

Flumethrin (2%) Formulation

Version 1.1 Revision Date: 18.03.2022 SDS Number: 10225127-00002 Date of last issue: 12.11.2021
Date of first issue: 12.11.2021

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Flumethrin (2%) Formulation

Manufacturer or supplier's details

Company : MSD
Address : Briahnager - Off Pune Nagar Road
Wagholi - Pune - India 412 207
Telephone : +1-908-740-4000
Emergency telephone number : +1-908-423-6000
E-mail address : EHSDATASTEWARD@msd.com

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product
Restrictions on use : Not applicable

2. HAZARDS IDENTIFICATION**Manufacture, Storage and Import of Hazardous Chemicals Rules 1989****Classification**

Highly Toxic, Toxic

GHS Classification

Acute toxicity (Oral) : Category 3
Acute toxicity (Dermal) : Category 2
Skin corrosion/irritation : Category 2
Serious eye damage/eye irritation : Category 2A
Reproductive toxicity : Category 1B
Specific target organ toxicity - single exposure (Oral) : Category 2
Specific target organ toxicity - repeated exposure : Category 2 (Auditory system)
Specific target organ toxicity - repeated exposure (Oral) : Category 2
Aspiration hazard : Category 1

Flumethrin (2%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 12.11.2021
1.1	18.03.2022	10225127-00002	Date of first issue: 12.11.2021

Short-term (acute) aquatic hazard : Category 3

Long-term (chronic) aquatic hazard : Category 2

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements :

- H301 Toxic if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H310 Fatal 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 if swallowed.
- H373 May cause damage to organs through prolonged or repeated exposure if swallowed.
- H373 May cause damage to organs (Auditory system) through prolonged or repeated exposure.
- H402 Harmful to aquatic life.
- H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

- P203 Obtain, read and follow all safety instructions before use.
- P260 Do not breathe mist or vapours.
- P262 Do not get in eyes, on skin, or on clothing.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

- P301 + P316 + P330 IF SWALLOWED: Get emergency medical help immediately. Rinse mouth.
- P302 + P352 + P316 IF ON SKIN: Wash with plenty of water. Get emergency medical help immediately.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308 + P316 IF exposed or concerned: Get emergency medical help immediately.
- P331 Do NOT induce vomiting.
- P332 + P317 If skin irritation occurs: Get medical help.
- P337 + P317 If eye irritation persists: Get medical help.
- P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.
- P391 Collect spillage.

Flumethrin (2%) Formulation

Version 1.1 Revision Date: 18.03.2022 SDS Number: 10225127-00002 Date of last issue: 12.11.2021
 Date of first issue: 12.11.2021

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

May form explosive dust-air mixture during processing, handling or other means.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Paraffin oil	8012-95-1	>= 50 - < 70
Xylene	1330-20-7	>= 10 - < 20
Flumethrin	69770-45-2	>= 2.5 - < 5

4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
 When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.
 Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
 Get medical attention immediately.
 Wash clothing before reuse.
 Destroy contaminated shoes.
- 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 : 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.
- Most important symptoms and effects, both acute and delayed : Toxic if swallowed.
 May be fatal if swallowed and enters airways.
 Fatal in contact with skin.
 Causes skin irritation.
 Causes serious eye irritation.
 May damage the unborn child.
 May cause damage to organs if swallowed.
 May cause damage to organs through prolonged or repeated exposure.

Flumethrin (2%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 12.11.2021
1.1	18.03.2022	10225127-00002	Date of first issue: 12.11.2021

Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Notes to physician : Treat symptomatically and supportively.

5. FIREFIGHTING MEASURES

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

Unsuitable extinguishing media : None known.

Specific hazards during fire-fighting : Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Carbon oxides

Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

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

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.
Only trained personnel should re-enter the area.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions : Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material.
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.
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

Flumethrin (2%) Formulation

Version 1.1 Revision Date: 18.03.2022 SDS Number: 10225127-00002 Date of last issue: 12.11.2021
Date of first issue: 12.11.2021

employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

7. HANDLING AND STORAGE

- Technical measures : Static electricity may accumulate and ignite suspended dust causing an explosion.
Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
- Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.
- Advice on safe handling : Do not get on skin or clothing.
Do not breathe mist or vapours.
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
Keep container tightly closed.
Minimize dust generation and accumulation.
Keep container closed when not in use.
Keep away from heat and sources of ignition.
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.
- Conditions for safe storage : Keep in properly labelled containers.
Store locked up.
Keep tightly closed.
Store in accordance with the particular national regulations.
- Materials to avoid : Do not store with the following product types:
Explosives

