# SAFETY DATA SHEET

# HERO® 21 EC

| Version | Revision Date: | SDS Number: | Date of last issue: - |
|---|---|---|---|
| 3.0 | 29.08.2023 | 50000397 | Date of first issue: 09.10.2020 |

## SECTION 1. IDENTIFICATION

Product name : HERO® 21 EC

**Manufacturer or supplier's details**

Company : FMC Corporation

Address : 2929 WALNUT ST
PHILADELPHIA PA 19104
USA

Telephone : (215) 299-6000

Emergency telephone : +506-40003869
911

Medical Emergency Number : Costa Rica - National Center of Poisoning - (506) 2223-1028; 800-INTOXICA
Dominican Republic: DOMINICAN REPUBLIC - Center for Drug Information and Poisoning - (809) 562-6601 Ext. 1801
El Salvador - Rosales National Hospital - (503) 2231-9262
Guatemala - Center of Toxicological Information and Assistance - (502) 2251-3560 / 2232-0735
Honduras - Hospital School - (504) 232-6105
Nicaragua - National Center of Toxicology - (505) 2289-4700 ext. 1294 cel. 8755-0983
Panama Center of Research and Information on Medications and Toxicology (507) 523-4948

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

Recommended use : Insecticide

Restrictions on use : Use as recommended by the label.

## SECTION 2. HAZARDS IDENTIFICATION

**GHS Classification**

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Skin corrosion/irritation : Category 3

Skin sensitization : Category 1

| | | |
|---|---|---|
| Carcinogenicity | : | Category 2 |
| Specific target organ toxicity - single exposure | : | Category 1 (Central nervous system) |
| Specific target organ toxicity - single exposure | : | Category 2 (Nervous system) |
| Specific target organ toxicity - single exposure | : | Category 3 (Respiratory system, Central nervous system) |
| Specific target organ toxicity - repeated exposure | : | Category 1 (Central nervous system) |
| Specific target organ toxicity - repeated exposure | : | Category 2 (Nervous system) |
| Aspiration hazard | : | Category 1 |
| Short-term (acute) aquatic hazard | : | Category 1 |
| Long-term (chronic) aquatic hazard | : | Category 1 |

**GHS label elements**

Hazard pictograms :

Signal Word : Danger

Hazard Statements :

H302 + H332 Harmful if swallowed or if inhaled.
H304 May be fatal if swallowed and enters airways.
H316 Causes mild skin irritation.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H370 Causes damage to organs (Central nervous system).
H371 May cause damage to organs (Nervous system).
H372 Causes damage to organs (Central nervous system) through prolonged or repeated exposure.
H373 May cause damage to organs (Nervous system) through prolonged or repeated exposure.
H410 Very 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.
P260 Do not breathe mist or vapors.
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.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.
P331 Do NOT induce vomiting.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

**Storage:**

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

**Disposal:**

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

**Other hazards which do not result in classification**

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

**Components**

| Chemical name | CAS-No. | Concentration (% w/w) |
|---|---|---|
| Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified | 64742-94-5 | >= 50 -< 70 |
| Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified | 64742-56-9 | >= 20 -< 30 |
| 2-methylnaphthalene | 91-57-6 | >= 10 -< 20 |
| Bifenthrin | 82657-04-3 | >= 10 -< 20 |
| 1-methylnaphthalene | 90-12-0 | >= 5 -< 10 |

| | | |
|---|---|---|
| cypermethrin (ISO) | 52315-07-8 | >= 2,5 -< 5 |
| calcium dodecylbenzenesulphonate | 26264-06-2 | >= 2,5 -< 3 |
| 2-ethylhexan-1-ol | 104-76-7 | >= 1 -< 2,5 |
| naphthalene | 91-20-3 | >= 0,25 -< 1 |

## SECTION 4. FIRST AID MEASURES

| | | |
|---|---|---|
| General advice | : | Move out of dangerous area.<br>Show this safety data sheet to the doctor in attendance.<br>Symptoms of poisoning may appear several hours later.<br>Do not leave the victim unattended. |
| If inhaled | : | Consult a physician after significant exposure.<br>If unconscious, place in recovery position and seek medical advice. |
| In case of skin contact | : | Wash off with soap and water.<br>If symptoms persist, call a physician.<br>If on clothes, remove clothes.<br>Wash contaminated clothing before re-use. |
| In case of eye contact | : | Flush eyes with water as a precaution.<br>Remove contact lenses.<br>Protect unharmed eye.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist. |
| If swallowed | : | Clean mouth with water and drink afterwards plenty of water.<br>Keep respiratory tract clear.<br>Do NOT induce vomiting.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person.<br>If symptoms persist, call a physician.<br>Take victim immediately to hospital. |
| Most important symptoms and effects, both acute and delayed | : | Exposure to skin may result in mild symptoms include itching, hives or rash, and skin redness. More severe symptoms include sneezing, itchy watery eyes, and difficulty breathing.<br>Swallowing or inhaling may result in sudden shortness of breath, coughing, nausea and or abdominal pain.<br>Harmful if swallowed or if inhaled.<br>May be fatal if swallowed and enters airways.<br>Causes mild skin irritation.<br>May cause an allergic skin reaction.<br>May cause respiratory irritation.<br>May cause drowsiness or dizziness.<br>Suspected of causing cancer.<br>Causes damage to organs.<br>Causes damage to organs through prolonged or repeated exposure. |
| Protection of first-aiders | : | First Aid responders should pay attention to self-protection |

and use the recommended protective clothing
Avoid inhalation, ingestion and contact with skin and eyes.
Avoid inhalation, ingestion and contact with skin and eyes.

Notes to physician : Treat symptomatically.

## SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Dry chemical, CO2, water spray or regular foam.

Unsuitable extinguishing media : Do not spread spilled material with high-pressure water streams.

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Fire may produce irritating, corrosive and/or toxic gases.
Carbon oxides
Fluorinated compounds
Chlorinated compounds
Hydrogen chloride
Hydrogen fluoride
Nitrogen oxides (NOx)
Hydrogen cyanide
Sulfur oxides
Chlorine compounds

Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.
Use a water spray to cool fully closed containers.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters : Firefighters should wear protective clothing and self-contained breathing apparatus.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Ensure adequate ventilation.
Use personal protective equipment.
If it can be safely done, stop the leak.
Do not touch or walk through the spilled material.

Environmental precautions : Prevent further leakage or spillage if safe to do so.
Prevent product from entering drains.

