

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Deltamethrin (2.5%) Formulation

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Sub-stance/Mixture : Veterinary product

Recommended restrictions on use : Not applicable

1.3 Details of the supplier of the safety data sheet

Company : MSD
Walton Manor, Walton
MK7 7AJ Milton Keynes - United Kingdom

Telephone : +1-908-740-4000

E-mail address of person responsible for the SDS : EHSDATASTEWARD@msd.com

1.4 Emergency telephone number

+1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Flammable liquids, Category 3	H226: Flammable liquid and vapour.
Skin irritation, Category 2	H315: Causes skin irritation.
Serious eye damage, Category 1	H318: Causes serious eye damage.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Germ cell mutagenicity, Category 1B	H340: May cause genetic defects.
Carcinogenicity, Category 1B	H350: May cause cancer.
Reproductive toxicity, Category 2	H361: Suspected of damaging fertility or the unborn child.
Specific target organ toxicity - single exposure, Category 3	H336: May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure, Category 2	H373: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008) as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567)

Hazard pictograms : 

Signal word : Danger

Hazard statements : H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H336 May cause drowsiness or dizziness.
H340 May cause genetic defects.
H350 May cause cancer.
H361 Suspected of damaging fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P391 Collect spillage.

Hazardous components which must be listed on the label:
Solvent naphtha (petroleum), light aromatic
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts
4-Nonylphenol, branched, ethoxylated
deltamethrin (ISO)

Additional Labelling

Restricted to professional users.

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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).

Vapours may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Solvent naphtha (petroleum), light aromatic	64742-95-6 265-199-0 649-356-00-4	Flam. Liq. 3; H226 Skin Irrit. 2; H315 Muta. 1B; H340 Carc. 1B; H350 STOT SE 3; H336 Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 50 - < 70
Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts	Not Assigned 271-529-4	Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Chronic 3; H412	>= 3 - < 10
4-Nonylphenol, branched, ethoxylated	127087-87-0	Repr. 2; H361 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 10	>= 3 - < 10
deltamethrin (ISO)	52918-63-5 258-256-6 607-319-00-X	Acute Tox. 3; H301 Acute Tox. 3; H331 Eye Irrit. 2; H319 Skin Sens. 1A; H317 Repr. 2; H361fd STOT SE 3; H335 STOT RE 1; H372 (Central nervous system, Immune system) STOT RE 1; H372	>= 2.5 - < 3

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

		(Central nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 <hr/> M-Factor (Acute aquatic toxicity): 1,000,000 M-Factor (Chronic aquatic toxicity): 1,000,000	
2,6-Di-tert-butyl-p-cresol	128-37-0 204-881-4	Aquatic Acute 1; H400 Aquatic Chronic 1; H410 <hr/> M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	>= 1 - < 2.5

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of 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.
- 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).
- If inhaled : If inhaled, remove to fresh air.
Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention immediately.

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

If swallowed : If swallowed, DO NOT induce vomiting.
If vomiting occurs have person lean forward.
Call a physician or poison control centre immediately.
Rinse mouth thoroughly with water.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Risks : May be fatal if swallowed and enters airways.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
May cause drowsiness or dizziness.
May cause genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

This product contains a pyrethroid.
Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray
Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not use a solid water stream as it may scatter and spread fire.
Flash back possible over considerable distance.
Vapours may form explosive mixtures with air.
Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Carbon oxides
Nitrogen oxides (NO_x)
Bromine compounds
Sulphur oxides
Metal oxides

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

5.3 Advice for firefighters

- 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

6.1 Personal precautions, protective equipment and emergency procedures

- Personal precautions : Remove all sources of ignition. Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

6.2 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. If spillage enters rivers or watercourses, inform the Environment Agency (emergency telephone number 0800 807060).

