

# Flumethrin (1%) Formulation

Version SDS Number: Date of last issue: 2023/09/30 **Revision Date:** 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

#### 1. PRODUCT AND COMPANY IDENTIFICATION

Chemical product name Flumethrin (1%) Formulation

Supplier's company name, address and phone number

Company name of supplier MSD

Address Kumagaya, Saitama Prefecture, Xicheng 810 MSD Co., Ltd.

Menuma factory

Telephone 048-588-8411

E-mail address EHSDATASTEWARD@msd.com

Emergency telephone number : +1-908-423-6000

Recommended use of the chemical and restrictions on use

Recommended use Veterinary product Not applicable Restrictions on use

#### 2. HAZARDS IDENTIFICATION

GHS classification of chemical product

Flammable liquids Category 3

Acute toxicity (Oral) Category 4

Acute toxicity (Dermal) Category 3

Skin corrosion/irritation Category 2

Serious eye damage/eye irri-

tation

Category 2

Reproductive toxicity Category 1B

Specific target organ toxicity - :

single exposure (Oral)

Category 2 (Systemic toxicity)

repeated exposure

Specific target organ toxicity - : Category 2 (Auditory system)

Specific target organ toxicity - :

repeated exposure (Oral)

Category 2 (Systemic toxicity)

Aspiration hazard Category 1



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

Short-term (acute) aquatic

hazard

Category 3

Long-term (chronic) aquatic

hazard

Category 3

**GHS** label elements

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 (Systemic toxicity) if swal-

lowed.

H373 May cause damage to organs (Auditory system) through

prolonged or repeated exposure.

H373 May cause damage to organs (Systemic toxicity) through

prolonged or repeated exposure if swallowed.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read

and understood.

P210 Keep away from heat, hot surfaces, sparks, open flames

and other ignition sources. No smoking.

P233 Keep container tightly closed.

P241 Use explosion-proof electrical/ ventilating/ lighting equip-

ment.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P260 Do not breathe mist or vapours. 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 protec-

tion/ face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P302 + P352 + P312 IF ON SKIN: Wash with plenty of water.

Call a POISON CENTER/ doctor if you feel unwell.



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

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 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.

P331 Do NOT induce vomiting.

P332 + P313 If skin irritation occurs: Get medical advice/ atten-

P337 + P313 If eye irritation persists: Get medical advice/ at-

P361 + P364 Take off immediately all contaminated clothing and wash it before reuse.

#### Storage:

P403 + P235 Store in a well-ventilated place. Keep cool. P405 Store locked up.

#### Disposal:

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

#### Other hazards which do not result in classification

Important symptoms and outlines of the emergency as-

Important symptoms and out- : Vapours may form explosive mixture with air.

sumed

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

# Components

Chemical name	CAS-No.	Concentration (% w/w)	ENCS No.
Paraffin oil	8012-95-1	>= 65.8537 - <= 68.8889	
Xylene	1330-20-7	11.5854	3-3, 3-60
Flumethrin	69770-45-2	>= 1 - < 2.5	
Toluene	108-88-3	>= 0.5556 - <= 0.6098	3-2, 3-60

#### 4. 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.

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



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

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 : 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

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 if swallowed.

May cause damage to organs through prolonged or repeated

exposure.

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

High volume water jet

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: :

ucts

Carbon oxides

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.

Special protective equipment :

for firefighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

#### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emer-

gency procedures

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).

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

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.

## 7. HANDLING AND STORAGE

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.



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

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.

Avoidance of contact : Oxidizing agents

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 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.

Storage

Conditions for safe storage : 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.

Materials to avoid : Do not store with the following product types:

Oxidizing solids Oxidizing liquids

Packaging material : Unsuitable material: None known.

