

# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

**Section 1: Identification** 

Product name : Permethrin (1%) Formulation

Manufacturer or supplier's details

Company : MSD

Address : 33 Whakatiki Street - Private Bag 908

Upper Hutt - New Zealand

Telephone : 0800 800 543

Emergency telephone number : 0800 764 766 (0800 POISON) 0800 243 622 (0800

CHEMCALL)

E-mail address : EHSDATASTEWARD@msd.com

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product Restrictions on use : Not applicable

Section 2: Hazard identification

**GHS Classification** 

Serious eye damage/eye irri-

tation

Category 1

Respiratory sensitisation : Category 1

Skin sensitisation : Category 1

Carcinogenicity : Category 1

Specific target organ toxicity - :

single exposure

Category 2

Specific target organ toxicity - :

repeated exposure

Category 2

Hazardous to the aquatic

environment - acute hazard

Category 1

Hazardous to the aquatic environment - chronic hazard

Category 1

**GHS** label elements



# Permethrin (1%) Formulation

Version Date of last issue: 06.04.2024 Revision Date: SDS Number: 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

Hazard pictograms







Signal word Danger

Hazard statements H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H334 May cause allergy or asthma symptoms or breathing

difficulties if inhaled. H350 May cause cancer.

H371 May cause damage to organs.

H373 May cause damage to organs through prolonged or re-

peated exposure.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

#### Prevention:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read

and understood.

P260 Do not breathe mist or vapours.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing should not be allowed out of

the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/ protective clothing/ eye protec-

tion/ face protection.

P284 Wear respiratory protection.

## Response:

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

P304 + P340 IF INHALED: Remove person to fresh air and

keep comfortable for breathing.

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON

CENTER/ doctor.

P308 + P311 IF exposed or concerned: Call a POISON

CENTER/ doctor.

P333 + P313 If skin irritation or rash occurs: Get medical ad-

vice/ attention.

P342 + P311 If experiencing respiratory symptoms: Call a

POISON CENTER/ doctor.

P391 Collect spillage.

## Storage:

P405 Store locked up.

#### Disposal:

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



# Permethrin (1%) Formulation

Date of last issue: 06.04.2024 Version Revision Date: SDS Number: 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

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

Cutaneous sensations may occur, such as burning or stinging on the face and mucosae. However, these sensations cause no lesions and are of a transitory nature (max. 24 hours).

#### Section 3: Composition/information on ingredients

Substance / Mixture Mixture

#### Components

| Chemical name                                  | CAS-No.    | Concentration (% w/w) |
|--|------------|-----------------------|
| Sulfuric acid, mono-C16-18-alkyl esters, sodi- | 68955-20-4 | >= 10 -< 20           |
| um salts                                       |            |                       |
| Coconut oil diethanolamide                     | 68603-42-9 | >= 3 -< 10            |
| Ethanol#                                       | 64-17-5    | >= 1 -< 10            |
| Permethrin (ISO)                               | 52645-53-1 | >= 1 -< 2.5           |
| Formaldehyde                                   | 50-00-0    | >= 0.2 -< 1           |

<sup>#</sup> Voluntarily-disclosed substance

#### Section 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.

Remove contaminated clothing and shoes.

Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse.

In case of eye contact In case of contact, immediately flush eyes with plenty of water

for at least 15 minutes.

If easy to do, remove contact lens, if worn.

Get medical attention immediately.

If swallowed If swallowed, DO NOT induce vomiting.

Get medical attention.

Rinse mouth thoroughly with water. May cause an allergic skin reaction.

Most important symptoms and effects, both acute and

delayed

Causes serious eye damage.

May cause allergy or asthma symptoms or breathing difficul-

ties if inhaled.

May cause cancer. May cause damage to organs.

May cause damage to organs through prolonged or repeated

exposure.

This product contains a pyrethroid.

Pyrethroid poisoning should not be confused with carbamate

or organophosphate poisoning.

