SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878

CUROX®M-102

Version	Revision Date:	SDS Number:	Date of last issue: 11.06.2024
3.3	03.12.2024	600000000258	Date of first issue: 20.07.2016

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name	:	CUROX®M-102
Unique Formula Identifier (UFI)	:	GYM8-T0Y5-R00W-ASEJ

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 Dr.-Gustav-Adolph-Str. 3 82049 Pullach
Telephone	:	+49 / 89 / 74422 – 0
E-mail address of person responsible for the SDS	:	contact@united-in.com

1.4 Emergency telephone number

+44 1235 239670

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Organic peroxides, Type D	H242: Heating may cause a fire.
Acute toxicity, Category 4	H302: Harmful if swallowed.
Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin corrosion, Sub-category 1B	H314: Causes severe skin burns and eye damage.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Reproductive toxicity, Category 2	H361: Suspected of damaging fertility or the unborn child.
Long-term (chronic) aquatic hazard, Cat-	H412: Harmful to aquatic life with long lasting ef-

egory 3 fects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Danger

Hazard statements :

H242	Heating may cause a fire.
H302 + H332	Harmful if swallowed or if inhaled.
H314	Causes severe skin burns and eye damage.
H361	Suspected of damaging fertility or the unborn child.
H412	Harmful to aquatic life with long lasting effects.

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.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

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.
P370 + P378	In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Hazardous components which must be listed on the label:

Trimethylpentanediol isobutyrate (CAS-No. 6846-50-0)
2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide (CAS-No. 1338-23-4)

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Organic Peroxide
Liquid mixture

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Trimethylpentanediol isobutyrate	6846-50-0 229-934-9 01-2119451093-47	Repr. 2; H361 Aquatic Chronic 3; H412	>= 55 - < 65
2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide	1338-23-4 700-954-4 01-2119514691-43-0000	Org. Perox. D; H242 Acute Tox. 4; H302 Acute Tox. 4; H332 Skin Corr. 1B; H314 Eye Dam. 1; H318 --- Acute toxicity estimate Acute oral toxicity: 500 mg/kg Acute inhalation toxicity (dust/mist): 1.5 mg/l Acute dermal toxicity: 2,500 mg/kg	>= 30 - < 35

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Take off contaminated clothing and shoes immediately.
Call a physician immediately.
Never give anything by mouth to an unconscious person.
If unconscious, place in recovery position and seek medical advice.
Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
Symptoms of poisoning may appear several hours later.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing

If inhaled : Administer oxygen if breathing is difficult or cyanosis is observed.
Call a physician immediately.
If breathed in, move person into fresh air.
If not breathing, give artificial respiration.
Respiratory tract burning possible if aerosols are inhaled.
Call a physician or poison control centre immediately.
If unconscious, place in recovery position and seek medical advice.
Keep respiratory tract clear.

In case of skin contact : If symptoms persist, call a physician.
Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Wash contaminated clothing before re-use.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Call a physician immediately.
Rinse mouth thoroughly with water.

Keep respiratory tract clear.
Do NOT induce vomiting.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Risks : Harmful if swallowed or if inhaled.
Causes serious eye damage.
Suspected of damaging fertility or the unborn child.
Causes severe burns.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray jet
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Risk of explosion if heated under confinement.
Possible emission of gaseous decomposition products may lead to a dangerous pressure build-up.
Avoid confinement.
Contact with incompatible materials or exposure to temperatures exceeding SADT may result in a self-accelerating decomposition reaction with release of flammable vapors which may auto-ignite.
The product burns violently.
Flash back possible over considerable distance.
Do not allow run-off from fire fighting to enter drains or water courses.
Vapours may form explosive mixtures with air.
The product will float on water and can be reignited on surface water.
Cool closed containers exposed to fire with water spray.

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

Specific extinguishing methods	:	Do not use a solid water stream as it may scatter and spread fire. Remove undamaged containers from fire area if it is safe to do so. Use water spray to cool unopened containers.
Further information	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use a water spray to cool fully closed 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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Follow safe handling advice and personal protective equipment recommendations. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. Use personal protective equipment. Remove all sources of ignition. Never return spills in original containers for re-use. Treat recovered material as described in the section "Disposal considerations".

