

# SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard



## Cypermethrin Liquid Formulation

|         |                |                |                                 |
|---------|----------------|----------------|---------------------------------|
| Version | Revision Date: | SDS Number:    | Date of last issue: 04/16/2024  |
| 1.7     | 06/26/2024     | 10849160-00008 | Date of first issue: 09/12/2022 |

### SECTION 1. IDENTIFICATION

Product name : Cypermethrin Liquid Formulation  
Other means of identification : VANQUISH LONG WOOL SPRAY-ON LICE TREATMENT AND BLOWFLY STRIKE PREVENTIVE FOR LONG WOOLLED SHEEP AND UNSHORN LAMBS (38354)  
Vanquish (A005997)

#### 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 : Category 2 (Nervous system)  
- single exposure

#### 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.

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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

Substance / Mixture : Mixture

### Components

| Chemical name    | CAS-No.    | Concentration (% w/w) |
|------------------|------------|-----------------------|
| Propylene glycol | 57-55-6    | 6                     |
| Cypermethrin     | 52315-07-8 | 5.19                  |
| Formaldehyde     | 50-00-0    | 0.24                  |

## 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.

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|                                                             |   |                                                                                                                                                                                                                                                        |
|-------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Most important symptoms and effects, both acute and delayed | : | Get medical attention.<br>Rinse mouth thoroughly with water.<br>Never give anything by mouth to an unconscious person.<br>May cause an allergic skin reaction.<br>May cause cancer.<br>Suspected of damaging fertility.<br>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<br>Alcohol-resistant foam<br>Carbon dioxide (CO <sub>2</sub> )<br>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<br>Nitrogen oxides (NO <sub>x</sub> )                                                                                                                                                                                             |
| Specific extinguishing methods                 | : | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.<br>Use water spray to cool unopened containers.<br>Remove undamaged containers from fire area if it is safe to do so.<br>Evacuate area. |
| Special protective equipment for fire-fighters | : | In the event of fire, wear self-contained breathing apparatus.<br>Use personal protective equipment.                                                                                                                                            |

### SECTION 6. ACCIDENTAL RELEASE MEASURES

|                                                                     |   |                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal precautions, protective equipment and emergency procedures | : | Use personal protective equipment.<br>Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).                                                                                                                                                            |
| Environmental precautions                                           | : | Avoid release to the environment.<br>Prevent further leakage or spillage if safe to do so.<br>Prevent spreading over a wide area (e.g., by containment or oil barriers).<br>Retain and dispose of contaminated wash water.<br>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.<br>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.                                                                                |

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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 certain local or national requirements.

### 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

| Components                      | CAS-No.    | Value type<br>(Form of exposure) | Control parameters / Permissible concentration | Basis     |
|---------------------------------|------------|----------------------------------|------------------------------------------------|-----------|
| Propylene glycol                | 57-55-6    | TWA                              | 10 mg/m <sup>3</sup>                           | US WEEL   |
| Cypermethrin                    | 52315-07-8 | TWA                              | 50 µg/m <sup>3</sup> (OEB 3)                   | Internal  |
| Further information: DSEN, Skin |            |                                  |                                                |           |
|                                 |            | Wipe limit                       | 100 µg/100 cm <sup>2</sup>                     | Internal  |
| Formaldehyde                    | 50-00-0    | TWA                              | 0.1 ppm                                        | ACGIH     |
|                                 |            | STEL                             | 0.3 ppm                                        | ACGIH     |
|                                 |            | TWA                              | 0.016 ppm                                      | NIOSH REL |

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|  |  |      |                             |           |
|--|--|------|-----------------------------|-----------|
|  |  | C    | 0.1 ppm                     | NIOSH REL |
|  |  | PEL  | 0.75 ppm                    | OSHA CARC |
|  |  | STEL | 2 ppm                       | OSHA CARC |
|  |  | TWA  | 0.016 ppm<br>(Formaldehyde) | NIOSH REL |
|  |  | C    | 0.1 ppm<br>(Formaldehyde)   | NIOSH REL |

