SECTION 1. IDENTIFICATION

Product name : Cypermethrin Liquid Formulation

Manufacturer or supplier's details
Company name of supplier : Merck & Co., Inc
Address : 126 E. Lincoln Avenue
          Rahway, New Jersey U.S.A. 07065
Telephone : 908-740-4000
Emergency telephone : 1-908-423-6000
E-mail address : EHSDATASTEWARD@merck.com

Recommended use of the chemical and restrictions on use
Recommended use : Veterinary product
Restrictions on use : Not applicable

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin sensitization : Category 1
Carcinogenicity : Category 1B
Reproductive toxicity : Category 2
Specific target organ toxicity - single exposure : Category 2 (Nervous system)

GHS label elements
Hazard pictograms :

Signal Word : Danger

Hazard Statements : H317 May cause an allergic skin reaction.
                   H350 May cause cancer.
                   H361f Suspected of damaging fertility.
                   H371 May cause damage to organs (Nervous system).

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.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves, protective clothing, eye protection and face protection.

Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P308 + P311 IF exposed or concerned: Call a doctor.
P308 + P313 IF exposed or concerned: Get medical attention.
P333 + P313 IF skin irritation or rash occurs: Get medical attention.
P363 Wash contaminated clothing before reuse.

Storage:
P405 Store locked up.

Disposal:
P501 Dispose of contents and container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Propylene glycol</td>
<td>57-55-6</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Cypermethrin</td>
<td>52315-07-8</td>
<td>5.19</td>
</tr>
<tr>
<td></td>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>0.24</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately. When symptoms persist or in all cases of doubt seek medical advice.

If inhaled: If inhaled, remove to fresh air. Get medical attention.

In case of skin contact: In case of contact, immediately flush skin with soap and plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

In case of eye contact: Flush eyes with water as a precaution. Get medical attention if irritation develops and persists.

If swallowed: If swallowed, DO NOT induce vomiting. Get medical attention. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and: May cause an allergic skin reaction. May cause cancer.
SAFETY DATA SHEET

Cypermethrin Liquid Formulation

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date:</th>
<th>SDS Number:</th>
<th>Date of last issue:</th>
<th>Date of first issue:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3</td>
<td>03/02/2023</td>
<td>10849160-00004</td>
<td>02/22/2023</td>
<td>09/12/2022</td>
</tr>
</tbody>
</table>

- **delayed**: Suspected of damaging fertility.
  May cause damage to organs.

- **Protection of first-aiders**: First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

- **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**: None known.

- **Specific hazards during fire fighting**: Exposure to combustion products may be a hazard to health.

- **Hazardous combustion products**: Carbon oxides
  Nitrogen oxides (NOx)

- **Specific extinguishing methods**: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
  Use water spray to cool unopened containers.
  Remove undamaged containers from fire area if it is safe to do so.
  Evacuate area.

- **Special protective equipment for fire-fighters**: In the event of fire, wear self-contained breathing apparatus.
  Use personal protective equipment.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- **Personal precautions, protective equipment and emergency procedures**: Use personal protective equipment.
  Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

- **Environmental precautions**: Avoid release to the environment.
  Prevent further leakage or spillage if safe to do so.
  Prevent spreading over a wide area (e.g., by containment or oil barriers).
  Retain and dispose of contaminated wash water.
  Local authorities should be advised if significant spillages cannot be contained.

- **Methods and materials for containment and cleaning up**: Soak up with inert absorbent material.
  For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container.
  Clean up remaining materials from spill with suitable absorbent.
  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.
  Sections 13 and 15 of this SDS provide information regarding
SECTION 7. HANDLING AND STORAGE

Technical measures: See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation: If sufficient ventilation is unavailable, use with local exhaust ventilation.

Advice on safe handling:
- Do not get on skin or clothing.
- Do not breathe mist or vapors.
- Do not swallow.
- Avoid contact with eyes.
- Wash skin thoroughly after handling.
- Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment.
- Keep container tightly closed.
- Do not eat, drink or smoke when using this product.
- Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage:
- Keep in properly labeled containers.
- Store locked up.
- Keep tightly closed.
- Store in accordance with the particular national regulations.

Materials to avoid:
- Do not store with the following product types:
  - Strong oxidizing agents
  - Self-reactive substances and mixtures
  - Organic peroxides
  - Explosives
  - Gases

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene glycol</td>
<td>57-55-6</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>US WEEL</td>
</tr>
<tr>
<td>Cypermethrin</td>
<td>52315-07-8</td>
<td>TWA</td>
<td>50 µg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Further information: DSEN, Skin

| Formaldehyde    | 50-00-0    | TWA                           | 0.1 ppm                                      | ACGIH |
|                 |            | STEL                          | 0.3 ppm                                      | ACGIH |
|                 |            | TWA                           | 0.016 ppm                                    | NIOSH REL |
|                 |            | C                             | 0.1 ppm                                      | NIOSH REL |
|                 |            | PEL                           | 0.75 ppm                                     | OSHA CARC |
|                 |            | STEL                          | 2 ppm                                        | OSHA CARC |
|                 |            | TWA                           | 0.016 ppm                                    | NIOSH REL |
|                 |            | C                             | 0.1 ppm                                      | NIOSH REL |

Wipe limit 100 µg/100 cm² Internal
Engineering measures: Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., dripless quick connections). All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Laboratory operations do not require special containment.