6.2 Environmental precautions

Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	Contact with incompatible substances can cause decomposition at or below SADT. Clear spills immediately. Suppress (knock down) gases/vapours/mists with a water spray jet. To clean the floor and all objects contaminated by this material, use plenty of water. Soak up with inert absorbent material. Isolate waste and do not reuse. Non-sparking tools should be used. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures	:	See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
Advice on safe handling	:	Open drum carefully as content may be under pressure. Protect from contamination. Do not swallow. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Avoid formation of aerosol. Take precautionary measures against static discharges. Never return any product to the container from which it was originally removed. Provide sufficient air exchange and/or exhaust in work rooms. Avoid confinement. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Smoking, eating and drinking should be prohibited in the application area. Wash thoroughly after handling. For personal protection see section 8.
Advice on protection against fire and explosion	:	Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from heat and sources of ignition. Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Keep away from combustible material. Do not spray on a naked flame or any incandescent material.
Hygiene measures	:	Avoid contact with skin, eyes and clothing. Keep away from food and drink. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Store in original container. Keep containers tightly closed in a cool, well-ventilated place. Store in cool place. Keep in a well-ventilated place. Contamination may result in dangerous pressure increases - closed containers may rupture. Observe label precautions. Store in accordance with the particular national regulations. Avoid impurities (e.g. rust, dust, ash), risk of decomposition. 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.

Advice on common storage : Keep away from combustible materials.
Keep away from strong acids, bases, heavy metal salts and other reducing substances.

Recommended storage temperature : < 30 °C

Further information on storage stability : Stable under recommended storage conditions.

7.3 Specific end use(s)

Specific use(s) : For further information, refer to the product technical data sheet.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide	1338-23-4	OELV - 15 min (STEL)	0.2 ppm 1.5 mg/m3	IE OEL

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Exposure routes	Potential health effects	Value
Trimethylpentanediol isobutyrate	Workers	Inhalation	Long-term systemic effects	17.62 mg/m3
	Workers	Skin contact	Long-term local effects	5 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	4.35 mg/m3
	Consumers	Skin contact	Long-term systemic effects	5 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	5 mg/kg bw/day
2-Butanone peroxide; Reaction mass of	Workers	Inhalation	Long-term systemic effects	2.35 mg/m3

butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide				
	Workers	Skin contact	Long-term systemic effects	1.33 mg/kg bw/day
	Workers	Inhalation	Acute systemic effects	7.05 mg/m3

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
Trimethylpentanediol isobutyrate	Fresh water	0.014 mg/l
	Marine water	0.001 mg/l
	Fresh water sediment	5.29 mg/kg dry weight (d.w.)
	Marine sediment	0.529 mg/kg dry weight (d.w.)
	Soil	1.05 mg/kg dry weight (d.w.)
	Sewage treatment plant	3 mg/l
2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide	Fresh water	0.0056 mg/l
	Marine water	0.00056 mg/l
	Intermittent use/release	0.056 mg/l
	Sewage treatment plant	1.2 mg/l
	Fresh water sediment	0.0876 mg/kg
	Marine sediment	0.00876 mg/kg
	Soil	0.0142 mg/kg

8.2 Exposure controls

Engineering measures

Minimize workplace exposure concentrations.

Personal protective equipment

Eye/face protection : Ensure that eyewash stations and safety showers are close to the workstation location.
Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.
Tightly fitting safety goggles
Please wear suitable protective goggles. Also wear face protection if there is a splash hazard.

Equipment should conform to EN 166

Hand protection
Material : Nitrile rubber

Break through time	:	30 min
Glove thickness	:	0.40 mm
Directive	:	Equipment should conform to EN 374
Material	:	butyl-rubber
Break through time	:	480 min
Glove thickness	:	0.47 mm
Directive	:	Equipment should conform to EN 374

Remarks : 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. Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.
Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.
Wear as appropriate:
Flame retardant antistatic protective clothing.