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

# Threshold limit value and permissible exposure limits for each component in the work environment

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Reference concentration / Permissible concentration	Basis
Paraffin oil	8012-95-1	OEL-M (Mist)	3 mg/m3	JP OEL JSOH
	Further information: Group 1: carcinogenic to humans			
		TWA (Inhal- able particu- late matter)	5 mg/m3	ACGIH
Xylene	1330-20-7	ACL	50 ppm	JP OEL ISHL
		OEL-M	50 ppm 217 mg/m3	JP OEL JSOH
	Further information: Group 3: Substances suspected to cause reproductive toxicity in humans			



# Flumethrin (1%) Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 2023/09/30

 8.0
 2024/04/06
 4019091-00016
 Date of first issue: 2019/02/25

		TWA	20 ppm	ACGIH
Flumethrin	69770-45-2	TWA	45 μg/m3 (OEB 3)	Internal
	Further information: Skin			
		Wipe limit	450 µg/100 cm <sup>2</sup>	Internal
Toluene	108-88-3	ACL	20 ppm	JP OEL ISHL
		OEL-M	50 ppm	JP OEL
			188 mg/m3	JSOH
	Further information: Group 1: Substances known to cause repro-			cause repro-
	ductive toxicity in humans, Skin absorption			
		TWA	20 ppm	ACGIH

# **Biological occupational exposure limits**

Components	CAS-No.	Target sub- stance	Biological specimen	Sam- pling time	Permissible concentration	Basis
Xylene	1330-20-7	total (o-, m-, p- )methylhip- puric acid	Urine	End of shift at end of work- week	800 mg/l	JSOH
		Methylhip- puric acids	Urine	End of shift (As soon as possible after exposure ceases)	1.5 g/g creatinine	ACGIH BEI
Toluene	108-88-3	Toluene	Blood	Within 2 h prior to end of shift at end of work week	0.6 mg/l	JSOH
		Toluene	Urine	Within 2 h prior to end of shift at end of work week	0.06 mg/l	JSOH
		Toluene	In blood	Prior to last shift of work- week	0.02 mg/l	ACGIH BEI
		Toluene	Urine	End of shift (As soon as possible after exposure	0.03 mg/l	ACGIH BEI



# Flumethrin (1%) Formulation

Date of last issue: 2023/09/30 Version Revision Date: SDS Number: 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

		ceases)		
o-Cresol	Urine	End of shift (As soon as possible after exposure ceases)	0.3 mg/g creatinine	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 con-

tainment devices). Minimize open handling.

Use explosion-proof electrical, ventilating and lighting equip-

ment.

Personal protective equipment

Respiratory protection If adequate local exhaust ventilation is not available or expo-

sure assessment demonstrates exposures outside the rec-

ommended guidelines, use respiratory protection. Combined particulates and organic vapour type

Filter type

Hand protection

Material Chemical-resistant gloves

Consider double gloving. Take note that the product is flam-Remarks

mable, which may impact the selection of hand protection.

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, dis-

posable suits) to avoid exposed skin surfaces.

Use appropriate degowning techniques to remove potentially

contaminated clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state Aqueous solution

Colour light brown, yellow



# Flumethrin (1%) Formulation

Version SDS Number: Date of last issue: 2023/09/30 **Revision Date:** 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

Odour No data available

Odour Threshold No data available

Melting point/freezing point No data available

Boiling point, initial boiling point and boiling range

No data available

Flammability (solid, gas) Not applicable

Flammability (liquids) No data available

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / Up- :

per flammability limit

No data available

Lower explosion limit / Lower flammability limit No data available

Flash point 54 °C

Decomposition temperature No data available

No data available pΗ

No data available Evaporation rate

No data available Auto-ignition temperature

Viscosity

Viscosity, kinematic No data available

Solubility(ies)

Water solubility No data available

Partition coefficient: n-

octanol/water

Not applicable

Vapour pressure No data available

Density and / or relative density

Relative density No data available

0.820 - 0.900 g/cm3 Density

Relative vapour density No data available

Explosive properties Not explosive



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

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

Flammable liquid and vapour.

Molecular weight : No data available

Particle characteristics

Particle size : Not applicable

#### 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard. Chemical stability : Stable under normal conditions.

Possibility of hazardous reac- :

tions

Can react with strong oxidizing agents.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : Oxidizing agents

Hazardous decomposition

products

No hazardous decomposition products are known.

Vapours may form explosive mixture with air.

#### 11. TOXICOLOGICAL INFORMATION

Information on likely routes of :

exposure

Inhalation
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 dermal toxicity : Acute toxicity estimate: 410 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



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

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

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.