6.3 Methods and material for containment and cleaning up

- Methods for cleaning up : Non-sparking tools should be used. Soak up with inert absorbent material. Suppress (knock down) gases/vapours/mists with a water spray jet. 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.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

SECTION 7: Handling and storage

7.1 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.
Use explosion-proof electrical, ventilating and lighting equipment.
- Advice on safe handling : Do not get on skin or clothing.
Do not breathe mist or vapours.
Do not swallow.
Do not get in eyes.
Wash skin thoroughly after handling.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Non-sparking tools should be used.
Keep container tightly closed.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Take precautionary measures against static discharges.
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.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations. Keep away from heat and sources of ignition.
- Advice on common storage : Do not store with the following product types:
Strong oxidizing agents
Self-reactive substances and mixtures
Organic peroxides
Flammable solids
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances and mixtures, which in contact with water, emit flammable gases

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

Explosives
Gases
Very acutely toxic substances and mixtures

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	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
2,6-Di-tert-butyl-p-cresol	128-37-0	TWA	10 mg/m ³	GB EH40

Derived No Effect Level (DNEL):

Substance name	End Use	Exposure routes	Potential health effects	Value
2,6-Di-tert-butyl-p-cresol	Workers	Inhalation	Long-term systemic effects	3.5 mg/m ³
	Workers	Dermal	Long-term systemic effects	0.5 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	0.86 mg/m ³
	Consumers	Dermal	Long-term systemic effects	0.25 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	0.25 mg/kg bw/day
	Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts	Workers	Skin contact	Long-term systemic effects
Consumers		Skin contact	Long-term systemic effects	85 mg/kg bw/day
Consumers		Ingestion	Long-term systemic effects	89 mg/kg bw/day
Polyethylene glycol castor oil	Workers	Inhalation	Long-term systemic effects	16.4 mg/m ³
	Workers	Skin contact	Long-term systemic effects	4.67 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	2.9 mg/m ³
	Consumers	Skin contact	Long-term systemic effects	1.67 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic	1.67 mg/kg

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

			effects	bw/day
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Predicted No Effect Concentration (PNEC):

Substance name	Environmental Compartment	Value
2,6-Di-tert-butyl-p-cresol	Fresh water	0.199 µg/l
	Intermittent use/release	0.02 µg/l
	Marine water	0.02 µg/l
	Sewage treatment plant	0.17 mg/l
	Fresh water sediment	0.0996 mg/kg dry weight (d.w.)
	Marine sediment	0.00996 mg/kg dry weight (d.w.)
	Soil	0.04769 mg/kg dry weight (d.w.)
	Oral (Secondary Poisoning)	8.33 mg/kg food
	Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts	Fresh water
Marine water		0.002 mg/l
Sewage treatment plant		3 mg/l
Fresh water sediment		0.174 mg/kg dry weight (d.w.)
Marine sediment		0.017 mg/kg dry weight (d.w.)
Polyethylene glycol castor oil	Soil	0.62 mg/kg dry weight (d.w.)
	Fresh water	0.000 mg/l
	Freshwater - intermittent	0.0661 mg/l
	Marine water	0.000 mg/l
	Marine water - intermittent	0.00661 mg/l
	Fresh water sediment	0.0129 mg/kg dry weight (d.w.)
Marine sediment	0.00129 mg/kg dry weight (d.w.)	
	Soil	0.00258 mg/kg dry weight (d.w.)

8.2 Exposure controls

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.

Use explosion-proof electrical, ventilating and lighting equipment.

Personal protective equipment

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.