If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Never return spills in original containers for re-use.
Collect as much of the spill as possible with a suitable absorbent material.
Pick up and transfer to properly labeled containers.
Keep in suitable, closed containers for disposal.

## SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

Materials to avoid : Do not store near acids.

Further information on storage stability : No decomposition if stored and applied as directed.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Ingredients with workplace control parameters**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|---|---|---|---|---|
| Solvent naphtha (petroleum), | 64742-94-5 | TWA | 200 mg/m3 | CR OEL |

| | | | | |
|---|---|---|---|---|
| heavy arom.; Kerosine — unspecified | | | (total hydrocarbon vapor) | |
| | | Further information: Confirmed animal carcinogen, Risk of cutaneous absorption | | |
| | | TWA | 200 mg/m3 (total hydrocarbon vapor) | ACGIH |
| Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified | 64742-56-9 | TWA | 5 mg/m3 | CR OEL |
| | | Further information: Not classifiable as a human carcinogen, Upper Respiratory Tract irritation | | |
| | | TWA (Inhalable particulate matter) | 5 mg/m3 | ACGIH |
| 2-methylnaphthalene | 91-57-6 | TWA | 0,5 ppm | CR OEL |
| | | Further information: Not classifiable as a human carcinogen, Risk of cutaneous absorption | | |
| 1-methylnaphthalene | 90-12-0 | TWA | 0,5 ppm | CR OEL |
| | | Further information: Not classifiable as a human carcinogen, Risk of cutaneous absorption | | |
| 2-ethylhexan-1-ol | 104-76-7 | TWA | 5 ppm | ACGIH |
| naphthalene | 91-20-3 | TWA | 10 ppm | CR OEL |
| | | Further information: Confirmed animal carcinogen, Risk of cutaneous absorption, Upper Respiratory Tract irritation, cataract, Hemolytic anemia | | |
| | | TWA | 10 ppm | ACGIH |

**Personal protective equipment**

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

Hand protection
Material : Protective gloves

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Protective measures : Plan first aid action before beginning work with this product.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Provide adequate ventilation.
Do not inhale aerosol.
When using do not eat or drink.

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

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | |
|---|---|---|
| Physical state | : | liquid |
| Form | : | liquid |
| Color | : | brown |
| Odor | : | hydrocarbon-like |
| Odor Threshold | : | No data available |
| pH | : | ca. 4,4 (22,7 °C)<br>Concentration: 10 g/l |
| Melting point/range | : | No data available |
| Boiling point/boiling range | : | No data available |
| Flash point | : | > 105 °C |
| Evaporation rate | : | No data available |
| Self-ignition | : | No data available |
| Upper explosion limit / Upper flammability limit | : | No data available |
| Lower explosion limit / Lower flammability limit | : | No data available |
| Vapor pressure | : | No data available |
| Relative vapor density | : | No data available |
| Density | : | ca. 0,99 g/cm3 |
| Solubility(ies) | | |
| Water solubility | : | soluble |
| Solubility in other solvents | : | soluble |

| | | |
|---|---|---|
| | | Solvent: Methanol |
| | | soluble<br>Solvent: hexane |
| Partition coefficient: n-octanol/water | : | No data available |
| Autoignition temperature | : | No data available |
| Decomposition temperature | : | No data available |
| Viscosity | | |
| Viscosity, dynamic | : | No data available |
| Viscosity, kinematic | : | 4,23 mm2/s (ca. 20 °C) |
| Explosive properties | : | Not explosive |
| Oxidizing properties | : | Non-oxidizing |
| Surface tension | : | 0,04 mN/m, ca. 25,2 °C |
| Molecular weight | : | Not applicable |
| Metal corrosion rate | : | Not corrosive to metals. |

## SECTION 10. STABILITY AND REACTIVITY

| | | |
|---|---|---|
| Reactivity | : | No decomposition if stored and applied as directed. |
| Chemical stability | : | No decomposition if stored and applied as directed. |
| Possibility of hazardous reactions | : | Vapors may form explosive mixture with air.<br>No decomposition if stored and applied as directed. |
| Conditions to avoid | : | Heat, flames and sparks.<br>Avoid formation of aerosol. |
| Incompatible materials | : | Avoid strong acids, bases, and oxidizers. |

## SECTION 11. TOXICOLOGICAL INFORMATION

**Acute toxicity**

Harmful if swallowed or if inhaled.

**Product:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat, male): ca. 550 mg/kg<br>Method: OECD Test Guideline 425 |

Symptoms: Tremors

Acute inhalation toxicity : LC50 (Rat, female): 1,8 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Symptoms: Tremors

Acute dermal toxicity : LD50 (Rat, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 402
Symptoms: Tremors
Assessment: The substance or mixture has no acute dermal toxicity

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Acute oral toxicity : LD50 (Rat, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 4,688 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

**Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:**

Acute oral toxicity : LD50 (Rat, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat, male and female): > 5,53 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 402
Remarks: Based on data from similar materials

**2-methylnaphthalene:**

Acute oral toxicity : LD50 (Rat): 1.630 mg/kg

**Bifenthrin:**

Acute oral toxicity : LD50 (Rat, male and female): 50,2 - 58,8 mg/kg
Symptoms: Convulsions, Tremors

Acute inhalation toxicity : LC50 (Rat, female): 0,6 - 1,2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Symptoms: Tremors, Convulsions

LC50 (Rat, male): 1,10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Symptoms: Tremors, Fatality

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Remarks: no mortality

**1-methylnaphthalene:**

Acute oral toxicity : LD50 (Rat): 1.840 mg/kg

**cypermethrin (ISO):**

Acute oral toxicity : LD50 (Rat, female): 810 - 2.000 mg/kg
Method: OECD Test Guideline 425
Symptoms: abnormal posture, hypoactivity, ataxia, Tremors
GLP: yes

LD50 (Rat, male and female): 69,2 - 142,3 mg/kg
Method: FIFRA 81.01
GLP: yes

Acute inhalation toxicity : LC50 (Rat, male and female): 0,52 - 2,06 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: yes

Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 402
Symptoms: Irritation
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: no mortality

**calcium dodecylbenzenesulphonate:**

Acute oral toxicity : LD50 (Rat, male and female): 1.300 mg/kg
Remarks: Based on data from similar materials

Acute inhalation toxicity : Remarks: Not classified

| | | |
|---|---|---|
| Acute dermal toxicity | : | LD50 (Rat, male and female): > 2000 milligram per kilogram<br>Method: OECD Test Guideline 402<br>Assessment: The substance or mixture has no acute dermal toxicity<br>Remarks: Based on data from similar materials |