**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



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

### 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

Result : No eye irritation

Method : OECD Test Guideline 405

#### 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

#### 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:



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

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

Germ cell mutagenicity -

Assessment

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



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

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
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



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

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

Reproductive toxicity - As-

sessment

Some evidence of adverse effects on development, based on

animal experiments.

STOT - single exposure

May cause damage to organs (Systemic toxicity) if swallowed.

**Components:** 

Xylene:

Assessment : May cause respiratory irritation.



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

Flumethrin:

Exposure routes : Oral

Assessment : Causes damage to organs.

Toluene:

Assessment : May cause drowsiness or dizziness.

STOT - repeated exposure

May cause damage to organs (Auditory system) through prolonged or repeated exposure. May cause damage to organs (Systemic toxicity) through prolonged or repeated exposure if swal-

lowed.

**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, 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



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

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

#### Toluene:

Species : Rat LOAEL : 1.875 mg/l

Application Route : inhalation (vapour)

Exposure time : 6 Months

Species: RatNOAEL: 625 mg/kgApplication Route: IngestionExposure time: 13 Weeks

## **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.

#### 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.



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

### **Experience with human exposure**

# **Components:**

Toluene:

Inhalation : Target Organs: Central nervous system

Symptoms: Neurological disorders

#### 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 fish (Chronic tox-

icity)

NOEC (Danio rerio (zebra fish)): > 0.1 - < 1 mg/l

Exposure time: 35 d

Method: OECD Test Guideline 210

Remarks: Based on data from similar materials



# Flumethrin (1%) Formulation

Date of last issue: 2023/09/30 Version **Revision Date:** SDS Number: 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

aquatic invertebrates (Chron-

ic toxicity)

Toxicity to daphnia and other : EL10 (Daphnia magna (Water flea)): > 1 - 10 mg/l

Exposure time: 21 d

Method: OECD Test Guideline 211

Remarks: Based on data from similar materials

Toxicity to microorganisms

NOEC: > 100 mg/l Exposure time: 3 h

Method: OECD Test Guideline 209

Remarks: Based on data from similar materials

Flumethrin:

Toxicity to fish (Chronic tox-

icity)

: NOEC (Danio rerio (zebra fish)): 0.046 mg/l

Exposure time: 144 h

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 fish (Chronic tox-

icity)

NOEC (Oncorhynchus kisutch (coho salmon)): 1.39 mg/l

Exposure time: 40 d

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOEC (Ceriodaphnia dubia (water flea)): 0.74 mg/l

Exposure time: 7 d

Toxicity to microorganisms

EC50 (Nitrosomonas sp.): 84 mg/l

Exposure time: 24 h

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

Toluene:

Biodegradability Result: Readily biodegradable.

Biodegradation: 80 %



# Flumethrin (1%) Formulation

Version 8.0

Revision Date: 2024/04/06

SDS Number: 4019091-00016

Date of last issue: 2023/09/30 Date of first issue: 2019/02/25

Exposure time: 20 d

**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

Mobility in soil

No data available

Hazardous to the ozone layer

Not applicable

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

**Disposal methods** 

Waste from residues : Dispose of in accordance with local regulations.

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.

14. TRANSPORT INFORMATION

**International Regulations** 



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

**UNRTDG** 

UN number : UN 1992

Proper shipping name : FLAMMABLE LIQUID, TOXIC, N.O.S.

(Xylene, Flumethrin)

Class : 3
Subsidiary risk : 6.1
Packing group : III
Labels : 3 (6.1)
Environmentally hazardous : no

IATA-DGR

UN/ID No. : UN 1992

Proper shipping name : Flammable liquid, toxic, n.o.s.

(Xylene, Flumethrin)

Class : 3
Subsidiary risk : 6.1
Packing group : III

Labels : Flammable Liquids, Toxic

Packing instruction (cargo : 366

aircraft)

Packing instruction (passen: 355

ger aircraft)

**IMDG-Code** 

UN number : UN 1992

Proper shipping name : FLAMMABLE LIQUID, TOXIC, N.O.S.