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

		Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.
Hand protection		
Material	:	Chemical-resistant gloves
Remarks	:	Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection.
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.
Respiratory protection	:	If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection. Equipment should conform to BS EN 14387
Filter type	:	Combined particulates and organic vapour type (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	:	liquid
Colour	:	yellow
Odour	:	No data available
Odour Threshold	:	No data available
pH	:	4 - 5
Melting point/freezing point	:	< -5 °C
Initial boiling point and boiling range	:	No data available
Flash point	:	40 °C
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
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	:	No data available

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

Density	:	0.917 - 0.919 g/cm ³
Solubility(ies)	:	
Water solubility	:	partly miscible
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

9.2 Other information

Flammability (liquids)	:	Not applicable
Molecular weight	:	No data available
Particle size	:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions	:	Flammable liquid and vapour. Vapours may form explosive mixture with air. Can react with strong oxidizing agents.
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10.4 Conditions to avoid

Conditions to avoid	:	Heat, flames and sparks.
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10.5 Incompatible materials

Materials to avoid	:	Oxidizing agents
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10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

SECTION 11: Toxicological information

11.1 Information on toxicological effects

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: > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Components:

Solvent naphtha (petroleum), light aromatic:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.61 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Acute oral toxicity : LD50 (Rat): 4,445 mg/kg

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Remarks: Based on data from similar materials

4-Nonylphenol, branched, ethoxylated:

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

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

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

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

2,6-Di-tert-butyl-p-cresol:

Acute oral toxicity : LD50 (Rat): > 6,000 mg/kg
Method: OECD Test Guideline 401

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Causes skin irritation.

Components:

Solvent naphtha (petroleum), light aromatic:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Skin irritation

4-Nonylphenol, branched, ethoxylated:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation
Remarks : Based on data from similar materials

deltamethrin (ISO):

Species : Rabbit
Result : No skin irritation

2,6-Di-tert-butyl-p-cresol:

Species : Rabbit

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

Method : OECD Test Guideline 404
Result : No skin irritation
Remarks : Based on data from similar materials

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

Solvent naphtha (petroleum), light aromatic:

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

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

4-Nonylphenol, branched, ethoxylated:

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation
Remarks : Based on data from similar materials

deltamethrin (ISO):

Species : Rabbit
Result : Moderate eye irritation

2,6-Di-tert-butyl-p-cresol:

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation
Remarks : Based on data from similar materials

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Components:

Solvent naphtha (petroleum), light aromatic:

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

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Test Type : Magnusson-Kligman-Test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Remarks : Based on data from similar materials

4-Nonylphenol, branched, ethoxylated:

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

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

2,6-Di-tert-butyl-p-cresol:

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

Germ cell mutagenicity

May cause genetic defects.

Components:

Solvent naphtha (petroleum), light aromatic:

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

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

Genotoxicity in vivo : Test Type: Sister chromatid exchange analysis in spermatogonia
Species: Mouse
Application Route: Intraperitoneal injection
Result: positive

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

Germ cell mutagenicity- Assessment : Positive result(s) from in vivo heritable germ cell mutagenicity tests in mammals

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: Directive 67/548/EEC, Annex, B.13/14
Result: negative
Remarks: Based on data from similar materials

4-Nonylphenol, branched, ethoxylated:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative
Remarks: Based on data from similar materials

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

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

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

2,6-Di-tert-butyl-p-cresol:

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

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

Test Type: Chromosome aberration test in vitro
Result: negative

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow
cytogenetic test, chromosomal analysis)
Species: Rat
Application Route: Ingestion
Result: negative

Carcinogenicity

May cause cancer.

Components:

Solvent naphtha (petroleum), light aromatic:

Species : Mouse
Application Route : Skin contact
Exposure time : 2 Years
Result : positive

Carcinogenicity - Assessment : Sufficient evidence of carcinogenicity in animal experiments

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

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

Application Route : oral (feed)
Exposure time : 2 Years
NOAEL : 1 mg/kg body weight
Result : negative

2,6-Di-tert-butyl-p-cresol:

Species : Rat
Application Route : Ingestion
Exposure time : 22 Months
Result : negative

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Components:

Solvent naphtha (petroleum), light aromatic:

Effects on fertility : Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: inhalation (vapour)
Result: negative

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

4-Nonylphenol, branched, ethoxylated:

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

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

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

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.