**2-ethylhexan-1-ol:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Rat, male): 2.047 mg/kg |
| Acute inhalation toxicity | : | LC50 (Rat): 4,3 mg/l<br>Exposure time: 4 h<br>Test atmosphere: dust/mist |
| Acute dermal toxicity | : | LD50 (Rat, male and female): > 3.000 mg/kg<br>Method: OECD Test Guideline 402<br>Assessment: The substance or mixture has no acute dermal toxicity |

**naphthalene:**

| | | |
|---|---|---|
| Acute oral toxicity | : | LD50 (Mouse, female): 710 mg/kg<br>Method: OECD Test Guideline 401 |
| Acute inhalation toxicity | : | LC0 (Rat, male and female): > 0,4 mg/l<br>Exposure time: 4 h<br>Test atmosphere: vapor<br>Method: OECD Test Guideline 403<br>Assessment: The substance or mixture has no acute inhalation toxicity |
| Acute dermal toxicity | : | LD50 (Rat, male and female): > 16.000 mg/kg<br>Method: OECD Test Guideline 402 |

**Skin corrosion/irritation**

Causes mild skin irritation.

**Product:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Assessment | : | Causes mild skin irritation. |
| Method | : | OECD Test Guideline 404 |
| Result | : | Mild skin irritant |

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Assessment | : | Repeated exposure may cause skin dryness or cracking. |
| Result | : | No skin irritation |
| Remarks | : | Minimal effects that do not meet the threshold for classification. |

Based on data from similar materials

**Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | No skin irritation |
| Remarks | : | Based on data from similar materials |

**2-methylnaphthalene:**

| | | |
|---|---|---|
| Result | : | Skin irritation |

**Bifenthrin:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | slight or no skin irritation. |
| GLP | : | yes |

| | | |
|---|---|---|
| Species | : | Rabbit |
| Method | : | OECD Test Guideline 404 |
| Result | : | slight or no skin irritation. |
| GLP | : | yes |

**1-methylnaphthalene:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Method | : | OECD Test Guideline 404 |
| Result | : | Mild skin irritation |

**cypermethrin (ISO):**

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

**calcium dodecylbenzenesulphonate:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Method | : | OECD Test Guideline 404 |
| Result | : | Skin irritation |

**2-ethylhexan-1-ol:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Method | : | OECD Test Guideline 404 |
| Result | : | Skin irritation |

**naphthalene:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | No skin irritation |

**Serious eye damage/eye irritation**

Not classified based on available information.

**Product:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | slight irritation |
| Assessment | : | Not classified as irritant |
| Method | : | OECD Test Guideline 405 |

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Assessment | : | No eye irritation |
| Remarks | : | Minimal effects that do not meet the threshold for classification.<br>Based on data from similar materials |

**Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | No eye irritation |
| Method | : | OECD Test Guideline 405 |
| Remarks | : | Based on data from similar materials |

**Bifenthrin:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | Slight or no eye irritation |
| Method | : | OECD Test Guideline 405 |
| GLP | : | yes |

**1-methylnaphthalene:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | No eye irritation |

**cypermethrin (ISO):**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | slight irritation |
| Assessment | : | Not classified as irritant |

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | No eye irritation |
| Assessment | : | Not classified as irritant |
| Method | : | OECD Test Guideline 405 |

**calcium dodecylbenzenesulphonate:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | Irreversible effects on the eye |
| Method | : | OECD Test Guideline 405 |

| | | |
|---|---|---|
| Remarks | : | Based on data from similar materials |
| Species | : | Rabbit |
| Result | : | Irreversible effects on the eye |
| Method | : | OECD Test Guideline 405 |

**2-ethylhexan-1-ol:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | Irritation to eyes, reversing within 21 days |
| Method | : | OECD Test Guideline 405 |

**naphthalene:**

| | | |
|---|---|---|
| Species | : | Rabbit |
| Result | : | No eye irritation |

**Respiratory or skin sensitization**

**Skin sensitization**

May cause an allergic skin reaction.

**Respiratory sensitization**

Not classified based on available information.

**Product:**

| | | |
|---|---|---|
| Test Type | : | Buehler Test |
| Species | : | Guinea pig |
| Assessment | : | May cause sensitization by skin contact. |
| Method | : | OECD Test Guideline 406 |
| Result | : | Causes sensitization. |
| Remarks | : | Causes sensitization. |

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

| | | |
|---|---|---|
| Test Type | : | Maximization Test |
| Species | : | Guinea pig |
| Result | : | Not a skin sensitizer. |
| Remarks | : | Based on data from similar materials |

**Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:**

| | | |
|---|---|---|
| Test Type | : | Buehler Test |
| Routes of exposure | : | Skin contact |
| Species | : | Guinea pig |
| Method | : | OECD Test Guideline 406 |
| Result | : | Not a skin sensitizer. |
| Remarks | : | Based on data from similar materials |

**Bifenthrin:**

| | | |
|---|---|---|
| Test Type | : | Maximization Test |
| Routes of exposure | : | Skin contact |
| Species | : | Guinea pig |
| Method | : | OECD Test Guideline 406 |
| Result | : | May cause sensitization by skin contact. |
| GLP | : | yes |

**cypermethrin (ISO):**

| | | |
|---|---|---|
| Test Type | : | Local lymph node assay (LLNA) |
| Routes of exposure | : | Dermal |
| Species | : | mice |
| Assessment | : | May cause sensitization by skin contact. |
| Method | : | OECD Test Guideline 429 |
| Result | : | May cause sensitization by skin contact. |

**calcium dodecylbenzenesulphonate:**

| | | |
|---|---|---|
| Test Type | : | Maximization Test |
| Species | : | Guinea pig |
| Method | : | OECD Test Guideline 406 |
| Result | : | Not a skin sensitizer. |
| Remarks | : | Based on data from similar materials |

**naphthalene:**

| | | |
|---|---|---|
| Test Type | : | Maximization Test |
| Species | : | Guinea pig |
| Method | : | OECD Test Guideline 406 |
| Result | : | Does not cause skin sensitization. |

**Germ cell mutagenicity**

Not classified based on available information.

