

Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

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

1.1 Product identifier

Trade name : Flumethrin (1%) Formulation

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

Use of the Sub- : Veterinary product

stance/Mixture

Recommended restrictions

on use

Not applicable

1.3 Details of the supplier of the safety data sheet

Company : MSD

20 Spartan Road

1619 Spartan, South Africa

Telephone : +27119239300

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)

Flammable liquids, Category 3

Acute toxicity, Category 4

Acute toxicity, Category 3

Acute toxicity, Category 3

Acute toxicity, Category 3

Skin irritation, Category 2

H226: Flammable liquid and vapour.

H302: Harmful if swallowed.

H311: Toxic in contact with skin.

H315: Causes skin irritation.

Eye irritation, Category 2

Reproductive toxicity, Category 1B

Specific target organ toxicity - single exH319: Causes serious eye irritation.
H360D: May damage the unborn child.
H371: May cause damage to organs.

posure, Category 2

Specific target organ toxicity - repeated

exposure, Category 2

Aspiration hazard, Category 1

H373: May cause damage to organs through pro-

longed or repeated exposure.

H304: May be fatal if swallowed and enters air-

ways.

Long-term (chronic) aquatic hazard, Cat- H412:

egory 3

H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

Hazard pictograms







Signal word : Danger

Hazard statements : H226 Flammable liquid and vapour.

H302 Harmful if swallowed.

H304 May be fatal if swallowed and enters airways.

H311 Toxic in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H360D May damage the unborn child.
H371 May cause damage to organs.

H373 May cause damage to organs through prolonged or

repeated exposure.

H412 Harmful 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 protec-

tion/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P308 + P311 IF exposed or concerned: Call a POISON

CENTER/ doctor.

Hazardous components which must be listed on the label:

Paraffin oil

Xylene

Flumethrin

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.

Vapours may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No.	Classification	Concentration
	EC-No.		(% w/w)
	Index-No.		
	Registration number		
Paraffin oil	8012-95-1	Asp. Tox. 1; H304	>= 50 - < 70



Flumethrin (1%) Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 30.09.2023

 5.0
 06.04.2024
 4019097-00016
 Date of first issue: 25.02.2019

	232-384-2	Aquatic Chronic 4; H413	
Xylene	1330-20-7 215-535-7 601-022-00-9	Flam. Liq. 3; H226 Acute Tox. 4; H332 Acute Tox. 4; H312 Skin Irrit. 2; H315 Eye Irrit. 2; H319 STOT SE 3; H335 STOT RE 2; H373 (Auditory system) Asp. Tox. 1; H304 Aquatic Chronic 3; H412	>= 10 - < 20
Flumethrin	69770-45-2 274-110-4	Acute Tox. 2; H300 Acute Tox. 1; H310 Eye Irrit. 2; H319 Repr. 1B; H360D STOT SE 1; H370 STOT RE 1; H372 Aquatic Chronic 1; H410 M-Factor (Chronic aquatic toxicity): 1	>= 1 - < 2,5
Toluene	108-88-3 203-625-9 601-021-00-3	Flam. Liq. 2; H225 Skin Irrit. 2; H315 Repr. 2; H361d STOT SE 3; H336 STOT RE 2; H373 (Central nervous system) Asp. Tox. 1; H304 Aquatic Chronic 3; H412	>= 0,25 - < 1

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 ad-

vice 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.



Flumethrin (1%) Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 30.09.2023

 5.0
 06.04.2024
 4019097-00016
 Date of first issue: 25.02.2019

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.

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 : Harmful if swallowed.

May be fatal if swallowed and enters airways.

Toxic in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
May damage the unborn child.
May cause damage to organs.

May cause damage to organs through prolonged or repeated

exposure.

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 prod- : Carbon oxides



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

ucts

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 meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances 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.

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 pro-

tective 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.

Local authorities should be advised if significant spillages

cannot be contained.

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 absor-

bent.

Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to deter-

mine 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.



Flumethrin (1%) Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 30.09.2023

 5.0
 06.04.2024
 4019097-00016
 Date of first issue: 25.02.2019

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 equip-

ment.