**Engineering measures** : Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less 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 faceshield 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

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|                                                  |   |                   |
|--------------------------------------------------|---|-------------------|
| Appearance                                       | : | suspension        |
| Color                                            | : | pink<br>red       |
| Odor                                             | : | No data available |
| Odor Threshold                                   | : | No data available |
| pH                                               | : | 3.0 - 6.0         |
| Melting point/freezing point                     | : | No data available |
| Initial boiling point and boiling range          | : | No data available |
| Flash point                                      | : | No data available |
| Evaporation rate                                 | : | No data available |
| Flammability (solid, gas)                        | : | Not applicable    |
| Flammability (liquids)                           | : | 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 |
| Relative density                                 | : | 1.02              |
| Density                                          | : | No data available |
| Solubility(ies)<br>Water solubility              | : | soluble           |
| Partition coefficient: n-octanol/water           | : | Not applicable    |
| Autoignition temperature                         | : | No data available |
| Decomposition temperature                        | : | No data available |
| Viscosity<br>Viscosity, kinematic                | : | No data available |
| Explosive properties                             | : | Not explosive     |

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|                          |   |                                                          |
|--------------------------|---|----------------------------------------------------------|
| Oxidizing properties     | : | The substance or mixture is not classified as oxidizing. |
| Molecular weight         | : | No data available                                        |
| Particle characteristics | : |                                                          |
| Particle size            | : | Not applicable                                           |

### SECTION 10. STABILITY AND REACTIVITY

|                                    |   |                                                |
|------------------------------------|---|------------------------------------------------|
| Reactivity                         | : | Not classified as a reactivity hazard.         |
| 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<br>Method: Calculation method                                             |
| Acute inhalation toxicity | : | Acute toxicity estimate: > 20000 ppm<br>Exposure time: 4 h<br>Test atmosphere: gas<br>Method: Calculation method |
| Acute dermal toxicity     | : | Acute toxicity estimate: > 5,000 mg/kg<br>Method: Calculation method                                             |

#### Components:

##### Propylene glycol:

|                           |   |                                                                             |
|---------------------------|---|-----------------------------------------------------------------------------|
| Acute oral toxicity       | : | LD50 (Rat): 22,000 mg/kg                                                    |
| Acute inhalation toxicity | : | LC50 (Rat): > 44.9 mg/l<br>Exposure time: 4 h<br>Test atmosphere: dust/mist |
| Acute dermal toxicity     | : | LD50 (Rabbit): > 2,000 mg/kg                                                |

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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  
Remarks: Based on national or regional regulation.

Acute inhalation toxicity : Acute toxicity estimate (Rat): 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:

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

#### Cypermethrin:

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

#### Formaldehyde:

Result : Corrosive after 3 minutes to 1 hour of exposure  
Remarks : Based on national or regional regulation.

### Serious eye damage/eye irritation

Not classified based on available information.

### Components:

#### Propylene glycol:

Species : Rabbit



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Result : No eye irritation  
Method : OECD Test Guideline 405

### Cypermethrin:

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

### Formaldehyde:

Result : Irreversible effects on the eye  
Remarks : Based on skin corrosivity.

### 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 : Human repeat insult patch test (HRIPT)  
Routes of exposure : Skin contact  
Species : Humans  
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

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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  
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: In vitro mammalian cell gene mutation test  
Result: positive

