

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Print Date: 06.03.2013

Revision Date : 04.03.2013

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Commercial Product Name: CUROX M-312

DE / EN

Version: 1.3

## 1. Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

#### Product information

Commercial Product Name : **CUROX M-312**

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

Use of the Substance/Mixture : Hardener

### 1.3 Details of the supplier of the safety data sheet

Company : **United Initiators GmbH & Co. KG**  
Dr. Gustav-Adolph-Str. 3  
82049 Pullach  
Germany  
E-mail address : contact@united-in.com

### 1.4 Emergency telephone number

+49 / 89 / 74422 – 0

In case of an emergency in the United States, contact:

**For chemical Emergency ONLY call CHEMTREC : 1-800-424-9300**

**For ALL other inquiries about this product call :**

**United Initiators Inc.**

**555 Garden Street, Elyria Ohio 44035 at**

**1 (440) 323-3112**

## 2. Hazards identification

### 2.1 Classification of the substance or mixture

#### **Classification (REGULATION (EC) No 1272/2008)**

Flammable liquids, Category 3  
Organic peroxides, Type D  
Acute toxicity, Category 4  
Skin corrosion, Category 1B

H226: Flammable liquid and vapour.  
H242: Heating may cause a fire.  
H302: Harmful if swallowed.  
H314: Causes severe skin burns and eye damage.

#### **Classification (67/548/EEC, 1999/45/EC)**

Oxidising

R 7: May cause fire.

R10: Flammable.

Corrosive

R34: Causes burns.

Harmful

R22: Harmful if swallowed.

### 2.2 Label elements

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## Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word :

Danger

Hazard statements :

H226  
H242  
H302  
H314

Flammable liquid and vapour.  
Heating may cause a fire.  
Harmful if swallowed.  
Causes severe skin burns and eye damage.

Precautionary statements :

**Prevention:**

P210

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P220

Keep/Store away from clothing/ strong acids, bases, heavy metal salts and other reducing substances /combustible materials.

P235

Keep cool.

P262

Do not get in eyes, on skin, or on clothing.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

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 cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P315

Get immediate medical advice/ attention.

P378

Use dry sand, dry chemical or alcohol-resistant foam for extinction.

**Storage:**

P403 + P233

Store in a well-ventilated place. Keep container tightly closed.

**Disposal:**

P501

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

Hazardous components which must be listed on the label:

- 1338-23-4 methylethylketoneperoxide

## Labelling according to EC Directives: 1999/45/EC

Hazard symbols :



Oxidising

Corrosive

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R-phrase(s)	: R 7 R10 R22 R34	May cause fire. Flammable. Harmful if swallowed. Causes burns.
S-phrase(s)	: S 3/7 S14  S26  S36/37/39  S45  S50	Keep container tightly closed in a cool place. Keep away from strong acids, bases, heavy metal salts and other reducing substances. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Do not mix with activators and catalyst promoters.

Hazardous components which must be listed on the label:

- 1338-23-4 methylethylketoneperoxide

## 2.3 Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

## 3. Composition/information on ingredients

### 3.2 Mixtures

#### Hazardous components

Chemical Name	CAS-No.	Classification (67/548/EEC)	Classification (1272/2008/EC)	Concentration [%]
	EC-No.			
	Registration number			
methylethylketoneperoxide	1338-23-4	O; R 7 Xn; R22 C; R34	Org. Perox. D; H242 Acute Tox. 4; H302 Skin Corr. 1B; H314	25 - < 35
	215-661-2			
	01-2119514691-43-0000			
4-hydroxy-4-methylpentan-2-one	123-42-2	Xi; R36	Eye Irrit. 2; H319	12,5 - < 15
	204-626-7			
butanone	78-93-3	F; R11 R66 R67 Xi; R36	Flam. Liq. 2; H225 Eye Irrit. 2; H319 STOT SE 3; H336	3 - < 5
	201-159-0			
hydrogen peroxide solution	7722-84-1	O; R 8 R 5	Ox. Liq. 1; H271 Acute Tox. 4; H332	3 - < 5
	231-765-0			

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		C; R35 Xn; R20/22	Acute Tox. 4; H302 Skin Corr. 1A; H314	
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For the full text of the R-phrases mentioned in this Section, see Section 16.

