

## Permethrin / Piperonyl Butoxide Formulation

Version 5.1      Revision Date: 12/06/2025      SDS Number: 677250-00022      Date of last issue: 06/17/2025  
Date of first issue: 05/16/2016

---

### SECTION 1. IDENTIFICATION

Product name : Permethrin / Piperonyl Butoxide Formulation  
Other means of identification : No data available

#### Manufacturer or supplier's details

Company name of supplier : Merck & Co., Inc  
Address : 37 McCarville Street  
Charlottetown, PE C1E 2A7  
Telephone : 908-740-4000  
Emergency telephone : 1-908-423-6000  
E-mail address : EHSDATASTEWARD@merck.com

#### Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product  
Restrictions on use : Not applicable

---

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the Hazardous Products Regulations

Skin sensitization : Category 1

Aspiration 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.

Precautionary Statements :

#### Prevention:

P261 Avoid breathing mist or vapors.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P280 Wear protective gloves.

#### Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER.  
P302 + P352 IF ON SKIN: Wash with plenty of water.  
P331 Do NOT induce vomiting.  
P333 + P313 If skin irritation or rash occurs: Get medical attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.

---

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version 5.1      Revision Date: 12/06/2025      SDS Number: 677250-00022      Date of last issue: 06/17/2025  
Date of first issue: 05/16/2016

### Storage:

P405 Store locked up.

### Disposal:

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

### Other hazards

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	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Distillates (petroleum), solvent-refined light paraffinic	Baseoil - unspecified	64741-89-5	$\geq 80 - < 100$ *
Permethrin (ISO)	m-phenoxybenzyl 3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate	52645-53-1	$\geq 5 - < 10$ *
2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether	Piperonyl Butoxide	51-03-6	$\geq 5 - < 10$ *

\* Actual concentration or concentration range is withheld as a trade secret

## SECTION 4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.  
Get medical attention 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 : If swallowed, DO NOT induce vomiting.  
If vomiting occurs have person lean forward.

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/06/2025	677250-00022	Date of first issue: 05/16/2016

---

Most important symptoms and effects, both acute and delayed	:	Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. 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. No information available.
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.

---

### SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO <sub>2</sub> ) Dry chemical
Unsuitable extinguishing media	:	None known.
Specific hazards during fire fighting	:	Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Chlorine compounds Carbon oxides
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

---

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
Environmental precautions	:	Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g., by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version 5.1      Revision Date: 12/06/2025      SDS Number: 677250-00022      Date of last issue: 06/17/2025  
Date of first issue: 05/16/2016

Methods and materials for containment and cleaning up : Soak up with inert absorbent material.  
For large spills, provide diking or other appropriate containment to keep material from spreading. If diked 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 determine 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 : Use only with adequate ventilation.

Advice on safe handling : Do not get on skin or clothing.  
Avoid breathing mist or vapors.  
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 assessment  
Keep container tightly closed.  
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Keep in properly labeled 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  
Gases

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients 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/m <sup>3</sup>	CA AB OEL
		STEL (Mist)	10 mg/m <sup>3</sup>	CA AB OEL
		TWAEV (Mist - Inhalable dust)	5 mg/m <sup>3</sup>	CA QC OEL
		TWA (Mist)	1 mg/m <sup>3</sup>	CA BC OEL

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version 5.1      Revision Date: 12/06/2025      SDS Number: 677250-00022      Date of last issue: 06/17/2025  
Date of first issue: 05/16/2016

		TWA (Inhalable particulate matter)	5 mg/m <sup>3</sup>	ACGIH
Permethrin (ISO)	52645-53-1	TWA	80 µg/m <sup>3</sup> (OEB 3)	Internal
		Wipe limit	800 µg/100 cm <sup>2</sup>	Internal
2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether	51-03-6	TWA	4 mg/m <sup>3</sup> (OEB 1)	Internal

**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 exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type : Combined particulates and organic vapor type

Hand protection

Material : Chemical-resistant gloves

Remarks : Choose gloves to protect hands against chemicals depending on the concentration 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 resistance data and an assessment of the local exposure potential.  
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.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : amber

Odor : odorless

Odor Threshold : No data available

pH : No data available

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/06/2025	677250-00022	Date of first issue: 05/16/2016

---

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
Vapor pressure	:	< 2 mmHg (25 °C)
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	0.885 g/cm <sup>3</sup>
Solubility(ies)	:	
Water solubility	:	negligible
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition 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 characteristics	:	
Particle size	:	Not applicable

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version 5.1      Revision Date: 12/06/2025      SDS Number: 677250-00022      Date of last issue: 06/17/2025  
Date of first issue: 05/16/2016

---

### SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.  
Chemical stability : Stable under normal conditions.  
Possibility of hazardous reactions : Can react with strong oxidizing agents.  
Conditions to avoid : None known.  
Incompatible materials : Oxidizing agents  
Hazardous decomposition products : No hazardous decomposition products are known.