**Product:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: Ames test<br>Method: OECD Test Guideline 471<br>Result: negative |
| Genotoxicity in vivo | : | Test Type: Micronucleus test<br>Species: Mouse<br>Method: OECD Test Guideline 474<br>Result: negative |
| Germ cell mutagenicity - Assessment | : | Test on bacterial cultures did not show mutagenic effects., Animal testing did not show any mutagenic effects. |

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: reverse mutation assay<br>Method: OECD Test Guideline 471<br>Result: negative |

Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Bone marrow chromosome aberration.
Species: Rat
Application Route: inhalation (vapor)
Result: negative

**Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:**

Genotoxicity in vitro : Test Type: reverse mutation assay
Metabolic activation: Metabolic activation
Method: OECD Test Guideline 471
Result: positive
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: negative
Remarks: Based on data from similar materials

**2-methylnaphthalene:**

Genotoxicity in vitro : Test Type: sister chromatid exchange assay
Test system: Human lymphocytes
Result: negative

Test Type: Ames test
Result: negative

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

**Bifenthrin:**

Genotoxicity in vitro : Test Type: gene mutation test
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Result: negative

Test Type: reverse mutation assay
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Mouse lymphoma assay
Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo : Test Type: Sex-linked Recessive Lethal Test
Species: Drosophila melanogaster (vinegar fly)
Result: negative

Test Type: unscheduled DNA synthesis assay
Species: Rat
Method: OECD Test Guideline 486
Result: negative

**1-methylnaphthalene:**

Genotoxicity in vitro : Test Type: sister chromatid exchange assay
Test system: Human lymphocytes
Result: negative

Test Type: Ames test
Result: negative

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

**cypermethrin (ISO):**

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

Test Type: unscheduled DNA synthesis assay
Test system: rat hepatocytes
Result: negative

Test Type: Chromosome aberration test in vitro
Metabolic activation: with and without metabolic activation
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: chromosome aberration assay
Species: Chinese hamster
Cell type: Bone marrow
Application Route: Oral
Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

**calcium dodecylbenzenesulphonate:**

Genotoxicity in vitro : Test Type: reverse mutation assay
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: chromosome aberration assay
Species: Rat (male and female)
Application Route: Oral
Exposure time: 90 d
Result: negative
Remarks: Based on data from similar materials

| | | |
|---|---|---|
| Germ cell mutagenicity - Assessment | : | Weight of evidence does not support classification as a germ cell mutagen. |

**2-ethylhexan-1-ol:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: reverse mutation assay<br>Method: OECD Test Guideline 471<br>Result: negative |
| Genotoxicity in vivo | : | Test Type: Micronucleus test<br>Species: Mouse<br>Application Route: Intraperitoneal injection<br>Result: negative |

**naphthalene:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Test Type: reverse mutation assay<br>Result: negative |
| Genotoxicity in vivo | : | Test Type: Micronucleus test<br>Species: Mouse<br>Application Route: Intraperitoneal injection<br>Result: negative |

**Carcinogenicity**

Suspected of causing cancer.

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

| | | |
|---|---|---|
| Species | : | Rat, male and female |
| Application Route | : | inhalation (vapor) |
| Exposure time | : | 12 month(s) |
| NOAEC | : | 1,8 mg/l |
| Result | : | negative |
| Remarks | : | Based on data from similar materials |
| Carcinogenicity - Assessment | : | Not classifiable as a human carcinogen. |

**Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:**

| | | |
|---|---|---|
| Species | : | Mouse, female |
| Application Route | : | Dermal |
| Exposure time | : | 78 weeks |
| Result | : | negative |
| Remarks | : | Based on data from similar materials |

**2-methylnaphthalene:**

| | | |
|---|---|---|
| Species | : | Mouse, male |
| Application Route | : | Oral |
| Exposure time | : | 81 w |
| Dose | : | 750, 1500 ppm |

| | | |
|---|---|---|
| LOAEL | : | 750 ppm |
| Result | : | equivocal |
| Symptoms | : | Tumor |
| Target Organs | : | Lungs |
| Remarks | : | Based on data from similar materials |
| Carcinogenicity - Assessment | : | Weight of evidence does not support classification as a carcinogen |

**Bifenthrin:**

| | | |
|---|---|---|
| Species | : | Rat, female |
| Application Route | : | Oral |
| Exposure time | : | 2 Years |
| NOAEL | : | 3 mg/kg bw/day |
| Result | : | negative |
| Species | : | Mouse, male |
| Application Route | : | Oral |
| Exposure time | : | 18 month(s) |
| NOAEL | : | 7,6 mg/kg bw/day |
| Result | : | positive |
| Symptoms | : | malignant tumors |

**1-methylnaphthalene:**

| | | |
|---|---|---|
| Species | : | Mouse, male |
| Application Route | : | Oral |
| Exposure time | : | 81 w |
| Dose | : | 750, 1500 ppm |
| LOAEL | : | 750 ppm |
| Result | : | equivocal |
| Symptoms | : | Tumor |
| Target Organs | : | Lungs |
| Carcinogenicity - Assessment | : | Weight of evidence does not support classification as a carcinogen |

**cypermethrin (ISO):**

| | | |
|---|---|---|
| Species | : | Rat |
| Application Route | : | Oral |
| Exposure time | : | 24 month(s) |
| NOAEL | : | 7,5 mg/kg bw/day |
| Result | : | negative |

**calcium dodecylbenzenesulphonate:**

| | | |
|---|---|---|
| Species | : | Rat, male and female |
| Application Route | : | Oral |
| Exposure time | : | 720 d |
| NOAEL | : | 250 mg/kg body weight |
| Result | : | negative |
| Remarks | : | Based on data from similar materials |

| | | |
|---|---|---|
| Carcinogenicity - Assessment | : | Weight of evidence does not support classification as a carcinogen |

**2-ethylhexan-1-ol:**

| | | |
|---|---|---|
| Species | : | Rat |
| Application Route | : | Oral |
| Exposure time | : | 24 month(s) |
| Result | : | negative |

**naphthalene:**

| | | |
|---|---|---|
| Species | : | Rat |
| Application Route | : | Inhalation |
| Exposure time | : | 2 Years |
| Result | : | positive |
| Carcinogenicity - Assessment | : | Limited evidence of carcinogenicity in animal studies |

**Reproductive toxicity**

Not classified based on available information.