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. First aid measures

### 4.1 Description of first aid measures

- General advice : Take off all contaminated clothing immediately. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- If inhaled : Remove to fresh air. Call a physician immediately.
- In case of skin contact : Wash off immediately with soap and plenty of water.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- If swallowed : Clean mouth with water and drink afterwards plenty of water. If a person vomits when lying on his back, place him in the recovery position. Do NOT induce vomiting. If swallowed, seek medical advice immediately and show this container or label.

### 4.2 Most important symptoms and effects, both acute and delayed

no data available

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

no data available

## 5. Firefighting measures

### 5.1 Extinguishing media

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

### 5.2 Special hazards arising from the substance or mixture

- Specific hazards during fire-fighting : Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

### 5.3 Advice for firefighters

- Special protective equipment for firefighters : Use personal protective equipment.

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Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

## 6. Accidental release measures

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

Wear respiratory protection. Wear personal protective equipment.

### 6.2 Environmental precautions

Avoid subsoil penetration. Do not allow material to contaminate ground water system. Do not contaminate water. If the product contaminates rivers and lakes or drains inform respective authorities. Do not let product enter drains.

### 6.3 Methods and materials for containment and cleaning up

Remove mechanically and with care (e.g. with clean polyethylene plastic shovel). Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

### 6.4 Reference to other sections

see chapter: 7, 8, 11, 12 and 13

### 6.5 Other information

Never add other substances or waste material to product residue. Offer surplus and non-recyclable solutions to a licensed disposal company.

## 7. Handling and storage

### 7.1 Precautions for safe handling

Advice on safe handling : For personal protection see section 8.

Dust explosion class : no data available

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Electrical installations / working materials must comply with the technological safety standards. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep container tightly closed. No smoking.

Further information on storage conditions : Avoid impurities (e.g. rust, dust, ash), risk of decomposition.

Advice on common storage : Store apart from other dangerous and incompatible substances.

Storage temperature : < 30 °C

Other data : Storing temperature for reasons of quality

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liquid up to -25 °C

## 7.3 Specific end use(s)

no data available

## 8. Exposure controls/personal protection

### 8.1 Control parameters

Components	CAS-No.	Control parameters	Basis	Update
4-hydroxy-4-methylpentan-2-one	123-42-2	AGW: 96 mg/m <sup>3</sup> , 20 ppm DFG, H,	DE TRGS 900	2006-01-01
butanone	78-93-3	AGW: 600 mg/m <sup>3</sup> , 200 ppm DFG, EU, H, Y,	DE TRGS 900	2010-08-04
Components	CAS-No.	Control parameters	Basis	Update
butanone	78-93-3	TWA: 600 mg/m <sup>3</sup> , 200 ppm  STEL: 900 mg/m <sup>3</sup> , 300 ppm	2000/39/EC	2000-06-16

Other information on limit values: see chapter 16

### Biological occupational exposure limits - TRGS903

Substance name	CAS-No.	Control parameters	Sampling time	Update
butanone	78-93-3	2-butanon: 5 mg/l ( )	b	2011-12-19

#### Remarks:

- |   |  |
|---|--|
| a | No time limit  |
| b | Immediately after exposition or after working hours        |
| c | In case of long-term exposition: after more than one shift |
| d | Before the next shift                                      |

### 8.2 Exposure controls

#### Engineering measures

Provide adequate ventilation.

#### Personal protective equipment

Respiratory protection : Short duration filter unit: Filter A

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## Hand protection

Material : butyl-rubber  
Glove thickness : 0,5 mm  
Breakthrough time: : >= 8 h

Remarks : Skin should be washed after contact.

## Eye protection

: Tightly fitting safety goggles  
Wear face protection.

## Skin and body protection

: Protective suit  
Remove and wash contaminated clothing before re-use.