Protection of first-aiders First Aid responders should pay attention to self-protection,



# Permethrin (1%) Formulation

Date of last issue: 06.04.2024 Version Revision Date: SDS Number: 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

> and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Treat symptomatically and supportively. Notes to physician

Section 5: Fire-fighting 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 prod: :

ucts

Chlorine compounds

Carbon oxides

Nitrogen oxides (NOx)

Sulphur oxides Metal 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

Evacuate area.

Special protective equipment:

for firefighters

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

Use personal protective equipment.

Hazchem Code 3Z

Section 6: Accidental release measures

Personal precautions, protec: :

tive equipment and emer-

gency procedures

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

Soak up with inert absorbent material.

For large spills, provide dyking or other appropriate contain-



# Permethrin (1%) Formulation

Date of last issue: 06.04.2024 Version Revision Date: SDS Number: 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

> ment 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-

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.

#### Section 7: Handling and storage

Technical measures See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation If sufficient ventilation is unavailable, use with local exhaust

ventilation.

Advice on safe handling Do not get on skin or clothing.

Avoid breathing mist or vapours.

Do not swallow. Do not get in eyes.

Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure as-

sessment

Keep container tightly closed.

Take care to prevent spills, waste and minimize release to the

environment.

Hygiene measures If exposure to chemical is likely during typical use, provide eye

flushing systems and safety showers close to the working

place.

When using do not eat, drink or smoke.

Contaminated work clothing should not be allowed out of the

workplace.

Wash contaminated clothing before re-use.

The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the

use of administrative controls.

Keep in properly labelled containers. Conditions for safe storage

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:

Strong oxidizing agents

#### Section 8: Exposure controls/personal protection

#### Components with workplace control parameters

| Components Control Control Control Control Control Control | Components | CAS-No. | Value type | Control parame- | Basis |
|--|------------|---------|------------|-----------------|-------|
|--|------------|---------|------------|-----------------|-------|



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

|                  |  | (Form of exposure) | ters / Permissible concentration |          |
|------------------|--|--------------------|----------------------------------|----------|
| Ethanol          | 64-17-5  | WES-TWA            | 200 ppm<br>380 mg/m3             | NZ OEL   |
|                  | Further information: Ototoxin  |                    |                                  |          |
|                  |  | WES-STEL           | 800 ppm<br>1,520 mg/m3           | NZ OEL   |
|                  | Further information: Ototoxin  |                    |                                  |          |
|                  | STEL 1,000 ppm   |                    | ACGIH                            |          |
| Permethrin (ISO) | 52645-53-1   | TWA                | 80 μg/m3 (OEB 3)                 | Internal |
|                  |  | Wipe limit         | 800 μg/100 cm <sup>2</sup>       | Internal |
| Formaldehyde     | 50-00-0  | WES-STEL           | 0.6 ppm                          | NZ OEL   |
|                  | Further information: Skin sensitiser, Known or presumed human carcinogen |                    |                                  |          |
|                  |  | TWA                | 0.1 ppm                          | ACGIH    |
|                  |  | STEL               | 0.3 ppm                          | ACGIH    |

**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.

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

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.

Work uniform or laboratory coat. Skin and body protection

> 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.



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

Section 9: Physical and chemical properties

Appearance : liquid

Colour : amber

Odour : No data available

Odour Threshold : No data available

pH : 7.3 - 7.7

Melting point/freezing point : No data available

Initial boiling point and boiling

range

No data available

Flash point : No data available

Evaporation rate : No data available

Flammability (solid, gas) : Not applicable

Flammability (liquids) : No data available

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : No data available

Density : 1.025 - 1.035 g/cm<sup>3</sup>

Solubility(ies)

Water solubility : No data available

Partition coefficient: n-

octanol/water

: Not applicable

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, kinematic : No data available

Explosive properties : Not explosive



# Permethrin (1%) Formulation

Version Date of last issue: 06.04.2024 **Revision Date:** SDS Number: 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

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

Molecular weight No data available

Particle characteristics

Particle size Not applicable

#### Section 10: Stability and reactivity

Reactivity Not classified as a reactivity hazard. Chemical stability Stable under normal conditions. Can react with strong oxidizing agents.