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.
Respirator with combination filter for vapour/particulate (EN 141)

Filter type : ABEK-filter

Protective measures : The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : colourless

Odour	:	characteristic
Odour Threshold	:	not determined
Melting point/ range	:	< -25 °C
Boiling point/boiling range	:	Decomposition: Decomposes below the boiling point.
Flammability	:	Not applicable
Upper explosion limit / Upper flammability limit	:	Upper explosion limit No data available
Lower explosion limit / Lower flammability limit	:	Lower explosion limit No data available
Flash point	:	84 °C Method: ISO 3679, closed cup
Auto-ignition temperature	:	not determined
Self-Accelerating decomposition temperature (SADT)	:	60 °C Method: UN-Test H.4 SADT-Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction.
pH	:	No data available substance/mixture is non-soluble (in water)
Viscosity		
Viscosity, dynamic	:	13 mPa.s (20 °C)
Viscosity, kinematic	:	not determined
Solubility(ies)		
Water solubility	:	practically insoluble
Solubility in other solvents	:	Solvent: Phthalates

		Description: completely miscible
Partition coefficient: n-octanol/water	:	Not applicable
Vapour pressure	:	< 1.5 hPa (25 °C) (for a component of this mixture)
Relative density	:	not determined
Density	:	1.01 g/cm3 (20 °C)
Relative vapour density	:	not determined

9.2 Other information

Explosives	:	Not explosive In use, may form flammable/explosive vapour-air mixture.
Oxidizing properties	:	The substance or mixture is not classified as oxidizing. Organic peroxide
Flammability (liquids)	:	Organic peroxide
Self-ignition	:	The substance or mixture is not classified as self heating. The substance or mixture is not classified as pyrophoric.
		The substance or mixture is not classified as pyrophoric.
Self-heating substances	:	Not applicable
		The substance or mixture is not classified as self heating.
Substances and mixtures, which in contact with water, emit flammable gases	:	The substance or mixture does not emit flammable gases in contact with water.
Desensitised explosives	:	Not applicable

Refractive index : 1.438 at 20 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.
Heating may cause a fire or explosion.

10.2 Chemical stability

Stable under recommended storage conditions.
No decomposition if stored normally.

10.3 Possibility of hazardous reactions

Hazardous reactions : Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid : Protect from contamination.
Contact with incompatible substances can cause decomposition at or below SADT.
Heat, flames and sparks.
Avoid confinement.

10.5 Incompatible materials

Materials to avoid : Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents

10.6 Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Harmful if swallowed or if inhaled.

Product:

Acute oral toxicity : Acute toxicity estimate: 1,450 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 4.35 mg/l

Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Components:

Trimethylpentanediol isobutyrate:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Method: Expert judgement
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LCLo (Rat): > 0.12 mg/l
Exposure time: 6 h
Test atmosphere: vapour
Method: Expert judgement
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: No mortality observed at this dose.

Acute dermal toxicity : LD50 (Guinea pig): > 2,000 mg/kg
Method: Expert judgement
Assessment: The substance or mixture has no acute dermal toxicity

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Acute oral toxicity : Acute toxicity estimate: 500 mg/kg
Method: Expert judgement

Acute inhalation toxicity : Acute toxicity estimate: 1.5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Expert judgement
Assessment: The component/mixture is moderately toxic after short term inhalation.
Remarks: Based on data from similar materials

Acute dermal toxicity : Acute toxicity estimate: 2,500 mg/kg
Method: Expert judgement

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks : Extremely corrosive and destructive to tissue.

Components:

Trimethylpentanediol isobutyrate:

Species	:	Guinea pig
Exposure time	:	24 h
Result	:	No skin irritation
Remarks	:	Based on available data, the classification criteria are not met.

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Species	:	Rabbit
Result	:	Causes burns.

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks	:	May cause irreversible eye damage.

Components:

Trimethylpentanediol isobutyrate:

Species	:	Rabbit
Exposure time	:	24 h
Result	:	No eye irritation

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Result	:	Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation

Not classified due to lack of data.

