

**Deltamethrin Liquid Formulation**

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

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**SECTION 1. IDENTIFICATION**

Product name : Deltamethrin Liquid Formulation

**Manufacturer or supplier's details**

Company : MSD

Address : Talcahuano 750, 6th floor, Ciudad Autonoma  
Buenos Aires, Argentina C1013AAP

Telephone : 908-740-4000

Emergency telephone : 1-908-423-6000

E-mail address : EHSDATASTEWARD@msd.com

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

Recommended use : Veterinary product

Restrictions on use : Not applicable

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**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification**

Acute toxicity (Oral) : Category 4

Serious eye damage/eye irritation : Category 1

Skin sensitization : Category 1

Reproductive toxicity : Category 2

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Central nervous system, Immune system)

Specific target organ toxicity - repeated exposure (Inhalation) : Category 2 (Central nervous system)

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

**GHS label elements**

## Deltamethrin Liquid Formulation

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

Hazard pictograms

:



Signal Word

:

Danger

Hazard Statements

:

H302 Harmful if swallowed.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.  
H373 May cause damage to organs (Central nervous system, Immune system) through prolonged or repeated exposure if swallowed.  
H373 May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.  
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.  
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 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
P302 + P352 IF ON SKIN: Wash with plenty of water.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
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:**

P405 Store locked up.

**Disposal:**

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

## Deltamethrin Liquid Formulation

Version 4.2      Revision Date: 03.11.2023      SDS Number: 1596211-00016      Date of last issue: 30.09.2023  
 Date of first issue: 25.04.2017

### Other hazards which do not result in classification

Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

#### Components

| Chemical name                                                                    | CAS-No.    | Concentration (% w/w) |
|----------------------------------------------------------------------------------|------------|-----------------------|
| Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl) | 9002-93-1  | >= 50 -< 70           |
| Deltamethrin (ISO)                                                               | 52918-63-5 | >= 3 -< 5             |

### 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 : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.  
 If easy to do, remove contact lens, if worn.  
 Get medical attention immediately.
- 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 delayed : Harmful if swallowed.  
 May cause an allergic skin reaction.  
 Causes serious eye damage.  
 Suspected of damaging fertility. Suspected of damaging the unborn child.  
 May cause damage to organs through prolonged or repeated exposure if swallowed.  
 May cause damage to organs through prolonged or repeated exposure if inhaled.  
 This product contains a pyrethroid.  
 Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.
- 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.

**Deltamethrin Liquid Formulation**

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

**SECTION 5. FIRE-FIGHTING MEASURES**

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
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 (NO<sub>x</sub>)  
Bromine compounds
- 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 certain local or national requirements.

**SECTION 7. HANDLING AND STORAGE**

- Technical measures : See Engineering measures under EXPOSURE

## Deltamethrin Liquid Formulation

Version 4.2      Revision Date: 03.11.2023      SDS Number: 1596211-00016      Date of last issue: 30.09.2023  
 Date of first issue: 25.04.2017

- Local/Total ventilation : CONTROLS/PERSONAL PROTECTION section.  
 : 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.  
 : Do not get in 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    |
|---------------------------------|------------|----------------------------------|------------------------------------------------|----------|
| Deltamethrin (ISO)              | 52918-63-5 | TWA                              | 15 µg/m <sup>3</sup> (OEB 3)                   | Internal |
| Further information: DSEN, Skin |            |                                  |                                                |          |
|                                 |            | Wipe limit                       | 100 µg/100 cm <sup>2</sup>                     | Internal |

- 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.  
 : Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).  
 : Minimize open handling.

#### Personal protective equipment

- Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.
- Filter type : Particulates type

**Deltamethrin Liquid Formulation**

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

**Hand protection**

Material : Chemical-resistant gloves

Remarks : Consider double gloving.

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.  
Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.  
Use appropriate degowning techniques to remove potentially contaminated clothing.

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 : liquid

Color : colorless

Odor : odorless

Odor Threshold : No data available

pH : 3,4 - 4 (20 °C)

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

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|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
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| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

---

|                                                  |   |                                                          |
|--------------------------------------------------|---|----------------------------------------------------------|
| 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                                 | : | No data available                                        |
| Density                                          | : | No data available                                        |
| Solubility(ies)<br>Water solubility              | : | No data available                                        |
| Partition coefficient: n-octanol/water           | : | No data available                                        |
| Autoignition temperature                         | : | No data available                                        |
| Decomposition temperature                        | : | No data available                                        |
| Viscosity<br>Viscosity, kinematic                | : | No data available                                        |
| Explosive properties                             | : | Not explosive                                            |
| Oxidizing properties                             | : | The substance or mixture is not classified as oxidizing. |
| Molecular weight                                 | : | Not applicable                                           |
| Particle size                                    | : | Not applicable                                           |

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**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. |

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**SECTION 11. TOXICOLOGICAL INFORMATION**

|                                          |   |                                                        |
|------------------------------------------|---|--------------------------------------------------------|
| Information on likely routes of exposure | : | Inhalation<br>Skin contact<br>Ingestion<br>Eye contact |
|------------------------------------------|---|--------------------------------------------------------|

**Deltamethrin Liquid Formulation**

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

---

**Acute toxicity**

Harmful if swallowed.