Possibility of hazardous reac-

tions

None known. Conditions to avoid Incompatible materials Oxidizing agents

Hazardous decomposition

products

No hazardous decomposition products are known.

## **Section 11: Toxicological information**

Exposure routes Inhalation

> Skin contact Ingestion Eye contact

#### **Acute toxicity**

Not classified based on available information.

**Product:** 

Acute toxicity estimate: > 2,000 mg/kg Acute oral toxicity

Method: Calculation method

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

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

Acute toxicity estimate: > 2,000 mg/kg Acute dermal toxicity

Method: Calculation method

#### **Components:**

#### Sulfuric acid, mono-C16-18-alkyl esters, sodium salts:

Acute oral toxicity : LD50 (Rat): 4,010 mg/kg

Remarks: Based on data from similar materials

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

Method: OECD Test Guideline 402

Remarks: Based on data from similar materials



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

Coconut oil diethanolamide:

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

Method: OECD Test Guideline 401

Assessment: The substance or mixture has no acute oral tox-

icity

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

Assessment: The substance or mixture has no acute dermal

toxicity

**Ethanol:** 

Acute oral toxicity : LD50 (Rat): 10,470 mg/kg

Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male): 116.9 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 15,800 mg/kg

Permethrin (ISO):

Acute oral toxicity : Acute toxicity estimate: 100 mg/kg

Method: Expert judgement

Remarks: Based on national or regional regulation.

Acute inhalation toxicity : LC50 (Rat): 2.3 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

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

Formaldehyde:

Acute oral toxicity : Acute toxicity estimate: 100 mg/kg

Method: Expert judgement

Remarks: Based on national or regional regulation.

Acute inhalation toxicity : Acute toxicity estimate (Rat): 100 ppm

Exposure time: 4 h Test atmosphere: gas Method: Expert judgement

Acute dermal toxicity : LD50 (Rabbit): 270 mg/kg

Skin corrosion/irritation

Not classified based on available information.

**Components:** 

Sulfuric acid, mono-C16-18-alkyl esters, sodium salts:

Species : Rabbit



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

Method : OECD Test Guideline 404

Result : Skin irritation

Remarks : Based on data from similar materials

Coconut oil diethanolamide:

Species : Rabbit

Method : OECD Test Guideline 404

Result : Skin irritation

Remarks : Based on data from similar materials

**Ethanol:** 

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

Permethrin (ISO):

Species : Rabbit

Result : No skin irritation

Formaldehyde:

Result : Corrosive after 3 minutes to 1 hour of exposure

Remarks : Based on national or regional regulation.

Serious eye damage/eye irritation

Causes serious eye damage.

Components:

Sulfuric acid, mono-C16-18-alkyl esters, sodium salts:

Species : Rabbit

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

Remarks : Based on data from similar materials

Coconut oil diethanolamide:

Species : Rabbit

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

Remarks : Based on data from similar materials

**Ethanol:** 

Species : Rabbit

Result : Irritation to eyes, reversing within 21 days

Method : OECD Test Guideline 405

Permethrin (ISO):

Result : Irritation to eyes, reversing within 21 days



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

Remarks : Based on national or regional regulation.

Formaldehyde:

Result : Irreversible effects on the eye Remarks : Based on skin corrosivity.

### Respiratory or skin sensitisation

#### Skin sensitisation

May cause an allergic skin reaction.

### Respiratory sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### **Components:**

#### Sulfuric acid, mono-C16-18-alkyl esters, sodium salts:

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

Method : OECD Test Guideline 406

Result : negative

#### Coconut oil diethanolamide:

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

**Ethanol:** 

Test Type : Mouse ear swelling test (MEST)

Exposure routes : Skin contact Species : Mouse Result : negative

Permethrin (ISO):

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

Assessment : Probability or evidence of skin sensitisation in humans

Assessment : May cause sensitisation by inhalation. Remarks : Based on national or regional regulation.