**Components:**

**Bifenthrin:**

| | | |
|---|---|---|
| Effects on fertility | : | Test Type: Two-generation study<br>Species: Rat<br>Application Route: Oral<br>General Toxicity Parent: NOAEL: 3 mg/kg bw/day<br>General Toxicity F1: NOAEL: 5 mg/kg bw/day<br>Result: negative |
| Effects on fetal development | : | Test Type: Embryo-fetal development<br>Species: Rabbit<br>Application Route: Oral<br>General Toxicity Maternal: NOAEL: 2,7 mg/kg bw/day<br>Teratogenicity: NOAEL: 2,7 mg/kg bw/day<br>Symptoms: Maternal effects.<br>Result: No teratogenic effects.<br><br>Test Type: Embryo-fetal development<br>Species: Rat<br>Application Route: Oral<br>General Toxicity Maternal: NOAEL: 1 mg/kg bw/day<br>Teratogenicity: NOAEL: 2 mg/kg bw/day<br>Result: No teratogenic effects.<br><br>Species: Rat<br>Application Route: Oral<br>General Toxicity Maternal: LOAEL: 7,2 mg/kg bw/day<br>Developmental Toxicity: LOAEL: 7,2 mg/kg bw/day |

Embryo-fetal toxicity.: NOEL: 9,0 mg/kg bw/day
Method: OECD Test Guideline 426
Result: Animal testing did not show any effects on fertility., Some evidence of adverse effects on development, based on animal experiments.

**cypermethrin (ISO):**

Effects on fertility : Test Type: Two-generation study
Species: Rat
Application Route: Oral
General Toxicity F1: NOAEL: 22 mg/kg bw/day
Method: OECD Test Guideline 416
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 12,5 mg/kg bw/day
Developmental Toxicity: NOAEL: 35 mg/kg bw/day
Method: OECD Test Guideline 426
Result: negative
GLP: yes

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

**calcium dodecylbenzenesulphonate:**

Effects on fertility : Test Type: Fertility/early embryonic development
Species: Rat, male and female
Application Route: Ingestion
General Toxicity Parent: NOAEL: 400 mg/kg body weight
Method: OECD Test Guideline 422
Result: negative

Effects on fetal development : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Ingestion
General Toxicity Maternal: NOAEL: 300 mg/kg body weight
Developmental Toxicity: NOAEL: 600 mg/kg body weight
Method: OECD Test Guideline 422
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

**2-ethylhexan-1-ol:**

Effects on fetal development : Test Type: Embryo-fetal development
Species: Mouse
Application Route: Oral
Method: OECD Test Guideline 414
Result: negative

**naphthalene:**

| | | |
|---|---|---|
| Effects on fertility | : | Test Type: reproductive and developmental toxicity study<br>Species: Rat<br>Application Route: Inhalation<br>Result: negative |
| Effects on fetal development | : | Test Type: Embryo-fetal development<br>Species: Rat<br>Application Route: Oral<br>Method: OECD Test Guideline 414<br>Result: Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses |

**STOT-single exposure**

May cause respiratory irritation.
May cause drowsiness or dizziness.
Causes damage to organs (Central nervous system).
May cause damage to organs (Nervous system).

**Components:**

**2-methylnaphthalene:**

| | | |
|---|---|---|
| Assessment | : | May cause respiratory irritation.<br>May cause drowsiness or dizziness. |

**Bifenthrin:**

| | | |
|---|---|---|
| Target Organs | : | Central nervous system |
| Assessment | : | Causes damage to organs. |

**1-methylnaphthalene:**

| | | |
|---|---|---|
| Assessment | : | May cause respiratory irritation.<br>May cause drowsiness or dizziness. |

**cypermethrin (ISO):**

| | | |
|---|---|---|
| Target Organs | : | Nervous system |
| Assessment | : | The substance or mixture is classified as specific target organ toxicant, single exposure, category 2. |
| Assessment | : | May cause respiratory irritation. |

**2-ethylhexan-1-ol:**

| | | |
|---|---|---|
| Assessment | : | May cause respiratory irritation. |

**STOT-repeated exposure**

Causes damage to organs (Central nervous system) through prolonged or repeated exposure.
May cause damage to organs (Nervous system) through prolonged or repeated exposure.

**Components:**

**Bifenthrin:**

| | | |
|---|---|---|
| Target Organs | : | Central nervous system |
| Assessment | : | The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1. |

**cypermethrin (ISO):**

| | | |
|---|---|---|
| Target Organs | : | Nervous system |
| Assessment | : | The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2. |

**Repeated dose toxicity**

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

| | | |
|---|---|---|
| Species | : | Rat, male and female |
| NOAEC | : | 0,9 - 1,8 mg/l |
| Application Route | : | inhalation (vapor) |
| Exposure time | : | 12 months |

**2-methylnaphthalene:**

| | | |
|---|---|---|
| Species | : | Mouse, female |
| LOAEL | : | 50,3 mg/kg |
| Application Route | : | Oral |
| Exposure time | : | 81 w |
| Dose | : | 0, 50.3, 107.6 mg/kg-d |
| Symptoms | : | pulmonary effects, immune system effects |

| | | |
|---|---|---|
| Species | : | Mouse |
| Application Route | : | Dermal |
| Exposure time | : | 30 w |
| Number of exposures | : | 2/w |
| Dose | : | 119 mg/kg-application |
| Symptoms | : | pulmonary effects |
| Remarks | : | Based on data from similar materials |

**Bifenthrin:**

| | | |
|---|---|---|
| Species | : | Rat, male and female |
| NOEL | : | 100 ppm |
| Application Route | : | Oral - feed |
| Exposure time | : | 90 d |
| Remarks | : | No toxicologically significant effects were found. |

| | | |
|---|---|---|
| Species | : | Dog, male and female |
| NOEL | : | 2,5 mg/kg bw/day |
| Application Route | : | Oral - feed |
| Exposure time | : | 13 w |
| Symptoms | : | Tremors |

**1-methylnaphthalene:**

| | | |
|---|---|---|
| Species | : | Mouse, female |
| LOAEL | : | 50,3 mg/kg |
| Application Route | : | Oral |
| Exposure time | : | 81 w |
| Dose | : | 0, 50.3, 107.6 mg/kg-d |
| Symptoms | : | pulmonary effects, immune system effects |
| Remarks | : | Based on data from similar materials |

| | | |
|---|---|---|
| Species | : | Mouse |
| Application Route | : | Dermal |
| Exposure time | : | 30 w |
| Number of exposures | : | 2/w |
| Dose | : | 119 mg/kg-application |
| Symptoms | : | pulmonary effects |
| Remarks | : | Based on data from similar materials |