Respiratory sensitisation

Not classified due to lack of data.

Components:

Trimethylpentanediol isobutyrate:

Species	:	Guinea pig
Result	:	Does not cause skin sensitisation.

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Species	:	Guinea pig
Method	:	OECD Test Guideline 406

Result : Does not cause skin sensitisation.

Assessment : Harmful if swallowed., Harmful if inhaled.

Germ cell mutagenicity

Not classified due to lack of data.

Components:

Trimethylpentanediol isobutyrate:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative

Test Type: Ames test
Method: Regulation (EC) No. 440/2008, Annex, B.13/14 (Ames test)
Result: negative

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Genotoxicity in vitro : Method: OECD Test Guideline 473
Result: negative

Method: OECD Test Guideline 471
Result: negative

Method: OECD Test Guideline 476
Result: negative

Carcinogenicity

Not classified due to lack of data.

Components:

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Remarks : This information is not available.

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Components:

Trimethylpentanediol isobutyrate:

Effects on foetal development	:	Test Type: One-generation reproduction toxicity study Species: Rat Application Route: Ingestion Method: OECD Test Guideline 414 Result: negative
Reproductive toxicity - Assessment	:	Suspected of damaging fertility or the unborn child., Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Effects on fertility	:	Species: Rat Application Route: oral (gavage) General Toxicity - Parent: NOAEL: 50 mg/kg body weight Method: OECD Test Guideline 421 Result: negative

STOT - single exposure

Not classified due to lack of data.

STOT - repeated exposure

Not classified due to lack of data.

Repeated dose toxicity

Components:

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Species	:	Rat
NOAEL	:	200 mg/kg
Application Route	:	oral (gavage)
Exposure time	:	28 d
Method	:	OECD Test Guideline 407

Repeated dose toxicity - Assessment	:	Harmful if swallowed., Harmful if inhaled.

Aspiration toxicity

Not classified due to lack of data.

Components:

Trimethylpentanediol isobutyrate:

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

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

Remarks : No data available

Components:

Trimethylpentanediol isobutyrate:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Components:

Trimethylpentanediol isobutyrate:

Toxicity to fish : NOEC (Fish): >= 6 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia (water flea)): >= 1.46 mg/l
Exposure time: 48 h

NOEC (Daphnia (water flea)): 0.7 mg/l
Exposure time: 21 d

Toxicity to algae/aquatic plants : EC50 (Chlorella pyrenoidosa (algae)): > 7.49 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : LOEC: 0.7 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): 44.2 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

NOEC (Poecilia reticulata (guppy)): 18 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

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

NOEC (Daphnia magna (Water flea)): 26.7 mg/l
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 5.6 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 2.1 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC50 (Bacteria): 48 mg/l
Exposure time: 0.5 h
Method: OECD Test Guideline 209

12.2 Persistence and degradability

Components:

Trimethylpentanediol isobutyrate:

Biodegradability : Result: rapidly biodegradable
Exposure time: 28 d
Method: OECD Test Guideline 301B

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301D

12.3 Bioaccumulative potential

Components:

Trimethylpentanediol isobutyrate:

Bioaccumulation	:	Species: Fish Bioconcentration factor (BCF): 1.95
Partition coefficient: n-octanol/water	:	log Pow: 4.91 (25 °C)

2-Butanone peroxide; Reaction mass of butane-2,2-diyl dihydroperoxide and dioxydibutane-2,2-diyl dihydroperoxide:

Partition coefficient: n-octanol/water	:	log Pow: < 0.3 (25 °C)

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment	:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product	:	Dispose of wastes in an approved waste disposal facility. 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. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.
Contaminated packaging	:	Dispose of in accordance with local regulations. Clean container with water. Dispose of contents/ container to an approved waste disposal plant. Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14: Transport information