Formaldehyde:

Test Type : Human repeat insult patch test (HRIPT)



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

Exposure routes : Skin contact
Species : Humans
Result : positive

Assessment : Probability or evidence of high skin sensitisation rate in hu-

mans

**Chronic toxicity** 

Germ cell mutagenicity

Not classified based on available information.

**Components:** 

Sulfuric acid, mono-C16-18-alkyl esters, sodium salts:

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

Method: OECD Test Guideline 471

Result: negative

Coconut oil diethanolamide:

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

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

**Ethanol:** 

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

Method: OECD Test Guideline 471

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Method: OECD Test Guideline 476

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Rat

Application Route: Ingestion

Result: negative

Permethrin (ISO):

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



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

Test Type: DNA damage and repair, unscheduled DNA syn-

thesis in mammalian cells (in vitro)

Result: negative

Test Type: Chromosome aberration test in vitro

Result: positive

Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Mouse Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow

cytogenetic test, chromosomal analysis)

Species: Mouse Result: negative

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

Species: Mouse Result: negative

Test Type: Mammalian erythrocyte micronucleus test (in vivo

cytogenetic assay) Species: Rat

Application Route: Intraperitoneal injection

Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow

cytogenetic test, chromosomal analysis)

Species: Mouse

Application Route: Ingestion

Result: positive

Germ cell mutagenicity -

Assessment

Weight of evidence does not support classification as a germ

cell mutagen.

Formaldehyde:

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

Result: positive

Test Type: In vitro mammalian cell gene mutation test

Result: positive

Test Type: Chromosome aberration test in vitro



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

Result: positive

Genotoxicity in vivo : Test Type: In vivo mammalian alkaline comet assay

Species: Mouse

Application Route: Inhalation

Result: positive

Germ cell mutagenicity -

Assessment

Positive result(s) from in vivo mammalian somatic cell muta-

genicity tests.

Carcinogenicity

May cause cancer.

**Components:** 

Permethrin (ISO):

Species : Rat Result : negative

Species : Mouse Result : negative

Formaldehyde:

Species : Rat

Application Route : inhalation (gas)
Exposure time : 28 Months
Result : positive

Carcinogenicity - Assess-

nent

: Sufficient evidence of carcinogenicity in animal experiments

Reproductive toxicity

Not classified based on available information.

**Components:** 

Sulfuric acid, mono-C16-18-alkyl esters, sodium salts:

Effects on foetal develop- : Test Type: Embryo-foetal development

ment Species: Rat

**Application Route: Ingestion** 

Result: negative

Coconut oil diethanolamide:

Effects on foetal develop- : Test Type: Embryo-foetal development

ment Species: Rat

Application Route: Ingestion Method: OECD Test Guideline 414

Result: negative

Remarks: Based on data from similar materials

**Ethanol:** 



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

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

Species: Mouse

Application Route: Ingestion

Result: negative

Permethrin (ISO):

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

Species: Rat

**Application Route: Ingestion** 

Result: negative

Effects on foetal develop-

ment

Test Type: Combined repeated dose toxicity study with the

reproduction/developmental toxicity screening test

Species: Rat

Application Route: Ingestion

Result: negative

Formaldehyde:

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Rat

Application Route: inhalation (gas)

Result: negative

STOT - single exposure

May cause damage to organs.

**Components:** 

Sulfuric acid, mono-C16-18-alkyl esters, sodium salts:

Assessment : May cause respiratory irritation.

Permethrin (ISO):

Assessment : May cause damage to organs.

Remarks : Based on national or regional regulation.

Formaldehyde:

Assessment : May cause respiratory irritation.

STOT - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

**Components:** 

Permethrin (ISO):

Assessment : May cause damage to organs through prolonged or repeated

exposure.

Remarks : Based on national or regional regulation.



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

Formaldehyde:

Assessment : May cause damage to organs through prolonged or repeated

exposure.

Remarks : Based on national or regional regulation.

