according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06.04.2024

 5.1
 28.09.2024
 677298-00020
 Date of first issue: 16.05.2016

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

1.1 Product identifier

Trade name : Permethrin / Piperonyl Butoxide Formulation

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

Use of the Sub- : Ve

stance/Mixture

: Veterinary product

Recommended restrictions

on use

Not applicable

1.3 Details of the supplier of the safety data sheet

Company : MSD

Kilsheelan

Clonmel Tipperary, IE

Telephone : 353-51-601000

E-mail address of person

responsible for the SDS

: EHSDATASTEWARD@msd.com

1.4 Emergency telephone number

1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin sensitisation, Category 1 H317: May cause an allergic skin reaction.
Aspiration hazard, Category 1 H304: May be fatal if swallowed and enters air-

ways.

Short-term (acute) aquatic hazard, Cate-

Long-term (chronic) aquatic hazard, Cat-

gory 1

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting

effects.

egory 1 2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms





according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 677298-00020 Date of first issue: 16.05.2016

Signal word : Danger

Hazard statements : H304 May be fatal if swallowed and enters airways.

H317 May cause an allergic skin reaction.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P273 Avoid release to the environment.

P280 Wear protective gloves.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

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

advice/ attention.

P391 Collect spillage.

Hazardous components which must be listed on the label:

Distillates (petroleum), solvent-refined light paraffinic Permethrin (ISO)

2.3 Other hazards

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

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Distillates (petroleum), solvent- refined light paraffinic	64741-89-5 265-091-3 649-455-00-2	Asp. Tox. 1; H304	>= 70 - < 90
Permethrin (ISO)	52645-53-1	Acute Tox. 4; H302	>= 2.5 - < 10

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version 5.1	Revision Date: 28.09.2024	SDS Number: 677298-00020	Date of last issue: 06.04.2024 Date of first issue: 16.05.2016	_
		258-067-9 613-058-00-2	Acute Tox. 4; H332 Skin Sens. 1; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10,000 M-Factor (Chronic aquatic toxicity): 10,000 Acute toxicity estimate Acute oral toxicity: 500 mg/kg Acute inhalation toxicity (dust/mist): 2.3 mg/l	
	outoxyethoxy)ethyl 6- rlpiperonyl ether	51-03-6 200-076-7 604-096-00-0	Eye Irrit. 2; H319 STOT SE 3; H335 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 EUH066 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1	0

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : In the case of accident or if you feel unwell, seek medical ad-

vice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

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

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

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 677298-00020 Date of first issue: 16.05.2016

If inhaled : If inhaled, remove to fresh air.

Get medical attention if symptoms occur.

In case of skin contact : In case of contact, immediately flush skin with soap and 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 : Flush eyes with water as a precaution.

Get medical attention if irritation develops and persists.

If swallowed, DO NOT induce vomiting.

If vomiting occurs have person lean forward.

Call a physician or poison control centre immediately. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Risks : May be fatal if swallowed and enters airways.

May cause an allergic skin reaction.

This product contains a pyrethroid.

Pyrethroid poisoning should not be confused with carbamate

or organophosphate poisoning.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Water spray

Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing

media

None known.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

Exposure to combustion products may be a hazard to health.

Hazardous combustion prod: :

ucts

Chlorine compounds

Carbon oxides

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 677298-00020 Date of first issue: 16.05.2016

5.3 Advice for firefighters

Special protective equipment :

for firefighters

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

Use personal protective equipment.

Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment. Use water spray to cool unopened containers.

Remove undamaged containers from fire area if it is safe to do

SO.

Evacuate area.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.

Follow safe handling advice (see section 7) and personal pro-

tective equipment recommendations (see section 8).

6.2 Environmental precautions

Environmental precautions : Avoid

Avoid release to the environment.

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

barriers).

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages

cannot be contained.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material.

For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absor-

bent.

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

mine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 677298-00020 Date of first issue: 16.05.2016

Local/Total ventilation : Use only with adequate ventilation.

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

Avoid breathing mist or vapours.

Do not swallow.

Avoid contact with 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.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

 Keep in properly labelled containers. Store locked up. Keep tightly closed. Store in accordance with the particular national

regulations.

