SAFETY DATA SHEET
according to the OSHA Hazard Communication Standard

AQUA RESLIN

Version	Revision Date:	SDS Number:	Date of last issue: -
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SECTION 1. IDENTIFICATION

Product name : AQUA RESLIN

Product code : Article/SKU: 04196162 UVP: 05952255 Specification: 102000004847 EPA Registration No: 101563-7

Manufacturer or supplier's details

Company name of supplier : Environmental Science U.S. LLC.

Address : 5000 Centregreen Way, Suite 400
Cary NC 27513

Telephone : 1-800-331-2867

Emergency telephone : +1 703-741-5970

E-mail address : uscontact@envu.com

Recommended use of the chemical and restrictions on use

Recommended use : Insecticide

Restrictions on use : See product label for restrictions.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Specific target organ toxicity - single exposure : Category 3

GHS label elements

Hazard pictograms :

Signal Word : Warning

Hazard Statements : H302 + H332 Harmful if swallowed or if inhaled.
H335 May cause respiratory irritation.

Precautionary Statements :

Prevention:

P261 Avoid breathing mist or vapors.

P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a doctor if you feel unwell. Rinse mouth.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.

Storage:

P405 Store locked up.

Disposal:

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

Other hazards

Repeated exposure may cause skin dryness or cracking.
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

Chemical nature : Ultra-low volume (ULV) liquid (UL)

Components

Chemical name	CAS-No.	Concentration (% w/w)
Permethrin	52645-53-1	>= 20 - < 30
2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO)	51-03-6	>= 20 - < 30
Naphtha (petroleum), heavy alkylate	64741-65-7	>= 10 - < 20
(Z)-9-Octadecen-1-ol ethoxylated	9004-98-2	>= 1 - < 5
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9	>= 0.0015 - < 0.06

Actual concentration is withheld as a trade secret

Alternative CAS Numbers for some regions

Chemical name	Alternative CAS Number(s)
Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	2682-20-4, 26172-55-4

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. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms occur.
In case of skin contact	:	Wash with water and soap as a precaution. Get medical attention if symptoms occur.
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 unless directed to do so by medical personnel. Get medical attention. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	:	No symptoms known or expected. Prolonged or repeated contact may dry skin and cause irritation. This product contains a pyrethroid. Pyrethroid poisoning should not be confused with carbamate or organophosphate poisoning. Harmful if swallowed or if inhaled. May cause respiratory irritation.
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	:	There is no specific antidote available. Treat symptomatically. In case of ingestion gastric lavage should be considered in cases of significant ingestions only within the first 2 hours. However, the application of activated charcoal and sodium sulphate is always advisable. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire fighting	:	Vapors may form explosive mixtures with air. 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.
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	:	If sufficient ventilation is unavailable, use with local exhaust ventilation.
Advice on safe handling	:	Do not get on skin or clothing. Avoid breathing mist or vapors. Do not swallow.

Avoid contact with eyes.
Wash skin thoroughly after handling.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Keep container tightly closed.
Already sensitized individuals, and those susceptible to asthma, allergies, chronic or recurrent respiratory disease, should consult their physician regarding working with respiratory irritants or sensitizers.
Do not eat, drink or smoke when using this product.
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.
Keep in a cool, well-ventilated place.
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
Naphtha (petroleum), heavy alkylate	64741-65-7	TWA	500 ppm 2,000 mg/m³	OSHA Z-1

Engineering measures : Minimize workplace exposure concentrations.
If sufficient ventilation is unavailable, use with local exhaust ventilation.

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection
Material : Nitrile rubber

Remarks : Choose gloves to protect hands against chemicals depending on the concentration specific to place of work. 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. Breakthrough time is not determined for the product. Change gloves often!

Eye protection : Wear the following personal protective equipment:
Safety glasses

Skin and body protection : Skin should be washed after contact.

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.
Wash contaminated clothing before re-use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	liquid
Color	:	white
Odor	:	characteristic
Odor Threshold	:	No data available
pH	:	4.9 - 6 (73 °F / 23 °C) Concentration: 100 %
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	> 199 °F / > 93 °C Method: Tag closed cup
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	:	No data available
Relative vapor density	:	No data available
Density	:	ca. 1.02 g/cm³ (68 °F / 20 °C)
Solubility(ies)		
Water solubility	:	soluble
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	135,000 - 205,000 mPa.s (77 °F / 25 °C)
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Minimum ignition energy	:	Not applicable
Particle size	:	<= 4 µm

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Vapors may form explosive mixture with air. 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

Harmful if swallowed or if inhaled.

