, dry chemical powder, CO2.

Unsuitable extinguishing media
halones.

Hazardous decomposition / combustion products
CO2, Carbon monoxide.
Acetic acid, Formic acid, Propanoic acid, Methyl ethyl ketone.

Protective equipment
Firefighters must wear fire resistant protective equipment. Wear approved respirator and protective gloves.

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Other information
Evacuate all non-essential personnel. Extinguish a small fire with powder or carbon dioxide then apply water to prevent re-ignition. Cool closed containers with water. Water used to extinguish a fire should not be allowed to enter the drainage system or water courses. After a fire, ventilate thoroughly the area and soak with water, clean the walls and metallic surfaces.

Fire and explosion hazard
CAUTION: reignition may occur. Decomposition under effect of heating (See also Section Hazardous decomposition products). If involved in a fire, it will support combustion. Vapours may form explosive mixtures with air. 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
Stop leakage if possible. Eliminate all sources of ignition, and do not generate flames or sparks. 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. Flush surroundings with large amounts of water.

Other information
CAUTION: reignition may occur. Vapours are heavier than air and may spread along floors. Vapours may travel to a source of ignition and flash back. Evacuate personnel to safe area.

7. HANDLING AND STORAGE

Precautions for safe handling
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. Eliminate all sources of ignition, and do not generate flames or sparks. 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. Avoid Incompatible materials (See Section 10).

Fire and explosion prevention
Use explosion protected equipment. Keep away from sources of ignition - No smoking. Vapours are heavier than air and may spread along floors. Use non-sparking tools in area's where explosive vapor air mixtures may occur. Do not cut or weld on or near this container even when empty.

Conditions for safe storage
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. Store separate from other chemicals. Keep only in the original container. Keep container upright to prevent leakage.

Storage

For maximum quality store below: 25 °C.

Other information
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.

NR-7-UK-HSE Guidance (07)
A COSHH assessment necessary to ensure compliance.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Ensure good ventilation and local exhaustion of the working area. Explosion proof ventilation recommended.

Personal protection

Respiratory
In case of insufficient ventilation wear suitable respiratory equipment (respirator with Filter A).

Hand
Wear suitable protective gloves of neoprene or synthetic rubber.

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Eye Wear eye/face protection.
Skin and body Wear suitable protective clothing.
Other information Emergency-shower and facilities for rinsing eyes must be accessible. Launder clothes before reuse.

Dimethyl phthalate		
Short Term Exposure Limit (STEL)	10 mg/m³	
Time Weighted Average (TWA)	5 mg/m³	
Methyl ethyl ketone peroxide		
Short Term Exposure Limit (STEL)	1.5 mg/m³	
DNEL	Worker DNEL long term inhalation systemic (mg/m3): 1.9 Worker DNEL long term dermal systemic (mg/kg bw/day): 1.08 General population DNEL long term inhalation systemic (mg/m3): 0.41 General population DNEL long term dermal systemic (mg/kg bw/day): 0.54 General population DNEL long term oral systemic (mg/kg bw/day): 0.27	
PNEC	PNEC fresh water (mg/l): 0.0056 PNEC marine water (mg/l): 0.00056 PNEC intermittent release (mg/l): 0.056 PNEC Sewage Treatment Plant (mg/l): 1.2 PNEC sediment fresh water (mg/kg): 0.019 PNEC sediment marine (mg/kg): 0.0019 PNEC soil (mg/kg): 0.00231	
Methyl ethyl ketone		
skin		Potential for cutaneous absorption
Short Term Exposure Limit (STEL)	300 ppm	
Short Term Exposure Limit (STEL)	899 mg/m³	
Time Weighted Average (TWA)	200 ppm	
Time Weighted Average (TWA)	600 mg/m³	

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance clear liquid
Colour colourless
Odour faint
Boiling point/range not applicable (Decomposes)
Melting point/freezing point Solidifies at or below -10°C / 14°F
Flash point Above the SADT value
Flammability Decomposition products may be flammable.
Explosive properties no
Oxidising properties not applicable

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Vapour pressure not determined
Density 1170 kg/m³ (20°C / 68°F) Specific gravity = 1.17 (20°C / 68°F)
Bulk density not applicable
Solubility in water Partly miscible with water (20°C / 68°F)
Solubility in other solvents Miscible with phthalates (20°C / 68°F)
pH value slightly acidic
Partition coefficient n-octanol/water not determined
Relative vapour density (air=1) not determined
Viscosity 25 mPa.s (20°C / 68°F)
Active oxygen content 9.8 -10.0 %
Peroxide content 36 %
Autoignition temperature Test method not applicable (See Section 7)
SADT 60 °C. See also Section 10.
Upper/lower flammability or explosive limits not determined
Volatile % not determined

10. STABILITY AND REACTIVITY

Chemical stability	
	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.
	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.	
Possibility of hazardous reactions Polymerization does not occur.	
Hazardous decomposition products 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

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No experimental toxicological data on the preparation as such available. The following data are applicable to the ingredient(s) listed below.
Dimethyl phthalate
Acute toxicity
Oral LD50 rat: >2400 mg/kg
Dermal LD50 rabbit: >10.000 mg/kg
Inhalation LC50 9300 mg/m³ (6.5 hours)
Irritation
Skin Mildly irritating
Eye Minimally irritating
Methyl ethyl ketone peroxide, 40 %
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
Sensitization Not sensitizing
Genotoxicity Ames test: Not mutagenic
Methyl ethyl ketone
Acute toxicity
Oral LD50 rat: 2737 mg/kg
Dermal LD50 rabbit 6480 mg/kg
Inhalation LC50 rat 23.5000 mg/m³
Irritation
Skin Moderately irritating
Eye Moderately irritating

12. ECOLOGICAL INFORMATION

No experimental ecological data are available on the preparation as such. The following data are applicable to the ingredient(s) listed below.

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

13. DISPOSAL CONSIDERATIONS

Product Due to the high risk of contamination recycling/recovery is not recommended. Waste disposal in accordance with regulations (most probably controlled incineration).
Contaminated packaging According to local regulations. Emptied container might retain product residues. Follow all warnings even after the container is emptied.
Other information For further advice contact manufacturer.
Waste code number Waste should be regarded as special waste for disposal. Please refer to your specific industry in the European Waste Catalogue.

14. TRANSPORT INFORMATION

Land transport
Transport hazard class 5.2
Classification Code P1

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RID class 5.2
Substance Identification No. 3105
UN number 3105
Proper Shipping Name ORGANIC PEROXIDE, TYPE D, LIQUID (Methyl ethyl ketone peroxide)
Tunnel code D
Required labels 5.2

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

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

15. REGULATORY INFORMATION

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

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

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R34.	Causes burns.

S(afety) 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).
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 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)

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

16. OTHER INFORMATION

Relevant hazard statements		
Chemical name	Hazard statement(s) (GHS-classification)	

R-phrase information		
Chemical name	R(isk) phrase(s) (EU classification)	
Dimethyl phthalate	none	none
Methyl ethyl ketone peroxide	R07	May cause fire
	R22	Harmful if swallowed

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	R34	Causes burns
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

History	
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Changes were made in section	Annex (EU)

This information only concerns the above mentioned product and does not need to be valid if used with other product(s) or in any process. The information is to our best present knowledge correct and complete and is given in good faith but without warranty. It remains the user's own responsibility to make sure that the information is appropriate and complete for his special use of this product.