Advice on common storage : Do not store with the following product types:

Strong oxidizing agents

Gases

7.3 Specific end use(s)

Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Distillates (petrole- um), solvent- refined light paraf- finic	64741-89-5	OELV - 8 hrs (TWA) (inhalable fraction)	5 mg/m3	IE OEL
Permethrin (ISO)	52645-53-1	TWA	80 μg/m3 (OEB 3)	Internal
		Wipe limit	800 μg/100 cm ²	Internal
2-(2- butoxyethoxy)ethyl 6-propylpiperonyl ether	51-03-6	TWA	4 mg/m3 (OEB 1)	Internal

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

Substance name	End Use	Exposure routes	Potential health ef-	Value
			fects	

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 677298-00020 Date of first issue: 16.05.2016

2-(2- butoxyethoxy)ethyl 6- propylpiperonyl ether	Workers	Inhalation	Long-term systemic effects	3.875 mg/m3
	Workers	Inhalation	Acute systemic ef- fects	7.75 mg/m3
	Workers	Inhalation	Long-term systemic effects	3.875 mg/m3
	Workers	Inhalation	Acute local effects	3.875 mg/m3
	Workers	Skin contact	Long-term systemic effects	27.7 mg/kg bw/day
	Workers	Skin contact	Acute systemic ef- fects	55.5 mg/kg bw/day
	Workers	Skin contact	Long-term local ef- fects	0.44 mg/cm2
	Workers	Skin contact	Acute local effects	0.888 mg/cm2
	Consumers	Inhalation	Long-term systemic effects	1.94 mg/m3
	Consumers	Inhalation	Acute systemic ef- fects	3.875 mg/m3
	Consumers	Inhalation	Long-term local ef- fects	1.94 mg/m3
	Consumers	Inhalation	Acute local effects	1.94 mg/m3
	Consumers	Skin contact	Long-term systemic effects	13.9 mg/kg bw/day
	Consumers	Skin contact	Acute systemic ef- fects	27.8 mg/kg bw/day
	Consumers	Skin contact	Long-term local ef- fects	0.22 mg/cm2
	Consumers	Skin contact	Acute local effects	0.22 mg/cm2
	Consumers	Ingestion	Long-term systemic effects	1.14 mg/kg bw/day
	Consumers	Ingestion	Acute systemic ef- fects	2.3 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
2-(2-butoxyethoxy)ethyl 6- propylpiperonyl ether	Fresh water	0.001 mg/l
	Marine water	0.0001 -
		0.000148 mg/l
	Sewage treatment plant	10 mg/l
	Fresh water sediment	0.019 mg/kg
	Marine sediment	0.0002 mg/kg
	Soil	0.016 mg/kg
	Oral (Secondary Poisoning)	12.53 mg/kg food
Distillates (petroleum), solvent refined heavy paraffinic	Oral (Secondary Poisoning)	9.33 mg/kg food

8.2 Exposure controls

Engineering measures

Ensure adequate ventilation, especially in confined areas. Minimize workplace exposure concentrations.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06.04.2024

 5.1
 28.09.2024
 677298-00020
 Date of first issue: 16.05.2016

Personal protective equipment

Eye/face protection : Wear the following personal protective equipment:

Safety glasses

Equipment should conform to I.S. EN 166

Hand protection

Material : Chemical-resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending

on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the

end of workday.

Skin and body protection : Select appropriate protective clothing based on chemical

resistance data and an assessment of the local exposure

potential.

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

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

sure assessment demonstrates exposures outside the rec-

ommended guidelines, use respiratory protection. Equipment should conform to I.S. EN 14387

Filter type : Combined particulates and organic vapour type (A-P)

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid

Colour : amber

Odour : odourless

Odour Threshold : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling

range

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 : No data available

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06.04.2024

 5.1
 28.09.2024
 677298-00020
 Date of first issue: 16.05.2016

flammability limit

Flash point : No data available

Auto-ignition temperature : No data available

Decomposition temperature : No data available

pH : No data available

Viscosity

Viscosity, dynamic : 40 mPa.s

Viscosity, kinematic : No data available

Solubility(ies)

Water solubility : negligible

Partition coefficient: n-

octanol/water

Not applicable

Vapour pressure : < 2 mmHg (25 °C)

Relative density : No data available

Density : 0.885 g/cm³

Relative vapour density : No data available

Particle characteristics

Particle size : Not applicable

9.2 Other information

Explosives : Not explosive

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

Evaporation rate : No data available

Molecular weight : No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Not classified as a reactivity hazard.

