

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	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)

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

Recommended use : Veterinary product  
Restrictions on use : Not applicable

**Manufacturer or supplier's details**

Company : MSD  
Address : 50 Tuas West Drive  
Singapore - Singapore 638408  
Telephone : +1-908-740-4000  
Emergency telephone number : 65 6697 2111 (24/7/365)  
E-mail address : EHSDATASTEWARD@msd.com

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**Section 2: Hazard identification****Classification of the substance or mixture**

Skin sensitisation : Category 1  
Carcinogenicity : Category 1B  
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, including precautionary statements**

## Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue:
5.0	14.04.2025	10852990-00009	26.06.2024
			Date of first issue: 15.09.2022

Hazard pictograms	:	  
Signal word	:	Danger
Hazard statements	:	H317 May cause an allergic skin reaction. 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	:	<b>Prevention:</b> 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 vapours. 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/ hearing protection. <b>Response:</b> P302 + P352 IF ON SKIN: Wash with plenty of water. 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. <b>Storage:</b> P405 Store locked up. <b>Disposal:</b> P501 Dispose of contents/ container to an approved waste disposal plant.

**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**

## Deltamethrin (1%) Liquid Formulation

Version 5.0      Revision Date: 14.04.2025      SDS Number: 10852990-00009      Date of last issue: 26.06.2024  
 Date of first issue: 15.09.2022

Chemical name	CAS-No.	Concentration (% w/w)
deltamethrin (ISO)	52918-63-5	$\geq 1$ -< 2.5
Formaldehyde	50-00-0	$\geq 0.1$ -< 1
Nonylphenol, ethoxylated	9016-45-9	$\geq 0.1$ -< 0.25
Methanol	67-56-1	$\geq 0.1$ -< 1

## Section 4: First-aid measures

## Description of necessary first-aid measures

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
 When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.  
 Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.  
 Remove contaminated clothing and shoes.  
 Get medical attention.  
 Wash clothing before reuse.  
 Thoroughly clean shoes before reuse.
- In case of eye contact : Flush eyes with water as a precaution.  
 Get medical attention if irritation develops and persists.
- If swallowed : If swallowed, DO NOT induce vomiting.  
 Get medical attention.  
 Rinse mouth thoroughly with water.

## Most important symptoms and effects, both acute and delayed

- Risks : This product contains a pyrethroid.  
 Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.  
 May cause an allergic skin reaction.  
 May cause cancer.  
 May cause damage to organs through prolonged or repeated exposure if swallowed.  
 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).

## Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically and supportively.

## Section 5: Fire-fighting measures

## Extinguishing media

- Suitable extinguishing media : Water spray  
 Alcohol-resistant foam  
 Carbon dioxide (CO<sub>2</sub>)

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

---

Dry chemical

Unsuitable extinguishing media : None known.

**Special hazards arising from the substance or mixture**

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

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**Section 6: Accidental release measures****Personal precautions, protective equipment and emergency procedures**Personal precautions : Use personal protective equipment.  
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).**Environmental precautions**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**Methods for cleaning up : Soak up with inert absorbent material.  
For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked 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 deter-

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

---

mine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding  
certain local or national requirements.

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**Section 7: Handling and storage****Precautions for safe handling**

- |                         |   |  |
|-------------------------|---|--|
| 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.<br>Do not breathe mist or vapours.<br>Do not swallow.<br>Avoid contact with eyes.<br>Wash skin thoroughly after handling.<br>Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment<br>Keep container tightly closed.<br>Do not eat, drink or smoke when using this product.<br>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.<br>When using do not eat, drink or smoke.<br>Contaminated work clothing should not be allowed out of the workplace.<br>Wash contaminated clothing before re-use.<br>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, including any incompatibilities**

- |                             |   |  |
|-----------------------------|---|--|
| Conditions for safe storage | : | Keep in properly labelled containers.<br>Store locked up.<br>Keep tightly closed.<br>Store in accordance with the particular national regulations. |
| Materials to avoid          | : | Do not store with the following product types:<br>Strong oxidizing agents  |

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**Section 8: Exposure controls/personal protection****Control parameters****Occupational Exposure Limits**