**Product:**

Acute oral toxicity : Acute toxicity estimate: 956,51 mg/kg  
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 10 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

**Components:****Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl):**

Acute oral toxicity : LD50 (Rat): 1.900 - 5.000 mg/kg  
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 3.000 mg/kg  
Remarks: Based on data from similar materials

**Deltamethrin (ISO):**

Acute oral toxicity : LD50 (Rat): 66,7 mg/kg  
LD50 (Rat): 9 - 139 mg/kg  
LD50 (Mouse): 19 - 34 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0,8 mg/l  
Exposure time: 2 h  
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): 2.000 mg/kg  
LD50 (Rat): > 800 mg/kg

Acute toxicity (other routes of administration) : LD50 (Rat): 2,5 mg/kg  
Application Route: Intravenous  
LD50 (Mouse): 10 mg/kg  
Application Route: Intraperitoneal

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl):**

Result : No skin irritation

**Deltamethrin (ISO):**

Species : Rabbit  
Result : No skin irritation

**Deltamethrin Liquid Formulation**

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

---

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Components:****Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl):**

Result : Irreversible effects on the eye

**Deltamethrin (ISO):**

Species : Rabbit  
Result : Moderate eye irritation

**Respiratory or skin sensitization****Skin sensitization**

May cause an allergic skin reaction.

**Respiratory sensitization**

Not classified based on available information.

**Components:****Deltamethrin (ISO):**

Test Type : Maximization Test  
Routes of exposure : Dermal  
Species : Guinea pig  
Result : negative

Test Type : Human repeat insult patch test (HRIPT)  
Routes of exposure : Dermal  
Species : Humans  
Result : positive

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****Deltamethrin (ISO):**

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

Test Type: DNA Repair  
Test system: Escherichia coli  
Result: negative

Test Type: Chromosomal aberration  
Test system: Chinese hamster ovary cells  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster lung cells  
Concentration: LOAEL: 20 mg/kg

**Deltamethrin Liquid Formulation**

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

---

Result: positive

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

Test Type: dominant lethal test  
Species: Mouse  
Application Route: Oral  
Result: negative

Test Type: sister chromatid exchange assay  
Species: Mouse  
Cell type: Bone marrow  
Application Route: Oral  
Result: negative

**Carcinogenicity**

Not classified based on available information.

**Components:****Deltamethrin (ISO):**

Species : Mouse, male and female  
Application Route : oral (feed)  
Exposure time : 104 weeks  
NOAEL : 8 mg/kg body weight  
LOAEL : 4 mg/kg body weight  
Result : positive  
Target Organs : Lymph nodes

Species : Rat, male and female  
Application Route : oral (feed)  
Exposure time : 2 Years  
Result : negative

Species : Dog, male and female  
Application Route : oral (feed)  
Exposure time : 2 Years  
NOAEL : 1 mg/kg body weight  
Result : negative

**Reproductive toxicity**

Suspected of damaging fertility. Suspected of damaging the unborn child.

**Components:****Deltamethrin (ISO):**

Effects on fertility : Test Type: Three-generation reproduction toxicity study  
Species: Rat  
Application Route: oral (feed)  
Early Embryonic Development: NOAEL: 50 mg/kg body weight

**Deltamethrin Liquid Formulation**

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

---

Symptoms: No effects on fertility., Embryo-fetal toxicity.  
Remarks: Significant toxicity observed in testing

Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Oral  
Early Embryonic Development: LOAEL: 84 - 149 mg/kg body weight  
Symptoms: No effects on fertility., Embryo-fetal toxicity.

Test Type: Fertility  
Species: Rat, male  
Application Route: Oral  
Fertility: LOAEL: 1 mg/kg body weight  
Symptoms: Effects on fertility.  
Target Organs: Testes

Effects on fetal development : Test Type: Development  
Species: Mouse  
Application Route: oral (gavage)  
Developmental Toxicity: LOAEL: 1 mg/kg body weight  
Result: Skeletal malformations.  
Remarks: Maternal toxicity observed.

Test Type: Development  
Species: Rat, female  
Developmental Toxicity: NOAEL: 10 mg/kg body weight  
Symptoms: No effects on fetal development.

