

SAFETY DATA SHEET

BUTANOX M-50

Version	Revision Date:	AR / EN	Date of last issue: 2021/07/13
2.8	2023/04/12		Date of first issue: 2015/01/20

SECTION 1. IDENTIFICATION

Product name : BUTANOX M-50
:

Manufacturer or supplier's details

Company : Nouryon Functional Chemicals B.V.
Haaksbergweg 88
NL 1101 BZ Amsterdam
Netherlands

Address : Haaksbergweg 88
Amsterdam 1101 BZ

Telephone : +31889840367

Emergency telephone number : 24 hours:+31 57 06 79211, US-CHEMTREC:1-800-424-9300,
CA-CANUTEC:1-613-996-6666, JP: +81 (836) 74 8810, CN: 化
学事故应急咨询电话 : +86 532 8388 9090-:
Nouryon Emergency Response Centre: +31 570 679211

Recommended use of the chemical and restrictions on use

Recommended use : Curing agent

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Organic peroxides : Type D
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 4
Acute toxicity (Dermal) : Category 5
Skin corrosion/irritation : Sub-category 1B
Serious eye damage/eye irritation : Category 1
Short-term (acute) aquatic hazard : Category 2

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GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H242 Heating may cause a fire.
 H302 + H332 Harmful if swallowed or if inhaled.
 H313 May be harmful in contact with skin.
 H314 Causes severe skin burns and eye damage.
 H401 Toxic to aquatic life.

Precautionary statements :

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P234 Keep only in original packaging.
 P235 Keep cool.
 P240 Ground and bond container and receiving equipment.
 P261 Avoid breathing mist or vapours.
 P264 Wash 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.
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
 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 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
 P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
 P312 Call a POISON CENTER/ doctor if you feel unwell.
 P363 Wash contaminated clothing before reuse.
 P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Storage:

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P403 Store in a well-ventilated place.
 P405 Store locked up.
 P410 Protect from sunlight.
 P420 Store separately.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Dimethyl phthalate	131-11-3	>= 55 -<= 70
Methyl ethyl ketone peroxide	1338-23-4	>= 30 -<= 37
Methyl ethyl ketone	78-93-3	>= 1 -<= 3

SECTION 4. FIRST AID MEASURES

- General advice : Immediate medical attention is required.
 Move out of dangerous area.
 Show this safety data sheet to the doctor in attendance.
- If inhaled : If breathed in, move person into fresh air.
 Consult a physician after significant exposure.
- In case of skin contact : Take off contaminated clothing and shoes immediately.
 Rinse immediately with plenty of water.
 Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
- In case of eye contact : Rinse with plenty of water.
 Get medical attention immediately. Continue to rinse during transport.
 Remove contact lenses.
 Protect unharmed eye.
 Keep eye wide open while rinsing.
 Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.

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Never give anything by mouth to an unconscious person.
 Take victim immediately to hospital.
 Do not induce vomiting! May cause chemical burns in mouth and throat.

Most important symptoms and effects, both acute and delayed : The symptoms and effects are as expected from the hazards as shown in section 2. No specific product related symptoms are known.
 Harmful if swallowed or if inhaled.
 May be harmful in contact with skin.
 Causes serious eye damage.
 Causes severe burns.

Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards during firefighting : CAUTION: reignition may occur.
 Supports combustion.
 Water spray may be ineffective unless used by experienced firefighters.
 Do not allow run-off from fire fighting to enter drains or water courses.
 Hazardous decomposition products formed under fire conditions.

Hazardous combustion products : Fire will produce smoke containing hazardous combustion products (see section 10).

Specific extinguishing methods : Use water spray to cool unopened containers.
 Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
 Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
 Wear respiratory protection.
 Ensure adequate ventilation.
 Remove all sources of ignition.

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Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Evacuate personnel to safe areas. Only qualified personnel equipped with suitable protective equipment may intervene. Prevent unauthorised persons entering the zone.

Environmental precautions : Prevent product from entering drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material and dispose of as hazardous waste. Use only inert inorganic material such as vermiculite or perlite as absorbent. Keep mixture of absorbent material and spilled product wetted with water. Confinement must be avoided. Never return spills in original containers for re-use.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Use explosion protected equipment. Keep away from sources of ignition - No smoking. No sparking tools should be used. Keep away from reducing agents (e.g. amines), acids, alkalis and heavy metal compounds (e.g. accelerators, driers, metal soaps). Do not cut or weld on or near this container even when empty. Keep away from combustible material.