## Hygiene measures

: Wash hands before breaks and immediately after handling the product.  
Keep away from food, drink and animal feedingstuffs.

## Environmental exposure controls

General advice : Avoid subsoil penetration.  
Do not allow material to contaminate ground water system.  
Do not contaminate water.  
If the product contaminates rivers and lakes or drains inform respective authorities.  
Do not let product enter drains.

## 9. Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance : liquid  
Colour : colourless  
Odour : characteristic  
Odour Threshold : Not relevant  
pH : not applicable  
Melting point/freezing point : < -25 °C

Initial boiling point and boiling range : not applicable, Decomposition  
Flash point : 57 °C  
Method: ISO 3679

Evaporation rate : Not relevant  
Flammability (solid, gas) : not applicable

Lower explosion limit : not applicable

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Upper explosion limit	: not applicable
Vapour pressure	: 0,184 Pa at 25 °C
Relative vapor density	: no data available
Density	: 1,01 g/cm <sup>3</sup> at 20 °C
Water solubility	: ca. 6,5 g/l at 20 °C
Partition coefficient: n-octanol/water	: log Pow: < 0,3 at 25 °C
Solubility in other solvents	: Mixable Medium: Phthalates
Auto-ignition temperature	: not applicable, Decomposes on heating.
Decomposition temperature	: ca. 60 °C, SADT (UN test H.4), SADT possible at temperatures above approximately 60 °C.
Viscosity, dynamic	: 13 mPa.s at 20 °C
Viscosity, kinematic	: no data available
Explosive properties	: no data available
Oxidizing properties	: Organic peroxide

## 9.2 Other information

Refractive index	: 1,431 at 20 °C
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## 10. Stability and reactivity

### 10.1 Reactivity

Stable under recommended storage conditions.

### 10.2 Chemical stability

Contact with incompatible substances can cause disintegration at or below SADT.

### 10.3 Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Stability : Stable under recommended storage conditions.

### 10.4 Conditions to avoid

Keep away from heat and sources of ignition.

### 10.5 Incompatible materials

Materials to avoid : Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents, Avoid impurities (e.g. rust, dust, ash), risk of decomposition.



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## 10.6 Hazardous decomposition products

Hazardous decomposition products : Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition

## 11. Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Acute oral toxicity : LD50 rat: 1.017 mg/kg  
Test substance: methylethylketoneperoxide (40% in dimethylphthalate)

Acute inhalation toxicity : LC50 rat: 17 mg/l  
Exposure time: 4 h  
Test substance: methylethylketoneperoxide (40% in dimethylphthalate)  
Note: Aerosol  
Nominal concentration

Acute dermal toxicity : LD50 rat: 4.000 mg/kg  
Test substance: methylethylketoneperoxide (40% in dimethylphthalate)

#### Skin corrosion/irritation

Skin irritation : Causes burns.

#### Serious eye damage/eye irritation

Eye irritation : Causes burns.

#### Respiratory or skin sensitization

Sensitisation : Method: Maximisation Test  
Test substance: methylethylketoneperoxide (60% in dimethylphthalate/diacetone alcohol)  
Did not cause sensitization on laboratory animals.

#### Germ cell mutagenicity

Genotoxicity in vitro : Result: Not mutagenic in Ames Test.

#### Carcinogenicity

no data available

#### Reproductive toxicity

no data available

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## Teratogenicity

no data available

### STOT - single exposure

butanone : May cause drowsiness or dizziness.

hydrogen peroxide solution : May cause respiratory irritation.

