

SAFETY DATA SHEET

according to the Globally Harmonized System



Permethrin (5%) / Piperonyl Butoxide (5%) Formulation (BR)

Version 3.0 Revision Date: 14.04.2025 SDS Number: 10836280-00004 Date of last issue: 30.09.2023
Date of first issue: 26.08.2022

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Permethrin (5%) / Piperonyl Butoxide (5%) Formulation (BR)

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

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

Hazard pictograms : The image shows two red diamond-shaped hazard pictograms. The first contains a black exclamation mark, indicating a warning or hazard. The second contains a black silhouette of a tree that appears to be dead or severely damaged, indicating a hazard to aquatic life.

Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.
H410 Very toxic to aquatic life with long lasting effects.

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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:

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

: 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) |
|-------------------------------------------------|------------|-----------------------|
| 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 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. |
| 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. Get medical attention if symptoms occur. |
| Most important symptoms | : This product contains a pyrethroid. |

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and effects, both acute and delayed

Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning.

May cause an allergic skin reaction.

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

: None known.

Specific hazards during fire-fighting

: Exposure to combustion products may be a hazard to health.

Hazardous combustion products

: Carbon oxides
Chlorine compounds

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 firefighters

: In the event of fire, wear self-contained breathing apparatus.
Use personal protective equipment.

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.

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

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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.

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 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 assessment Take care to prevent spills, waste and minimize release to the environment. |
| Conditions for safe storage | : Keep in properly labelled containers. 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 parame- ters / Permissible concentration | Basis |
|-------------------------------------------------|------------|-------------------------------------|------------------------------------------------------------|----------|
| 2-(2-butoxyethoxy)ethyl 6-propylpiperonyl ether | 51-03-6 | TWA | 4 mg/m ³ (OEB 1) | Internal |
| Permethrin (ISO) | 52645-53-1 | TWA Wipe limit | 80 µg/m ³ (OEB 3) 800 µg/100 cm ² | Internal |

Engineering measures

: Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections). All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).

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Minimize open handling.

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 vapour type |
| Hand protection | |
| Material | : Chemical-resistant gloves |
| Remarks | : Consider double gloving. |
| Eye protection | : Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols. |
| Skin and body protection | : Work uniform or laboratory coat. Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Use appropriate degowning techniques to remove potentially contaminated clothing. |
| Hygiene measures | : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before re-use. The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls. |

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 |

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| | |
|--------------------------------------------------|------------------------------------------------------------|
| Flash point | : No data available |
| Evaporation rate | : No data available |
| Flammability (solid, gas) | : Not applicable |
| Flammability (liquids) | : No data available |
| Upper explosion limit / Upper flammability limit | : No data available |
| Lower explosion limit / Lower flammability limit | : No data available |
| Vapour pressure | : < 2 mmHg (25 °C) |
| Relative vapour density | : No data available |
| Relative density | : No data available |
| Density | : 0.885 g/cm ³ |
| 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, 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 |

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. |

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Conditions to avoid : None known.
Incompatible materials : Oxidizing agents
Hazardous decomposition products : No hazardous decomposition products are known.

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: > 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:

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
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.

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Components:

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:

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.

Respiratory sensitisation

Not classified based on available information.

Components:

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 |

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| | | |
|--------|---|-------------------------|
| Method | : | OECD Test Guideline 406 |
| Result | : | negative |

Germ cell mutagenicity

Not classified based on available information.

Components:

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. |

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||

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:

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:

Permethrin (ISO):

|| Effects on fertility : Test Type: Two-generation reproduction toxicity study
|| Species: Rat
|| Application Route: Ingestion
|| Result: negative

|| Effects on foetal 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
|| Species: Rat
|| Application Route: Ingestion
|| Result: negative

|| Effects on foetal development : Test Type: Embryo-foetal development
|| Species: Rat
|| Application Route: Ingestion

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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:

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 |
| Application Route | : | Ingestion |
| Exposure time | : | 7 Weeks |

Aspiration toxicity

Not classified based on available information.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

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

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| | |
|------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| plants | 1.13 mg/l Exposure time: 72 h |
| | EC10 (<i>Pseudokirchneriella subcapitata</i> (green algae)): 0.0023 mg/l Exposure time: 72 h |
| M-Factor (Acute aquatic toxicity) | : 10,000 |
| Toxicity to microorganisms | : EC50: > 1,000 mg/l Exposure time: 3 h |
| Toxicity to fish (Chronic toxicity) | : NOEC: 0.00041 mg/l Exposure time: 35 d Species: <i>Danio rerio</i> (zebra fish) Method: OECD Test Guideline 210 |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : NOEC: 0.0047 µg/l Exposure time: 21 d Species: <i>Daphnia magna</i> (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 (<i>Cyprinodon variegatus</i> (sheepshead minnow)): 3.94 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : EC50 (<i>Daphnia magna</i> (Water flea)): 0.51 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : ErC50 (<i>Pseudokirchneriella subcapitata</i> (green algae)): 3.89 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 |
| | NOEC (<i>Pseudokirchneriella subcapitata</i> (green algae)): 0.824 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 |
| M-Factor (Acute aquatic toxicity) | : 1 |
| Toxicity to microorganisms | : EC50: > 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 |

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| | | |
|------------------------------------------------------------------------|---|-----------------------------------------------------------------------------------------|
| Toxicity to fish (Chronic toxicity) | : | NOEC: 0.18 mg/l Exposure time: 35 d Species: Pimephales promelas (fathead minnow) |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC: 0.03 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) |
| M-Factor (Chronic aquatic toxicity) | : | 1 |

Persistence and degradability

Components:

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

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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.

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)

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 IMO instruments

Not applicable for product as supplied.

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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.

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 : 14.04.2025

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/>

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

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

SAFETY DATA SHEET

according to the Globally Harmonized System



Permethrin (5%) / Piperonyl Butoxide (5%) Formulation (BR)

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3.0

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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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