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 as-

sessment

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. Wash contami-

nated 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 Explosives

Gases

Very acutely toxic substances and mixtures



Flumethrin (1%) Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 30.09.2023

 5.0
 06.04.2024
 4019097-00016
 Date of first issue: 25.02.2019

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	Control parameters	Basis
		of exposure)	-	
Xylene	1330-20-7	OEL-RL	200 ppm	ZA OEL
	Further inform	nation: danger of cuta	aneous absorption, Occupati	onal Exposure
	Limits - Restri	cted Limits For Haza	ardous Chemical Agents	
		OEL- RL STEL/C	300 ppm	ZA OEL
			aneous absorption, Occupati	onal Exposure
	Limits - Restri	cted Limits For Haza	ardous Chemical Agents	
		TWA	50 ppm	2000/39/EC
			221 mg/m3	
		STEL	100 ppm	2000/39/EC
			442 mg/m3	
Flumethrin	69770-45-2	TWA	45 μg/m3 (OEB 3)	Internal
	Further information: Skin			
		Wipe limit	450 μg/100 cm ²	Internal
Toluene	108-88-3	OEL-RL	40 ppm	ZA OEL
	Further information: danger of cutaneous absorption, Occupational Exposure			
	Limits - Restricted Limits For Hazardous Chemical Agents			
		TWA	50 ppm	2006/15/EC
			192 mg/m3	
		STEL	100 ppm	2006/15/EC
			384 mg/m3	

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Xylene	1330-20-7	Methylhippuric acids: 1.5 g/g cre- atinine (Urine)	End of shift	ZA BEI
Toluene	108-88-3	Toluene: 0,02 mg/l (Blood)	Prior to last shift of workweek	ZA BEI
		Toluene: 0,03 mg/l (Urine)	End of shift	ZA BEI
		o-Cresol: 0.3 mg/g creatinine (Urine)	End of shift	ZA BEI

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Xylene	Workers	Inhalation	Long-term systemic effects	221 mg/m3



Flumethrin (1%) Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 30.09.2023

 5.0
 06.04.2024
 4019097-00016
 Date of first issue: 25.02.2019

	Workers	Inhalation	Acute systemic effects	442 mg/m3
	Workers	Inhalation	Long-term local ef- fects	221 mg/m3
	Workers	Inhalation	Acute local effects	442 mg/m3
	Workers	Skin contact	Long-term systemic effects	212 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	65,3 mg/m3
	Consumers	Inhalation	Acute systemic effects	260 mg/m3
	Consumers	Inhalation	Long-term local ef- fects	65,3 mg/m3
	Consumers	Inhalation	Acute local effects	260 mg/m3
	Consumers	Skin contact	Long-term systemic effects	125 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	12,5 mg/kg bw/day
Glycerides, mixed decanoyl and octanoyl	Workers	Inhalation	Long-term systemic effects	177,79 mg/m3
	Workers	Skin contact	Long-term systemic effects	25,21 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	43,84 mg/m3
	Consumers	Skin contact	Long-term systemic effects	12,61 mg/kg bw/day
	Consumers	Ingestion	Long-term systemic effects	12,61 mg/kg bw/day
Paraffin oil	Workers	Inhalation	Long-term systemic effects	5 mg/m3
	Workers	Inhalation	Short-term exposure	5 mg/m3
	Workers	Inhalation	Long-term local ef- fects	5 mg/m3
	Workers	Inhalation	Acute local effects	5 mg/m3
Toluene	Workers	Inhalation	Acute systemic ef- fects	384 mg/m3
	Workers	Inhalation	Acute local effects	384 mg/m3
	Workers	Skin contact	Long-term systemic effects	384 mg/kg bw/day
	Workers	Inhalation	Long-term systemic effects	192 mg/m3
	Workers	Inhalation	Long-term local ef- fects	192 mg/m3
	Consumers	Inhalation	Acute systemic effects	226 mg/m3
	Consumers	Inhalation	Acute local effects	226 mg/m3
	Consumers	Skin contact	Long-term systemic effects	226 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	56,5 mg/m3
	Consumers	Ingestion	Long-term systemic effects	8,13 mg/kg bw/day
· · · · · · · · · · · · · · · · · · ·	Consumers	Inhalation	Long-term local ef-	56,5 mg/m3



Flumethrin (1%) Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 30.09.2023

 5.0
 06.04.2024
 4019097-00016
 Date of first issue: 25.02.2019

l fects

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
Xylene	Fresh water	0,327 mg/l
	Intermittent use/release	0,327 mg/l
	Marine water	0,327 mg/l
	Sewage treatment plant	6,58 mg/l
	Fresh water sediment	12,46 mg/kg dry weight (d.w.)
	Marine sediment	12,46 mg/kg dry weight (d.w.)
	Soil	2,31 mg/kg dry weight (d.w.)
Glycerides, mixed decanoyl and octanoyl	Oral (Secondary Poisoning)	0,03 mg/kg food
Toluene	Fresh water	0,68 mg/l
	Marine water	0,68 mg/l
	Intermittent use/release	0,68 mg/l
	Sewage treatment plant	13,61 mg/l
	Fresh water sediment	16,39 mg/kg dry weight (d.w.)
	Marine sediment	16,39 mg/kg dry weight (d.w.)
	Soil	2,89 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 guick 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.

