

SAFETY DATA SHEET

NOROX CHM-50 RED



Version
1.0

Revision Date:
04/30/2018

SDS Number:
600000000710

Print Date:
04/30/2018

SECTION 1. IDENTIFICATION

Product name : NOROX CHM-50 RED

Manufacturer or supplier's details

Company name of supplier : United Initiators, Inc.

Address : 555 Garden Street
Elyria OH 44035

Telephone : +1-440-323-3112

Telefax : +1-440-323-2659

Emergency telephone : CHEMTREC US (24h): +1-800-424-9300
CHEMTREC WORLD (24h): +1-703-527-3887

E-mail address of person responsible for the SDS : cs-initiators.nafta@united-in.com

Recommended use of the chemical and restrictions on use

Recommended use : Hardener

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids : Category 3

Organic peroxides : Type F

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 3

Acute toxicity (Dermal) : Category 4

Skin corrosion : Category 1B

Serious eye damage : Category 1

Reproductive toxicity : Category 2

Specific target organ
systemic toxicity - repeated
exposure : Category 2

Acute aquatic toxicity : Category 2

Chronic aquatic toxicity : Category 2

GHS label elements

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Hazard pictograms

:



Signal Word

:

Danger

Hazard Statements

:

H226 Flammable liquid and vapor.
H242 Heating may cause a fire.
H302 + H312 Harmful if swallowed or in contact with skin.
H314 Causes severe skin burns and eye damage.
H331 Toxic if inhaled.
H361 Suspected of damaging fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Precautionary Statements

:

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
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.
P233 Keep container tightly closed.
P234 Keep only in original container.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe 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

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CENTER/doctor.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
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.
P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P410 Protect from sunlight.
P411 + P235 Store at temperatures not exceeding < 38 °C/ < 100 °F. Keep cool.
P420 Store away from other materials.

Disposal:

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

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture
Chemical nature : Organic Peroxide
Liquid mixture

Hazardous ingredients

| Chemical name | CAS-No. | Concentration (% w/w) |
|--|------------|-----------------------|
| Methyl Acetoacetate | 105-45-3 | >= 45 - < 50 |
| Cumene hydroperoxide | 80-15-9 | >= 40 - < 45 |
| Cumene | 98-82-8 | >= 5 - < 7.5 |
| acetophenone | 98-86-2 | >= 1 - < 5 |
| Benzenemethanol, alpha,alpha-dimethyl- | 617-94-7 | >= 1 - < 5 |
| 2-Naphthalenol, 1-[[4-(phenylazo)phenyl]azo]-, ar-heptyl ar',ar''-Me derivs. | 92257-31-3 | >= 0.1 - < 1 |

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.
No artificial respiration, mouth-to-mouth or mouth to nose. Use suitable instruments/apparatus.
Call a physician immediately.

If inhaled : Call a physician or poison control center immediately.
If unconscious, place in recovery position and seek medical

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|---|---|---|
| | | advice. Keep respiratory tract clear. Call a physician immediately. If breathed in, move person into fresh air. Contact a poison control center. |
| 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. Call a physician immediately. Rinse mouth thoroughly with water. |
| Most important symptoms and effects, both acute and delayed | : | Harmful if swallowed or in contact with skin. Causes serious eye damage. Toxic if inhaled. Suspected of damaging fertility or the unborn child. May cause damage to organs through prolonged or repeated exposure. Causes severe burns. |
| 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. |

SECTION 5. FIRE-FIGHTING MEASURES

| | | |
|---------------------------------------|---|--|
| Suitable extinguishing media | : | Water spray Alcohol-resistant foam Carbon dioxide (CO2) 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 |

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may auto-ignite.

Flash back possible over considerable distance.
Vapors 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.

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.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Remove all sources of ignition.
Evacuate personnel to safe areas.
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 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.

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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.