Advice on safe handling : For personal protection see section 8. Avoid formation of aerosol. Do not breathe vapours or spray mist. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : No smoking. Electrical installations / working materials must comply with the technological safety standards. Keep only in original container. Store away from other materials.

Further information on storage stability : Maximum storage temperature is for quality only.

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Maximum storage temperature: : 25 °C

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Dimethyl phthalate	131-11-3	CMP	5 mg/m ³	AR OEL
		TWA	5 mg/m ³	ACGIH
Methyl ethyl ketone peroxide	1338-23-4	CMP-C	0,2 ppm	AR OEL
		C	0,2 ppm	ACGIH
Methyl ethyl ketone	78-93-3	CMP	200 ppm	AR OEL
		CMP - CPT	300 ppm	AR OEL
		TWA	200 ppm	ACGIH
		STEL	300 ppm	ACGIH

Occupational exposure limits of decomposition products

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Formic acid	64-18-6	CMP	5 ppm	AR OEL
		CMP - CPT	10 ppm	AR OEL
		TWA	5 ppm	ACGIH
		STEL	10 ppm	ACGIH
Organic acid	64-19-7	CMP	10 ppm	AR OEL
		CMP - CPT	15 ppm	AR OEL
		TWA	10 ppm	ACGIH
		STEL	15 ppm	ACGIH
Fatty acid	79-09-4	CMP	10 ppm	AR OEL
		TWA	10 ppm	ACGIH
Methyl ethyl ketone	78-93-3	CMP	200 ppm	AR OEL
		CMP - CPT	300 ppm	AR OEL
		TWA	200 ppm	ACGIH
		STEL	300 ppm	ACGIH

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Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Methyl ethyl ketone	78-93-3	MEK	Urine	End of shift	2 mg/l	AR BEI
		methyl ethyl ketone	Urine	End of shift (As soon as possible after exposure ceases)	2 mg/l	ACGIH BEI

Engineering measures : Explosion proof ventilation recommended.
Effective exhaust ventilation system
Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Respiratory protection : In the case of vapour or aerosol formation use a respirator with an approved filter.
Filter A

Hand protection

Material : Neoprene

Material : Nitrile rubber

Material : butyl-rubber

Break through time : >= 480 min

Glove thickness : 0,5 mm

Remarks : Breakthrough time is not determined for the product. Change gloves often!
The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove.

Eye protection : Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Protective suit

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

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When using do not eat or drink.
 When using do not smoke.
 Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Clear liquid
Colour	:	colourless
Odour	:	Faint.
Odour Threshold	:	No data available
pH	:	Not applicable
Melting point	:	No data available
Boiling point/boiling range	:	Decomposes below the boiling point.
Flash point	:	Above the SADT value No flash point was obtained, but the product may release flammable vapour.
Evaporation rate	:	No data available
Flammability (liquids)	:	Decomposition products may be flammable.
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	1 hPa (84 °C)
Relative vapour density	:	No data available
Relative density	:	1,180 (20 °C)
Bulk density	:	Not applicable
Solubility(ies)		

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Water solubility	:	partly miscible (20 °C)
Solubility in other solvents	:	(20 °C) Description: Miscible with:, Phthalates
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	Test method not applicable
Decomposition temperature	:	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 SADT. Contact with incompatible substances can cause decomposition below the SADT.
Self-Accelerating decomposition temperature (SADT)	:	60 °C
Viscosity		
Viscosity, dynamic	:	24 mPa.s (20 °C)
Viscosity, kinematic	:	20,34 mm ² /s (20 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	Not classified as oxidising.
Active Oxygen Content	:	8,8 - 9,0 %
Organic peroxides	:	30 - 37 %

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable under normal conditions.
Chemical stability	:	Stable under recommended storage conditions.
Possibility of hazardous reactions	:	No dangerous reaction known under conditions of normal use.
Conditions to avoid	:	Confinement must be avoided. Heat, flames and sparks.

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- Incompatible materials : Contact with the following incompatible materials will result in hazardous decomposition:
 Acids and bases
 Iron
 Copper
 Reducing agents
 Heavy metals
 Rust
 Do not mix with peroxide accelerators, unless under controlled processing.
 Use only stainless steel 316, PP, polyethylene or glass-lined equipment.
 For queries regarding the suitability of other materials please contact the supplier.
- Hazardous decomposition products : No decomposition if stored and applied as directed.
- Hazardous decomposition products : Carbon oxides
 Formic acid
 Organic acid
 Fatty acid
 Methyl ethyl ketone
- Thermal decomposition : 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 SADT. Contact with incompatible substances can cause decomposition below the SADT.
- Self-Accelerating decomposition temperature (SADT) : 60 °C

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed or if inhaled.
 May be harmful in contact with skin.