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 flam-

mable, 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



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

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 expo-

sure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

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 : Aqueous solution
Colour : light brown, yellow
Odour : No data available
Odour Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling

range

Flash point

: 54 °C

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Upper explosion limit / Upper

flammability limit

No data available

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

Density : 0,820 - 0,900 g/cm³

Solubility(ies)

Water solubility : No data available Partition coefficient: n- : Not applicable

octanol/water

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, kinematic : No data available



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

9.2 Other information

Flammability (liquids) : No data available

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.

10.4 Conditions to avoid

Conditions to avoid : Heat, flames and sparks.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Information on likely routes of : Inhalation exposure Skin conta

re Skin contact Ingestion

Eye contact

Acute toxicity

Harmful if swallowed. Toxic in contact with skin.

Product:

Acute oral toxicity : Acute toxicity estimate: 410,05 mg/kg

Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 20 mg/l



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: 393,03 mg/kg

Method: Calculation method

Components:

Paraffin oil:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

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

Assessment: The substance or mixture has no acute dermal

toxicity

Xylene:

Acute oral toxicity : LD50 (Rat): 3.523 mg/kg

Method: Directive 67/548/EEC, Annex V, B.1.

Acute inhalation toxicity : Acute toxicity estimate: 11 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: 1.100 mg/kg

Method: Expert judgement

Remarks: Based on national or regional regulation.

Flumethrin:

Acute oral toxicity : LD50 (Rat): > 20 mg/kg

LD50 (Mouse): > 20 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2.934 mg/l

Acute dermal toxicity : LD50 (Rat): > 5 mg/kg

Toluene:

Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg

Acute inhalation toxicity : LC50 (Rat): 28,1 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg

Skin corrosion/irritation

Causes skin irritation.



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

Components:

Paraffin oil:

Species : Rabbit

Result : No skin irritation

Xylene:

Species : Rabbit Result : Skin irritation

Flumethrin:

Result : No skin irritation

Toluene:

Species : Rabbit

Method : Directive 67/548/EEC, Annex V, B.4.

Result : Skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:

Paraffin oil:

Species : Rabbit

Result : No eye irritation

Xylene:

Species : Rabbit

Result : Irritation to eyes, reversing within 21 days

Flumethrin:

Result : Mild eye irritation

Toluene:

Species : Rabbit

Method : OECD Test Guideline 405

Result : No eye irritation

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Xylene:



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

Test Type : Local lymph node assay (LLNA)

Exposure routes : Skin contact
Species : Mouse
Result : negative

Toluene:

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

Method : Directive 67/548/EEC, Annex V, B.6.

Result : negative

Germ cell mutagenicity

Not classified based on available information.

Components:

Xylene:

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

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Result: negative

Test Type: In vitro sister chromatid exchange assay in mam-

malian cells Result: negative

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)

Species: Mouse

Application Route: Skin contact

Result: negative

Flumethrin:

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)

Test system: Salmonella typhimurium

Result: equivocal

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

Result: positive

Remarks: Not classified due to inconclusive data.

Test Type: Chromosomal aberration Test system: Human lymphocytes

Result: negative

Test Type: in vitro micronucleus test

Test system: Mouse Result: negative



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

Germ cell mutagenicity- As-

sessment

Weight of evidence does not support classification as a germ

cell mutagen.

Toluene:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test

Result: negative

Test Type: Bacterial reverse mutation assay (AMES)

Result: negative

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow

cytogenetic test, chromosomal analysis)

Species: Rat

Application Route: Intraperitoneal injection

Result: negative

Test Type: Rodent dominant lethal test (germ cell) (in vivo)

Species: Mouse

Application Route: inhalation (vapour) Method: OECD Test Guideline 478

Result: negative

Carcinogenicity

Not classified based on available information.

Components:

Xylene:

Species: RatApplication Route: IngestionExposure time: 103 weeksResult: negative

Flumethrin:

Species : Rat
Application Route : Oral
Exposure time : 2 Years

NOAEL : 0,5 mg/kg body weight

Result : negative

Carcinogenicity - Assess-

ment

Weight of evidence does not support classification as a car-

cinogen

Toluene:

Species : Rat

Application Route : inhalation (vapour)

Exposure time : 103 weeks Result : negative

Species : Mouse Application Route : Skin contact



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

Exposure time : 24 Months
Result : negative

Reproductive toxicity

May damage the unborn child.