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Paraffin oil	8012-95-1	TWA (Mist)	5 mg/m ³	IN OEL
		STEL (Mist)	10 mg/m ³	IN OEL
		TWA (Inhalable particulate matter)	5 mg/m ³	ACGIH
Xylene	1330-20-7	TWA	100 ppm 435 mg/m ³	IN OEL
		STEL	150 ppm 655 mg/m ³	IN OEL
		TWA	100 ppm	ACGIH

Flumethrin (2%) Formulation

Version 1.1 Revision Date: 18.03.2022 SDS Number: 10225127-00002 Date of last issue: 12.11.2021
 Date of first issue: 12.11.2021

		STEL	150 ppm	ACGIH
Flumethrin	69770-45-2	TWA	45 µg/m ³ (OEB 3)	Internal
Further information: Skin				
		Wipe limit	450 µg/100 cm ²	Internal

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sam-pling time	Permissible concentra-tion	Basis
Xylene	1330-20-7	Methylhip-puric acids	Urine	End of shift (As soon as possible after exposure ceases)	1.5 g/g cre-atinine	ACGIH BEI

Engineering measures : Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections).
 All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.
 Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).
 Minimize open handling.

Personal protective equipment

Respiratory protection : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type : Combined particulates and organic vapour type

Hand protection

Material : Chemical-resistant gloves

Remarks : Consider double gloving.

Eye protection : Wear safety glasses with side shields or goggles.
 If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.
 Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Skin and body protection : Work uniform or laboratory coat.
 Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.
 Use appropriate degowning techniques to remove potentially contaminated clothing.

Hygiene measures : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.
 When using do not eat, drink or smoke.

Flumethrin (2%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 12.11.2021
1.1	18.03.2022	10225127-00002	Date of first issue: 12.11.2021

Wash contaminated clothing before re-use.
The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Colour	:	light brown
Odour	:	odourized
Odour Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	May form explosive dust-air mixture during processing, handling or other means.
Flammability (liquids)	:	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
Density	:	0.750 - 0.950 g/cm ³
Solubility(ies) Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available

Flumethrin (2%) Formulation

Version 1.1 Revision Date: 18.03.2022 SDS Number: 10225127-00002 Date of last issue: 12.11.2021
Date of first issue: 12.11.2021

Viscosity
Viscosity, kinematic : No data available

Explosive properties : Not explosive

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

Molecular weight : No data available

Particle size : Not applicable

10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : May form explosive dust-air mixture during processing, handling or other means.
Can react with strong oxidizing agents.

Conditions to avoid : Heat, flames and sparks.
Avoid dust formation.

Incompatible materials : Oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

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

Acute toxicity

Toxic if swallowed.
Fatal in contact with skin.

Product:

Acute oral toxicity : Acute toxicity estimate: 186.2 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 40 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: 185.64 mg/kg
Method: Calculation method

Components:**Paraffin oil:**

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

Flumethrin (2%) Formulation

Version 1.1 Revision Date: 18.03.2022 SDS Number: 10225127-00002 Date of last issue: 12.11.2021
Date of first issue: 12.11.2021

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 : LC50 (Rat): 27.571 mg/l
Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 4,200 mg/kg

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

Skin corrosion/irritation

Causes skin irritation.

Components:**Paraffin oil:**

Species : Rabbit
Result : No skin irritation

Xylene:

Species : Rabbit
Result : Skin irritation

Flumethrin:

Result : No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Components:**Paraffin oil:**

Species : Rabbit
Result : No eye irritation

Xylene:

Species : Rabbit

Flumethrin (2%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 12.11.2021
1.1	18.03.2022	10225127-00002	Date of first issue: 12.11.2021

Result : Irritation to eyes, reversing within 21 days

Flumethrin:

Result : Mild eye irritation

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Components:

Xylene:

Test Type : Local lymph node assay (LLNA)
 Exposure routes : Skin contact
 Species : Mouse
 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 mammalian 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

Flumethrin (2%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 12.11.2021
1.1	18.03.2022	10225127-00002	Date of first issue: 12.11.2021

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

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Not classified based on available information.

