

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Deltamethrin (1%) Liquid Formulation

Other means of identification : Wipeout (A004558)

Manufacturer or supplier's details

Company : MSD

Address : 126 E. Lincoln Avenue
Rahway, New Jersey U.S.A. 07065

Telephone : +1-908-740-4000

Emergency telephone number : +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

2. HAZARDS IDENTIFICATION**GHS Classification**

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

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue:
4.0	2025/04/14	10853021-00009	2024/06/26
			Date of first issue: 2022/09/15

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	:	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 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. Response: 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. Storage: P405 Store locked up. Disposal: 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).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

Chemical name	CAS-No.	Concentration (% w/w)
deltamethrin (ISO)	52918-63-5	≥ 1 -< 2.5
Formaldehyde	50-00-0	≥ 0.1 -< 1
Nonylphenol, ethoxylated	9016-45-9	≥ 0.025 -< 0.25
Methanol	67-56-1	< 1

4. FIRST AID MEASURES

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

5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Water spray Alcohol-resistant foam Carbon dioxide (CO ₂) Dry chemical
Unsuitable extinguishing media	: None known.
Specific hazards during fire-fighting	: Exposure to combustion products may be a hazard to health.

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

- Hazardous combustion products : Carbon oxides
Nitrogen oxides (NO_x)
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 firefighters : In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.
-

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

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 vapours.
-

Deltamethrin (1%) Liquid Formulation

Version 4.0 Revision Date: 2025/04/14 SDS Number: 10853021-00009 Date of last issue: 2024/06/26
 Date of first issue: 2022/09/15

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

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

Materials to avoid : Store in accordance with the particular national regulations.
 Do not store with the following product types:
 Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components 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 ³ (OEB 3)	Internal
	Further information: DSEN, Skin			
		Wipe limit	100 µg/100 cm ²	Internal
Formaldehyde	50-00-0	PSD	0.3 ppm	ID OEL
	Further information: Dermal Sensitization, Respiratory Sensitization, Suspected human carcinogen			
		TWA	0.1 ppm	ACGIH
		STEL	0.3 ppm	ACGIH
Methanol	67-56-1	NAB	200 ppm	ID OEL
	Further information: Skin			
		PSD	250 ppm	ID OEL
	Further information: Skin			
		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

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue:
4.0	2025/04/14	10853021-00009	2024/06/26
			Date of first issue: 2022/09/15

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 : Combined particulates and organic vapour 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.

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : suspension

Colour : white

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

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)		
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 ² /s No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

Molecular weight : No data available

Particle characteristics
Particle size : Not applicable

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.

11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 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

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

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

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
Remarks: Based on national or regional regulation.

Acute dermal toxicity : 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:

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

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

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

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

|| 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

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.

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

Deltamethrin (1%) Liquid Formulation

Version 4.0	Revision Date: 2025/04/14	SDS Number: 10853021-00009	Date of last issue: 2024/06/26 Date of first issue: 2022/09/15
----------------	------------------------------	-------------------------------	---

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:

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

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

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 - Assessment	: Sufficient evidence of carcinogenicity in animal experiments
------------------------------	--

Methanol:

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

Reproductive toxicity

Not classified based on available information.

Deltamethrin (1%) Liquid Formulation

Version 4.0	Revision Date: 2025/04/14	SDS Number: 10853021-00009	Date of last issue: 2024/06/26 Date of first issue: 2022/09/15
----------------	------------------------------	-------------------------------	---

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

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

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue:
4.0	2025/04/14	10853021-00009	2024/06/26
			Date of first issue: 2022/09/15

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.
------------	-------------------------------------

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):**

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.

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

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
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
------------	---

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue:
4.0	2025/04/14	10853021-00009	2024/06/26
			Date of first issue: 2022/09/15

<div style="border-left: 3px solid black; padding-left: 5px;">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 solid black; padding-left: 5px;">Ingestion</div>	:	Symptoms: muscle pain, Small pupils

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:**deltamethrin (ISO):**

<div style="border-left: 3px solid black; padding-left: 5px;">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 solid black; padding-left: 5px;">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 solid black; padding-left: 5px;">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 solid black; padding-left: 5px;">M-Factor (Acute aquatic toxicity)</div>	:	1,000,000
<div style="border-left: 3px solid black; padding-left: 5px;">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 solid black; padding-left: 5px;">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 solid black; padding-left: 5px;">M-Factor (Chronic aquatic toxicity)</div>	:	1,000,000

Formaldehyde:

<div style="border-left: 3px solid black; padding-left: 5px;">Toxicity to fish</div>	:	LC50 (Morone saxatilis (striped bass)): 6.7 mg/l
--	---	--

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

	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 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:

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue:
4.0	2025/04/14	10853021-00009	2024/06/26
			Date of first issue: 2022/09/15

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. 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

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

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

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.

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 (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

(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
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.

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.

15. REGULATORY INFORMATION**Safety, health and environmental regulations/legislation specific for the substance or mixture**

Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

Regulation of the Minister of Health No. 472 of 1996 on the Safeguarding of Substances Hazardous to Health

Hazardous substances that must be registered : Formaldehyde

Government Regulation No. 74 of 2001 on the Management of Hazardous and Toxic Substances

Hazardous substances approved for use	: Formaldehyde
	Methanol
Prohibited substances	: Not applicable
Restricted substances	: Not applicable

Regulation of the Ministry of Trade No. 7 of 2022 on Distribution and Control of Hazardous Materials

Type of hazardous materials subject to distribution and control, Annex I : Formaldehyde

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

Type of hazardous materials subject to distribution and control, Annex II : Not applicable

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

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

16. OTHER INFORMATION

Revision Date : 2025/04/14

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 : yyyy/mm/dd

Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	: ACGIH - Biological Exposure Indices (BEI)
ID OEL	: Indonesia. Occupational Exposure Limits

ACGIH / TWA	: 8-hour, time-weighted average
ACGIH / STEL	: Short-term exposure limit
ID OEL / NAB	: Long term exposure limit
ID OEL / PSD	: Short term exposure limit

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;

Deltamethrin (1%) Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2024/06/26
4.0	2025/04/14	10853021-00009	Date of first issue: 2022/09/15

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.

ID / EN