SECTION 7. HANDLING AND STORAGE

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Advice on protection against fire and explosion : Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). 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 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.
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 : < 38 °C
< 100 °F

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

| Ingredients | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|----------------------|---------|----------------------------------|--|-----------|
| Cumene hydroperoxide | 80-15-9 | TWA | 1 ppm | US WEEL |
| Cumene | 98-82-8 | TWA | 50 ppm | ACGIH |
| | | TWA | 50 ppm 245 mg/m3 | NIOSH REL |
| | | TWA | 50 ppm 245 mg/m3 | OSHA Z-1 |
| | | TWA | 50 ppm 245 mg/m3 | OSHA P0 |
| acetophenone | 98-86-2 | TWA | 10 ppm | ACGIH |
| | | TWA | 10 ppm | US WEEL |

Hazardous components without workplace control parameters

| Ingredients | CAS-No. |
|---|------------|
| Methyl Acetoacetate | 105-45-3 |
| Benzenemethanol, alpha, alpha-dimethyl- | 617-94-7 |
| 2-Naphthalenol, 1-[[4-(phenylazo)phenyl]azo]-, ar-heptyl ar', ar''-Me derivs. | 92257-31-3 |

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 : >= 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

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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 : 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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : red

Odor : strong, aromatic

Odor Threshold : No data available

pH : Not applicable

Melting point/range : No data available

Boiling point/boiling range : No data available Decomposition

Flash point : 60 °C
Method: closed cup

Flammability (solid, gas) : Not applicable

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapor pressure : No data available

Density : 1 g/cm³

Solubility(ies)
Water solubility : slightly soluble

Partition coefficient: n-octanol/water : No data available

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

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self-accelerating decomposition reaction.

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.
Organic peroxide

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Stable under recommended storage conditions.

Chemical stability : Stable under recommended storage conditions.

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

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed or in contact with skin.

Toxic if inhaled.

Product:

Acute oral toxicity : Acute toxicity estimate: 725.96 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 7.14 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: 1,652 mg/kg
Method: Calculation method

Ingredients:

Methyl Acetoacetate:

Acute oral toxicity : LD50 (Rat, male): 2,580 mg/kg
Method: OECD Test Guideline 401

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Acute inhalation toxicity : LC50 (Rabbit): > 49 mg/l
Exposure time: 4 h
Test atmosphere: vapor

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402

Cumene hydroperoxide:

Acute oral toxicity : LD50 Oral (Rat): 382 mg/kg

Acute inhalation toxicity : 0.51 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Expert judgment
Assessment: The component/mixture is toxic after short term inhalation.

Acute dermal toxicity : Acute toxicity estimate: 1,100 mg/kg
Method: Expert judgment

Cumene:

Acute oral toxicity : LD50 (Rat): 2,700 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rabbit): > 3,160 mg/kg

acetophenone:

Acute oral toxicity : Acute toxicity estimate: 500 mg/kg
Method: Expert judgment
Assessment: The component/mixture is moderately toxic after single ingestion.
Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Acute dermal toxicity : LD50 (Rat): 3,300 mg/kg
Method: OECD Test Guideline 402

Benzenemethanol, alpha,alpha-dimethyl-:

Acute oral toxicity : LD50 (Rat): 1,300 mg/kg

Acute dermal toxicity : LD50 (Rabbit): 4,300 mg/kg

2-Naphthalenol, 1-[[4-(phenylazo)phenyl]azo]-, ar-heptyl ar',ar''-Me derivs.:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Skin corrosion/irritation

Causes severe burns.

Product:

Remarks: Extremely corrosive and destructive to tissue.

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Ingredients:

Methyl Acetoacetate:

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

Cumene hydroperoxide:

Species: Rabbit
Result: Causes burns.

Cumene:

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

acetophenone:

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

Benzenemethanol, alpha,alpha-dimethyl-:

Species: Rabbit
Result: Severe skin irritation

2-Naphthalenol, 1-[[4-(phenylazo)phenyl]azo]-, ar-heptyl ar',ar''-Me derivs.:

Result: No skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Remarks: May cause irreversible eye damage.

Ingredients:

Methyl Acetoacetate:

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

Cumene hydroperoxide:

Species: Rabbit
Result: Corrosive

Cumene:

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

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acetophenone:

Species: Rabbit

Result: Eye irritation

Method: No information available.

Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Benzenemethanol, alpha,alpha-dimethyl-:

Result: Irritating to eyes.

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Ingredients:

Methyl Acetoacetate:

Routes of exposure: Skin contact

Species: Mouse

Method: OECD Test Guideline 429

Result: Does not cause skin sensitization.

Cumene hydroperoxide:

Result: Does not cause skin sensitization.

Cumene:

Routes of exposure: Skin contact

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Does not cause skin sensitization.

acetophenone:

Test Type: Draize Test

Routes of exposure: Skin contact

Species: Guinea pig

Result: Does not cause skin sensitization.

Germ cell mutagenicity

Not classified based on available information.