Components:

Xylene:

Effects on fertility : Test Type: One-generation reproduction toxicity study

Species: Rat

Application Route: inhalation (vapour)

Result: negative

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rat

Application Route: inhalation (vapour)

Result: negative

Flumethrin:

Effects on foetal develop-

ment

Test Type: Development

Species: Rat

Application Route: Oral

Developmental Toxicity: NOAEL: 0,36 mg/kg body weight Result: Maternal toxicity observed., Reduced offspring weight

gain, foetal abnormalities

Test Type: Development

Species: Rat

Application Route: Oral

Developmental Toxicity: NOAEL: 0,5 mg/kg body weight Result: Maternal toxicity observed., Skeletal malformations,

Reduced foetal weight

Test Type: Development

Species: Rabbit Application Route: Oral

Developmental Toxicity: NOAEL: 1,7 mg/kg body weight

Result: No teratogenic potential

Reproductive toxicity - As-

sessment

May damage the unborn child.

Toluene:

Effects on fertility : Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: inhalation (vapour) Method: OECD Test Guideline 416

Result: negative

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rat

Application Route: inhalation (vapour)

Result: positive



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

Reproductive toxicity - As-

sessment

Some evidence of adverse effects on development, based on

animal experiments.

STOT - single exposure

May cause damage to organs.

Components:

Xylene:

Assessment : May cause respiratory irritation.

Flumethrin:

Exposure routes : Oral

Assessment : Causes damage to organs.

Toluene:

Assessment : May cause drowsiness or dizziness.

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Components:

Xylene:

Exposure routes : inhalation (vapour)
Target Organs : Auditory system

Assessment : Shown to produce significant health effects in animals at con-

centrations of >0.2 to 1 mg/l/6h/d.

Flumethrin:

Exposure routes : Oral

Assessment : Causes damage to organs through prolonged or repeated

exposure.

Toluene:

Exposure routes : Inhalation

Target Organs : Central nervous system

Assessment : May cause damage to organs through prolonged or repeated

exposure.

Repeated dose toxicity

Components:

Paraffin oil:

Species: Rat, femaleLOAEL: 161 mg/kgApplication Route: IngestionExposure time: 90 Days



Flumethrin (1%) Formulation

Version **Revision Date:** SDS Number: Date of last issue: 30.09.2023 06.04.2024 4019097-00016 Date of first issue: 25.02.2019 5.0

Xylene:

Species Rat

LOAEL > 0.2 - 1 mg/lApplication Route : inhalation (vapour)

Exposure time 13 Weeks

Remarks Based on data from similar materials

: Rat Species

Species
LOAEL
Application Route
Exposure time 150 mg/kg : Ingestion Exposure time 90 Days

Flumethrin:

Species Rat NOAEL NOAEL
Application Route
Exposure time
Target Organs
Symptoms 0,7 mg/kg Oral : 13 Weeks

digestive system, Skin

Symptoms decrease in appetite, Skin disorders

Species Dog NOAEL
Application Route : Oral
Exposure time : 13 Weeks
: digestive system, Hair, Skin decrease in appetite, Skin decrease in app

decrease in appetite, Skin disorders Symptoms

Toluene:

Species Rat

LOAEL 1,875 mg/l

Application Route : inhalation (vapour)

Exposure time : 6 Months

Species : Rat : 625 mg/kg : Ingestion : 13 Weeks NOAEL Application Route Exposure time

Aspiration toxicity

May be fatal if swallowed and enters airways.

Components:

Paraffin oil:

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.

Xylene:

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.



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

Toluene:

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:

Toluene:

Inhalation : Target Organs: Central nervous system

Symptoms: Neurological disorders

SECTION 12: Ecological information

12.1 Toxicity

Components:

Paraffin oil:

Toxicity to fish : LL50 (Scophthalmus maximus (turbot)): > 100 mg/l

Exposure time: 96 h

Test substance: Water Accommodated Fraction Remarks: Based on data from similar materials

Toxicity to daphnia and other:

aquatic invertebrates

EL50 (Acartia tonsa (Calanoid copepod)): > 100 mg/l

Exposure time: 48 h

Test substance: Water Accommodated Fraction Remarks: Based on data from similar materials

