

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 28.09.2024
4.0	14.04.2025	10853016-00010	Date of first issue: 15.09.2022

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**SECTION 1. IDENTIFICATION**

Product identifier : Deltamethrin (1%) Liquid Formulation

Other means of identification : Wipeout (A004558)

**Manufacturer or supplier's details**

Company : MSD

Address : Rua Coronel Bento Soares, 530  
Cruzeiro - Sao Paulo - Brazil CEP 12730-340

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 in accordance with ABNT NBR 14725 Standard**

Acute toxicity (Inhalation) : Category 5

Skin sensitization : Category 1

Carcinogenicity : Category 1B

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

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

Short-term (acute) aquatic : Category 1  
hazard

Long-term (chronic) aquatic : Category 1  
hazard

**GHS label elements in accordance with ABNT NBR 14725 Standard**

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Hazard pictograms

:



Signal Word

: Danger

Hazard Statements

: H317 May cause an allergic skin reaction.  
H333 May be harmful if inhaled.  
H350 May cause cancer.  
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.  
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:**

P302 + P352 IF ON SKIN: Wash with plenty of water.  
P304 + P312 IF INHALED: Call a POISON CENTER/ doctor if you feel unwell.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P391 Collect spillage.

**Storage:**

P405 Store locked up.

**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.	Classification	Concentration (% w/w)
Deltamethrin (ISO)	52918-63-5	Acute Tox. (Oral), 3 Acute Tox. (Inhalation), 3 Eye Irrit., 2A Skin Sens., 1A Repr., 2	$\geq 1$ - < 2,5

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		STOT SE, 3 STOT RE, (Oral)(Central nervous system, Immune sys- tem) , 1 STOT RE, (Inhala- tion)(Central nervous system) , 1 Aquatic Acute, 1 Aquatic Chronic, 1	
Formaldehyde	50-00-0	Flam. Gas, 1B Acute Tox. (Oral), 3 Acute Tox. (Inhala- tion), 2 Acute Tox. (Dermal), 3 Skin Corr., 1B Eye Dam., 1 Skin Sens., 1A Muta., 2 Carc., 1B STOT SE, 3 Aquatic Acute, 2	$\geq 0,25$ -< 1
Nonylphenol, ethoxylated	9016-45-9	Acute Tox. (Oral), 4 Eye Dam., 1 Aquatic Acute, 1 Aquatic Chronic, 1	$\geq 0,1$ -< 0,25
Methanol	67-56-1	Flam. Liq., 2 Acute Tox. (Oral), 3 Acute Tox. (Inhala- tion), 3 Acute Tox. (Dermal), 3 STOT SE, (optic nerve, Central nerv- ous system) , 1	$\geq 0,1$ -< 1

## 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.

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- |   |   |  |
|---|---|--|
| If swallowed  | : | Get medical attention if irritation develops and persists.<br>If swallowed, DO NOT induce vomiting.<br>Get medical attention.<br>Rinse mouth thoroughly with water.  |
| Most important symptoms and effects, both acute and delayed | : | This product contains a pyrethroid.<br>Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.<br>May cause an allergic skin reaction.<br>May be harmful if inhaled.<br>May cause cancer.<br>May cause damage to organs through prolonged or repeated exposure if swallowed.<br>May cause damage to organs through prolonged or repeated exposure if inhaled. |
| 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> )<br>Bromine compounds  |
| 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.   |

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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 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.

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.

Conditions for safe storage : Keep in properly labeled containers.  
Store locked up.  
Keep tightly closed.

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Materials to avoid : Store in accordance with the particular national regulations.  
: 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 (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
Formaldehyde	50-00-0	CEIL	1,6 ppm 2,3 mg/m <sup>3</sup>	BR OEL
	Further information: Degree of harmfulness: maximum			
		TWA	0,1 ppm	ACGIH
		STEL	0,3 ppm	ACGIH
Methanol	67-56-1	LT	156 ppm 200 mg/m <sup>3</sup>	BR OEL
	Further information: Absorption through the skin, Degree of harmfulness: maximum			
		TWA	200 ppm	ACGIH
		STEL	250 ppm	ACGIH

## Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Methanol	67-56-1	Methanol	Urine	End of workday	15 mg/l	BR BEI
		Methanol	Urine	End of shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI

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

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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	:	Combined particulates and organic vapor type
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.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state	:	suspension
Color	:	white
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	6,4 - 7,4
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	:	No data available

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flammability limit

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : 0,994 - 1,014 (20 °C)

Density : No data available

Solubility(ies)

Water solubility : No data available

Partition coefficient: n-octanol/water : Not applicable

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, kinematic : 230 - 320 mm<sup>2</sup>/s  
No data available

Explosive properties : Not explosive

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**

May be harmful if inhaled.