#### Repeated dose toxicity

#### **Components:**

### Sulfuric acid, mono-C16-18-alkyl esters, sodium salts:

Species : Rat
NOAEL : 428 mg/kg
LOAEL : 970 mg/kg
Application Route : Ingestion
Exposure time : 90 Days

#### Coconut oil diethanolamide:

Species : Rat

NOAEL : > 300 mg/kg
Application Route : Ingestion
Exposure time : 28 Days

Remarks : Based on data from similar materials

Species : Rat
NOAEL : 50 mg/kg
Application Route : Skin contact

Exposure time : 2 yr

**Ethanol:** 

Species : Rat

NOAEL : 1,730 mg/kg LOAEL : 3,200 mg/kg Application Route : Ingestion Exposure time : 90 Days

Permethrin (ISO):

Species : Rat

NOAEL : 0.2201 mg/l Application Route : Inhalation Exposure time : 90 Days

Species : Rat

NOAEL : 175 mg/kg Application Route : Ingestion Exposure time : 90 Days

### **Aspiration toxicity**

Not classified based on available information.



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

#### **Section 12: Ecological information**

## **Ecotoxicity**

#### **Components:**

Sulfuric acid, mono-C16-18-alkyl esters, sodium salts:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 5.2 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 2.8 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Remarks: Based on data from similar materials

Toxicity to algae/aquatic

plants

ErC50 (Desmodesmus subspicatus (green algae)): 34 mg/l

Exposure time: 72 h

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

NOEC (Ceriodaphnia dubia (water flea)): 0.204 mg/l

Exposure time: 7 d

Remarks: Based on data from similar materials

Toxicity to microorganisms : NOEC (Pseudomonas putida): 550 mg/l

Exposure time: 18 h

Coconut oil diethanolamide:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2.4 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 3.2 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

ErC50 (Desmodesmus subspicatus (green algae)): > 1 - 10

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Based on data from similar materials

EC10 (Desmodesmus subspicatus (green algae)): > 1 - 10

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Based on data from similar materials

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): > 0.01 - 0.1 mg/l

Exposure time: 21 d

Method: OECD Test Guideline 211

Remarks: Based on data from similar materials



# Permethrin (1%) Formulation

Date of last issue: 06.04.2024 Version Revision Date: SDS Number: 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

EC10 (Pseudomonas putida): 830 mg/l Toxicity to microorganisms

> Exposure time: 16 h Method: DIN 38 412 Part 8

**Ethanol:** 

Toxicity to fish LC50 (Pimephales promelas (fathead minnow)): 14,200 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Ceriodaphnia dubia (water flea)): 5,012 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

ErC50 (Chlorella vulgaris (Fresh water algae)): 275 mg/l

Exposure time: 72 h

EC10 (Chlorella vulgaris (Fresh water algae)): 11.5 mg/l

Exposure time: 72 h

Toxicity to fish (Chronic tox-

icity)

NOEC (Oryzias latipes (Japanese medaka)): >= 79 mg/l

Exposure time: 100 d

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): 9.6 mg/l

Exposure time: 9 d

Toxicity to microorganisms

EC50 (Protozoa): 5,800 mg/l

Exposure time: 4 h

Permethrin (ISO):

Toxicity to fish LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.00079 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0.0001 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.13

mg/l

Exposure time: 72 h

EC10 (Pseudokirchneriella subcapitata (green algae)): 0.0023

Exposure time: 72 h

M-Factor (Acute aquatic tox-

10,000

Toxicity to fish (Chronic tox-

icity)

NOEC (Danio rerio (zebra fish)): 0.00041 mg/l

Exposure time: 35 d

Method: OECD Test Guideline 210

Toxicity to daphnia and other

aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): 0.0047 µg/l

Exposure time: 21 d

Method: OECD Test Guideline 211



# Permethrin (1%) Formulation

Version SDS Number: Date of last issue: 06.04.2024 **Revision Date:** 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

10,000

M-Factor (Chronic aquatic

toxicity)

Toxicity to microorganisms

EC50: > 1,000 mg/l

Exposure time: 3 h

Formaldehyde:

Toxicity to fish LC50 (Morone saxatilis (striped bass)): 6.7 mg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia pulex (Water flea)): 5.8 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

ErC50 (Desmodesmus subspicatus (green algae)): 4.89 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): 1.04 mg/l

Exposure time: 21 d

Method: OECD Test Guideline 211

Toxicity to microorganisms EC50 (activated sludge): 19 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

### Persistence and degradability

#### Components:

#### Sulfuric acid, mono-C16-18-alkyl esters, sodium salts:

Biodegradability Result: Readily biodegradable.