Components:

Xylene:

Species : Rat
 Application Route : Ingestion
 Exposure time : 103 weeks
 Result : negative

Flumethrin:

Species : Rat
 Application Route : Oral
 Exposure time : 2 Years
 NOAEL : 0.5 mg/kg body weight
 Result : negative

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

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

Flumethrin:

Effects on foetal development : Test Type: Development
 Species: Rat

Flumethrin (2%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 12.11.2021
1.1	18.03.2022	10225127-00002	Date of first issue: 12.11.2021

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 - Assessment : May damage the unborn child.

STOT - single exposure

May cause damage to organs if swallowed.

Components:

Xylene:

Assessment : May cause respiratory irritation.

Flumethrin:

Exposure routes : Oral
 Assessment : Causes damage to organs.

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure if swallowed.
 May cause damage to organs (Auditory system) 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 concentrations of >0.2 to 1 mg/l/6h/d.

Flumethrin:

Exposure routes : Oral
 Assessment : Causes damage to organs through prolonged or repeated exposure.

Flumethrin (2%) Formulation

Version 1.1 Revision Date: 18.03.2022 SDS Number: 10225127-00002 Date of last issue: 12.11.2021
Date of first issue: 12.11.2021

Repeated dose toxicity**Components:****Paraffin oil:**

Species : Rat, female
LOAEL : 161 mg/kg
Application Route : Ingestion
Exposure time : 90 Days

Xylene:

Species : Rat
LOAEL : > 0.2 - 1 mg/l
Application Route : inhalation (vapour)
Exposure time : 13 Weeks
Remarks : Based on data from similar materials

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

Flumethrin:

Species : Rat
NOAEL : 0.7 mg/kg
Application Route : Oral
Exposure time : 13 Weeks
Target Organs : digestive system, Skin
Symptoms : decrease in appetite, Skin disorders

Species : Dog
NOAEL : 0.88 mg/kg
Application Route : Oral
Exposure time : 13 Weeks
Target Organs : digestive system, Hair, Skin
Symptoms : decrease in appetite, Skin disorders

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 (2%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 12.11.2021
1.1	18.03.2022	10225127-00002	Date of first issue: 12.11.2021

12. ECOLOGICAL INFORMATION

Ecotoxicity

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
 Method: OECD Test Guideline 209
 Remarks: Based on data from similar materials
- Toxicity to fish (Chronic toxicity) : NOEC: > 0.1 - < 1 mg/l
 Exposure 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 (Chronic toxicity) : EL10: > 1 - 10 mg/l
 Exposure time: 21 d
 Species: Daphnia magna (Water flea)
 Method: OECD Test Guideline 211

Flumethrin (2%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 12.11.2021
1.1	18.03.2022	10225127-00002	Date of first issue: 12.11.2021

Remarks: Based on data from similar materials

Flumethrin:

Toxicity to fish (Chronic toxicity) : NOEC: 0.046 mg/l
Exposure time: 144 h
Species: Danio rerio (zebra fish)

M-Factor (Chronic aquatic toxicity) : 1

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

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

Mobility in soil

No data available

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

Disposal methods

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

Flumethrin (2%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 12.11.2021
1.1	18.03.2022	10225127-00002	Date of first issue: 12.11.2021

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

UN number	: UN 2810
Proper shipping name	: TOXIC LIQUID, ORGANIC, N.O.S. (Flumethrin)
Class	: 6.1
Packing group	: II
Labels	: 6.1

IATA-DGR

UN/ID No.	: UN 2810
Proper shipping name	: Toxic liquid, organic, n.o.s. (Flumethrin)
Class	: 6.1
Packing group	: II
Labels	: Toxic
Packing instruction (cargo aircraft)	: 662
Packing instruction (passenger aircraft)	: 654

IMDG-Code

UN number	: UN 2810
Proper shipping name	: TOXIC LIQUID, ORGANIC, N.O.S. (Flumethrin)
Class	: 6.1
Packing group	: II
Labels	: 6.1
EmS Code	: F-A, S-A
Marine pollutant	: yes

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

15. REGULATORY INFORMATION**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

Flumethrin (2%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 12.11.2021
1.1	18.03.2022	10225127-00002	Date of first issue: 12.11.2021

16. OTHER INFORMATION

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/>

Date format : dd.mm.yyyy

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
 ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)
 IN OEL : India. Permissible levels of certain chemical substances in work environment.

ACGIH / TWA : 8-hour, time-weighted average
 ACGIH / STEL : Short-term exposure limit
 IN OEL / TWA : Time-Weighted Average Concentration (TWA) (8 hrs.)
 IN OEL / STEL : Short-term exposure Limit STEL (15 min)

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

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for

Flumethrin (2%) Formulation

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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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