Ingredients:

Methyl Acetoacetate:

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

: Method: OECD Test Guideline 471

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Result: negative

: Method: OECD Test Guideline 473
Result: negative

Cumene hydroperoxide:

Genotoxicity in vitro : Result: positive
Remarks: In vitro tests have shown mutagenic effects.

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Application Route: Skin contact
Result: negative

Cumene:

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

: Method: OECD Test Guideline 471
Result: negative

: Method: OECD Test Guideline 476
Result: negative

: Method: OECD Test Guideline 482
Result: negative

: Test Type: Ames test
Result: positive

Genotoxicity in vivo : Species: Rat
Application Route: Intraperitoneal
Exposure time: 72 h
Method: OECD Test Guideline 474
Result: Equivocal

Species: Mouse
Application Route: inhalation (gas)
Exposure time: 14 w
Method: OECD Test Guideline 474
Result: negative

acetophenone:

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

: Method: OECD Test Guideline 476
Result: negative

: Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Species: Mouse

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Application Route: Intraperitoneal
Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

Not classified based on available information.

Ingredients:

Methyl Acetoacetate:

Remarks: This information is not available.

Cumene hydroperoxide:

Remarks: This information is not available.

Cumene:

Species: Rat
Application Route: inhalation (gas)
Exposure time: 2 Years
LOEC: 250
Method: OECD Test Guideline 451
Result: negative

Species: Mouse
Application Route: inhalation (gas)
Exposure time: 2 Years
LOEC: 125
Method: OECD Test Guideline 451
Result: negative

Carcinogenicity - Assessment : Carcinogenicity classification not possible from current data.

IARC

Group 2B: Possibly carcinogenic to humans

Cumene 98-82-8

OSHA

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.

NTP

Reasonably anticipated to be a human carcinogen

Cumene 98-82-8

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Ingredients:

Methyl Acetoacetate:

Effects on fertility : Species: Rat
Application Route: Ingestion

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General Toxicity Parent: NOAEL: > 1,000
Method: OECD Test Guideline 422
Result: negative

Cumene hydroperoxide:

Effects on fertility : Remarks: No data available

Effects on fetal development : Remarks: No data available

Cumene:

Effects on fetal development : Species: Rabbit
Application Route: inhalation (vapor)
General Toxicity Maternal: LOAEL: 500
Developmental Toxicity: NOAEL: 2,300
Method: OECD Test Guideline 414

Species: Rat
Application Route: inhalation (vapor)
General Toxicity Maternal: NOAEL: 100
Developmental Toxicity: NOAEL: > 1,200
Method: OECD Test Guideline 414

acetophenone:

Effects on fertility : Species: Rat
Application Route: Ingestion
General Toxicity Parent: NOAEL: 225 mg/kg body weight
General Toxicity F1: NOAEL: 225 mg/kg body weight
Method: OECD Test Guideline 422
Result: negative

Species: Rat
Application Route: Ingestion
General Toxicity Parent: LOAEL: 750 mg/kg body weight
General Toxicity F1: LOAEL: 750 mg/kg body weight
Method: OECD Test Guideline 422

Effects on fetal development : Species: Mouse
Application Route: Ingestion
General Toxicity Maternal: NOAEL: >= 175 mg/kg body weight
Teratogenicity: NOAEL: >= 175 mg/kg body weight
Developmental Toxicity: NOAEL: >= 175 mg/kg body weight
Method: OECD Test Guideline 414
Result: negative

2-Naphthalenol, 1-[[4-(phenylazo)phenyl]azo]-, ar-heptyl ar',ar''-Me derivs.:

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

STOT-single exposure

Not classified based on available information.

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Ingredients:

Cumene:

Assessment: May cause respiratory irritation.

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Ingredients:

Cumene hydroperoxide:

Assessment: May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Ingredients:

Methyl Acetoacetate:

Species: Rat
NOAEL: 1,000 mg/kg
Application Route: Ingestion
Exposure time: 28 d
Method: OECD Test Guideline 407

Cumene hydroperoxide:

Species: Rat
NOAEL: 0.031 mg/l
Application Route: inhalation (dust/mist/fume)
Exposure time: 90 d

Cumene:

Species: Rat
NOAEL: > 536 mg/kg
Application Route: oral (feed)

Species: Rat
NOAEL: 125 mg/kg
Application Route: inhalation (vapor)
Method: OECD Test Guideline 413

acetophenone:

Species: Rat
NOAEL: 225 mg/kg
LOAEL: 750 mg/kg
Application Route: Ingestion
Method: OECD Test Guideline 422

Aspiration toxicity

Not classified based on available information.