Toxicity to algae/aquatic

plants

: EL50 (Skeletonema costatum (marine diatom)): > 100 mg/l

Exposure time: 72 h

Test substance: Water Accommodated Fraction Remarks: Based on data from similar materials

NOELR (Skeletonema costatum (marine diatom)): > 1 mg/l

Exposure time: 72 h

Test substance: Water Accommodated Fraction Remarks: Based on data from similar materials

Xylene:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 13,5 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l

Exposure time: 24 h

Method: OECD Test Guideline 202

Remarks: Based on data from similar materials

Toxicity to algae/aquatic

plants

: EC50 (Skeletonema costatum (marine diatom)): 10 mg/l

Exposure time: 72 h

Toxicity to microorganisms : NOEC : > 100 mg/l

Exposure time: 3 h



Flumethrin (1%) Formulation

Version **Revision Date:** SDS Number: Date of last issue: 30.09.2023 06.04.2024 4019097-00016 Date of first issue: 25.02.2019 5.0

Method: OECD Test Guideline 209

Remarks: Based on data from similar materials

Toxicity to fish (Chronic tox-

icity)

NOEC: > 0.1 - < 1 mg/lExposure time: 35 d

Species: Danio rerio (zebra fish) Method: OECD Test Guideline 210

Remarks: Based on data from similar materials

Toxicity to daphnia and other: aquatic invertebrates (Chron-

ic toxicity)

EL10: > 1 - 10 mg/lExposure time: 21 d

Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

Remarks: Based on data from similar materials

Flumethrin:

Toxicity to fish (Chronic tox-

icity)

NOEC: 0,046 mg/l Exposure time: 144 h

Species: Danio rerio (zebra fish)

M-Factor (Chronic aquatic

toxicity)

: 1

Toluene:

Toxicity to fish LC50 (Oncorhynchus kisutch (coho salmon)): 5,5 mg/l

Exposure time: 96 h

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Ceriodaphnia dubia (water flea)): 3,78 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

NOEC (Skeletonema costatum (marine diatom)): 10 mg/l

Exposure time: 72 h

Toxicity to microorganisms EC50 (Nitrosomonas sp.): 84 mg/l

Exposure time: 24 h

Toxicity to fish (Chronic tox-

icity)

NOEC: 1,39 mg/l

Exposure time: 40 d

Species: Oncorhynchus kisutch (coho salmon)

Toxicity to daphnia and other:

aquatic invertebrates (Chron-

NOEC: 0,74 mg/l Exposure time: 7 d

ic toxicity)

Species: Ceriodaphnia dubia (water flea)

12.2 Persistence and degradability

Components:

Xylene:

Biodegradability Result: Readily biodegradable.

Biodegradation: > 70 % Exposure time: 28 d

Method: OECD Test Guideline 301F

Remarks: Based on data from similar materials



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

П

Toluene:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 80 % Exposure time: 20 d

12.3 Bioaccumulative potential

Components:

Paraffin oil:

Partition coefficient: n-

octanol/water

: log Pow: > 4

Remarks: Calculation

Xylene:

Partition coefficient: n-

octanol/water

log Pow: 3,16

Remarks: Calculation

Flumethrin:

Partition coefficient: n-

octanol/water

log Pow: 6,2

Toluene:

Bioaccumulation : Species: Leuciscus idus (Golden orfe)

Bioconcentration factor (BCF): 90

Partition coefficient: n-

octanol/water

: log Pow: 2,73

12.4 Mobility in soil

No data available

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 Other adverse effects

Product:

Endocrine disrupting poten-

tial

: The substance/mixture does not contain components considered to have endocrine disrupting properties according to

REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

levels of 0.1% or higher.



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

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 han-

dling 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

Ш

ADN : UN 1992
ADR : UN 1992
RID : UN 1992
IMDG : UN 1992
IATA : UN 1992

14.2 UN proper shipping name

ADN : FLAMMABLE LIQUID, TOXIC, N.O.S.

(Xylene, Flumethrin)

ADR : FLAMMABLE LIQUID, TOXIC, N.O.S.

(Xylene, Flumethrin)

RID : FLAMMABLE LIQUID, TOXIC, N.O.S.

(Xylene, Flumethrin)

IMDG : FLAMMABLE LIQUID, TOXIC, N.O.S.

(Xylene, Flumethrin)

IATA : Flammable liquid, toxic, n.o.s.