10.2 Chemical stability

Stable under normal conditions.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 677298-00020 Date of first issue: 16.05.2016

10.3 Possibility of hazardous reactions

Hazardous reactions : Can react with strong oxidizing agents.

10.4 Conditions to avoid

Conditions to avoid : None known.

10.5 Incompatible materials

Materials to avoid : Oxidizing agents

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of : Inhalation

exposure Skin contact

Ingestion Eye contact

Acute toxicity

Not classified based on available information.

Product:

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

Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 5 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist Method: Calculation method

Components:

Distillates (petroleum), solvent-refined light paraffinic:

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

Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): > 5.53 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

Assessment: The substance or mixture has no acute inhala-

tion toxicity

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Method: OECD Test Guideline 402

Permethrin (ISO):

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06.04.2024

 5.1
 28.09.2024
 677298-00020
 Date of first issue: 16.05.2016

Acute oral toxicity : LD50 (Rat): 480 - 554 mg/kg

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

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:

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

Method: OECD Test Guideline 423

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

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

Method: OECD Test Guideline 402

Skin corrosion/irritation

Not classified based on available information.

Components:

Distillates (petroleum), solvent-refined light paraffinic:

Species : Rabbit

Result : No skin irritation

Permethrin (ISO):

Species : Rabbit

Result : No skin irritation

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

Assessment : Repeated exposure may cause skin dryness or cracking.

Serious eye damage/eye irritation

Not classified based on available information.

Components:

Distillates (petroleum), solvent-refined light paraffinic:

Species : Rabbit

Result : No eye irritation

Permethrin (ISO):

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 677298-00020 Date of first issue: 16.05.2016

Species : Rabbit

Result : No eye irritation

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:

Species : Rabbit

Method : OECD Test Guideline 405

Result : Irritation to eyes, reversing within 21 days

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Components:

Distillates (petroleum), solvent-refined light paraffinic:

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

Method : OECD Test Guideline 406

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

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:

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

Method : OECD Test Guideline 406

Result : negative

Germ cell mutagenicity

Not classified based on available information.

Components:

Distillates (petroleum), solvent-refined light paraffinic:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro

Result: negative

Remarks: Based on data from similar materials

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

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 677298-00020 Date of first issue: 16.05.2016

cytogenetic assay) Species: Mouse

Application Route: Intraperitoneal injection

Result: negative

Permethrin (ISO):

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

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Result: negative

Test Type: Chromosome aberration test in vitro

Result: negative

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- As-

sessment

Weight of evidence does not support classification as a germ

cell mutagen.

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 677298-00020 Date of first issue: 16.05.2016

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

Result: negative

Carcinogenicity

Not classified based on available information.

Components:

Distillates (petroleum), solvent-refined light paraffinic:

Species Mouse, female Application Route Skin contact Exposure time : 18 Months

: OECD Test Guideline 451 Method

Result : negative

Carcinogenicity - Assess-

: Classified based on DMSO extract content < 3% (Regulation

(EC) 1272/2008, Annex VI, Part 3, Note L) ment

Permethrin (ISO):

Species Rat Result negative

Species Mouse Result negative

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:

Species Rat Application Route Ingestion Exposure time : 107 weeks

Method : OECD Test Guideline 451

Result : negative

Reproductive toxicity

Not classified based on available information.

Components:

Distillates (petroleum), solvent-refined light paraffinic:

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

Species: Rat

Application Route: Ingestion

Result: negative

Permethrin (ISO):

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

Species: Rat

Application Route: Ingestion

Result: negative

Effects on foetal develop-Test Type: Combined repeated dose toxicity study with the

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 28.09.2024 677298-00020 Date of first issue: 16.05.2016 5.1

ment reproduction/developmental toxicity screening test

Species: Rat

Application Route: Ingestion

Result: negative

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:

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

Species: Rat

Application Route: Ingestion

Result: negative

Effects on foetal develop-

Test Type: Embryo-foetal development ment

Species: Rat

Application Route: Ingestion

Result: negative

STOT - single exposure

Not classified based on available information.

Components:

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:

Assessment May cause respiratory irritation.