(Xylene, Flumethrin)

Class : 3
Subsidiary risk : 6.1
Packing group : III
Labels : 3 (6.1)
EmS Code : F-E, S-D
Marine pollutant : no

## Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

# **National Regulations**

Refer to section 15 for specific national regulation.

## 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.

ERG Code : 131

#### 15. REGULATORY INFORMATION

#### **Related Regulations**

**Fire Service Law** 



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

Group 4, Type 2 petroleums, Water insoluble liquid, (1000 litre), Hazardous rank III

#### **Chemical Substance Control Law**

**Priority Assessment Chemical Substance** 

Chemical name	Number
Xylene	125
Toluene	46

# **Industrial Safety and Health Law**

#### **Harmful Substances Prohibited from Manufacture**

Not applicable

## **Harmful Substances Required Permission for Manufacture**

Not applicable

#### **Substances Prevented From Impairment of Health**

Not applicable

# Circular concerning Information on Chemicals having Mutagenicity - Annex 2: Information on Existing Chemicals having Mutagenicity

Not applicable

# Circular concerning Information on Chemicals having Mutagenicity - Annex 1: Information on Notified Substances having Mutagenicity

Not applicable

## **Substances Subject to be Notified Names**

Article 57-2 (Enforcement Order Table 9)

Chemical name	Concentration (%)	Remarks
Mineral oil	>=65.8537 - <=68.8889	-
Xylene	>=10.5556 - <=11.5854	-
Toluene	>=0.5556 - <=0.6098	-

## **Substances Subject to be Indicated Names**

Article 57 (Enforcement Order Article 18)

Chemical name	Remarks
Mineral oil	-
xylene	-
toluene	-

# Carcinogenic Substances (Article 577-2 of the Occupational Health and Safety Regulations)

Not applicable

# Ordinance on Prevention of Hazards Due to Specified Chemical Substances

Not applicable

#### **Ordinance on Prevention of Lead Poisoning**

Not applicable

#### Ordinance on Prevention of Tetraalkyl Lead Poisoning

Not applicable



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

#### **Ordinance on Prevention of Organic Solvent Poisoning**

Organic Solvents Class 2

# Enforcement Order of the Industrial Safety and Health Law - Attached table 1 (Dangerous Substances)

Inflammable Substance

#### **Poisonous and Deleterious Substances Control Law**

Not applicable

Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

#### **Class I Designated Chemical Substances**

Chemical name	Administration number	Concentration (%)
Xylene	80	12

## **High Pressure Gas Safety Act**

Not applicable

#### **Explosive Control Law**

Not applicable

#### **Vessel Safety Law**

Flammable liquids (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

#### **Aviation Law**

Flammable liquid (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)

#### Marine Pollution and Sea Disaster Prevention etc Law

Bulk transportation : Noxious liquid substance(Category Y)
Pack transportation : Not classified as marine pollutant

#### **Narcotics and Psychotropics Control Act**

Narcotic or Psychotropic Raw Material (Export / Import Permission)

Not applicable

Specific Narcotic or Psychotropic Raw Material (Export / Import permission)

Not applicable

#### Waste Disposal and Public Cleansing Law

Specially Controlled Industrial Waste

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

AICS : not determined

DSL : not determined

IECSC : not determined



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

#### 16. OTHER INFORMATION

In this SDS, if the concentration of substances subject to notification under the Industrial Safety and Health Law is indicated as a range, it includes cases where it is a trade secret.

#### **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 Agen-

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

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

Date format : yyyy/mm/dd

## Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)
JP OEL ISHL : Japan. Administrative Control Levels

JP OEL JSOH : Japan Society for Occupational Health. Recom-

mendation of Occupational Exposure Limits

JSOH : Occupational exposure limits based on biological monitoring

(JSOH).

ACGIH / TWA : 8-hour, time-weighted average JP OEL ISHL / ACL : Administrative Control level

JP OEL JSOH / OEL-M : Occupational Exposure Limit-Mean

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, Evalua-



# Flumethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 2023/09/30 8.0 2024/04/06 4019091-00016 Date of first issue: 2019/02/25

tion, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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

JP / EN