Test Type: Development  
Species: Rabbit, female  
Application Route: oral (gavage)  
Developmental Toxicity: NOAEL: 16 mg/kg body weight  
Symptoms: No effects on fetal development.

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

**STOT-single exposure**

Not classified based on available information.

**Components:****Deltamethrin (ISO):**

Assessment : May cause respiratory irritation.

**STOT-repeated exposure**

May cause damage to organs (Central nervous system, Immune system) through prolonged or repeated exposure if swallowed.

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

**Deltamethrin Liquid Formulation**

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

---

**Components:****Deltamethrin (ISO):**

|                    |                                                                   |
|--------------------|-------------------------------------------------------------------|
| Routes of exposure | : Ingestion                                                       |
| Target Organs      | : Central nervous system, Immune system                           |
| Assessment         | : Causes damage to organs through prolonged or repeated exposure. |

|                    |                                                                   |
|--------------------|-------------------------------------------------------------------|
| Routes of exposure | : inhalation (dust/mist/fume)                                     |
| Target Organs      | : Central nervous system                                          |
| Assessment         | : Causes damage to organs through prolonged or repeated exposure. |

**Repeated dose toxicity****Components:****Deltamethrin (ISO):**

|                   |                        |
|-------------------|------------------------|
| Species           | : Rat, male and female |
| NOAEL             | : 1 mg/kg              |
| LOAEL             | : 2,5 mg/kg            |
| Application Route | : Oral                 |
| Exposure time     | : 13 Weeks             |
| Target Organs     | : Nervous system       |
| Symptoms          | : hyperexcitability    |

|                   |                                                  |
|-------------------|--------------------------------------------------|
| Species           | : Rat                                            |
| LOAEL             | : 3 mg/m <sup>3</sup>                            |
| Application Route | : inhalation (dust/mist/fume)                    |
| Exposure time     | : 2 wk / 5 d/wk / 6 h/d                          |
| Symptoms          | : Local irritation, respiratory tract irritation |

|                   |                                                                    |
|-------------------|--------------------------------------------------------------------|
| Species           | : Dog                                                              |
| NOAEL             | : 0,1 mg/kg                                                        |
| LOAEL             | : 1 mg/kg                                                          |
| Application Route | : Oral                                                             |
| Exposure time     | : 13 Weeks                                                         |
| Target Organs     | : Nervous system                                                   |
| Symptoms          | : Dilatation of the pupil, Vomiting, Tremors, Diarrhea, Salivation |

|                   |                  |
|-------------------|------------------|
| Species           | : Rat            |
| NOAEL             | : 14 mg/kg       |
| LOAEL             | : 54 mg/kg       |
| Application Route | : Oral           |
| Exposure time     | : 91 d           |
| Target Organs     | : Nervous system |

|                   |                         |
|-------------------|-------------------------|
| Species           | : Mouse                 |
| LOAEL             | : 6 mg/kg               |
| Application Route | : Oral                  |
| Exposure time     | : 12 Weeks              |
| Target Organs     | : Immune system         |
| Symptoms          | : immune system effects |

**Deltamethrin Liquid Formulation**

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

**Aspiration toxicity**

Not classified based on available information.

**Experience with human exposure****Components:****Deltamethrin (ISO):**

|              |   |                                                                                                                                                                                   |
|--------------|---|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inhalation   | : | Symptoms: respiratory tract irritation, Dizziness, Sweating, Headache, Nausea, Vomiting, anorexia, Fatigue, tingling, Palpitation, Blurred vision, muscle twitching               |
| Skin contact | : | Symptoms: Skin irritation, Erythema, pruritis, Headache, Nausea, Vomiting, Dizziness, tingling, Sweating, muscle twitching, Blurred vision, Fatigue, anorexia, Allergic reactions |
| Ingestion    | : | Symptoms: muscle pain, Small pupils                                                                                                                                               |

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl):**

|                  |   |                                                                                                                                   |
|------------------|---|-----------------------------------------------------------------------------------------------------------------------------------|
| Toxicity to fish | : | LC50 (Pimephales promelas (fathead minnow)): 4 - 8,9 mg/l<br>Exposure time: 96 h<br>Remarks: Based on data from similar materials |
|------------------|---|-----------------------------------------------------------------------------------------------------------------------------------|

|                                                     |   |                                                                                                                         |
|-----------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------|
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 18 - 26 mg/l<br>Exposure time: 48 h<br>Remarks: Based on data from similar materials |
|-----------------------------------------------------|---|-------------------------------------------------------------------------------------------------------------------------|

|                            |   |                                         |
|----------------------------|---|-----------------------------------------|
| Toxicity to microorganisms | : | IC50: 5.000 mg/l<br>Exposure time: 16 h |
|----------------------------|---|-----------------------------------------|