STOT - repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

Distillates (petroleum), solvent-refined light paraffinic:

Species Rabbit NOAEL 1,000 mg/kg Application Route Skin contact Exposure time 4 Weeks

OECD Test Guideline 410 Method

Remarks Based on data from similar materials

Species Rat

NOAEL > 980 mg/m3

inhalation (dust/mist/fume) Application Route

Exposure time 4 Weeks

Remarks Based on data from similar materials

Permethrin (ISO):

Species Rat

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

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 677298-00020 Date of first issue: 16.05.2016

Species : Rat

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

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:

Species : Rat

NOAEL : 1,323 mg/kg
Application Route : Ingestion
Exposure time : 7 Weeks

Aspiration toxicity

May be fatal if swallowed and enters airways.

Product:

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

Components:

Distillates (petroleum), solvent-refined light paraffinic:

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.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components consid-

ered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

levels of 0.1% or higher.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Distillates (petroleum), solvent-refined light paraffinic:

Toxicity to fish : LL50 (Pimephales promelas (fathead minnow)): > 100 mg/l

Exposure time: 96 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

LL50 (Daphnia magna (Water flea)): > 10,000 mg/l

Exposure time: 48 h

Test substance: Water Accommodated Fraction

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version **Revision Date:** SDS Number: Date of last issue: 06.04.2024 28.09.2024 677298-00020 Date of first issue: 16.05.2016 5.1

Toxicity to algae/aquatic

plants

NOEC (Pseudokirchneriella subcapitata (green algae)): > 100

Exposure time: 72 h

Test substance: Water Accommodated Fraction

Method: OECD Test Guideline 201

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

NOEC: 10 mg/l

Species: Daphnia magna (Water flea)

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/aguatic

plants

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

Exposure time: 72 h

EC10 (Pseudokirchneriella subcapitata (green algae)): 0.0023

Exposure time: 72 h

M-Factor (Acute aquatic tox-

icity)

10,000

Toxicity to microorganisms EC50 : > 1,000 mg/l

Exposure time: 3 h

Toxicity to fish (Chronic tox-

icity)

NOEC: 0.00041 mg/l

Exposure time: 35 d

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

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

NOEC: 0.0047 µg/l

Exposure time: 21 d Species: Daphnia magna (Water flea)

Method: OECD Test Guideline 211

M-Factor (Chronic aquatic

toxicity)

10,000

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:

Toxicity to fish LC50 (Cyprinodon variegatus (sheepshead minnow)): 3.94

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 0.51 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 677298-00020 Date of first issue: 16.05.2016

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 3.89

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.824

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

M-Factor (Acute aquatic tox-

icity)

: 1

Toxicity to microorganisms : EC50 : > 1,000 mg/l

Exposure time: 3 h

Method: OECD Test Guideline 209

Toxicity to fish (Chronic tox-

icity)

NOEC: 0.18 mg/l Exposure time: 35 d

Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

NOEC: 0.03 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea)

M-Factor (Chronic aquatic

toxicity)

: 1

12.2 Persistence and degradability

Components:

Distillates (petroleum), solvent-refined light paraffinic:

Biodegradability : Result: Not readily biodegradable.

Biodegradation: 4 % Exposure time: 28 d

Method: OECD Test Guideline 301B

Permethrin (ISO):

Biodegradability : Result: Not readily biodegradable.

Method: OECD Test Guideline 301F

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:

Biodegradability : Result: Not readily biodegradable.

Biodegradation: 0 % Exposure time: 28 d

Method: OECD Test Guideline 301D

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06.04.2024

 5.1
 28.09.2024
 677298-00020
 Date of first issue: 16.05.2016

12.3 Bioaccumulative potential

Components:

Permethrin (ISO):

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)

Bioconcentration factor (BCF): 570

Partition coefficient: n-

octanol/water

: log Pow: 4.67

2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether:

Partition coefficient: n-

octanol/water

: log Pow: 5

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered

to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of

0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components consid-

ered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

levels of 0.1% or higher.

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Dispose of in accordance with local regulations.

According to the European Waste Catalogue, Waste Codes

are not product specific, but application specific.

Waste codes should be assigned by the user, preferably in

discussion with the waste disposal authorities.

Do not dispose of waste into sewer.

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

dling site for recycling or disposal.

If not otherwise specified: Dispose of as unused product.