Personal protective equipment
Respiratory protection: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection Material: Chemical-resistant gloves

Eye protection: Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a face shield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Skin and body protection: Work uniform or laboratory coat.

Hygiene measures: If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before re-use. The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: suspension
Color: pink
red
Odor: No data available
Odor Threshold: No data available
### SECTION 10. STABILITY AND REACTIVITY

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>3.0 - 6.0</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (liquids)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>1.02</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Water solubility: soluble</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Viscosity, kinematic: No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>The substance or mixture is not classified as oxidizing.</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
</tr>
<tr>
<td>Particle size</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

Reactivity: Not classified as a reactivity hazard.
SAFETY DATA SHEET

Cypermethrin Liquid Formulation

Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions: Can react with strong oxidizing agents.
Conditions to avoid: None known.
Incompatible materials: Oxidizing agents
Hazardous decomposition products: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity
Not classified based on available information.

Product:
Acute oral toxicity: Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Acute inhalation toxicity: Acute toxicity estimate: > 20000 ppm
Exposure time: 4 h
Test atmosphere: gas
Method: Calculation method

Acute dermal toxicity: Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Components:
Propylene glycol:
Acute oral toxicity: LD50 (Rat): 22,000 mg/kg
Acute inhalation toxicity: LC50 (Rat): > 44.9 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity: LD50 (Rabbit): > 2,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Cypermethrin:
Acute oral toxicity: LD50 (Rat, female): 367 mg/kg
LD50 (Rat, male): 891 mg/kg
Acute dermal toxicity: LD50 (Rat): > 4,800 mg/kg
LD50 (Rabbit): > 2,400 mg/kg
## Formaldehyde:

**Acute oral toxicity**: Acute toxicity estimate: 100 mg/kg  
Method: Expert judgment

**Acute inhalation toxicity**: Acute toxicity estimate: 100 ppm  
Exposure time: 4 h  
Test atmosphere: gas  
Method: Expert judgment

**Acute dermal toxicity**: LD50 (Rabbit): 270 mg/kg

### Skin corrosion/irritation

Not classified based on available information.

### Components:

#### Propylene glycol:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>OECD Test Guideline 404</td>
</tr>
<tr>
<td>Result</td>
<td>No skin irritation</td>
</tr>
</tbody>
</table>

#### Cypermethrin:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>Draize Test</td>
</tr>
<tr>
<td>Result</td>
<td>No skin irritation</td>
</tr>
</tbody>
</table>

#### Formaldehyde:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>OECD Test Guideline 404</td>
</tr>
<tr>
<td>Result</td>
<td>Corrosive after 3 minutes to 1 hour of exposure</td>
</tr>
</tbody>
</table>

### Serious eye damage/eye irritation

Not classified based on available information.

### Components:

#### Propylene glycol:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method</td>
<td>OECD Test Guideline 405</td>
</tr>
<tr>
<td>Result</td>
<td>No eye irritation</td>
</tr>
</tbody>
</table>

#### Cypermethrin:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>No eye irritation</td>
</tr>
<tr>
<td>Method</td>
<td>Draize Test</td>
</tr>
</tbody>
</table>

#### Formaldehyde:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rabbit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>Irreversible effects on the eye</td>
</tr>
</tbody>
</table>
Respiratory or skin sensitization

Skin sensitization
May cause an allergic skin reaction.

Respiratory sensitization
Not classified based on available information.

Components:

Propylene glycol:
Test Type: Maximization Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: negative

Cypermethrin:
Test Type: Magnusson-Kligman-Test
Species: Guinea pig
Assessment: Did not cause sensitization on laboratory animals.
Result: Not a skin sensitizer.

Formaldehyde:
Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: positive
Assessment: Probability or evidence of high skin sensitization rate in humans

Germ cell mutagenicity
Not classified based on available information.