**cypermethrin (ISO):**

| | | |
|---|---|---|
| Species | : | Dog |
| NOAEL | : | 5 mg/kg |
| LOAEL | : | 15 mg/kg |
| Application Route | : | Oral |
| Exposure time | : | 1 yr |
| Dose | : | 1, 5, 15 mg/kg/d |
| Symptoms | : | Gastrointestinal disturbance, Neurological disorders |

| | | |
|---|---|---|
| Species | : | Dog |
| NOAEL | : | 6 mg/kg bw/day |
| LOAEL | : | 18 mg/kg bw/day |
| Application Route | : | Oral |
| Exposure time | : | 90 d |
| Target Organs | : | Nervous system |

| | | |
|---|---|---|
| Species | : | Rat |
| NOAEL | : | 16.7 mg/kg bw/day |
| LOAEL | : | 33.7 mg/kg bw/day |
| Application Route | : | Oral |
| Exposure time | : | 90 d |
| Target Organs | : | Nervous system |

| | | |
|---|---|---|
| Species | : | Dog |
| NOAEL | : | 6 mg/kg |
| LOAEL | : | 18 mg/kg |
| Application Route | : | Oral |
| Exposure time | : | 1 yr |
| Dose | : | 3, 6, 18, 33 mg/kg/d |
| Method | : | EPA OPP 83-1 |
| Symptoms | : | Tremors |

| | | |
|---|---|---|
| Species | : | Rat |

| | | |
|---|---|---|
| NOAEL | : | 4,5 mg/kg |
| Application Route | : | Oral |
| Exposure time | : | 2 yr |
| Dose | : | 0.6, 4.5, 30, 45 mg/kg/d |
| Target Organs | : | Liver |

**calcium dodecylbenzenesulphonate:**

| | | |
|---|---|---|
| Species | : | Rat, male and female |
| NOAEL | : | 85 mg/kg |
| LOAEL | : | 145 mg/kg |
| Application Route | : | Oral |
| Exposure time | : | 9 Months |
| Remarks | : | Based on data from similar materials |

| | | |
|---|---|---|
| Species | : | Rat, male |
| LOAEL | : | 286 mg/kg |
| Application Route | : | Skin contact |
| Exposure time | : | 15 Days |
| Remarks | : | Based on data from similar materials |

| | | |
|---|---|---|
| Species | : | Rat, male and female |
| NOAEL | : | 100 mg/kg bw/day |
| LOAEL | : | 200 mg/kg bw/day |
| Application Route | : | Oral - gavage |
| Exposure time | : | 28 - 54 days |
| Method | : | OECD Test Guideline 422 |
| Remarks | : | Based on data from similar materials |

**2-ethylhexan-1-ol:**

| | | |
|---|---|---|
| Species | : | Rat |
| | : | 250 mg/kg |
| Application Route | : | Oral |
| Exposure time | : | 13 weeks |
| Method | : | OECD Test Guideline 408 |

**Aspiration toxicity**

May be fatal if swallowed and enters airways.

**Product:**

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

May be fatal if swallowed and enters airways.

**Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:**

May be fatal if swallowed and enters airways.

**Bifenthrin:**
The substance does not have properties associated with aspiration hazard potential.

**1-methylnaphthalene:**
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

**cypermethrin (ISO):**
The substance does not have properties associated with aspiration hazard potential.

**Experience with human exposure**

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

| | | |
|---|---|---|
| Skin contact | : | Symptoms: Repeated exposure may cause skin dryness or cracking. |

**2-methylnaphthalene:**

| | | |
|---|---|---|
| Skin contact | : | Target Organs: Skin<br>Symptoms: Irritation |

**1-methylnaphthalene:**

| | | |
|---|---|---|
| Skin contact | : | Target Organs: Skin<br>Symptoms: Irritation |

**cypermethrin (ISO):**

| | | |
|---|---|---|
| General Information | : | Symptoms: May cause paraesthesia |

**Further information**

**Product:**

| | | |
|---|---|---|
| Remarks | : | Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.<br>Concentrations substantially above the TLV value may cause narcotic effects.<br>Solvents may degrease the skin. |

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

| | | |
|---|---|---|
| Remarks | : | Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Small |

amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

**Product:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Danio rerio (zebra fish)): 0,00718 mg/l<br>Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia): 0,00076 mg/l<br>Exposure time: 48 h |
| Toxicity to algae/aquatic plants | : | ErC50 (Pseudokirchneriella subcapitata (green algae)): 120,94 mg/l<br>End point: Growth rate<br>Exposure time: 72 h |
| Toxicity to soil dwelling organisms | : | LD50 (Eisenia fetida (earthworms)): 1.000 mg/kg<br>Exposure time: 14 d |
| Toxicity to terrestrial organisms | : | LD50 (Coturnix japonica (Japanese quail)): > 2.000 mg/kg |
| | | LD50 (Apis mellifera (bees)): 0,007 µg/bee<br>Exposure time: 48 h<br>Remarks: Contact |

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

| | | |
|---|---|---|
| Toxicity to fish | : | LL50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l<br>Exposure time: 96 h<br>Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EL50 (Daphnia magna (Water flea)): 1,4 mg/l<br>Exposure time: 48 h<br>Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : | EL50 (Pseudokirchneriella subcapitata (green algae)): 1 - 3 mg/l<br>Exposure time: 24 h<br>Method: OECD Test Guideline 201 |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | EL50 (Daphnia magna (Water flea)): 0,89 mg/l<br>Exposure time: 21 d<br>Method: OECD Test Guideline 211 |

| | | |
|---|---|---|
| Toxicity to microorganisms | : | LL50 (Tetrahymena pyriformis): 677,9 mg/l<br>Exposure time: 72 h<br>Test Type: Growth inhibition |

**Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:**

| | | |
|---|---|---|
| Toxicity to fish | : | LL50 (Pimephales promelas (fathead minnow)): > 100 mg/l<br>Exposure time: 96 h<br>Test Type: static test<br>Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EL50 (Daphnia magna (Water flea)): > 10.000 mg/l<br>Exposure time: 24 h<br>Test Type: static test<br>Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : | NOELR (Pseudokirchneriella subcapitata (green algae)): 100 mg/l<br>Exposure time: 72 h<br>Test Type: static test<br>Method: OECD Test Guideline 201 |
| Toxicity to fish (Chronic toxicity) | : | NOELR (Oncorhynchus mykiss (rainbow trout)): 1.000 mg/l<br>Exposure time: 14 d |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | (Daphnia magna (Water flea)): 10 mg/l<br>Exposure time: 21 d<br>Test Type: semi-static test<br>Method: OECD Test Guideline 211 |
| Toxicity to microorganisms | : | NOEL: > 1,93 mg/l<br>Exposure time: 0,16 h |

**2-methylnaphthalene:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Fish): 2 mg/l<br>Exposure time: 96 h<br>Test Type: static test |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia): 1,49 mg/l<br>End point: Immobilization<br>Test Type: static test |

**Bifenthrin:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Salmo gairdneri): 0,00015 mg/l<br>Exposure time: 96 h<br>Test Type: flow-through test<br><br>LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,00035 mg/l<br>Exposure time: 96 h<br>Test Type: flow-through test |

LC50 (Oncorhynchus mykiss (rainbow trout)): 0,000256 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

LC50 (Pimephales promelas (fathead minnow)): 0,000234 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia): 0,00011 mg/l
Exposure time: 48 h

LC50 (Daphnia): 0,0016 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (algae): 0,822 mg/l
Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 1.000

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 0,00012 mg/l
Exposure time: 21 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0,0013 µg/l
Exposure time: 21 d

NOEC (Daphnia magna (Water flea)): 0,00095 µg/l
Exposure time: 21 d

M-Factor (Chronic aquatic toxicity) : 100.000

Toxicity to soil dwelling organisms : LD50 (Eisenia fetida (earthworms)): > 16 mg/kg
Exposure time: 14 d

Method: OECD Test Guideline 216
Remarks: No significant adverse effect on Nitrogen mineralization.