Test Type: Chromosome aberration test in vitro  
Result: positive

Genotoxicity in vivo : Test Type: In vivo mammalian alkaline comet assay

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Species: Mouse  
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 : Sufficient evidence of carcinogenicity in animal experiments

|             |                                                 |         |
|-------------|-------------------------------------------------|---------|
| <b>IARC</b> | Group 1: Carcinogenic to humans<br>Formaldehyde | 50-00-0 |
|-------------|-------------------------------------------------|---------|

|             |                                                        |         |
|-------------|--------------------------------------------------------|---------|
| <b>OSHA</b> | OSHA specifically regulated carcinogen<br>Formaldehyde | 50-00-0 |
|-------------|--------------------------------------------------------|---------|

|            |                                              |         |
|------------|----------------------------------------------|---------|
| <b>NTP</b> | Known to be human carcinogen<br>Formaldehyde | 50-00-0 |
|------------|----------------------------------------------|---------|

### Reproductive toxicity

Suspected of damaging fertility.

#### Components:

##### Propylene glycol:

|                      |                                                                                                                               |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------|
| Effects on fertility | : Test Type: Two-generation reproduction toxicity study<br>Species: Mouse<br>Application Route: Ingestion<br>Result: negative |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------|

|                              |                                                                                                             |
|------------------------------|-------------------------------------------------------------------------------------------------------------|
| Effects on fetal development | : Test Type: Embryo-fetal development<br>Species: Mouse<br>Application Route: Ingestion<br>Result: negative |
|------------------------------|-------------------------------------------------------------------------------------------------------------|

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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.

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### Formaldehyde:

Assessment : May cause respiratory irritation.

### STOT-repeated exposure

Not classified based on available information.

### Repeated dose toxicity

#### Components:

##### Propylene glycol:

|                   |                      |
|-------------------|----------------------|
| Species           | : Rat, male          |
| NOAEL             | : $\geq 1,700$ 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 |

### Aspiration toxicity

Not classified based on available information.

### Experience with human exposure

#### Components:

##### Cypermethrin:

|                     |                                                                                                                                  |
|---------------------|----------------------------------------------------------------------------------------------------------------------------------|
| General Information | : Target Organs: Nervous system<br>Symptoms: muscle weakness, central nervous system effects<br>Remarks: Based on Human Evidence |
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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<br>Exposure time: 96 h                                      |
| Toxicity to daphnia and other aquatic invertebrates                    | : | EC50 (Ceriodaphnia dubia (water flea)): 18,340 mg/l<br>Exposure time: 48 h                                          |
| Toxicity to algae/aquatic plants                                       | : | ErC50 (Skeletonema costatum (marine diatom)): 19,300 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201 |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC (Ceriodaphnia dubia (water flea)): 13,020 mg/l<br>Exposure time: 7 d                                           |
| Toxicity to microorganisms                                             | : | NOEC (Pseudomonas putida): > 20,000 mg/l<br>Exposure time: 18 h                                                     |

#### **Cypermethrin:**

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

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## Cypermethrin Liquid Formulation

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### Formaldehyde:

- |                                                                        |   |                                                                                                                    |
|------------------------------------------------------------------------|---|--------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                                       | : | LC50 (Morone saxatilis (striped bass)): 6.7 mg/l<br>Exposure time: 96 h                                            |
| Toxicity to daphnia and other aquatic invertebrates                    | : | EC50 (Daphnia pulex (Water flea)): 5.8 mg/l<br>Exposure time: 48 h                                                 |
| Toxicity to algae/aquatic plants                                       | : | ErC50 (Desmodesmus subspicatus (green algae)): 4.89 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201 |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC (Daphnia magna (Water flea)): 1.04 mg/l<br>Exposure time: 21 d<br>Method: OECD Test Guideline 211             |
| Toxicity to microorganisms                                             | : | EC50 (activated sludge): 19 mg/l<br>Exposure time: 3 h<br>Method: OECD Test Guideline 209                          |

### Persistence and degradability

#### Components:

##### Propylene glycol:

- |                  |   |                                                                                                                     |
|------------------|---|---------------------------------------------------------------------------------------------------------------------|
| Biodegradability | : | Result: Readily biodegradable.<br>Biodegradation: 98.3 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301F |
|------------------|---|---------------------------------------------------------------------------------------------------------------------|

