

Deltamethrin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 23.03.2020
2.5	12.10.2020	1559920-00010	Date of first issue: 25.04.2017

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Deltamethrin Liquid Formulation

Manufacturer or supplier's details

Company : MSD

Address : 50 Tuas West Drive
Singapore - Singapore 638408

Telephone : 908-740-4000

Emergency telephone number : 65 6697 2111 (24/7/365)

E-mail address : EHSDATASTEWARD@msd.com

Telefax : 908-735-1496

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product

2. HAZARDS IDENTIFICATION**GHS Classification**

Acute toxicity (Oral) : Category 4

Serious eye damage/eye irritation : Category 1

Skin sensitisation : Category 1

Reproductive toxicity : Category 2

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Central nervous system, Immune system)

Specific target organ toxicity - repeated exposure (Inhalation) : Category 2 (Central nervous system)





Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

GHS label elements

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- Hazard pictograms :    
- Signal word : Danger
- Hazard statements : H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
H373 May cause damage to organs (Central nervous system, Immune system) through prolonged or repeated exposure if swallowed.
H373 May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.
H410 Very toxic to aquatic life with long lasting effects.
- Precautionary statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.
Storage:
P405 Store locked up.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

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Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl)	9002-93-1	>= 50 -< 70
deltamethrin (ISO)	52918-63-5	>= 3 -< 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.
- 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 : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Get medical attention immediately.
- If swallowed : If swallowed, DO NOT induce vomiting.
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 : Harmful if swallowed.
May cause an allergic skin reaction.
Causes serious eye damage.
Suspected of damaging fertility. Suspected of damaging the unborn child.
May cause damage to organs through prolonged or repeated exposure if swallowed.
May cause damage to organs through prolonged or repeated exposure if inhaled.
- 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

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Unsuitable extinguishing media	:	Carbon dioxide (CO ₂) Dry chemical None known.
Specific hazards during fire-fighting	:	Exposure to combustion products may be a hazard to health.
Hazardous combustion products	:	Carbon oxides Nitrogen oxides (NO _x) Bromine 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 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	:	If sufficient ventilation is unavailable, use with local exhaust ventilation.
Advice on safe handling	:	Do not get on skin or clothing. Do not breathe mist or vapours.

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- Do not swallow.
 Do not get in 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.
 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 labelled containers.
 Store locked up.
 Keep tightly closed.
- Materials to avoid : Store in accordance with the particular national regulations.
 Do not store with the following product types:
 Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
deltamethrin (ISO)	52918-63-5	TWA	15 µg/m ³ (OEB 3)	Internal
Further information: DSEN, Skin				
		Wipe limit	150 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).
 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 : Particulates 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

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- 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** : colourless
- Odour** : odourless
- Odour Threshold** : No data available
- pH** : 3.4 - 4 (20 °C)
- 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
- Vapour pressure** : No data available
- Relative vapour density** : No data available

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Relative density	:	No data available
Density	:	No data available
Solubility(ies)	:	
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
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	:	Not applicable
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.
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
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Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity	:	Acute toxicity estimate: 956.51 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

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Components:**Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl):**

Acute oral toxicity : LD50 (Rat): 1,900 - 5,000 mg/kg
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit): > 3,000 mg/kg
Remarks: Based on data from similar materials

deltamethrin (ISO):

Acute oral toxicity : LD50 (Rat): 66.7 mg/kg
LD50 (Rat): 9 - 139 mg/kg
LD50 (Mouse): 19 - 34 mg/kg

Acute inhalation toxicity : LC50 (Rat): 0.8 mg/l
Exposure time: 2 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): 2,000 mg/kg
LD50 (Rat): > 800 mg/kg

Acute toxicity (other routes of administration) : LD50 (Rat): 2.5 mg/kg
Application Route: Intravenous
LD50 (Mouse): 10 mg/kg
Application Route: Intraperitoneal

Skin corrosion/irritation

Not classified based on available information.

Components:**Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl):**

Result : No skin irritation

deltamethrin (ISO):

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Components:**Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl):**

Result : Irreversible effects on the eye

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deltamethrin (ISO):

Species	:	Rabbit
Result	:	Moderate eye irritation

Respiratory or skin sensitisation**Skin sensitisation**

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Components:**deltamethrin (ISO):**

Test Type	:	Maximisation Test
Exposure routes	:	Dermal
Species	:	Guinea pig
Result	:	negative
	:	Human repeat insult patch test (HRIPT)
	:	Dermal
	:	Humans
	:	positive

Germ cell mutagenicity

Not classified based on available information.

Components:**deltamethrin (ISO):**

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
		Test Type: DNA Repair Test system: Escherichia coli Result: negative
		Test Type: Chromosomal aberration Test system: Chinese hamster ovary cells Result: negative
		Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster lung cells Concentration: LOAEL: 20 mg/kg Result: positive
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse Application Route: Oral Result: negative
		Test Type: dominant lethal test Species: Mouse Application Route: Oral

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Result: negative

Test Type: sister chromatid exchange assay

Species: Mouse

Cell type: Bone marrow

Application Route: Oral

Result: negative

Carcinogenicity

Not classified based on available information.

