

**SAFETY DATA SHEET  
NOROX MEKP-9**

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**SECTION 1. IDENTIFICATION**

Product name : NOROX MEKP-9

**Manufacturer or supplier's details**

Company name of supplier : DALIAN F.T.Z.GREAT INDUSTRY & TRADE CO.,LTD.

Address : 1207A HUI NENG BUILDING DALIAN F.T.Z. CHINA

Telephone : 0086-411-39552935

Telefax : 0086-411-39266880

Emergency telephone : 0086-411-39552935

E-mail address of person responsible for the SDS : Great@dlwawoo.com  
tangaizhang@hefuchem.com

**Recommended use of the chemical and restrictions on use**

Recommended use : Hardener

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**SECTION 2. HAZARDS IDENTIFICATION**

**GHS classification in accordance with 29 CFR 1910.1200**

Flammable liquids : Category 4

Organic peroxides : Type D

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Skin corrosion : Category 1B

Serious eye damage : Category 1

Acute aquatic toxicity : Category 2

**GHS label elements**

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H227 Combustible liquid.  
H242 Heating may cause a fire.

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H302 + H332 Harmful if swallowed or if inhaled.  
H314 Causes severe skin burns and eye damage.  
H401 Toxic to aquatic life.

Precautionary Statements

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**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.  
P234 Keep only in original container.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.  
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/shower.  
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.  
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:**

P405 Store locked up.  
P410 Protect from sunlight.  
P411 + P235 Store at temperatures not exceeding < 100 °F/ < 38 °C. Keep cool.  
P420 Store away from other materials.

**Disposal:**

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

**Other hazards**

None known.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture

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Mixture

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Chemical nature : Organic Peroxide  
Liquid mixture

#### Hazardous ingredients

Chemical name	CAS-No.	Concentration (% w/w)
Dimethyl phthalate	131-11-3	>= 40 - < 45
2-Butanone, peroxide	1338-23-4	>= 30 - < 35
Trimethylpentanediol isobutyrate	6846-50-0	>= 20 - < 25
Butanone	78-93-3	>= 1 - < 5
Hydrogen peroxide	7722-84-1	>= 1 - < 5

#### SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.  
Show this material safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.  
Symptoms of poisoning may appear several hours later.  
Call a physician immediately.
- If inhaled : Call a physician or poison control center immediately.  
If unconscious, place in recovery position and seek medical advice.  
Keep respiratory tract clear.  
Call a physician immediately.  
If breathed in, move person into fresh air.
- In case of skin contact : 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.  
If symptoms persist, call a physician.
- 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 : Keep respiratory tract clear.  
Do NOT induce vomiting.  
Call a physician immediately.  
Rinse mouth thoroughly with water.
- Most important symptoms and effects, both acute and delayed : Harmful if swallowed or if inhaled.  
Causes serious eye damage.  
Causes severe burns.

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

Notes to physician : Treat symptomatically and supportively.

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## SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : High volume water jet

Specific hazards during fire fighting : 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.  
Vapors may form explosive mixtures with air.  
Cool closed containers exposed to fire with water spray.

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 : 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.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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

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## SECTION 6. ACCIDENTAL RELEASE MEASURES

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

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- considerations".
- 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.
- Methods and materials for containment and cleaning up : Contact with incompatible substances can cause decomposition at or below SADT.  
Clear spills immediately.  
Suppress (knock down) gases/vapors/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.

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## SECTION 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Advice on protection against fire and explosion : Keep away from heat and sources of ignition. Use only explosion-proof equipment. Keep away from combustible material.
- Advice on safe handling : Do not swallow.  
Do not breathe vapors/dust.  
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.  
Protect from contamination.
- Conditions for safe storage : 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.

Store in original container.  
 Keep containers tightly closed in a cool, well-ventilated place.  
 Store in accordance with the particular national regulations.

Materials to avoid : Keep away from strong acids, bases, heavy metal salts and other reducing substances.