### STOT - repeated exposure

no data available

## Aspiration hazard

### Aspiration toxicity

no data available

## 12. Ecological information

### 12.1 Toxicity

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 44,2 mg/l  
Exposure time: 96 h  
Test substance: methylethylketoneperoxide (33% in dimethylphthalate)

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia): 39 mg/l  
Exposure time: 48 h  
Test substance: methylethylketoneperoxide (40% in dimethylphthalate)

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata): 5,6 mg/l  
Exposure time: 72 h  
Test substance: methylethylketoneperoxide (40% in dimethylphthalate)

Toxicity to bacteria : EC50 (Bacteria): 48 mg/l  
Exposure time: 30 min  
Test substance: methylethylketoneperoxide (33% in dimethylphthalate)

### 12.2 Persistence and degradability

Biodegradability : Result: Readily biodegradable.  
Method: Closed Bottle test  
Test substance: methylethylketoneperoxide (MEKP)

### 12.3 Bioaccumulative potential

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no data available

## 12.4 Mobility in soil

no data available

## 12.5 Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

## 12.6 Other adverse effects

no data available

## 13. Disposal considerations

### 13.1 Waste treatment methods

Advice on disposal and packaging : Disposal:  
Dispose of in conjunction with appropriate waste disposal authorities and in accordance with disposal regulations.  
Waste codes should be assigned by the user based on the application for which the product was used.

## 14. Transport information

### ADR

UN number : 3105  
Description of the goods : ORGANIC PEROXIDE TYPE D, LIQUID  
(methylethylketoneperoxide)  
Class : 5.2  
Packing group : --  
Classification Code : P1  
Labels : 5.2  
Limited quantity : LQ16  
Tunnel restriction code : (D)  
Environmentally hazardous : no

### RID

UN number : 3105  
Description of the goods : ORGANIC PEROXIDE TYPE D, LIQUID  
(methylethylketoneperoxide)  
Class : 5.2  
Packing group : --  
Classification Code : P1  
Labels : 5.2  
Limited quantity : LQ16  
Environmentally hazardous : no

### IATA

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UN number : 3105  
 Description of the goods : Organic peroxide type D, liquid  
 (methylethylketoneperoxide)  
 Class : 5.2  
 Packing group : --  
 Labels : 5.2 (HEAT)  
 Packing instruction (cargo air-  
 craft) : 570  
 Environmentally hazardous : no  
 Packing instruction (passenger  
 aircraft) : 570

## IMDG

UN number : 3105  
 Description of the goods : ORGANIC PEROXIDE TYPE D, LIQUID  
 (methylethylketoneperoxide)  
 Class : 5.2  
 Packing group : --  
 Labels : 5.2  
 EmSNumber 1 : F-J  
 EmS Number 2 : S-R  
 Marine Pollutant : no

## Special precautions for user

see chapter: 6, 7 and 8

## 15. Regulatory information

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

#### National legislation

Water contaminating class : WGK 2 (water endangering)  
 (Germany) Classification according VwVwS, Annex 4.

Other regulations : BGV B4 organische Peroxide. (German regulatory requirements)  
 BG-Merkblatt M001 beachten (German regulatory requirements)  
 Produkt unterliegt nicht dem Sprengstoffgesetz (SprengG). (German  
 regulatory requirements) Take note of Dir 92/85/EEC on the safety  
 and health at work of pregnant workers. Take note of Dir 94/33/EC  
 on the protection of young people at work. Störfallverordnung  
 Anhang I (German regulatory requirements)

Gefahrengruppe nach § 3 BGV B4: (German regulatory require-  
 ments) II (German regulatory requirements)

### 15.2 Chemical Safety Assessment

no data available

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## 16. Other information

### Full text of R-phrases referred to under sections 2 and 3

R 5	Heating may cause an explosion.
R 7	May cause fire.
R 8	Contact with combustible material may cause fire.
R10	Flammable.
R11	Highly flammable.
R20/22	Harmful by inhalation and if swallowed.
R22	Harmful if swallowed.
R34	Causes burns.
R35	Causes severe burns.
R36	Irritating to eyes.
R66	Repeated exposure may cause skin dryness or cracking.
R67	Vapours may cause drowsiness and dizziness.

### Full text of H-Statements referred to under sections 2 and 3.

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H242	Heating may cause a fire.
H271	May cause fire or explosion; strong oxidiser.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.

### Other information

DFG	Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission).
EU	European Union (The EU has established a limit value: deviations in value and peak limit are possible)
H	Skin absorption
Y	When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child

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.