according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 30.09.2023 677299-00017 Date of first issue: 16.05.2016

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Permethrin / Piperonyl Butoxide Formulation

Manufacturer or supplier's details

Company : MSD

Address : Briahnager - Off Pune Nagar Road

Wagholi - Pune - India 412 207

Telephone : +1-908-740-4000

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

E-mail address : EHSDATASTEWARD@msd.com

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product Restrictions on use : Not applicable

2. HAZARDS IDENTIFICATION

Manufacture, Storage and Import of Hazardous Chemicals Rules 1989

Classification

Not classified as hazardous according to criteria laid down in Part I of Schedule-1.

GHS Classification

Skin sensitisation : Category 1

Aspiration hazard : Category 1

Short-term (acute) aquatic

hazard

Category 1

Long-term (chronic) aquatic

hazard

Category 1

GHS label elements

Hazard pictograms



Signal word : Danger

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

H317 May cause an allergic skin reaction.

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 3.0 30.09.2023 677299-00017 Date of first issue: 16.05.2016

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P261 Avoid breathing mist or vapours.

P272 Contaminated work clothing should not be allowed out of

the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves.

Response:

P301 + P316 IF SWALLOWED: Get emergency medical help

immediately.

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

P331 Do NOT induce vomiting.

P333 + P317 If skin irritation or rash occurs: Get medical help.

P362 + P364 Take off contaminated clothing and wash it before

reuse

P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

Other hazards which do not result in classification

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).

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Distillates (petroleum), solvent-refined light paraf- finic	64741-89-5	>= 70 - < 90
Permethrin (ISO)	52645-53-1	>= 5 - < 10
2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether	51-03-6	>= 5 - < 10

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 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.

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 3.0 30.09.2023 677299-00017 Date of first issue: 16.05.2016

> Get medical attention. Wash clothing before reuse.

Thoroughly clean shoes before reuse. Flush eyes with water as a precaution.

In case of eye contact

Get medical attention if irritation develops and persists.

If swallowed 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.

Most important symptoms and effects, both acute and 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.

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

delayed

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

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.

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

Retain and dispose of contaminated wash water.

Local authorities should be advised if significant spillages

cannot be contained.

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 3.0 30.09.2023 677299-00017 Date of first issue: 16.05.2016

Methods and materials for containment and 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 absorbent.

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

Technical measures : See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation Advice on safe handling Use only with adequate ventilation.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.

Conditions for safe storage : Keep in properly labelled containers.

Store locked up. Keep tightly closed.

Store in accordance with the particular national regulations.

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

Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Distillates (petroleum), solvent- refined light paraffinic	64741-89-5	TWA (Mist)	5 mg/m3	IN OEL
		STEL (Mist)	10 mg/m3	IN OEL
		TWA (Inhal- able particu- late matter)	5 mg/m3	ACGIH
2-(2-butoxyethoxy)ethyl 6- propylpiperonyl ether	51-03-6	TWA	4 mg/m3 (OEB 1)	Internal
Permethrin (ISO)	52645-53-1	TWA	80 μg/m3 (OEB 3)	Internal
		Wipe limit	800 μg/100 cm ²	Internal

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 30.09.2023 677299-00017 Date of first issue: 16.05.2016

Engineering measures : Ensure adequate ventilation, especially in confined areas.

Minimize workplace exposure concentrations.

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

1

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.

Eye protection : Wear the following personal protective equipment:

Safety glasses

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

sistance data and an assessment of the local exposure poten-

tıaı.

Skin contact must be avoided by using impervious protective

clothing (gloves, aprons, boots, etc).

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : amber

Odour : odourless

Odour Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling

range

No data available

Flash point : No data available

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 3.0 30.09.2023 677299-00017 Date of first issue: 16.05.2016

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 : < 2 mmHg (25 °C)

Relative vapour density : No data available

Relative density : No data available

Density : 0.885 g/cm³

Solubility(ies)

Water solubility : negligible

Partition coefficient: n-

octanol/water

Not applicable

Auto-ignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : 40 mPa.s

Viscosity, kinematic : No data available

Explosive properties : Not explosive

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

Molecular weight : No data available

Particle size : Not applicable

10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reac- : Can react with strong oxidizing agents.

tions

Conditions to avoid : None known. Incompatible materials : Oxidizing agents

Hazardous decomposition : No hazardous decomposition products are known.