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06.04.2024

 5.1
 28.09.2024
 677298-00020
 Date of first issue: 16.05.2016

SECTION 14: Transport information

14.1 UN number or ID number

ADN : UN 3082
ADR : UN 3082
RID : UN 3082
IMDG : UN 3082
IATA : UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Permethrin (ISO), 2-(2-butoxyethoxy)ethyl 6-propylpiperonyl

ether)

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Permethrin (ISO), 2-(2-butoxyethoxy)ethyl 6-propylpiperonyl

ether)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Permethrin (ISO), 2-(2-butoxyethoxy)ethyl 6-propylpiperonyl

ether)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Permethrin (ISO), 2-(2-butoxyethoxy)ethyl 6-propylpiperonyl

ether)

IATA : Environmentally hazardous substance, liquid, n.o.s.

(Permethrin (ISO), 2-(2-butoxyethoxy)ethyl 6-propylpiperonyl

ether)

14.3 Transport hazard class(es)

Class Subsidiary risks

 ADN
 : 9

 ADR
 : 9

 RID
 : 9

 IMDG
 : 9

 IATA
 : 9

14.4 Packing group

ADN

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 5.1 28.09.2024 677298-00020 Date of first issue: 16.05.2016

ADR

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9
Tunnel restriction code : (-)

RID

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

IMDG

Packing group : III
Labels : 9
EmS Code : F-A, S-F

IATA (Cargo)

Packing instruction (cargo : 964

aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

IATA (Passenger)

Packing instruction (passen- : 964

ger aircraft)

Packing instruction (LQ) : Y964
Packing group : III

Labels : Miscellaneous

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

IATA (Passenger)

Environmentally hazardous : yes

IATA (Cargo)

Environmentally hazardous : yes

14.6 Special precautions for user

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

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 28.09.2024 677298-00020 Date of first issue: 16.05.2016 5.1

14.7 Maritime transport in bulk according to IMO instruments

: Not applicable for product as supplied. Remarks

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)

Conditions of restriction for the following entries should be considered: Number on list 3

Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.

Substance(s) or mixture(s) are listed here according to their appearance in the regulation, irrespective of their use/purpose or the conditions of the restriction. Please refer to the conditions in corresponding Regulation to determine whether an entry is applicable to the placing on the market or

not. Not applicable

Permethrin (ISO)

REACH - Candidate List of Substances of Very High

Concern for Authorisation (Article 59).

Regulation (EC) on substances that deplete the ozone Not applicable

laver

tants (recast)

Regulation (EU) 2019/1021 on persistent organic pollu-Not applicable

Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import

of dangerous chemicals

REACH - List of substances subject to authorisation Not applicable

(Annex XIV)

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of

major-accident hazards involving dangerous substances.

Quantity 1 Quantity 2 E1 **ENVIRONMENTAL** 100 t 200 t

HAZARDS

Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

AICS not determined

DSL not determined

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 06.04.2024

 5.1
 28.09.2024
 677298-00020
 Date of first issue: 16.05.2016

IECSC : not determined

15.2 Chemical safety assessment

A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other information : Items where changes have been made to the previous version

are highlighted in the body of this document by two vertical

lines.

Full text of H-Statements

H302 : Harmful if swallowed.

H304 : May be fatal if swallowed and enters airways.

H317 : May cause an allergic skin reaction. H319 : Causes serious eye irritation.

H332 : Harmful if inhaled.

H335 : May cause respiratory irritation.

H400 : Very toxic to aquatic life.

H410 : Very toxic to aquatic life with long lasting effects.

EUH066 : Repeated exposure may cause skin dryness or cracking.

Full text of other abbreviations

Acute Tox. : Acute toxicity

Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard

Asp. Tox. : Aspiration hazard Eye Irrit. : Eye irritation Skin Sens. : Skin sensitisation

STOT SE : Specific target organ toxicity - single exposure

IE OEL : Ireland. List of Chemical Agents and Carcinogens with Occu-

pational Exposure Limit Values - Code of Practice, Schedule 1

and 2

IE OEL / OELV - 8 hrs (TWA) : Occupational exposure limit value (8-hour reference period)

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL

according to Regulation (EC) No. 1907/2006, as amended by Commission Regulation (EU) 2020/878



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 06.04.2024 28.09.2024 677298-00020 Date of first issue: 16.05.2016 5.1

- Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI -Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Sources of key data used to compile the Safety Data Sheet

Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, http://echa.europa.eu/

Classification of the mixture:

Classification procedure:

Skin Sens. 1	H317	Calculation method
Asp. Tox. 1	H304	Based on product data or assessment
Aquatic Acute 1	H400	Calculation method
Aquatic Chronic 1	H410	Calculation method

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

IE / EN