## Deltamethrin (1%) Liquid Formulation

Version 5.0      Revision Date: 14.04.2025      SDS Number: 10852990-00009      Date of last issue: 26.06.2024  
 Date of first issue: 15.09.2022

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	PEL (short term)	0.3 ppm 0.37 mg/m <sup>3</sup>	SG OEL
		TWA	0.1 ppm	ACGIH
		STEL	0.3 ppm	ACGIH
Methanol	67-56-1	PEL (short term)	250 ppm 328 mg/m <sup>3</sup>	SG OEL
		PEL (long term)	200 ppm 262 mg/m <sup>3</sup>	SG OEL
		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 shift (As soon as possible after exposure ceases)	15 mg/l	ACGIH BEI

## Appropriate engineering control 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.

## Individual protection measures, such as personal protective equipment (PPE)

Eye/face 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 protection : Work uniform or laboratory coat.  
 Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, dis-

## Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

posable suits) to avoid exposed skin surfaces.  
Use appropriate degowning techniques to remove potentially contaminated clothing.

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 vapour type

Hand protection

Material : Chemical-resistant gloves

Remarks : Consider double gloving.

**Section 9: Physical and chemical properties**

Appearance : suspension

Colour : white

Odour : No data available

Odour 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 flammability limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : 0.994 - 1.014 (20 °C)

Density : No data available

Solubility(ies)

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

---

Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition 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

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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 Skin contact Ingestion Eye contact
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**Acute toxicity**

Not classified based on available information.

**Product:**

Acute oral toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method
Acute inhalation toxicity	:	Acute toxicity estimate: > 20 mg/l Exposure time: 4 h Test atmosphere: vapour Method: Calculation method



**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

---

Acute dermal toxicity : Acute toxicity estimate: > 2,000 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 judgement  
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 judgement

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

**Nonylphenol, ethoxylated:**

Acute oral toxicity : LD50 (Rat): 500 - 2,000 mg/kg

**Methanol:**

Acute oral toxicity : Acute toxicity estimate (Humans): 300 mg/kg  
Method: Expert judgement

Acute inhalation toxicity : Acute toxicity estimate: 3 mg/l  
Exposure time: 4 h  
Test atmosphere: vapour  
Method: Expert judgement

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

---

Acute dermal toxicity	Remarks:	Based on national or regional regulation.
	:	Acute toxicity estimate: 300 mg/kg
	:	Method: Expert judgement
	:	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

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

---

**Methanol:**

Species	: Rabbit
Result	: No eye irritation

**Respiratory or skin sensitisation****Skin sensitisation**

May cause an allergic skin reaction.

**Respiratory sensitisation**

Not classified based on available information.

**Components:****deltamethrin (ISO):**

Test Type	: Maximisation Test
Exposure routes	: Dermal
Species	: Guinea pig
Result	: negative

Test Type	: Human repeat insult patch test (HRIPT)
Exposure routes	: Dermal
Species	: Humans
Result	: positive

**Formaldehyde:**

Test Type	: Human repeat insult patch test (HRIPT)
Exposure routes	: Skin contact
Species	: Humans
Result	: positive

Assessment	: Probability or evidence of high skin sensitisation rate in humans
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**Nonylphenol, ethoxylated:**

Test Type	: Maximisation Test
Exposure routes	: Skin contact
Species	: Guinea pig
Result	: negative
Remarks	: Based on data from similar materials

**Methanol:**

Test Type	: Maximisation Test
Exposure routes	: Skin contact
Species	: Guinea pig
Result	: negative

**Germ cell mutagenicity**

Not classified based on available information.

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

---

**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.

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

---

**II****Nonylphenol, ethoxylated:**

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative Remarks: Based on data from similar materials
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**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
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**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

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

Carcinogenicity - Assessment	: Sufficient evidence of carcinogenicity in animal experiments
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**Methanol:**

Species	: Monkey
Application Route	: inhalation (vapour)
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-foetal 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-foetal 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 foetal 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 foetal development

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

---

	Test Type: Development Species: Rabbit, female Application Route: oral (gavage) Developmental Toxicity: NOAEL: 16 mg/kg body weight Symptoms: No effects on foetal development
Reproductive toxicity - Assessment	: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

**Formaldehyde:**

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

Effects on fertility	: Test Type: One-generation reproduction toxicity study Species: Monkey Application Route: inhalation (vapour) Result: negative
Effects on foetal development	: Test Type: Reproduction/Developmental toxicity screening test Species: Monkey Application Route: inhalation (vapour) Result: negative

**STOT - single exposure**

Not classified based on available information.