2,6-Di-tert-butyl-p-cresol:

Effects on fertility : Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative

STOT - single exposure

May cause drowsiness or dizziness.

Components:

Solvent naphtha (petroleum), light aromatic:

Assessment : May cause drowsiness or dizziness.

deltamethrin (ISO):

Assessment : May cause respiratory irritation.

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

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.

2,6-Di-tert-butyl-p-cresol:

Assessment : No significant health effects observed in animals at concentrations of 100 mg/kg bw or less.

Repeated dose toxicity

Components:

Solvent naphtha (petroleum), light aromatic:

Species : Rat
LOAEL : 500 mg/kg
Application Route : Ingestion
Exposure time : 28 Days

4-Nonylphenol, branched, ethoxylated:

Species : Rat
LOAEL : 150 mg/kg
Application Route : Ingestion
Exposure time : 90 Days
Method : OPPTS 870.3100
Remarks : Based on data from similar materials

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

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

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

2,6-Di-tert-butyl-p-cresol:

Species : Rat
NOAEL : 25 mg/kg
Application Route : Ingestion
Exposure time : 22 Months

Aspiration toxicity

May be fatal if swallowed and enters airways.

Product:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Components:

Solvent naphtha (petroleum), light aromatic:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

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, Nau-

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

Ingestion : sea, Vomiting, Dizziness, tingling, Sweating, muscle twitching,
Blurred vision, Fatigue, anorexia, Allergic reactions
: Symptoms: muscle pain, Small pupils

SECTION 12: Ecological information

12.1 Toxicity

Components:

Solvent naphtha (petroleum), light aromatic:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 8.2 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction

Toxicity to daphnia and other : EL50 (Daphnia magna (Water flea)): 4.5 mg/l
aquatic invertebrates : Exposure time: 48 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : EL50 (Pseudokirchneriella subcapitata (microalgae)): 3.1 mg/l
plants : Exposure time: 96 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201

NOELR (Pseudokirchneriella subcapitata (microalgae)): 0.5
mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201

Toxicity to daphnia and other : NOELR: 2.6 mg/l
aquatic invertebrates (Chron- : Exposure time: 21 d
ic toxicity) : Species: Daphnia magna (Water flea)
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 211

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Toxicity to fish : LC50 : > 1 - < 10 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l
aquatic invertebrates : Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 10 -
plants : 100 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

NOEC (Pseudokirchneriella subcapitata (green algae)): > 0.1 - 1 mg/l

Exposure time: 96 h

Remarks: Based on data from similar materials

Toxicity to fish (Chronic toxicity) : NOEC: > 0.1 - 1 mg/l
Exposure time: 72 d
Species: Oncorhynchus mykiss (rainbow trout)
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: > 1 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Remarks: Based on data from similar materials

4-Nonylphenol, branched, 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: > 0.1 - 1 mg/l
Exposure time: 100 d
Species: Oryzias latipes (Japanese medaka)
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: > 0.001 - 0.01 mg/l
Exposure time: 28 d
Species: Mysidopsis bahia (opossum shrimp)
Remarks: Based on data from similar materials

M-Factor (Chronic aquatic toxicity) : 10

deltamethrin (ISO):

Toxicity to fish : LC50 (Cyprinodon variegatus (sheepshead minnow)): 0.00048

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

		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: 0.000022 mg/l Exposure time: 36 d Species: Pimephales promelas (fathead minnow)
		NOEC: 0.000017 mg/l Exposure time: 260 d Species: Pimephales promelas (fathead minnow)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.0041 µg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	1,000,000
2,6-Di-tert-butyl-p-cresol:		
Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 0.57 mg/l Exposure time: 96 h Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.48 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0.24 mg/l Exposure time: 72 h Method: OECD Test Guideline 201

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.24 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : 1