Biodegradation: 77 % Exposure time: 30 d

Method: OECD Test Guideline 301D

Coconut oil diethanolamide:

Biodegradability Result: Readily biodegradable.

Biodegradation: 92.5 % Exposure time: 28 d

Method: OECD Test Guideline 301B

**Ethanol:** 

Biodegradability Result: Readily biodegradable.

> Biodegradation: 84 % Exposure time: 20 d

Permethrin (ISO):

Result: Not readily biodegradable. Biodegradability

Method: OECD Test Guideline 301F



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

Formaldehyde:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 99 % Exposure time: 28 d

Method: OECD Test Guideline 301A

**Bioaccumulative potential** 

**Components:** 

Coconut oil diethanolamide:

Partition coefficient: n-

octanol/water

log Pow: 3.75

Remarks: Calculation

**Ethanol:** 

Partition coefficient: n-

octanol/water

log Pow: -0.35

Permethrin (ISO):

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)

Bioconcentration factor (BCF): 570

Partition coefficient: n-

octanol/water

log Pow: 4.67

Formaldehyde:

Partition coefficient: n-

octanol/water

log Pow: 0.35

Remarks: Calculation

Mobility in soil

No data available

Other adverse effects

No data available

Section 13: Disposal considerations

**Disposal methods** 

Waste from residues : Do not dispose of waste into sewer.

Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste han-

dling site for recycling or disposal.

If not otherwise specified: Dispose of as unused product.

**Section 14: Transport information** 

International Regulations

**UNRTDG** 

UN number : UN 3082



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Permethrin (ISO))

Class : 9
Packing group : III
Labels : 9
Environmentally hazardous : yes

**IATA-DGR** 

UN/ID No. : UN 3082

Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.

(Permethrin (ISO))

Class : 9 Packing group : III

Labels : Miscellaneous

Packing instruction (cargo : 964

aircraft)

Packing instruction (passen: :

ger aircraft)

Environmentally hazardous : yes

**IMDG-Code** 

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

964

(Permethrin (ISO))

Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes

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

Not applicable for product as supplied.

**National Regulations** 

**NZS 5433** 

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Permethrin (ISO))

Class : 9
Packing group : III
Labels : 9
Hazchem Code : 3Z
Marine pollutant : no

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.



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

#### **Section 15: Regulatory information**

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

#### **HSNO Approval Number**

HSR100759 Veterinary Medicines Non dispersive Open System Application Group Standard

Tolerable Exposure Limits (TEL)

Not applicable

Environmental Exposure Limits (EEL)

| Chemical name | Environmental compartment | Reference concentration |
|---------------|---------------------------|-------------------------|
| permethrin    | Water                     | 0.0001 mg/l             |

#### **HSW Controls**

Certified handler certificate not required.

Tracking hazardous substance not required.

Refer to the Health and Safety at Work (Hazardous Substances) Regulations 2017, for further information.

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

AICS : not determined

DSL : not determined

IECSC : not determined

#### **Section 16: Other information**

Revision Date : 28.09.2024

**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/

Date format : dd.mm.yyyy

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

NZ OEL : New Zealand. Workplace Exposure Standards for Atmospher-

ic Contaminants

ACGIH / TWA : 8-hour, time-weighted average ACGIH / STEL : Short-term exposure limit

NZ OEL / WES-TWA : Workplace Exposure Standard - Time Weighted average NZ OEL / WES-STEL : Workplace Exposure Standard - Short-Term Exposure Limit

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for



# Permethrin (1%) Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 7.1 28.09.2024 5544458-00011 Date of first issue: 19.03.2020

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; 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.

NZ / EN