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**Product:**

Acute oral toxicity	:	Acute toxicity estimate: > 5.000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: 25 mg/l Exposure time: 4 h Test atmosphere: vapor Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 5.000 mg/kg Method: Calculation method

**Components:****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

**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

**Nonylphenol, ethoxylated:**

Acute oral toxicity	:	LD50 (Rat): 500 - 2.000 mg/kg
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**Methanol:**

Acute oral toxicity	:	Acute toxicity estimate (Humans): 300 mg/kg
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	Method: Expert judgment
Acute inhalation toxicity	: Acute toxicity estimate: 3 mg/l Exposure time: 4 h Test atmosphere: vapor Method: Expert judgment Remarks: Based on national or regional regulation.
Acute dermal toxicity	: Acute toxicity estimate: 300 mg/kg Method: Expert judgment Remarks: Based on national or regional regulation.

**Skin corrosion/irritation**

Not classified based on available information.

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

Species	: Rabbit
Result	: No skin irritation

**Formaldehyde:**

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

**Nonylphenol, ethoxylated:**

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

**Methanol:**

Species	: Rabbit
Result	: No skin irritation

**Serious eye damage/eye irritation**

Not classified based on available information.

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

Species	: Rabbit
Result	: Moderate eye irritation

**Formaldehyde:**

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

**Nonylphenol, ethoxylated:**

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

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**Methanol:**

Species	: Rabbit
Result	: No eye irritation

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

May cause an allergic skin reaction.

**Respiratory sensitization**

Not classified based on available information.

**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

**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
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**Nonylphenol, ethoxylated:**

Test Type	: Maximization Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Result	: negative
Remarks	: Based on data from similar materials

**Methanol:**

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

**Germ cell mutagenicity**

Not classified based on available information.

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**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 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

**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 Species: Mouse Application Route: Inhalation Result: positive
Germ cell mutagenicity - Assessment	: Positive result(s) from in vivo mammalian somatic cell mutagenicity tests.

**Nonylphenol, ethoxylated:**

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Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative  
Remarks: Based on data from similar materials

**Methanol:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Result: negative

Test Type: in vitro micronucleus test  
Result: negative

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

**Carcinogenicity**

May cause cancer.

**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

**Formaldehyde:**

Species : Rat  
Application Route : inhalation (gas)  
Exposure time : 28 Months  
Result : positive

Carcinogenicity - Assess- : Sufficient evidence of carcinogenicity in animal experiments

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**||ment****Methanol:**

Species	: Monkey
Application Route	: inhalation (vapor)
Exposure time	: 7 Months
Result	: negative

**Reproductive toxicity**

Not classified based on available information.

**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 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 - As-	: Some evidence of adverse effects on sexual function and

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Assessment : fertility, and/or on development, based on animal experiments.

**Formaldehyde:**

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

**Methanol:**

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Monkey  
Application Route: inhalation (vapor)  
Result: negative

Effects on fetal development : Test Type: Reproduction/Developmental toxicity screening test  
Species: Monkey  
Application Route: inhalation (vapor)  
Result: negative

**STOT-single exposure**

Not classified based on available information.

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

Assessment : May cause respiratory irritation.

**Formaldehyde:**

Assessment : May cause respiratory irritation.

**Methanol:**

Target Organs : optic nerve, Central nervous system  
Assessment : Causes damage to organs.

**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.

**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

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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

**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



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<div style="border-left: 3px double black; padding-left: 10px;">Skin contact</div>	: Symptoms: Skin irritation, Erythema, pruritis, Headache, Nausea, Vomiting, Dizziness, tingling, Sweating, muscle twitching, Blurred vision, Fatigue, anorexia, Allergic reactions
<div style="border-left: 3px double black; padding-left: 10px;">Ingestion</div>	: Symptoms: muscle pain, Small pupils

## SECTION 12. ECOLOGICAL INFORMATION

## Ecotoxicity

Components:**Deltamethrin (ISO):**

<div style="border-left: 3px double black; padding-left: 10px;">Toxicity to fish</div>	: LC50 (Cyprinodon variegatus (sheepshead minnow)): 0,00048 mg/l Exposure time: 96 h  LC50 (Oncorhynchus mykiss (rainbow trout)): 0,00039 mg/l Exposure time: 96 h
<div style="border-left: 3px double black; padding-left: 10px;">Toxicity to daphnia and other aquatic invertebrates</div>	: EC50 (Mysidopsis bahia (opossum shrimp)): 0,0037 µg/l Exposure time: 48 h  EC50 (Daphnia magna (Water flea)): 0,0035 mg/l Exposure time: 48 h  LC50 (Gammarus fasciatus (freshwater shrimp)): 0,0003 µg/l Exposure time: 96 h
<div style="border-left: 3px double black; padding-left: 10px;">Toxicity to algae/aquatic plants</div>	: EC50 (Pseudokirchneriella subcapitata (green algae)): > 9,1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility.
<div style="border-left: 3px double black; padding-left: 10px;">M-Factor (Acute aquatic toxicity)</div>	: 1.000.000
<div style="border-left: 3px double black; padding-left: 10px;">Toxicity to fish (Chronic toxicity)</div>	: 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
<div style="border-left: 3px double black; padding-left: 10px;">Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</div>	: NOEC (Daphnia magna (Water flea)): 0,0041 µg/l Exposure time: 21 d
<div style="border-left: 3px double black; padding-left: 10px;">M-Factor (Chronic aquatic toxicity)</div>	: 1.000.000