Product:

Acute oral toxicity : LD50 (Rat): 1,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 2.87 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Components:

Permethrin:

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 (Piperonyl butoxide/PBO):

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

Naphtha (petroleum), heavy alkylate:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat): > 20 mg/l
Test atmosphere: vapor
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg
Remarks: Based on data from similar materials

(Z)-9-Octadecen-1-ol ethoxylated:

Acute oral toxicity : LD50 (Rat): 2,760 mg/kg

Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Acute oral toxicity : LD50 (Rat): 64 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0.171 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: Corrosive to the respiratory tract.

Acute dermal toxicity : LD50 (Rabbit): 87.12 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit
Result : No skin irritation

Components:

Permethrin:

Species : Rabbit
Result : No skin irritation

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Assessment : Repeated exposure may cause skin dryness or cracking.

Naphtha (petroleum), heavy alkylate:

Species : Rabbit
Result : Skin irritation
Remarks : Based on data from similar materials

Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Species : Rabbit
Method : OECD Test Guideline 404
Result : Corrosive after 1 to 4 hours of exposure

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Result	:	No eye irritation

Components:

Permethrin:

Species	:	Rabbit
Result	:	No eye irritation

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

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

Naphtha (petroleum), heavy alkylate:

Species	:	Rabbit
Result	:	No eye irritation
Remarks	:	Based on data from similar materials

(Z)-9-Octadecen-1-ol ethoxylated:

Result	:	Irreversible effects on the eye

Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

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

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Species	:	Guinea pig
Result	:	Does not cause skin sensitization.

Components:

Permethrin:

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 (Piperonyl butoxide/PBO):

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

Naphtha (petroleum), heavy alkylate:

Test Type	:	Maximization Test
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Result	:	negative
Remarks	:	Based on data from similar materials

Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

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

Assessment : Probability or evidence of high skin sensitization rate in humans

Germ cell mutagenicity

Not classified based on available information.

Components:

Permethrin:

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 (Piperonyl butoxide/PBO):

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

Naphtha (petroleum), heavy alkylate:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test
Result: negative

Test Type: Chromosome aberration test in vitro
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)
Species: Rat
Application Route: inhalation (vapor)
Result: negative
Remarks: Based on data from similar materials

Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)

Species: Mouse
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Carcinogenicity

Not classified based on available information.

Components:

Permethrin:

Species	:	Rat
Result	:	negative
Species	:	Mouse
Result	:	negative

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Species	:	Rat
Application Route	:	Ingestion
Exposure time	:	107 weeks
Method	:	OECD Test Guideline 451
Result	:	negative

Naphtha (petroleum), heavy alkylate:

Species	:	Rat
Application Route	:	inhalation (vapor)
Exposure time	:	105 weeks
Result	:	negative
Remarks	:	Based on data from similar materials

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Components:

Permethrin:

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 (Piperonyl butoxide/PBO):

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

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Ingestion
Result: negative

Naphtha (petroleum), heavy alkylate:

Effects on fertility : Test Type: One-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: inhalation (vapor)
Result: negative
Remarks: Based on data from similar materials

STOT-single exposure

May cause respiratory irritation.

Components:

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Assessment : May cause respiratory irritation.

Naphtha (petroleum), heavy alkylate:

Assessment : May cause drowsiness or dizziness.
Remarks : Based on data from similar materials

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

Permethrin:

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 (Piperonyl butoxide/PBO):

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

Naphtha (petroleum), heavy alkylate:

Species	:	Rat
NOAEL	:	>= 5,000 mg/kg
Application Route	:	Ingestion
Exposure time	:	90 Days
Remarks	:	Based on data from similar materials

Species	:	Rabbit
NOAEL	:	> 1.16 mg/l
Application Route	:	inhalation (vapor)
Exposure time	:	90 Days

Aspiration toxicity

Not classified based on available information.