Product:

- Acute oral toxicity : LD50 Oral (rats): 1.017 mg/kg
 Method: OECD Test Guideline 401
- Acute inhalation toxicity : LC50 (Rat): 1,5 mg/l
 Exposure time: 4 h

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Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): 4.000 mg/kg
Method: OECD Test Guideline 402

Components:

Dimethyl phthalate:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute inhalation toxicity : Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 10.000 mg/kg

Methyl ethyl ketone peroxide:

Acute oral toxicity : LD50 (Rat, male): 1.017 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): 1,5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: no

Acute dermal toxicity : LD50 (Rabbit, male and female): 4.000 mg/kg
Method: OECD Test Guideline 402

Methyl ethyl ketone:

Acute oral toxicity : LD50 (Rat): 2.737 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 6.480 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Species : Rabbit

Assessment : Category 1B

Method : Tested according to Annex V of Directive 67/548/EEC.

Result : Sub-category 1B

Components:

Dimethyl phthalate:

Result : slight irritation

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Methyl ethyl ketone peroxide:

Result : Causes burns.

Methyl ethyl ketone:

Result : Repeated exposure may cause skin dryness or cracking.
 Remarks : Moderately irritating.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Species : Rabbit
 Result : Risk of serious damage to eyes.
 Assessment : Risk of serious damage to eyes.
 Method : Tested according to Annex V of Directive 67/548/EEC.

Components:

Dimethyl phthalate:

Result : Slightly irritating to eyes.

Methyl ethyl ketone peroxide:

Result : Risk of serious damage to eyes.

Methyl ethyl ketone:

Result : Irritating to eyes.

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Methyl ethyl ketone peroxide:

Assessment : Does not cause skin sensitisation.

Germ cell mutagenicity

Not classified based on available information.

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Components:

Methyl ethyl ketone peroxide:

Genotoxicity in vitro : Test Type: Ames test
Result: negative

Genotoxicity in vivo : Remarks: Not classified due to data which are conclusive although insufficient for classification.

Carcinogenicity

Not classified based on available information.

Components:

Methyl ethyl ketone peroxide:

Remarks : No data available

Reproductive toxicity

Not classified based on available information.

Components:

Methyl ethyl ketone peroxide:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Dose: 0 25, 50, 75 milligram per kilogram
General Toxicity - Parent: NOAEL: 50 mg/kg bw/day
General Toxicity F1: NOAEL F1: 50 mg/kg bw/day
Fertility: NOAEL Parent: 75 mg/kg bw/day
Method: OECD Test Guideline 421
GLP: yes

STOT - single exposure

Not classified based on available information.

Components:

Methyl ethyl ketone peroxide:

Remarks : Not classified due to data which are conclusive although insufficient for classification.

Methyl ethyl ketone:

Exposure routes : Inhalation
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

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STOT - repeated exposure

Not classified based on available information.

Components:

Methyl ethyl ketone peroxide:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration toxicity

Not classified based on available information.

Components:

Dimethyl phthalate:

No aspiration toxicity classification

Methyl ethyl ketone peroxide:

No aspiration toxicity classification

Methyl ethyl ketone:

No aspiration toxicity classification

Further information

Product:

Remarks : No further data available.

Components:

Dimethyl phthalate:

Remarks : No further data available.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 44,2 mg/l
Exposure time: 96 h
Test Type: semi-static test

Toxicity to daphnia and other : (Daphnia magna (Water flea)): 39 mg/l
aquatic invertebrates : Exposure time: 48 h
Test Type: Immobilization

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GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (algae)): 5,6 mg/l
Exposure time: 72 h
Test Type: Growth inhibition

Toxicity to microorganisms : EC10 (activated sludge): 12 mg/l
Exposure time: 0,5 h
Test Type: Respiration inhibition
Method: Domestic OECD Guideline 209

Components:

Dimethyl phthalate:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 420 mg/l
Exposure time: 96 h

Toxicity to algae/aquatic plants : EC10 (Desmodesmus subspicatus (green algae)): 193,09 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201

ErC50 (Desmodesmus subspicatus (green algae)): 259,76 mg/l
Exposure time: 72 h
Test Type: Growth inhibition
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 11 mg/l
Exposure time: 102 d
Test Type: flow-through test
Method: Other guidelines

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 9,6 mg/l
End point: reproduction rate
Exposure time: 21 d
Method: Other guidelines

Ecotoxicology Assessment

Acute aquatic toxicity : Harmful to aquatic life.