**Formaldehyde:**

<div style="border-left: 3px double black; padding-left: 10px;">Toxicity to fish</div>	: LC50 (Morone saxatilis (striped bass)): 6,7 mg/l Exposure time: 96 h
<div style="border-left: 3px double black; padding-left: 10px;">Toxicity to daphnia and other</div>	: EC50 (Daphnia pulex (Water flea)): 5,8 mg/l

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aquatic invertebrates	Exposure time: 48 h
Toxicity to algae/aquatic plants	: ErC50 (Desmodesmus subspicatus (green algae)): 4,89 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Daphnia magna (Water flea)): 1,04 mg/l Exposure time: 21 d Method: OECD Test Guideline 211
Toxicity to microorganisms	: EC50 (activated sludge): 19 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

**Nonylphenol, ethoxylated:**

Toxicity to fish	: LC50 (Pimephales promelas (fathead minnow)): > 0,1 - 1 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Ceriodaphnia dubia (water flea)): > 0,1 - 1 mg/l Exposure time: 48 h Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	: ErC50 (Selenastrum capricornutum (green algae)): > 1 - 10 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials  EC10 (Selenastrum capricornutum (green algae)): > 1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
M-Factor (Acute aquatic toxicity)	: 1
Toxicity to fish (Chronic toxicity)	: NOEC (Oryzias latipes (Japanese medaka)): > 0,1 - 1 mg/l Exposure time: 100 d Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	: NOEC (Mysidopsis bahia (opossum shrimp)): > 0,001 - 0,01 mg/l Exposure time: 28 d Remarks: Based on data from similar materials
M-Factor (Chronic aquatic toxicity)	: 10

**Methanol:**

Toxicity to fish	: LC50 (Lepomis macrochirus (Bluegill sunfish)): 15.400 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia magna (Water flea)): > 10.000 mg/l Exposure time: 48 h Method: DIN 38412

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Toxicity to algae/aquatic plants	:	ErC50 (Raphidocelis subcapitata (freshwater green alga)): 22.000 mg/l Exposure time: 96 h Method: OECD Test Guideline 201
Toxicity to microorganisms	:	EC50 (activated sludge): > 1.000 mg/l Exposure time: 3 h Test substance: Neutralized product Method: OECD Test Guideline 209

**Persistence and degradability****Components:****Deltamethrin (ISO):**

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

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 99 % Exposure time: 28 d Method: OECD Test Guideline 301A
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**Nonylphenol, ethoxylated:**

Biodegradability	:	Result: Not readily biodegradable. Remarks: Based on data from similar materials
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**Methanol:**

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 95 % Exposure time: 20 d
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**Bioaccumulative potential****Components:****Deltamethrin (ISO):**

Bioaccumulation	:	Species: Lepomis macrochirus (Bluegill sunfish) Bioconcentration factor (BCF): 1.800
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Partition coefficient: n-octanol/water	:	log Pow: 4,6
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**Formaldehyde:**

Partition coefficient: n-octanol/water	:	log Pow: 0,35 Remarks: Calculation
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**Nonylphenol, ethoxylated:**

Partition coefficient: n-octanol/water	:	log Pow: 4,48
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**Methanol:**

Bioaccumulation	:	Species: Leuciscus idus (Golden orfe) Bioconcentration factor (BCF): < 10
Partition coefficient: n-octanol/water	:	log Pow: -0,77

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

Distribution among environmental compartments	:	log Koc: 7,2
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**Other adverse effects**

No data available

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

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

**SECTION 14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (deltamethrin (ISO))
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. (Deltamethrin (ISO))
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.  
(Deltamethrin (ISO))

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****ANTT**

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(deltamethrin (ISO))

Class : 9

Packing group : III

Labels : 9

Hazard Identification Number : 90

**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**

National List of Carcinogenic Agents for Humans - (LINACH)

Group 1: Carcinogenic to humans	
Formaldehyde	50-00-0

Brazil. List of chemicals controlled by the Federal Police : 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 : 14.04.2025

Date format : dd.mm.yyyy

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**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/>

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

**Full text of other abbreviations**

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	: ACGIH - Biological Exposure Indices (BEI)
BR BEI	: Brazil. NR7. Parameters for Biological Control of Occupational Exposure to Some Chemical Agents
BR OEL	: Brazil. NR 15 - Unhealthy activities and operations
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
BR OEL / CEIL	: Ceiling
BR OEL / LT	: Up to 48 hours /week

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

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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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