14.1 UN number or ID number

ADR	:	UN 3105
RID	:	UN 3105
IMDG	:	UN 3105
IATA	:	UN 3105

14.2 UN proper shipping name

ADR	:	ORGANIC PEROXIDE TYPE D, LIQUID (METHYL ETHYL KETONE PEROXIDE(S))
RID	:	ORGANIC PEROXIDE TYPE D, LIQUID (METHYL ETHYL KETONE PEROXIDE(S))
IMDG	:	ORGANIC PEROXIDE TYPE D, LIQUID (METHYL ETHYL KETONE PEROXIDE(S))
IATA	:	Organic peroxide type D, liquid (Methyl ethyl ketone peroxide(s))

14.3 Transport hazard class(es)

		Class	Subsidiary risks
ADR	:	5.2	
RID	:	5.2	
IMDG	:	5.2	

IATA	:	5.2	HEAT

14.4 Packing group

ADR

Packing group	:	Not assigned by regulation
Classification Code	:	P1
Labels	:	5.2
Tunnel restriction code	:	(D)

RID

Packing group	:	Not assigned by regulation
Classification Code	:	P1
Hazard Identification Number	:	539
Labels	:	5.2

IMDG

Packing group	:	Not assigned by regulation
Labels	:	5.2
EmS Code	:	F-J, S-R

IATA (Cargo)

Packing instruction (cargo aircraft)	:	570
Packing group	:	Not assigned by regulation
Labels	:	Organic Peroxides, Keep Away From Heat

IATA (Passenger)

Packing instruction (passenger aircraft)	:	570
Packing group	:	Not assigned by regulation
Labels	:	Organic Peroxides, Keep Away From Heat

14.5 Environmental hazards

ADR

Environmentally hazardous	:	no

RID

Environmentally hazardous	:	no

IMDG

Marine pollutant	:	no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 3 Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EC) on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors

This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.	hydrogen peroxide (ANNEX I)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	P6b	SELF-REACTIVE SUBSTANCES AND MIXTURES and ORGANIC PEROXIDES

Other regulations:

Gefahrgruppe nach TRGS 741: II (German regulatory requirements)

Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

TCSI (TW)	:	On the inventory, or in compliance with the inventory
TSCA (US)	:	All substances listed as active on the TSCA inventory
AIIC (AU)	:	On the inventory, or in compliance with the inventory
DSL (CA)	:	All components of this product are on the Canadian DSL
ENCS (JP)	:	On the inventory, or in compliance with the inventory
ISHL (JP)	:	On the inventory, or in compliance with the inventory
KECI (KR)	:	On the inventory, or in compliance with the inventory
PICCS (PH)	:	On the inventory, or in compliance with the inventory
IECSC (CN)	:	On the inventory, or in compliance with the inventory
TECI (TH)	:	On the inventory, or in compliance with the inventory

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of H-Statements

H242	:	Heating may cause a fire.
H302	:	Harmful if swallowed.
H314	:	Causes severe skin burns and eye damage.
H318	:	Causes serious eye damage.
H332	:	Harmful if inhaled.
H361	:	Suspected of damaging fertility or the unborn child.
H412	:	Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Org. Perox.	:	Organic peroxides
Repr.	:	Reproductive toxicity
Skin Corr.	:	Skin corrosion

IE OEL	:	Ireland. List of Chemical Agents and Carcinogens with Occupational Exposure Limit Values - Code of Practice, Schedule 1 and 2
IE OEL / OELV - 15 min (STEL)	:	Occupational exposure limit value (15-minute reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Other information	:	This safety datasheet only contains information relating to safety and does not replace any product information or product specification. These safety instructions also apply to empty packaging which may still contain product residues. The hazards on the label also apply to residues in the container.
Sources of key data used to compile the Safety Data Sheet	:	Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/

Classification of the mixture:		**Classification procedure:**
Org. Perox. D	H242	Based on product data or assessment
Acute Tox. 4	H302	Calculation method
Acute Tox. 4	H332	Calculation method
Skin Corr. 1B	H314	Calculation method
Eye Dam. 1	H318	Calculation method
Repr. 2	H361	Calculation method
Aquatic Chronic 3	H412	Calculation method

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.

IE / EN