Toxicity to microorganisms : EC50 : > 10,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Toxicity to fish (Chronic toxicity) : NOEC: 0.053 mg/l
Exposure time: 30 d
Species: Oryzias latipes (Japanese medaka)
Method: OECD Test Guideline 210

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0.316 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic toxicity) : 1

12.2 Persistence and degradability

Components:

Solvent naphtha (petroleum), light aromatic:

Biodegradability : Result: Inherently biodegradable.
Biodegradation: 94 %
Exposure time: 25 d

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

4-Nonylphenol, branched, ethoxylated:

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

deltamethrin (ISO):

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

2,6-Di-tert-butyl-p-cresol:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 4.5 %
Exposure time: 28 d
Method: OECD Test Guideline 301C

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

12.3 Bioaccumulative potential

Components:

Benzenesulfonic acid, C10-13-alkyl derivs., calcium salts:

Partition coefficient: n-octanol/water : log Pow: 2.89

deltamethrin (ISO):

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

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

2,6-Di-tert-butyl-p-cresol:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 330 - 1,800

Partition coefficient: n-octanol/water : log Pow: 5.1

12.4 Mobility in soil

Components:

deltamethrin (ISO):

Distribution among environmental compartments : log Koc: 7.2

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : This substance/mixture contains components considered to have endocrine disrupting properties for environment, according to REACH Article 57(f), Commission Regulation (EU) 2018/605 or Commission Delegated Regulation (EU) 2017/2100.

Components:

4-Nonylphenol, branched, ethoxylated:

Assessment : The substance is considered to have endocrine disrupting properties according to REACH Article 57(f) for the environ-

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

ment.

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

- | | | |
|------------------------|---|--|
| Product | : | Dispose of in accordance with local regulations.
According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.
Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.
Do not dispose of waste into sewer. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal.
Empty containers retain residue and can be dangerous.
Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death.
If not otherwise specified: Dispose of as unused product. |

SECTION 14: Transport information

14.1 UN number

- | | | |
|------|---|---------|
| ADN | : | UN 3295 |
| ADR | : | UN 3295 |
| RID | : | UN 3295 |
| IMDG | : | UN 3295 |
| IATA | : | UN 3295 |

14.2 UN proper shipping name

- | | | |
|------|---|--|
| ADN | : | HYDROCARBONS, LIQUID, N.O.S. |
| ADR | : | HYDROCARBONS, LIQUID, N.O.S. |
| RID | : | HYDROCARBONS, LIQUID, N.O.S. |
| IMDG | : | HYDROCARBONS, LIQUID, N.O.S.
(deltamethrin (ISO), 2,6-Di-tert-butyl-p-cresol) |
| IATA | : | Hydrocarbons, liquid, n.o.s. |

14.3 Transport hazard class(es)

- | | Class | Subsidiary risks |
|-----|-------|------------------|
| ADN | : | 3 |
| ADR | : | 3 |

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2 Revision Date: 07.11.2023 SDS Number: 9374089-00007 Date of last issue: 30.09.2023
Date of first issue: 27.08.2021

RID : 3
IMDG : 3
IATA : 3

14.4 Packing group

ADN

Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

ADR

Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3
Tunnel restriction code : (D/E)

RID

Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

IMDG

Packing group : III
Labels : 3
EmS Code : F-E, S-D

IATA (Cargo)

Packing instruction (cargo aircraft) : 366
Packing instruction (LQ) : Y344
Packing group : III
Labels : Flammable Liquids

IATA (Passenger)

Packing instruction (passenger aircraft) : 355
Packing instruction (LQ) : Y344
Packing group : III
Labels : Flammable Liquids

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

14.6 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.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant EU provisions transposed through retained EU law

- | | | |
|---|---|--|
| UK REACH List of restrictions (Annex 17) | : | Conditions of restriction for the following entries should be considered:
Number on list 3

4-Nonylphenol, branched, ethoxylated (Number on list 46b, 46a.)
Solvent naphtha (petroleum), light aromatic (Number on list 29, 28)