##### Cypermethrin:

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

##### Formaldehyde:

- |                  |   |                                                                                                                   |
|------------------|---|-------------------------------------------------------------------------------------------------------------------|
| Biodegradability | : | Result: Readily biodegradable.<br>Biodegradation: 99 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301A |
|------------------|---|-------------------------------------------------------------------------------------------------------------------|

### Bioaccumulative potential

#### Components:

##### Propylene glycol:

- |                                        |   |                                                                    |
|----------------------------------------|---|--------------------------------------------------------------------|
| Partition coefficient: n-octanol/water | : | log Pow: -1.07<br>Method: Regulation (EC) No. 440/2008, Annex, A.8 |
|----------------------------------------|---|--------------------------------------------------------------------|

##### Cypermethrin:

- |                                        |   |                                    |
|----------------------------------------|---|------------------------------------|
| Bioaccumulation                        | : | Bioconcentration factor (BCF): 488 |
| Partition coefficient: n-octanol/water | : | log Pow: 6.6                       |

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### 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.<br>Do not dispose of waste into sewer.                                                                     |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal.<br>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.<br>(Cypermethrin) |
| Class                     | : | 9                                                                     |
| Packing group             | : | III                                                                   |
| Labels                    | : | 9                                                                     |
| Environmentally hazardous | : | yes                                                                   |

#### IATA-DGR

|                                          |   |                                                                       |
|------------------------------------------|---|-----------------------------------------------------------------------|
| UN/ID No.                                | : | UN 3082                                                               |
| Proper shipping name                     | : | Environmentally hazardous substance, liquid, n.o.s.<br>(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 |
|-----------|---|---------|



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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

| Components   | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|--------------|---------|--------------------|-----------------------------|
| Formaldehyde | 50-00-0 | 100                | 41666                       |

### SARA 304 Extremely Hazardous Substances Reportable Quantity

| Components   | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|--------------|---------|--------------------|-----------------------------|
| Formaldehyde | 50-00-0 | 100                | 41666                       |

### 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:

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|              |         |        |
|--------------|---------|--------|
| 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](http://www.P65Warnings.ca.gov).

#### California Regulated Carcinogens

|              |         |
|--------------|---------|
| Formaldehyde | 50-00-0 |
|--------------|---------|

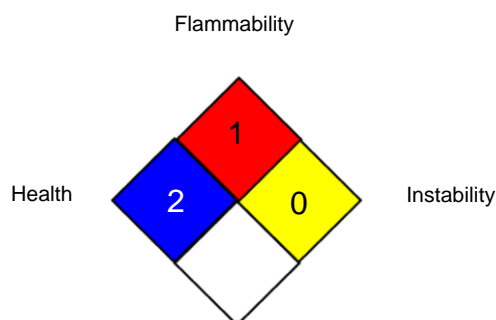
#### The ingredients of this product are reported in the following inventories:

|       |                  |
|-------|------------------|
| AICS  | : not determined |
| DSL   | : not determined |
| IECSC | : not determined |

## SECTION 16. OTHER INFORMATION

### Further information

#### NFPA 704:



#### HMIS® IV:

|                 |   |   |
|-----------------|---|---|
| HEALTH          | * | 3 |
| FLAMMABILITY    |   | 1 |
| PHYSICAL HAZARD |   | 0 |

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

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|                  |   |                                                                                           |
|------------------|---|-------------------------------------------------------------------------------------------|
| 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                                                                                  |

AIIC - 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; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECL - 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

|                                                                    |   |                                                                                                                                                                                   |
|--------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sources of key data used to compile the Material Safety Data Sheet | : | Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <a href="http://echa.europa.eu/">http://echa.europa.eu/</a> |
|--------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|               |   |            |
|---------------|---|------------|
| Revision Date | : | 06/26/2024 |
|---------------|---|------------|

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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.

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