Recommended storage temperature : < 100 °F

< 38 °C

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Dimethyl phthalate	131-11-3	TWA	5 mg/m <sup>3</sup>	ACGIH
		TWA	5 mg/m <sup>3</sup>	NIOSH REL
		TWA	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA	5 mg/m <sup>3</sup>	OSHA P0
2-Butanone, peroxide	1338-23-4	C	0.2 ppm	ACGIH
		C	0.2 ppm 1.5 mg/m <sup>3</sup>	NIOSH REL
		C	0.7 ppm 5 mg/m <sup>3</sup>	OSHA P0
Butanone	78-93-3	TWA	200 ppm	ACGIH
		STEL	300 ppm	ACGIH
		TWA	200 ppm 590 mg/m <sup>3</sup>	NIOSH REL
		ST	300 ppm 885 mg/m <sup>3</sup>	NIOSH REL
		TWA	200 ppm 590 mg/m <sup>3</sup>	OSHA Z-1
		TWA	200 ppm 590 mg/m <sup>3</sup>	OSHA P0
Hydrogen peroxide	7722-84-1	STEL	300 ppm 885 mg/m <sup>3</sup>	OSHA P0
		TWA	1 ppm	ACGIH
		TWA	1 ppm 1.4 mg/m <sup>3</sup>	NIOSH REL
		TWA	1 ppm 1.4 mg/m <sup>3</sup>	OSHA Z-1
		TWA	1 ppm 1.4 mg/m <sup>3</sup>	OSHA P0

### Hazardous components without workplace control parameters

Ingredients	CAS-No.
Trimethylpentanediol isobutyrate	6846-50-0

### Biological occupational exposure limits

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

**Engineering measures** : Minimize workplace exposure concentrations.

### Personal protective equipment

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Filter type : ABEK-filter

Hand protection

Material : butyl-rubber

Break through time :  $\geq 480$  min

Glove thickness : 0.5 mm

Remarks : 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 Wash hands before breaks and at the end of workday.

Eye protection : Tightly fitting safety goggles  
Please wear suitable protective goggles. Also wear face protection if there is a splash hazard.  
Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection : Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential.

Hygiene measures : 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.

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

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Appearance	:	liquid
Color	:	colorless
Odor	:	very faint
pH	:	Not applicable
Melting point/range	:	No data available
Boiling point/boiling range	:	Decomposition: Decomposes below the boiling point.
Flash point	:	> 76 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	> 1
Density	:	1.1 g/cm <sup>3</sup>
Solubility(ies)	:	
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	No data available
Self-Accelerating decomposition temperature (SADT)	:	60 °C SADT-Self Accelerating Decomposition Temperature. Lowest temperature at which the tested package size will undergo a self-accelerating decomposition reaction.
Viscosity	:	
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	not determined
Oxidizing properties	:	The substance or mixture is not classified as oxidizing. Organic peroxide

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#### SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable under recommended storage conditions.
Chemical stability	:	Stable under recommended storage conditions.



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Possibility of hazardous reactions	:	Vapors may form explosive mixture with air.
Conditions to avoid	:	Protect from contamination. Contact with incompatible substances can cause decomposition at or below SADT. Heat, flames and sparks. Avoid confinement.
Incompatible materials	:	Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents
Hazardous decomposition products	:	Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition

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## SECTION 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

Harmful if swallowed or if inhaled.

#### Product:

Acute oral toxicity	:	Acute toxicity estimate: 1,431 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: 4.29 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method

#### Ingredients:

##### **Dimethyl phthalate:**

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	(Rat): > 10.4 mg/l Exposure time: 6 h Test atmosphere: vapor Remarks: No mortality observed at this dose.
Acute dermal toxicity	:	LD50 (Rabbit): > 12,000 mg/kg

##### **2-Butanone, peroxide:**

Acute oral toxicity	:	Acute toxicity estimate: 500 mg/kg Method: Expert judgment
Acute inhalation toxicity	:	Acute toxicity estimate: 1.5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Expert judgment

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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 judgment

**Trimethylpentanediol isobutyrate:**

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

Acute inhalation toxicity : LCLo (Rat): > 5.30 mg/l  
Exposure time: 6 h  
Test atmosphere: vapor  
Method: Expert judgment  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Guinea pig): > 18,530 mg/kg  
Method: Expert judgment  
Assessment: The substance or mixture has no acute dermal toxicity

**Butanone:**

Acute oral toxicity : LD50 (Rat): 2,193 mg/kg  
Method: OECD Test Guideline 423

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Method: OECD Test Guideline 402

**Hydrogen peroxide:**

Acute oral toxicity : LD50 (Rat, male): 1,026 mg/kg  
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): > 0.17 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Assessment: The component/mixture is moderately toxic after short term inhalation.  
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute dermal toxicity : LD50 (Rabbit): > 6,500 mg/kg

**Skin corrosion/irritation**

Causes severe burns.

**Product:**

Remarks: Extremely corrosive and destructive to tissue.