(Xylene, Flumethrin)

14.3 Transport hazard class(es)

		Class	Subsidiary risks
ADN	:	3	6.1
ADR	:	3	6.1
RID	:	3	6.1
IMDG	:	3	6.1
IATA	:	3	6.1



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

14.4 Packing group

ADN

Packing group : III
Classification Code : FT1
Hazard Identification Number : 36
Labels : 3 (6.1)

ADR

Packing group : III
Classification Code : FT1
Hazard Identification Number : 36
Labels : 3 (6.1)
Tunnel restriction code : (D/E)

RID

Packing group : III
Classification Code : FT1
Hazard Identification Number : 36
Labels : 3 (6.1)

IMDG

Packing group : III
Labels : 3 (6.1)
EmS Code : F-E, S-D

IATA (Cargo)

Packing instruction (cargo : 366

aircraft)

Packing instruction (LQ) : Y343 Packing group : III

Labels : Flammable Liquids, Toxic

IATA (Passenger)

Packing instruction (passen: 355

ger aircraft)

Packing instruction (LQ) : Y343
Packing group : III

Labels : Flammable Liquids, Toxic

14.5 Environmental hazards

ADN

Environmentally hazardous : no

ADR

Environmentally hazardous : no

rid

Environmentally hazardous : no

IMDG

Marine pollutant : no

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



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

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

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

H225 : Highly flammable liquid and vapour.
H226 : Flammable liquid and vapour.

H300 : Fatal if swallowed.

H304 : May be fatal if swallowed and enters airways.

H310 : Fatal in contact with skin.
H312 : Harmful in contact with skin.
H315 : Causes skin irritation.

H319 : Causes serious eye irritation.

H332 : Harmful if inhaled.

H335 : May cause respiratory irritation.
H336 : May cause drowsiness or dizziness.
H360D : May damage the unborn child.

H361d : Suspected of damaging the unborn child. H370 : Causes damage to organs if swallowed.

H372 : Causes damage to organs through prolonged or repeated

exposure if swallowed.

H373 : May cause damage to organs through prolonged or repeated

exposure.

H410 : Very toxic to aquatic life with long lasting effects.
 H412 : Harmful to aquatic life with long lasting effects.
 H413 : May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

Acute Tox. : Acute toxicity

Aquatic Chronic : Long-term (chronic) aquatic hazard

Asp. Tox. : Aspiration hazard Eye Irrit. : Eye irritation Flam. Liq. : Flammable liquids



Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 30.09.2023 5.0 06.04.2024 4019097-00016 Date of first issue: 25.02.2019

Repr. : Reproductive toxicity

Skin Irrit. : Skin irritation

STOT RE : Specific target organ toxicity - repeated exposure STOT SE : Specific target organ toxicity - single exposure

2000/39/EC : Europe. Commission Directive 2000/39/EC establishing a first

list of indicative occupational exposure limit values

2006/15/EC : Europe. Indicative occupational exposure limit values
ZA BEI : South Africa. The Regulations for Hazardous Chemical

Agents, Biological Exposure Indices

ZA OEL : South Africa. The Regulations for Hazardous Chemical

Agents, Occupational Exposure Limits

2000/39/EC / TWA: Limit Value - eight hours2000/39/EC / STEL: Short term exposure limit2006/15/EC / TWA: Limit Value - eight hours2006/15/EC / STEL: Short term exposure limit

ZA OEL / OEL-RL : Occupational Exposure Limit Restricted limit - 8- hour expo-

sure or equivalent (12 hour shifts)

ZA OEL / OEL- RL STEL/C : Occupational Exposure Limit Restricted limit - Short term oc-

cupational exposure limits / ceiling limits

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - 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; 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; 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

Further information

Sources of key data used to : Internal technical data, data from raw material SDSs, OECD



Flumethrin (1%) Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 30.09.2023

 5.0
 06.04.2024
 4019097-00016
 Date of first issue: 25.02.2019

compile the Safety Data eChem Portal search results and European Chemicals Agen-

Sheet cy, http://echa.europa.eu/

Classification of the m	ixture:	Classification procedure:		
Flam. Liq. 3	H226	Based on product data or assessment		
Acute Tox. 4	H302	Calculation method		
Acute Tox. 3	H311	Calculation method		
Skin Irrit. 2	H315	Calculation method		
Eye Irrit. 2	H319	Calculation method		
Repr. 1B	H360D	Calculation method		
STOT SE 2	H371	Calculation method		
STOT RE 2	H373	Calculation method		
Asp. Tox. 1	H304	Calculation method		
Aquatic Chronic 3	H412	Calculation method		

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

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.

ZA / EN