Toxicity to terrestrial organisms : LD50 (Colinus virginianus (Bobwhite quail)): 1.800 mg/kg

LD50 (Anas platyrhynchos (Mallard duck)): > 2.150 mg/kg

LD50 (Apis mellifera (bees)): 0.1 - 0.35 µg/bee
Exposure time: 24 h
End point: Acute oral toxicity

Method: OECD Test Guideline 213

LD50 (Apis mellifera (bees)): 0.1 - 0.3 µg/bee
Exposure time: 24 h
End point: Acute contact toxicity
Method: OECD Test Guideline 214

**1-methylnaphthalene:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Pimephales promelas (fathead minnow)): 9 mg/l<br>Exposure time: 48 h<br>Test Type: static test |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 1,42 mg/l<br>End point: Immobilization<br>Exposure time: 48 h |
| Toxicity to algae/aquatic plants | : | EC50 (Pseudokirchneriella subcapitata (green algae)): 12 mg/l<br>Exposure time: 14 d<br>Test Type: static test |

**cypermethrin (ISO):**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 0,69 µg/l<br>Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 0,141 µg/l<br>Exposure time: 48 h |
| Toxicity to algae/aquatic plants | : | EC50 (algae): > 1 mg/l<br>Exposure time: 72 h |
| Toxicity to fish (Chronic toxicity) | : | NOEC (Fish): 0,015 µg/l<br>Exposure time: 21 d |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC (Crustaceans): 0,01 µg/l<br>Exposure time: 21 d |
| Toxicity to soil dwelling organisms | : | LC50 (worms): > 100 mg/kg<br>Exposure time: 14 d |
| Toxicity to terrestrial organisms | : | LD50 (Colinus virginianus (Bobwhite quail)): > 2.025 mg/kg |

NOEC (Colinus virginianus (Bobwhite quail)): 150 mg/kg
End point: Reproduction Test

LD50 (Apis mellifera (bees)): 0,059 µg/bee

LC50 (Apis mellifera (bees)): 0,033 µg/bee

**Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

**calcium dodecylbenzenesulphonate:**

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 10 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

LC50 (Pimephales promelas (fathead minnow)): 4,6 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3,5 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : NOEC (Pseudokirchneriella subcapitata (green algae)): 7,9 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

EC50 (Pseudokirchneriella subcapitata (green algae)): 65,4 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1,65 mg/l
Exposure time: 21 d
Remarks: Based on data from similar materials

NOEC (Daphnia magna (Water flea)): 1,18 mg/l
Exposure time: 21 d
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (activated sludge): 500 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): 1.000 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 207

Toxicity to terrestrial organisms : LD50 (Colinus virginianus (Bobwhite quail)): 1.356 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 223

**2-ethylhexan-1-ol:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Leuciscus idus (Golden orfe)): 17,1 - 28,2 mg/l<br>Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 39 mg/l<br>Exposure time: 48 h |
| Toxicity to algae/aquatic plants | : | EC10 (Desmodesmus subspicatus (green algae)): 3,2 mg/l<br>Exposure time: 72 h<br><br>EC50 (Desmodesmus subspicatus (green algae)): 11,5 mg/l<br>Exposure time: 72 h |
| Toxicity to microorganisms | : | EC50 (Anabaena flos-aquae (cyanobacterium)): 16,6 mg/l<br>Exposure time: 72 h |

**naphthalene:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 1,6 mg/l<br>Exposure time: 96 h<br>Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 2,16 mg/l<br>Exposure time: 48 h<br>Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : | EC50 (Skeletonema costatum (marine diatom)): 0,4 - 0,5 mg/l<br>Exposure time: 72 h |
| M-Factor (Acute aquatic toxicity) | : | 1 |
| Toxicity to fish (Chronic toxicity) | : | NOEC (Oncorhynchus kisutch (coho salmon)): 0,37 mg/l<br>Exposure time: 40 d |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC (Daphnia pulex (Water flea)): 0,59 mg/l<br>Exposure time: 125 d |
| M-Factor (Chronic aquatic toxicity) | : | 1 |
| Toxicity to microorganisms | : | IC50 (Bacteria): 29 mg/l<br>Exposure time: 24 h |

**Persistence and degradability**

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

| | | |
|---|---|---|
| Biodegradability | : | Result: Readily biodegradable.<br>Biodegradation: 58,6 %<br>Exposure time: 28 d |

Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

**Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:**

Biodegradability : Result: Inherently biodegradable.
Biodegradation: 31 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

**Bifenthrin:**

Biodegradability : Result: Not readily biodegradable.

**1-methylnaphthalene:**

Biodegradability : Result: Not readily biodegradable.

**cypermethrin (ISO):**

Biodegradability : Result: Not readily biodegradable.

**calcium dodecylbenzenesulphonate:**

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

**2-ethylhexan-1-ol:**

Biodegradability : Result: Readily biodegradable.

**naphthalene:**

Biodegradability : Result: Inherently biodegradable.
Biodegradation: 67 %
Exposure time: 12 d

**Bioaccumulative potential**

**Product:**

Bioaccumulation : Remarks: No data available

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Bioaccumulation : Remarks: The product/substance has a potential to bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3,72
Method: QSAR

**2-methylnaphthalene:**

Partition coefficient: n- : log Pow: 3,86

octanol/water

**Bifenthrin:**

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 1.709
Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is possible.
See section 9 for octanol-water partition coefficient.

Partition coefficient: n-octanol/water : log Pow: 6

**1-methylnaphthalene:**

Partition coefficient: n-octanol/water : log Pow: 3,87

**cypermethrin (ISO):**

Bioaccumulation : Remarks: Accumulation in aquatic organisms is expected.