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**Ingredients:**

**Dimethyl phthalate:**

Species: Rabbit  
Method: Draize Test  
Result: No skin irritation

**2-Butanone, peroxide:**

Species: Rabbit  
Result: Causes burns.

**Trimethylpentanediol isobutyrate:**

Species: Guinea pig  
Result: Mild skin irritation

**Butanone:**

Species: Rabbit  
Method: OECD Test Guideline 404  
Result: No skin irritation

**Hydrogen peroxide:**

Result: Corrosive after 3 minutes or less of exposure

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Product:**

Remarks: May cause irreversible eye damage.

**Ingredients:**

**Dimethyl phthalate:**

Species: Rabbit  
Result: No eye irritation  
Method: OECD Test Guideline 405

**2-Butanone, peroxide:**

Result: Irreversible effects on the eye

**Trimethylpentanediol isobutyrate:**

Species: Rabbit  
Result: No eye irritation  
Method: OECD Test Guideline 405

**Butanone:**

Species: Rabbit  
Result: Eye irritation  
Method: OECD Test Guideline 405

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**Hydrogen peroxide:**

Result: Irreversible effects on the eye

**Respiratory or skin sensitization**

**Skin sensitization**

Not classified based on available information.

**Respiratory sensitization**

Not classified based on available information.

**Ingredients:**

**Dimethyl phthalate:**

Species: Mouse

Method: OECD Test Guideline 429

Result: Does not cause skin sensitization.

**2-Butanone, peroxide:**

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Does not cause skin sensitization.

Assessment: Harmful if swallowed., Harmful if inhaled.

**Trimethylpentanediol isobutyrate:**

Species: Guinea pig

Result: Does not cause skin sensitization.

**Butanone:**

Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Does not cause skin sensitization.

**Germ cell mutagenicity**

Not classified based on available information.

**Ingredients:**

**Dimethyl phthalate:**

Genotoxicity in vitro : Method: OECD Test Guideline 471  
Result: negative

: Method: OECD Test Guideline 473  
Result: negative

: Method: OECD Test Guideline 476  
Result: positive

Genotoxicity in vivo : Test Type: Chromosomal aberration  
Species: Rat



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Application Route: Intraperitoneal

Result: negative

Test Type: Micronucleus test

Species: Mouse

Application Route: Intraperitoneal injection

Result: negative

**2-Butanone, peroxide:**

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

: Method: OECD Test Guideline 471  
Result: negative

: Method: OECD Test Guideline 476  
Result: negative

**Trimethylpentanediol isobutyrate:**

Genotoxicity in vitro : Method: OECD Test Guideline 476  
Result: negative

: Test Type: Ames test  
Result: negative

: Method: OECD Test Guideline 473  
Result: negative

**Butanone:**

Genotoxicity in vitro : Method: OECD Test Guideline 471  
Result: negative

: Method: OECD Test Guideline 476  
Result: negative

: Method: OECD Test Guideline 473  
Result: negative

Genotoxicity in vivo : Species: Mouse  
Application Route: Intraperitoneal  
Method: OECD Test Guideline 474  
Result: negative

**Hydrogen peroxide:**

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

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo  
cytogenetic assay)  
Species: Mouse  
Result: negative

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**Carcinogenicity**

Not classified based on available information.

**Ingredients:****Dimethyl phthalate:**

Species: Rat

Application Route: Skin contact

Method: OECD Test Guideline 451

Result: negative

Remarks: Based on data from similar materials

**2-Butanone, peroxide:**

Remarks: This information is not available.

<b>IARC</b>	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
<b>OSHA</b>	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
<b>NTP</b>	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**Ingredients:****Dimethyl phthalate:**

Effects on fertility : Species: Rat  
Application Route: oral (gavage)  
Method: OECD Test Guideline 440  
Result: negative

Effects on fetal development : Species: Rat  
Application Route: Ingestion  
General Toxicity Maternal: NOAEL: 840 mg/kg body weight  
Developmental Toxicity: NOAEL: 3,570 mg/kg body weight  
Method: OECD Test Guideline 414

**2-Butanone, peroxide:**

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

**Butanone:**

Effects on fertility : Species: Rat

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Application Route: oral (drinking water)  
General Toxicity Parent: NOAEL: 10,000 mg/l  
General Toxicity F1: NOAEL: 10,000 mg/l  
Method: OECD Test Guideline 416  
Remarks: Based on data from similar materials

Species: Rat  
Application Route: oral (drinking water)  
General Toxicity Parent: LOAEL: 20,000 mg/l  
Method: OECD Test Guideline 416  
Remarks: Based on data from similar materials

Effects on fetal development : Species: Rat  
Application Route: Inhalation  
General Toxicity Maternal: NOAEC: ca. 1,002 mg/kg body weight  
Teratogenicity: NOAEC Parent: ca. 1,002 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: negative

#### **STOT-single exposure**

Not classified based on available information.