Product:

No aspiration toxicity classification

Components:

Naphtha (petroleum), heavy alkylate:

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:

Permethrin:

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.00079 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.0001 mg/l Exposure time: 48 h

Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 1.13 mg/l Exposure time: 72 h EC10 (Pseudokirchneriella subcapitata (green algae)): 0.0023 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 (Piperonyl butoxide/PBO):

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

Naphtha (petroleum), heavy alkylate:

Toxicity to fish	:	LL50 (Oncorhynchus mykiss (rainbow trout)): > 1 - 10 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): > 1 - 10 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	NOELR (Pseudokirchneriella subcapitata (green algae)): > 0.1 - 1 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 Remarks: Based on data from similar materials EL50 (Pseudokirchneriella subcapitata (green algae)): > 1 - 10 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOELR (Daphnia magna (Water flea)): > 1 - 10 mg/l Exposure time: 21 d Test substance: Water Accommodated Fraction Method: OECD Test Guideline 211 Remarks: Based on data from similar materials

Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.19 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.16 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Skeletonema costatum (marine diatom)): 0.0052 mg/l Exposure time: 48 h NOEC (Skeletonema costatum (marine diatom)): 0.00049 mg/l Exposure time: 48 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): 0.02 mg/l Exposure time: 36 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.10 mg/l Exposure time: 21 d

Persistence and degradability

Components:

Permethrin:

Biodegradability : Result: Not readily biodegradable.
Method: OECD Test Guideline 301F

2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO):

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 0 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Naphtha (petroleum), heavy alkylate:

Biodegradability : Result: Readily biodegradable.
Remarks: Based on data from similar materials

Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 62 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Bioaccumulative potential

Components:

Permethrin:

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 (Piperonyl butoxide/PBO):

Partition coefficient: n-octanol/water : log Pow: 5

Naphtha (petroleum), heavy alkylate:

Partition coefficient: n-octanol/water : log Pow: > 4
Remarks: Expert judgment

Reaction mass of: 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1):

Partition coefficient: n-octanol/water : log Pow: < 1

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	It is best to use all of the product in accordance with label directions. If it is necessary to dispose of unused product, please follow container label instructions and applicable local guidelines. Do not dispose of waste into sewer.
Contaminated packaging	:	Follow advice on product label and/or leaflet. Empty containers retain residue and can be dangerous. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO), Permethrin)
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. (2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO), Permethrin)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO), Permethrin)

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

49 CFR

UN/ID/NA number	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO), Permethrin)
Class	:	9
Packing group	:	III
Labels	:	CLASS 9
ERG Code	:	171
Marine pollutant	:	yes(Permethrin, 2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO))

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

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
Specific target organ toxicity (single or repeated exposure)

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

Permethrin	52645-53-1	>= 20 - < 30 %
2-(2-Butoxyeth-oxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO)	51-03-6	>= 20 - < 30 %

US State Regulations

Pennsylvania Right To Know

Water	7732-18-5
2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO)	51-03-6
Permethrin	52645-53-1
Naphtha (petroleum), heavy alkylate	64741-65-7
Hexadecan-1-ol	36653-82-4

Product Type : Insecticides, acaricides and products to control other arthropods

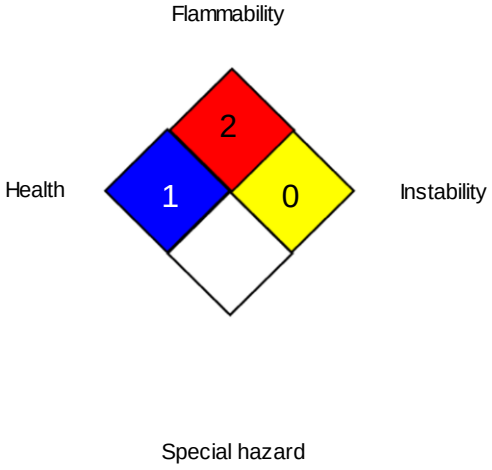
Active substance : 203 g/l
Permethrin

203 g/l
2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether (Piperonyl butoxide/PBO)

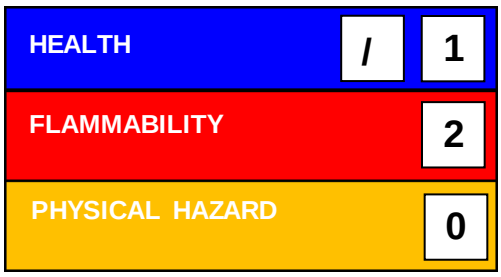
SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Sub-

stances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; 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; HMIS - Hazardous Materials Identification System; 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; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; 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

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	:	09/29/2023

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.

US / Z8