Substance(s) or mixture(s) are listed here according to their appearance in the regulation, irrespective of their use/purpose or the conditions of the restriction. Please refer to the conditions in corresponding Regulation to determine whether an entry is applicable to the placing on the market or not. |
| UK REACH Candidate list of substances of very high concern (SVHC) for Authorisation | : | 4-Nonylphenol, branched, ethoxylated |
| The Persistent Organic Pollutants Regulations (retained Regulation (EU) 2019/1021 as amended for Great Britain) | : | Not applicable |
| Regulation (EC) No 1005/2009 on substances that deplete the ozone layer | : | Not applicable |
| UK REACH List of substances subject to authorisation (Annex XIV) | : | 4-Nonylphenol, branched, ethoxylated |
| GB Export and import of hazardous chemicals - Prior Informed Consent (PIC) Regulation | : | 4-Nonylphenol, branched, ethoxylated |

Control of Major Accident Hazards Regulations 2015 (COMAH)

E1	ENVIRONMENTAL HAZARDS	Quantity 1 100 t	Quantity 2 200 t
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SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version 4.2	Revision Date: 07.11.2023	SDS Number: 9374089-00007	Date of last issue: 30.09.2023 Date of first issue: 27.08.2021
P5c		FLAMMABLE LIQUIDS	5,000 t 50,000 t
34		Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams), (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)	2,500 t 25,000 t

Other regulations:

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to new and expectant mothers at work contained in Regulation 16 to 18) and of the Pregnant Workers Directive 92/85/EEC.

Take note of The Management of Health and Safety at Work Regulations 1999 (requirements relating to protection of young people at work contained in Regulation 19) and of Directive 94/33/EC on the protection of young people at work.

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

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

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information : 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 H-Statements

H226	:	Flammable liquid and vapour.
H301	:	Toxic if swallowed.
H304	:	May be fatal if swallowed and enters airways.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H319	:	Causes serious eye irritation.

SAFETY DATA SHEET

According to REACH Regulation (EC) No 1907/2006, as amended by
UK REACH Regulations SI 2019/758



Deltamethrin (2.5%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 30.09.2023
4.2	07.11.2023	9374089-00007	Date of first issue: 27.08.2021

H331	: Toxic if inhaled.
H335	: May cause respiratory irritation.
H336	: May cause drowsiness or dizziness.
H340	: May cause genetic defects.
H350	: May cause cancer.
H361	: Suspected of damaging fertility or the unborn child.
H361fd	: Suspected of damaging fertility. Suspected of damaging the unborn child.
H372	: Causes damage to organs through prolonged or repeated exposure if inhaled.
H372	: Causes damage to organs through prolonged or repeated exposure if swallowed.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H411	: Toxic to aquatic life with long lasting effects.
H412	: Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Asp. Tox.	: Aspiration hazard
Carc.	: Carcinogenicity
Eye Dam.	: Serious eye damage
Eye Irrit.	: Eye irritation
Flam. Liq.	: Flammable liquids
Muta.	: Germ cell mutagenicity
Repr.	: Reproductive toxicity
Skin Irrit.	: Skin irritation
Skin Sens.	: Skin sensitisation
STOT RE	: Specific target organ toxicity - repeated exposure
STOT SE	: Specific target organ toxicity - single exposure
GB EH40	: UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA	: Long-term exposure limit (8-hour TWA reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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;

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NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECL - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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/>

Classification of the mixture:

Flam. Liq. 3	H226
Skin Irrit. 2	H315
Eye Dam. 1	H318
Skin Sens. 1	H317
Muta. 1B	H340
Carc. 1B	H350
Repr. 2	H361
STOT SE 3	H336
STOT RE 2	H373
Asp. Tox. 1	H304
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Classification procedure:

Based on product data or assessment
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Calculation method
Based on product data or assessment
Calculation method
Calculation method

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

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