#### **Ingredients:**

##### **Hydrogen peroxide:**

Assessment: May cause respiratory irritation.

#### **STOT-repeated exposure**

Not classified based on available information.

#### **Repeated dose toxicity**

#### **Ingredients:**

##### **Dimethyl phthalate:**

Species: Rat  
NOAEL: 770 mg/kg  
Application Route: Oral  
Exposure time: 16 w  
Method: OECD Test Guideline 408

##### **2-Butanone, peroxide:**

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.

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**Hydrogen peroxide:**

Species: Mouse  
Application Route: Ingestion  
Exposure time: 90 d  
Symptoms: No adverse effects.

**Aspiration toxicity**

Not classified based on available information.

**Ingredients:****Dimethyl phthalate:**

No aspiration toxicity classification

**Further information****Product:**

Remarks: No data available

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Ingredients:****Dimethyl phthalate:**

- |  |   |  |
|--|---|--|
| Toxicity to fish   | : | LC50 (Pimephales promelas (fathead minnow)): 39 mg/l<br>Exposure time: 96 h  |
| Toxicity to daphnia and other aquatic invertebrates                    | : | LC50 (Daphnia magna (Water flea)): > 52 mg/l<br>Exposure time: 48 h  |
| Toxicity to algae  | : | EC50 (Desmodesmus subspicatus (green algae)): 260 mg/l<br>Exposure time: 72 h  |
| Toxicity to fish (Chronic toxicity)                                    | : | NOEC (Oncorhynchus mykiss (rainbow trout)): 11 mg/l<br>Exposure time: 102 d<br>Method: OECD Test Guideline 210<br><br>LOEC (Oncorhynchus mykiss (rainbow trout)): 24 mg/l<br>Exposure time: 102 d<br>Method: OECD Test Guideline 210 |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC (Daphnia magna (Water flea)): 9.6 mg/l<br>Exposure time: 21 d<br><br>LOEC (Daphnia magna (Water flea)): 23 mg/l<br>Exposure time: 21 d  |
| Toxicity to microorganisms   | : | EC50: 4,100 mg/l<br>Exposure time: 0.5 h<br>Method: OECD Test Guideline 209  |



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**2-Butanone, peroxide:**

- 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 : 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

**Trimethylpentanediol isobutyrate:**

- Toxicity to fish : NOEC (Lepomis macrochirus (Bluegill sunfish)):  $\geq 6$  mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- LC50 (Pimephales promelas (fathead minnow)):  $> 1.55$  mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)):  $\geq 1.46$  mg/l  
Exposure time: 48 h
- Toxicity to algae : EC50 (Selenastrum capricornutum (green algae)):  $> 7.49$  mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : LOEC (Daphnia magna (Water flea)): 0.7 mg/l  
Exposure time: 21 d

**Ecotoxicology Assessment**

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

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**Butanone:**

- Toxicity to fish : LC50 (*Pimephales promelas* (fathead minnow)): 2,993 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 308 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202
- Toxicity to algae : EC50 (*Pseudokirchneriella subcapitata* (green algae)): 2,029 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 201
- Toxicity to microorganisms : NOEC (*Pseudomonas putida*): 1,150 mg/l  
Exposure time: 16 h  
Method: DIN 38 412 Part 8

**Hydrogen peroxide:**

- Toxicity to fish : LC50 (*Pimephales promelas* (fathead minnow)): 16.4 mg/l  
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : LC50 (*Daphnia pulex* (Water flea)): 2.4 mg/l  
Exposure time: 48 h
- Toxicity to algae : EC50 (*Skeletonema costatum* (marine diatom)): 1.38 mg/l  
Exposure time: 72 h
- NOEC (*Skeletonema costatum* (marine diatom)): 0.63 mg/l  
Exposure time: 72 h
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Daphnia magna* (Water flea)): 0.63 mg/l  
Exposure time: 21 d
- Toxicity to microorganisms : EC50: Method: OECD Test Guideline 209

**Persistence and degradability****Ingredients:****Dimethyl phthalate:**

- Biodegradability : Result: Readily biodegradable.  
Method: OECD Test Guideline 301E

**2-Butanone, peroxide:**

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

**Trimethylpentanediol isobutyrate:**

- Biodegradability : Result: rapidly biodegradable

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Method: OECD Test Guideline 301B

**Butanone:**

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

**Hydrogen peroxide:**

Biodegradability : Result: Readily biodegradable.