**Components:****deltamethrin (ISO):**

Assessment	: May cause respiratory irritation.
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**Formaldehyde:**

Assessment	: May cause respiratory irritation.
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**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.

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

---

**Components:****deltamethrin (ISO):**

Exposure routes	: Ingestion
Target Organs	: Central nervous system, Immune system
Assessment	: Causes damage to organs through prolonged or repeated exposure.

Exposure routes	: 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/m3
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, Diarrhoea, 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



**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

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
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****Toxicity****Components:****deltamethrin (ISO):**

Toxicity to fish	: 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
Toxicity to daphnia and other aquatic invertebrates	: 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
Toxicity to algae/aquatic plants	: 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
M-Factor (Acute aquatic toxicity)	: 1,000,000
Toxicity to fish (Chronic toxicity)	: NOEC (Pimephales promelas (fathead minnow)): 0.000022 mg/l

## Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

	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

**Formaldehyde:**

Toxicity to fish	: LC50 (Morone saxatilis (striped bass)): 6.7 mg/l
	Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	: EC50 (Daphnia pulex (Water flea)): 5.8 mg/l
	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 tox-	: 1

## Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

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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

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: Neutralised product  
Method: OECD Test Guideline 209

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

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

**Formaldehyde:**

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

**Nonylphenol, ethoxylated:**

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

**Methanol:**

Biodegradability : Result: Readily biodegradable.

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

Biodegradation: 95 %  
Exposure time: 20 d

**Bioaccumulative potential****Components:****deltamethrin (ISO):**

Bioaccumulation : Species: *Lepomis macrochirus* (Bluegill sunfish)  
Bioconcentration factor (BCF): 1,800

Partition coefficient: n-octanol/water : log Pow: 4.6

**Formaldehyde:**

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

**Nonylphenol, ethoxylated:**

Partition coefficient: n-octanol/water : log Pow: 4.48

**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

**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**

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

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**UNRTDG**

UN number	: UN 3082
UN proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (deltamethrin (ISO))
Transport hazard class(es)	: 9
Packing group	: III
Labels	: 9
Environmental hazards	: yes

**IATA-DGR**

UN/ID No.	: UN 3082
UN proper shipping name	: Environmentally hazardous substance, liquid, n.o.s. (deltamethrin (ISO))
Transport hazard class(es)	: 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. (deltamethrin (ISO))
Transport hazard class(es)	: 9
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
Marine pollutant	: yes

**Transport in bulk according to IMO instruments**

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.

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**Section 15: Regulatory information****Safety, health and environmental regulations specific for the product in question**

Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subject to the requirements in the Act/Regulations.

Environmental Protection and Management Act and Environmental Protection and Management (Hazardous Substances) Regulations	: Nonylphenol and nonylphenol ethoxylates
Fire Safety (Petroleum and Flammable Materials)	: Not applicable

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

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## Regulations

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

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

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**Section 16: Other information**

Revision Date : 14.04.2025

**Further information**Sources of key data used to compile the 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.

Date format : dd.mm.yyyy

**Full text of other abbreviations**

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	: ACGIH - Biological Exposure Indices (BEI)
SG OEL	: Singapore. Workplace Safety and Health (General Provisions) Regulations - First Schedule Permissible Exposure Limits of Toxic Substances.
ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
SG OEL / PEL (long term)	: Permissible Exposure Level (PEL) Long Term
SG OEL / PEL (short term)	: Permissible Exposure Level (PEL) Short Term

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

**Deltamethrin (1%) Liquid Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 26.06.2024
5.0	14.04.2025	10852990-00009	Date of first issue: 15.09.2022

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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.

SG / EN