Partition coefficient: n-octanol/water : log Pow: 5 - 6 (24 °C)

**calcium dodecylbenzenesulphonate:**

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 70,79
Method: QSAR

Partition coefficient: n-octanol/water : log Pow: 4,77 (25 °C)

**2-ethylhexan-1-ol:**

Partition coefficient: n-octanol/water : log Pow: 2,9 (25 °C)

**naphthalene:**

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 168

Partition coefficient: n-octanol/water : log Pow: 3,7

**Mobility in soil**

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Distribution among environmental compartments : Remarks: Expected to partition to sediment and wastewater solids. Moderately volatile.

**Bifenthrin:**

| | | |
|---|---|---|
| Distribution among environmental compartments | : | Koc: 236610 ml/g, log Koc: 5,37<br>Remarks: immobile |
| Stability in soil | : | |

**cypermethrin (ISO):**

| | | |
|---|---|---|
| Distribution among environmental compartments | : | Remarks: immobile |

**Other adverse effects**

**Product:**

| | | |
|---|---|---|
| Results of PBT and vPvB assessment | : | This mixture contains substances considered to be persistent, bioaccumulating and toxic (PBT). |
| Additional ecological information | : | An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.<br>Very toxic to aquatic life with long lasting effects. |

**Components:**

**cypermethrin (ISO):**

| | | |
|---|---|---|
| Additional ecological information | : | An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.<br>Very toxic to aquatic life with long lasting effects. |

## 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>Send to a licensed waste management company. |
| Contaminated packaging | : | It is prohibited to reuse, bury, burn, or sell containers.<br>Rinsable containers: Triple rinse containers of less than 20 liters and pressure rinse containers of 20 liters or more. Triple rinsing: Add water up to ¼ of the container's capacity, close and shake for 30 seconds. Pour the rinse water into the mixing tank, considering this volume of water within the recommended volume for mixing preparation. Perform this procedure three times. Pressure rinsing: Activate the pressure rinsing device for 30 seconds, considering the volume of water used as part of the recommended volume for mixing preparation. In both procedures, punctured the container on its base without damaging the label. In all cases, take the |

empty containers to collection points indicated by the local empty containers program.

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

**UNRTDG**

| | | |
|---|---|---|
| UN number | : | UN 3082 |
| Proper shipping name | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bifenthrin, Zeta-Cypermethrin) |
| Class | : | 9 |
| Packing group | : | III |
| Labels | : | 9 |

**IATA-DGR**

| | | |
|---|---|---|
| UN/ID No. | : | UN 3082 |
| Proper shipping name | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bifenthrin, Zeta-Cypermethrin) |
| Class | : | 9 |
| Packing group | : | III |
| Labels | : | Miscellaneous |
| Packing instruction (cargo aircraft) | : | 964 |
| Packing instruction (passenger aircraft) | : | 964 |
| Environmentally hazardous | : | yes |

**IMDG-Code**

| | | |
|---|---|---|
| UN number | : | UN 3082 |
| Proper shipping name | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bifenthrin, Zeta-Cypermethrin) |
| Class | : | 9 |
| Packing group | : | III |
| Labels | : | 9 |
| EmS Code | : | F-A, S-F |
| Marine pollutant | : | yes |

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

Not applicable for product as supplied.

**Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, 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.

## SECTION 15. REGULATORY INFORMATION

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

<** Phrase language not available: [ EN ] CUST - 100000000009381 **>

| | | |
|---|---|---|
| Law on Narcotics, Psychotropic Substances, Drugs of Unauthorized Use, Money-Laundering and Related Activities. | : | Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified<br>acetic acid |

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

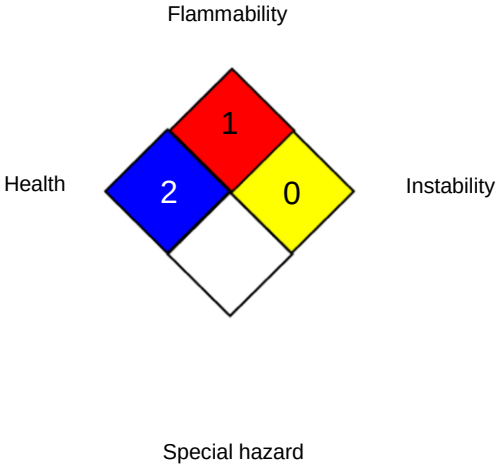
| | | |
|---|---|---|
| TCSI | : | On the inventory, or in compliance with the inventory |
| TSCA | : | Product contains substance(s) not listed on TSCA inventory. |
| AIIC | : | Not in compliance with the inventory |
| DSL | : | This product contains the following components that are not on the Canadian DSL nor NDSL.<br><br>2-METHYLBIPHENYL-3-YLMETHYL (Z)-(1RS,3RS)-3-(2-CHLORO-3,3,3-TRIFLUOROPROP-1-ENYL)-2,2-DIMETHYLCYCLOPROPANECARBOXYLATE<br>cypermethrin (ISO)<br>Fatty acids, C6-10, Me esters |
| ENCS | : | Not in compliance with the inventory |
| ISHL | : | Not in compliance with the inventory |
| KECI | : | On the inventory, or in compliance with the inventory |
| PICCS | : | Not in compliance with the inventory |
| IECSC | : | On the inventory, or in compliance with the inventory |
| NZIoC | : | Not in compliance with the inventory |
| TECI | : | Not in compliance with the inventory |

## SECTION 16. OTHER INFORMATION

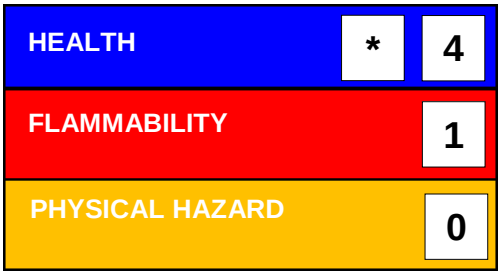
| | | |
|---|---|---|
| Revision Date | : | 29.08.2023 |
| Date format | : | dd.mm.yyyy |

**Further information**

**NFPA:**




**HMIS® IV:**




HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

**Full text of other abbreviations**

| | | |
|---|---|---|
| ACGIH | : | USA. ACGIH Threshold Limit Values (TLV) |
| CR OEL | : | Costa Rica. Maximum allowable occupational exposure limits in the workplace. |
| ACGIH / TWA | : | 8-hour, time-weighted average |
| CR OEL / TWA | : | Time weighted average 8-hr value |

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the

Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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CR / EN