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Ingredients:

Cumene:

May be fatal if swallowed and enters airways.

Further information

Product:

Remarks: Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Ingredients:

Methyl Acetoacetate:

- Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 111.4 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
- Toxicity to algae : NOEC (Desmodesmus subspicatus (green algae)): 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Cumene hydroperoxide:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 3.9 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 18 mg/l
Exposure time: 48 h
- Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): 1.6 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Cumene:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4.8 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2.14 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
- Toxicity to algae : EC50 (Desmodesmus subspicatus (green algae)): 2.01 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.35 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

Toxicity to microorganisms : EC50: > 2,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Ecotoxicology Assessment

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

acetophenone:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 162 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 528 mg/l
Exposure time: 48 h

Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (green algae)): 86.4 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 24.8 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : IC50: > 1,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Persistence and degradability

Ingredients:

Methyl Acetoacetate:

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

Cumene hydroperoxide:

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301B

Cumene:

Biodegradability : Result: Readily biodegradable.

acetophenone:

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

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Benzenemethanol, alpha,alpha-dimethyl-:

Biodegradability : Remarks: No data available

Bioaccumulative potential

Ingredients:

Methyl Acetoacetate:

Partition coefficient: n-octanol/water : log Pow: -0.4 (20 °C)

Cumene hydroperoxide:

Partition coefficient: n-octanol/water : log Pow: 1.6

Cumene:

Bioaccumulation : Bioconcentration factor (BCF): 94.69
Remarks: Calculation

Partition coefficient: n-octanol/water : log Pow: 3.55 (23 °C)

acetophenone:

Bioaccumulation : Bioconcentration factor (BCF): 0.48

Partition coefficient: n-octanol/water : log Pow: 1.63

Benzenemethanol, alpha,alpha-dimethyl-:

Partition coefficient: n-octanol/water : Remarks: No data available

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 unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

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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.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Dispose of wastes in an approved waste disposal facility.
- Contaminated packaging : 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.
Dispose of in accordance with local regulations.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

- UN number : UN 3109
Proper shipping name : ORGANIC PEROXIDE TYPE F, LIQUID
(CUMYL HYDROPEROXIDE)
Class : 5.2
Packing group : Not assigned by regulation
Labels : 5.2

IATA-DGR

- UN/ID No. : UN 3109
Proper shipping name : Organic peroxide type F, liquid
(Cumyl hydroperoxide)
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 3109
Proper shipping name : ORGANIC PEROXIDE TYPE F, LIQUID
(CUMYL HYDROPEROXIDE)
Class : 5.2
Packing group : Not assigned by regulation
Labels : 5.2
EmS Code : F-J, S-R
Marine pollutant : yes

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

Not applicable for product as supplied.

Domestic regulation

49 CFR

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| | | |
|----------------------|---|---|
| UN/ID/NA number | : | UN 3109 |
| Proper shipping name | : | Organic peroxide type F, liquid (Cumyl Hydroperoxide, <=45%) |
| Class | : | 5.2 |
| Packing group | : | Not assigned by regulation |
| Labels | : | ORGANIC PEROXIDE |
| ERG Code | : | 145 |
| Marine pollutant | : | yes |

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) |
|----------------------|---------|-----------------------|--------------------------------|
| Cumene hydroperoxide | 80-15-9 | 10 | 24 |

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

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

SARA 302 : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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

| | |
|----------------------|---------|
| Cumene hydroperoxide | 80-15-9 |
| Cumene | 98-82-8 |
| acetophenone | 98-86-2 |

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):

| | |
|--------------|---------|
| Cumene | 98-82-8 |
| acetophenone | 98-86-2 |

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):

| | |
|----------------------|----------|
| Methyl Acetoacetate | 105-45-3 |
| Cumene hydroperoxide | 80-15-9 |
| Cumene | 98-82-8 |
| acetophenone | 98-86-2 |

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

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Xylene 1330-20-7
Ethylbenzene 100-41-4

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Xylene 1330-20-7
Ethylbenzene 100-41-4

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

California Prop. 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

Cumene 98-82-8
Ethylbenzene 100-41-4

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

DSL (CA) : All components of this product are on the Canadian DSL
NZIoC (NZ) : 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.

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 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

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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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