Components:

Propylene glycol:
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

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

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

Cypermethrin:
Genotoxicity in vitro: Test Type: Chromosome aberration test in vitro
SAFETY DATA SHEET
Cypermethrin Liquid Formulation

Test system: Human lymphocytes
Result: negative

Test Type: Microbial mutagenesis assay (Ames test)
Result: negative

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

Genotoxicity in vivo:
- Test Type: In vivo micronucleus test
  Species: Rat
  Application Route: Oral
  Result: positive

- Test Type: In vivo micronucleus test
  Species: Rat
  Application Route: Dermal
  Result: positive

- Test Type: In vivo micronucleus test
  Species: Rat
  Application Route: Intraperitoneal injection
  Result: negative

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

Formaldehyde:
Genotoxicity in vitro:
- Test Type: Bacterial reverse mutation assay (AMES)
  Result: positive

- Test Type: Chromosome aberration test in vitro
  Result: positive

Genotoxicity in vivo:
- Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
  Species: Rat
  Application Route: Inhalation
  Result: positive

Germ cell mutagenicity - Assessment:
Positive result(s) from in vivo mammalian somatic cell mutagenicity tests.

Carcinogenicity:
May cause cancer.

Components:
Propylene glycol:
- Species: Rat
- Application Route: Ingestion
- Exposure time: 2 Years
- Result: negative
Formaldehyde:
Species: Rat
Application Route: Inhalation (gas)
Exposure time: 28 Months
Result: Positive
Carcinogenicity - Assessment:
IARC: Group 1: Carcinogenic to humans
Formaldehyde 50-00-0
OSHA: OSHA specifically regulated carcinogen
Formaldehyde 50-00-0
NTP: Known to be human carcinogen
Formaldehyde 50-00-0

Reproductive toxicity
Suspected of damaging fertility.

Components:
Propylene glycol:
Effects on fertility: Test Type: Two-generation reproduction toxicity study
Species: Mouse
Application Route: Ingestion
Result: negative
Effects on fetal development: Test Type: Embryo-fetal development
Species: Mouse
Application Route: Ingestion
Result: negative

Cypermethrin:
Effects on fertility: Test Type: Fertility
Species: Rat, male
Application Route: Oral
Fertility: LOAEL: 68 mg/kg body weight
Symptoms: Effects on fertility, male reproductive effects, Testicular effects

Test Type: Fertility
Species: Rat, male
Application Route: Oral
Fertility: NOAEL: 6.25 mg/kg body weight
Target Organs: Male reproductive organs, Testis

Effects on fetal development: Test Type: Three-generation reproduction toxicity study
Species: Mouse
Application Route: Oral
General Toxicity Maternal: NOAEL: 5 mg/kg body weight
Symptoms: No effects on fetal development, No effect on
reproduction capacity., Reduced body weight

Test Type: Reproduction/Developmental toxicity screening test
Species: Rabbit
Application Route: Oral
Teratogenicity: NOAEL: 30 mg/kg body weight
Symptoms: No effects on fetal development.

Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Oral
Teratogenicity: NOAEL: 17.5 mg/kg body weight
Symptoms: No effects on fetal development.

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

Formaldehyde:
Effects on fetal development: Test Type: Embryo-fetal development
Species: Rat
Application Route: inhalation (gas)
Result: negative

STOT-single exposure
May cause damage to organs (Nervous system).

Components:

Cypermethrin:
Target Organs: Nervous system
Assessment: May cause damage to organs.

Formaldehyde:
Assessment: May cause respiratory irritation.

STOT-repeated exposure
Not classified based on available information.

Components:

Formaldehyde:
Routes of exposure: inhalation (gas)
Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

Propylene glycol:
Species: Rat, male
SAFETY DATA SHEET
Cypermethrin Liquid Formulation

NOAEL : >= 1,700 mg/kg
Application Route : Ingestion
Exposure time : 2 y

Cypermethrin:
Species : Rat
NOAEL : 5 mg/kg
Application Route : Oral
Exposure time : 3 Months
Target Organs : Central nervous system

Species : Rabbit
NOAEL : 12.5 mg/kg
Application Route : Oral
Exposure time : 3 Months
Target Organs : Central nervous system

Species : Dog
NOAEL : 1 mg/kg
Application Route : Oral
Exposure time : 1 y
Symptoms : anxiety, central nervous system effects

Species : Rabbit
NOAEL : 20 mg/kg
Application Route : Dermal
Exposure time : 3 Weeks
Target Organs : male reproductive organs
Symptoms : reduced body weight gain, reduced food consumption

Formaldehyde:
Species : Rat
NOAEL : 6 ppm
LOAEL : 10 ppm
Application Route : inhalation (gas)
Exposure time : 28 Days

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

Components:

Cypermethrin:
General Information : Target Organs: Nervous system
Symptoms: muscle weakness, central nervous system effects
Remarks: Based on Human Evidence
The most common side effects are:
Remarks: paraesthesias
Further information

Components:

Cypermethrin:
Remarks : Dermal absorption possible

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Propylene glycol:
Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l
Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates : EC50 (Ceriodaphnia dubia (water flea)): 18,340 mg/l
Exposure time: 48 h
Toxicity to algae/aquatic plants : ErC50 (Skeletonema costatum (marine diatom)): 19,300 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Ceriodaphnia dubia (water flea)): 13,020 mg/l
Exposure time: 7 d
Toxicity to microorganisms : NOEC (Pseudomonas putida): > 20,000 mg/l
Exposure time: 18 h

Cypermethrin:
Toxicity to fish : EC50 (Oncorhynchus mykiss (rainbow trout)): 0.39 µg/l
Exposure time: 96 h
EC50 (Cyprinodon variegatus (sheepshead minnow)): 0.95 µg/l
Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.0036 µg/l
Exposure time: 48 h
EC50 (Americamysis): 0.00475 µg/l
Exposure time: 48 h
Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.14 µg/l
Exposure time: 30 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Mysidopsis bahia (opossum shrimp)): 0.000781 µg/l
Exposure time: 28 d

Formaldehyde:
Toxicity to fish : LC50 : 6.7 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates
EC50 (Daphnia pulex (Water flea)): 5.8 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants
EC50 (Desmodesmus subspicatus (green algae)): 4.89 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity)
NOEC (Oryzias latipes (Orange-red killifish)): >= 48 mg/l
Exposure time: 28 d
Method: OECD Test Guideline 202

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
NOEC (Daphnia magna (Water flea)): >= 6.4 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

Toxicity to microorganisms
EC50: 34.1 mg/l
Exposure time: 120 h

Persistence and degradability

Components:

Propylene glycol:
Biodegradability
Result: Readily biodegradable.
Biodegradation: 98.3 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Cypermethrin:
Stability in water
Degradation half life (DT50): 17 d

Formaldehyde:
Biodegradability
Result: Readily biodegradable.
Biodegradation: 91 %
Exposure time: 14 d
Method: OECD Test Guideline 301C
Remarks: Based on data from similar materials

Bioaccumulative potential

Components:

Propylene glycol:
Partition coefficient: n-octanol/water
log Pow: -1.07

Cypermethrin:
Bioaccumulation
Bioconcentration factor (BCF): 488

Partition coefficient: n-
log Pow: 6.6
SAFETY DATA SHEET

Cypermethrin Liquid Formulation

octanol/water

**Formaldehyde:**
Partition coefficient: n-octanol/water: log Pow: 0.35
Remarks: Calculation

**Mobility in soil**

**Components:**

**Cypermethrin:**
Distribution among environmental compartments: log Koc: 5.58
Stability in soil:

**Other adverse effects**
No data available

**SECTION 13. DISPOSAL CONSIDERATIONS**

**Disposal methods**
Waste from residues: Dispose of in accordance with local regulations.
Do not dispose of waste into sewer.
Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

**SECTION 14. TRANSPORT INFORMATION**

**International Regulations**

**UNRTDG**
UN number: UN 3082
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (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. (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. (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.

Domestic regulation

49 CFR
UN/ID/NA number: UN 3082
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Cypermethrin)
Class: 9
Packing group: III
Labels: CLASS 9
ERG Code: 171
Marine pollutant: yes (Cypermethrin)
Remarks: Above applies only to containers over 119 gallons or 450 liters.

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

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>100</td>
<td>41666</td>
</tr>
</tbody>
</table>

SARA 304 Extremely Hazardous Substances Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formaldehyde</td>
<td>50-00-0</td>
<td>100</td>
<td>41666</td>
</tr>
</tbody>
</table>

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards: Respiratory or skin sensitization
Carcinogenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)

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

Cypermethrin Liquid Formulation

Version 1.3  Revision Date: 03/02/2023  SDS Number: 10849160-00004  Date of last issue: 02/22/2023  Date of first issue: 09/12/2022

Formaldehyde  50-00-0  0.24 %

US State Regulations

Pennsylvania Right To Know

Water 7732-18-5
Propylene glycol 57-55-6
Cypermethrin 52315-07-8
Formaldehyde 50-00-0
Sodium hydroxide 1310-73-2

California Prop. 65

WARNING: This product can expose you to chemicals including Formaldehyde, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

California Regulated Carcinogens

Formaldehyde 50-00-0

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

AICS: not determined
DSL: not determined
IECSC: not determined

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Health</th>
<th>Special hazard</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS® IV:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>* 3</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

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)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA CARC : OSHA Specifically Regulated Chemicals/Carcinogens
US WEEL : USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / C : Ceiling value not be exceeded at any time.
OSHA CARC / PEL : Permissible exposure limit (PEL)
OSHA CARC / STEL : Excursion limit
US WEEL / TWA : 8-hr TWA

AIC - Australian Inventory of Industrial Chemicals; 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; IECS - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observe (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; SDAT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Korea 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


Revision Date: 03/02/2023

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and
shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.

US / Z8