**Bioaccumulative potential**

**Ingredients:**

**Dimethyl phthalate:**

Bioaccumulation : Bioconcentration factor (BCF): 57  
Method: OECD Test Guideline 305

Partition coefficient: n-octanol/water : log Pow: 1.54

**2-Butanone, peroxide:**

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

**Trimethylpentanediol isobutyrate:**

Partition coefficient: n-octanol/water : log Pow: 4.48

**Butanone:**

Partition coefficient: n-octanol/water : log Pow: 0.3 (40 °C)

**Hydrogen peroxide:**

Partition coefficient: n-octanol/water : log Pow: -1.57  
Remarks: Calculation

**Mobility in soil**

No data available

**Other adverse effects**

**Product:**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : An environmental hazard cannot be excluded in the event of

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mation	unprofessional handling or disposal. Toxic to aquatic life.
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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

- |                        |   |
|------------------------|---|
| Waste from residues    | : The product should not be allowed to enter drains, water courses or the soil.<br>Do not contaminate ponds, waterways or ditches with chemical or used container.<br>Dispose of wastes in an approved waste disposal facility. |
| Contaminated packaging | : Empty remaining contents.<br>Dispose of as unused product.<br>Do not re-use empty containers.<br>Do not burn, or use a cutting torch on, the empty drum.<br>Dispose of in accordance with local regulations.                  |

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### UNRTDG

- |                      |  |
|----------------------|--|
| UN number            | : UN 3105  |
| Proper shipping name | : ORGANIC PEROXIDE TYPE D, LIQUID<br>(METHYL ETHYL KETONE PEROXIDE(S)) |
| 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<br>(Methyl ethyl ketone peroxide(s)) |
| Class                                    | : 5.2  |
| Packing group                            | : Not assigned by regulation   |
| Labels                                   | : Organic Peroxides, Keep Away From Heat                               |
| Packing instruction (cargo aircraft)     | : 570  |
| Packing instruction (passenger aircraft) | : 570  |

#### IMDG-Code

- |                      |  |
|----------------------|--|
| UN number            | : UN 3105  |
| Proper shipping name | : ORGANIC PEROXIDE TYPE D, LIQUID<br>(METHYL ETHYL KETONE PEROXIDE(S)) |
| 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.



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**Domestic regulation****49 CFR**

UN/ID/NA number : UN 3105  
Proper shipping name : Organic peroxide type D, liquid  
(Methyl ethyl ketone peroxide(s), <=45%)  
Class : 5.2  
Packing group : Not assigned by regulation  
Labels : ORGANIC PEROXIDE  
ERG Code : 145  
Marine pollutant : no

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**SECTION 15. REGULATORY INFORMATION****EPCRA - Emergency Planning and Community Right-to-Know****CERCLA Reportable Quantity**

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
2-Butanone, peroxide	1338-23-4	10	29
Butanone	78-93-3	5000	5000 (D035)
Butanone	78-93-3	100	100 (F005)

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

Ingredients	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Hydrogen peroxide	7722-84-1	1000	*

\*: Calculated RQ exceeds reasonably attainable upper limit.

**SARA 311/312 Hazards** : Fire Hazard  
Reactivity Hazard  
Acute Health Hazard

**SARA 302** : The following components are subject to reporting levels established by SARA Title III, Section 302:

Hydrogen peroxide                      7722-84-1

**SARA 313** : The following components are subject to reporting levels established by SARA Title III, Section 313:

Dimethyl phthalate                      131-11-3

**Clean Air Act**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

Dimethyl phthalate                      131-11-3

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

Butanone                                      78-93-3

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### Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product contains the following toxic pollutants listed under the U.S. Clean Water Act Section 307

Dimethyl phthalate	131-11-3
<b>California Prop. 65</b>	This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

### The ingredients of this product are reported in the following inventories:

DSL (CA)	: All components of this product are on the Canadian DSL
AICS (AU)	: On the inventory, or in compliance with the inventory
NZIoC (NZ)	: On the inventory, or in compliance with the inventory
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
TCSI (TW)	: On the inventory, or in compliance with the inventory
TSCA (US)	: On TSCA Inventory

### TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; 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

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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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance 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

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The information provided in this Material 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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