Methyl ethyl ketone peroxide:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 44,2 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203

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GLP: yes

NOEC (Poecilia reticulata (guppy)): 18 mg/l
 Exposure time: 96 h
 Test Type: semi-static test
 Method: OECD Test Guideline 203
 GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 39 mg/l
 Exposure time: 48 h
 Test Type: Immobilization
 Method: OECD Test Guideline 202
 GLP: yes

NOEC (Daphnia magna (Water flea)): 26,7 mg/l
 Exposure time: 24 h
 Test Type: Immobilization
 Method: OECD Test Guideline 202
 GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (algae)): 5,6 mg/l
 Exposure time: 72 h
 Test Type: Growth inhibition
 Method: OECD Test Guideline 201
 GLP: yes

NOEC (Pseudokirchneriella subcapitata (algae)): 2,1 mg/l
 Exposure time: 72 h
 Test Type: Growth inhibition
 Method: OECD Test Guideline 201
 GLP: yes

Toxicity to microorganisms : EC50 (activated sludge): 48 mg/l
 Exposure time: 0,5 h
 Test Type: Respiration inhibition
 Method: Domestic OECD Guideline 209
 GLP: yes

EC10 (activated sludge): 12 mg/l
 Exposure time: 0,5 h
 Test Type: Respiration inhibition
 Method: Domestic OECD Guideline 209
 GLP: yes

Methyl ethyl ketone:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 3.220 mg/l
 Exposure time: 96 h

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Persistence and degradability

Components:

Dimethyl phthalate:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 93 - 98 %

Methyl ethyl ketone peroxide:

Biodegradability : Result: Readily biodegradable.
Method: Closed Bottle test

Methyl ethyl ketone:

Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential

Components:

Dimethyl phthalate:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 5,4
Exposure time: 1 d

Partition coefficient: n-octanol/water : log Pow: 2,12

Methyl ethyl ketone peroxide:

Bioaccumulation : Bioconcentration factor (BCF): 10,3
Remarks: Not expected considering the low log Pow value.

Partition coefficient: n-octanol/water : log Pow: < 2,04 (25 °C)
Method: OECD Test Guideline 117

Methyl ethyl ketone:

Partition coefficient: n-octanol/water : log Pow: 0,29

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

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Components:

Dimethyl phthalate:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of contents/container in accordance with local regulation.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not burn, or use a cutting torch on, the empty drum.
Due to the high risk of contamination recycling/recovery is not recommended.
Follow all warnings even after the container is emptied.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 3105
Proper shipping name : ORGANIC PEROXIDE TYPE D, LIQUID
(Methyl ethyl ketone peroxide)
Class : 5.2
Packing group : Not assigned by regulation
Labels : 5.2

IATA-DGR

UN/ID No. : UN 3105
Proper shipping name : Organic peroxide type D, liquid
(Methyl ethyl ketone peroxide)
Class : 5.2
Packing group : Not assigned by regulation
Labels : Organic Peroxides, Keep Away From Heat
Packing instruction (cargo aircraft) : 570

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Packing instruction (passenger aircraft) : 570

IMDG-Code

UN number : UN 3105
 Proper shipping name : ORGANIC PEROXIDE TYPE D, LIQUID (Methyl ethyl ketone peroxide)
 Class : 5.2
 Packing group : Not assigned by regulation
 Labels : 5.2
 EmS Code : F-J, S-R
 Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Argentina. Carcinogenic Substances and Agents Registry. : Not applicable

Control of precursors and essential chemicals for the preparation of drugs. : Not applicable

The components of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory
 TSCA : All substances listed as active on the TSCA inventory
 AIIC : All components are listed on the inventory, regulatory obligations/restrictions apply
 DSL : All components of this product are on the Canadian DSL
 ENCS : On the inventory, or in compliance with the inventory
 ISHL : On the inventory, or in compliance with the inventory

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KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	On the inventory, or in compliance with the inventory
TECI	:	On the inventory, or in compliance with the inventory

SECTION 16. OTHER INFORMATION

Revision Date : 2023/04/12

Date format : yyyy/mm/dd

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
AR BEI	:	Argentina. Biological Exposure Indices
AR OEL	:	Argentina. Occupational Exposure Limits

ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
ACGIH / C	:	Ceiling limit
AR OEL / CMP	:	TLV (Threshold Limit Value)
AR OEL / CMP - CPT	:	STEL (Short Term Limit Value)
AR OEL / CMP-C	:	Ceiling value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level;

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NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.

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