---

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Inhalation  
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 inhalation 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

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version 5.1      Revision Date: 12/06/2025      SDS Number: 677250-00022      Date of last issue: 06/17/2025  
Date of first issue: 05/16/2016

---

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):**

Species : Rabbit  
Result : No eye irritation

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/06/2025	677250-00022	Date of first issue: 05/16/2016

---

### 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether:

Species	:	Rabbit
Result	:	Irritation to eyes, reversing within 21 days
Method	:	OECD Test Guideline 405

### Respiratory or skin sensitization

#### Skin sensitization

May cause an allergic skin reaction.

#### Respiratory sensitization

Not classified based on available information.

### Components:

#### Distillates (petroleum), solvent-refined light paraffinic:

Test Type	:	Buehler Test
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	negative

#### Permethrin (ISO):

Test Type	:	Buehler Test
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Result	:	positive

Assessment	:	Probability or evidence of skin sensitization in humans
------------	---	---

### 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether:

Test Type	:	Maximization Test
Routes of exposure	:	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
----------------------	---	--

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version 5.1      Revision Date: 12/06/2025      SDS Number: 677250-00022      Date of last issue: 06/17/2025  
Date of first issue: 05/16/2016

---

### 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 synthesis 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

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version 5.1      Revision Date: 12/06/2025      SDS Number: 677250-00022      Date of last issue: 06/17/2025  
Date of first issue: 05/16/2016

---

### **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

#### **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 fetal development : 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

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version 5.1      Revision Date: 12/06/2025      SDS Number: 677250-00022      Date of last issue: 06/17/2025  
Date of first issue: 05/16/2016

---

Species: Rat  
Application Route: Ingestion  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
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  
Method : OECD Test Guideline 410  
Remarks : Based on data from similar materials

Species : Rat  
NOAEL : > 980 mg/m<sup>3</sup>  
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 : 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

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/06/2025	677250-00022	Date of first issue: 05/16/2016

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.

---

## SECTION 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 (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 10 mg/l

#### **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

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/06/2025	677250-00022	Date of first issue: 05/16/2016

---

EC10 (Pseudokirchneriella subcapitata (green algae)): 0.0023 mg/l  
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : 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 (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.0047 µg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

Toxicity to microorganisms : EC50: > 1,000 mg/l  
Exposure time: 3 h

### **2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether:**

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

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.18 mg/l  
Exposure time: 35 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.03 mg/l  
Exposure time: 21 d

Toxicity to microorganisms : EC50: > 1,000 mg/l  
Exposure time: 3 h  
Method: OECD Test Guideline 209

### **Persistence and degradability**

#### **Components:**

#### **Distillates (petroleum), solvent-refined light paraffinic:**

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 4 %

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/06/2025	677250-00022	Date of first issue: 05/16/2016

---

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

#### Components:

##### Permethrin (ISO):

Distribution among environmental compartments : log Koc: 4.43

### 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 handling site for recycling or disposal.  
If not otherwise specified: Dispose of as unused product.

---

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version 5.1      Revision Date: 12/06/2025      SDS Number: 677250-00022      Date of last issue: 06/17/2025  
Date of first issue: 05/16/2016

---

### 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)  
Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo aircraft) : 964  
Packing instruction (passenger aircraft) : 964  
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 Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

### Domestic regulation

#### TDG

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  
ERG Code : 171  
Marine pollutant : yes(Permethrin (ISO), 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/06/2025	677250-00022	Date of first issue: 05/16/2016

### 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.

## SECTION 15. REGULATORY INFORMATION

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

AICS : not determined

CA. DSL : not determined

IECSC : not determined

### Canadian lists

No substances are subject to CEPA Section 84 Ministerial Conditions.

## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	: Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	: Canada. British Columbia OEL
CA QC OEL	: Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA	: 8-hour, time-weighted average
CA AB OEL / TWA	: 8-hour Occupational exposure limit
CA AB OEL / STEL	: 15-minute occupational exposure limit
CA BC OEL / TWA	: 8-hour time weighted average
CA QC OEL / TWAEV	: Time-weighted average exposure value

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 Standardization; 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 Organization for Standardization; KECl - 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;

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Permethrin / Piperonyl Butoxide Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 06/17/2025
5.1	12/06/2025	677250-00022	Date of first issue: 05/16/2016

---

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

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 12/06/2025  
Date format : mm/dd/yyyy

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.

CA / Z8