**Deltamethrin (ISO):**

|                  |   |                                                                                       |
|------------------|---|---------------------------------------------------------------------------------------|
| Toxicity to fish | : | LC50 (Cyprinodon variegatus (sheepshead minnow)): 0,00048 mg/l<br>Exposure time: 96 h |
|------------------|---|---------------------------------------------------------------------------------------|

|  |   |                                                                                 |
|--|---|---------------------------------------------------------------------------------|
|  | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 0,00039 mg/l<br>Exposure time: 96 h |
|--|---|---------------------------------------------------------------------------------|

|                                                     |   |                                                                              |
|-----------------------------------------------------|---|------------------------------------------------------------------------------|
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Mysidopsis bahia (opossum shrimp)): 0,0037 µg/l<br>Exposure time: 48 h |
|-----------------------------------------------------|---|------------------------------------------------------------------------------|

|  |   |                                                                       |
|--|---|-----------------------------------------------------------------------|
|  | : | EC50 (Daphnia magna (Water flea)): 0,0035 mg/l<br>Exposure time: 48 h |
|--|---|-----------------------------------------------------------------------|

|  |   |                                                                                   |
|--|---|-----------------------------------------------------------------------------------|
|  | : | LC50 (Gammarus fasciatus (freshwater shrimp)): 0,0003 µg/l<br>Exposure time: 96 h |
|--|---|-----------------------------------------------------------------------------------|

|                                  |   |                                                                                                                            |
|----------------------------------|---|----------------------------------------------------------------------------------------------------------------------------|
| Toxicity to algae/aquatic plants | : | EC50 (Pseudokirchneriella subcapitata (green algae)): > 9,1 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201 |
|----------------------------------|---|----------------------------------------------------------------------------------------------------------------------------|

**Deltamethrin Liquid Formulation**

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

Remarks: No toxicity at the limit of solubility.

M-Factor (Acute aquatic toxicity) : 1.000.000  
Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0,000022 mg/l  
Exposure time: 36 d

NOEC (Pimephales promelas (fathead minnow)): 0,000017 mg/l  
Exposure time: 260 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0,0041 µg/l  
Exposure time: 21 d  
M-Factor (Chronic aquatic toxicity) : 1.000.000

**Persistence and degradability****Components:****Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl):**

Biodegradability : Biodegradation: > 60 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B

Result: Not readily biodegradable.  
Biodegradation: 36 %  
Exposure time: 28 d  
Method: Closed Bottle test

**Deltamethrin (ISO):**

Stability in water : Hydrolysis: 0 %(30 d)

**Bioaccumulative potential****Components:****Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl):**

Partition coefficient: n-octanol/water : log Pow: 2,7

**Deltamethrin (ISO):**

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
Bioconcentration factor (BCF): 1.800

Partition coefficient: n-octanol/water : log Pow: 4,6

**Mobility in soil****Components:****Deltamethrin (ISO):**

Distribution among environ- : log Koc: 7,2

## Deltamethrin Liquid Formulation

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

mental compartments

### Other adverse effects

No data available

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

|                        |   |                                                                                                                                                             |
|------------------------|---|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waste from residues    | : | Do not dispose of waste into sewer.<br>Dispose of in accordance with local regulations.                                                                     |
| 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>(deltamethrin (ISO), Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl)) |
| 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>(Deltamethrin (ISO), Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl)) |
| 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.<br>(Deltamethrin (ISO), Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl)) |
| Class                | : | 9                                                                                                                                                             |
| Packing group        | : | III                                                                                                                                                           |
| Labels               | : | 9                                                                                                                                                             |
| EmS Code             | : | F-A, S-F                                                                                                                                                      |

**Deltamethrin Liquid Formulation**

|         |                |               |                                 |
|---------|----------------|---------------|---------------------------------|
| Version | Revision Date: | SDS Number:   | Date of last issue: 30.09.2023  |
| 4.2     | 03.11.2023     | 1596211-00016 | Date of first issue: 25.04.2017 |

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**

Argentina. Carcinogenic Substances and Agents Registry. : Not applicable

Control of precursors and essential chemicals for the preparation of drugs. : Not applicable

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

AICS : not determined

DSL : not determined

IECSC : not determined

**SECTION 16. OTHER INFORMATION**

Revision Date : 03.11.2023  
Date format : dd.mm.yyyy

**Further information**

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, <http://echa.europa.eu/>

**Full text of other abbreviations**

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 con-

**Deltamethrin Liquid Formulation**

|         |                |               |                                 |
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centration; 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

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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