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 3.0 30.09.2023 677299-00017 Date of first issue: 16.05.2016

products

11. TOXICOLOGICAL INFORMATION

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: > 5,000 mg/kg

Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 10 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):

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

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 30.09.2023 677299-00017 Date of first issue: 16.05.2016

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):

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.

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 3.0 30.09.2023 677299-00017 Date of first issue: 16.05.2016

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

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

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 3.0 30.09.2023 677299-00017 Date of first issue: 16.05.2016

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.

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

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

Method : OECD Test Guideline 451

Result : negative

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 3.0 30.09.2023 677299-00017 Date of first issue: 16.05.2016

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):

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

Species: Rat

Application Route: Ingestion

Result: negative

Effects on foetal develop-

ment

ment

Test Type: Combined repeated dose toxicity study with the

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

Species: Rat

Application Route: Ingestion

Result: negative

STOT - single exposure

Not classified based on available information.

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 3.0 30.09.2023 677299-00017 Date of first issue: 16.05.2016

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

Method : OECD Test Guideline 410

Remarks : Based on data from similar materials

Species : Rat

NOAEL : > 980 mg/m3

Application Route : inhalation (dust/mist/fume)

Exposure time : 4 Weeks

Remarks : Based on data from similar materials

Permethrin (ISO):

Species : Rat

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

Species: RatNOAEL: 175 mg/kgApplication Route: IngestionExposure 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.

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 30.09.2023 677299-00017 Date of first issue: 16.05.2016 3.0

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.

12. ECOLOGICAL INFORMATION

Ecotoxicity

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

Toxicity to algae/aquatic

plants

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

mg/l

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):

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

Exposure time: 96 h

aquatic invertebrates

Toxicity to daphnia and other : 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 ma/l

Exposure time: 72 h

EC10 (Pseudokirchneriella subcapitata (green algae)):

0.0023 mg/l

Exposure time: 72 h

M-Factor (Acute aquatic tox- :

icity)

10,000

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

Exposure time: 3 h

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 3.0 30.09.2023 677299-00017 Date of first issue: 16.05.2016

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

Toxicity to algae/aquatic

plants

ErC50 (Pseudokirchneriella subcapitata (green algae)): 3.89

mq/l

Exposure time: 72 h

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.824

mq/l

Exposure time: 72 h

Method: OECD Test Guideline 201

M-Factor (Acute aquatic tox- :

icity)

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)

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 3.0 30.09.2023 677299-00017 Date of first issue: 16.05.2016

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

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

Mobility in soil

No data available

Other adverse effects

No data available

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.

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 3.0 30.09.2023 677299-00017 Date of first issue: 16.05.2016

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 3082

Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

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

ether)

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

ether)

964

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.

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

ether)

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

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

Special precautions for user

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

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

Version Revision Date: SDS Number: Date of last issue: 04.04.2023 30.09.2023 677299-00017 Date of first issue: 16.05.2016 3.0

15. REGULATORY INFORMATION

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

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

AICS not determined

DSL not determined

IECSC not determined

16. OTHER INFORMATION

Revision Date 30.09.2023

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 dd.mm.yyyy

Full text of other abbreviations

ACGIH USA. ACGIH Threshold Limit Values (TLV)

IN OEL India. Permissible levels of certain chemical substances in

work environment.

ACGIH / TWA 8-hour, time-weighted average

IN OEL / TWA Time-Weighted Average Concentration (TWA) (8 hrs.)

Short-term exposure Limit STEL (15 min) IN OEL / STEL

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

according to the Globally Harmonized System



Permethrin / Piperonyl Butoxide Formulation

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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.

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