Components:**deltamethrin (ISO):**

Species	: Mouse, male and female
Application Route	: oral (feed)
Exposure time	: 104 weeks
NOAEL	: 8 mg/kg body weight
LOAEL	: 4 mg/kg body weight
Result	: positive
Target Organs	: Lymph nodes

Species	: Rat, male and female
Application Route	: oral (feed)
Exposure time	: 2 Years
Result	: negative

Species	: Dog, male and female
Application Route	: oral (feed)
Exposure time	: 2 Years
NOAEL	: 1 mg/kg body weight
Result	: negative

Reproductive toxicity

Suspected of damaging fertility. Suspected of damaging the unborn child.

Components:**deltamethrin (ISO):**

Effects on fertility	: Test Type: Three-generation reproduction toxicity study
	Species: Rat
	Application Route: oral (feed)
	Early Embryonic Development: NOAEL: 50 mg/kg body weight
	Symptoms: No effects on fertility, Embryo-foetal toxicity
	Remarks: Significant toxicity observed in testing

	Test Type: Two-generation reproduction toxicity study
	Species: Rat
	Application Route: Oral
	Early Embryonic Development: LOAEL: 84 - 149 mg/kg body weight
	Symptoms: No effects on fertility, Embryo-foetal toxicity

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	: Test Type: Fertility Species: Rat, male Application Route: Oral Fertility: LOAEL: 1 mg/kg body weight Symptoms: Effects on fertility Target Organs: Testes
Effects on foetal development	: Test Type: Development Species: Mouse Application Route: oral (gavage) Developmental Toxicity: LOAEL: 1 mg/kg body weight Result: Skeletal malformations Remarks: Maternal toxicity observed. Test Type: Development Species: Rat, female Developmental Toxicity: NOAEL: 10 mg/kg body weight Symptoms: No effects on foetal development Test Type: Development Species: Rabbit, female Application Route: oral (gavage) Developmental Toxicity: NOAEL: 16 mg/kg body weight Symptoms: No effects on foetal development
Reproductive toxicity - Assessment	: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

STOT - single exposure

Not classified based on available information.

Components:**deltamethrin (ISO):**

Assessment : May cause respiratory irritation.

STOT - repeated exposure

May cause damage to organs (Central nervous system, Immune system) through prolonged or repeated exposure if swallowed.

May cause damage to organs (Central nervous system) through prolonged or repeated exposure if inhaled.

Components:**deltamethrin (ISO):**

Exposure routes : Ingestion
Target Organs : Central nervous system, Immune system
Assessment : Causes damage to organs through prolonged or repeated exposure.

Exposure routes : inhalation (dust/mist/fume)
Target Organs : Central nervous system
Assessment : Causes damage to organs through prolonged or repeated exposure.

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Repeated dose toxicity**Components:****deltamethrin (ISO):**

Species	: Rat, male and female
NOAEL	: 1 mg/kg
LOAEL	: 2.5 mg/kg
Application Route	: Oral
Exposure time	: 13 Weeks
Target Organs	: Nervous system
Symptoms	: hyperexcitability

Species	: Rat
LOAEL	: 3 mg/m ³
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 2 wk / 5 d/wk / 6 h/d
Symptoms	: Local irritation, respiratory tract irritation

Species	: Dog
NOAEL	: 0.1 mg/kg
LOAEL	: 1 mg/kg
Application Route	: Oral
Exposure time	: 13 Weeks
Target Organs	: Nervous system
Symptoms	: Dilatation of the pupil, Vomiting, Tremors, Diarrhoea, Salivation

Species	: Rat
NOAEL	: 14 mg/kg
LOAEL	: 54 mg/kg
Application Route	: Oral
Exposure time	: 91 d
Target Organs	: Nervous system

Species	: Mouse
LOAEL	: 6 mg/kg
Application Route	: Oral
Exposure time	: 12 Weeks
Target Organs	: Immune system
Symptoms	: immune system effects

Aspiration toxicity

Not classified based on available information.

Experience with human exposure**Components:****deltamethrin (ISO):**

Inhalation	: Symptoms: respiratory tract irritation, Dizziness, Sweating, Headache, Nausea, Vomiting, anorexia, Fatigue, tingling, Palpitation, Blurred vision, muscle twitching
Skin contact	: Symptoms: Skin irritation, Erythema, pruritis, Headache, Nau-

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Ingestion	:	sea, Vomiting, Dizziness, tingling, Sweating, muscle twitching, Blurred vision, Fatigue, anorexia, Allergic reactions Symptoms: muscle pain, Small pupils
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12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:**Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl):**

Toxicity to fish	:	LC50 (Pimephales promelas (fathead minnow)): 4 - 8.9 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
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Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 18 - 26 mg/l Exposure time: 48 h Remarks: Based on data from similar materials
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Toxicity to microorganisms	:	IC50: 5,000 mg/l Exposure time: 16 h
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deltamethrin (ISO):

Toxicity to fish	:	LC50 (Cyprinodon variegatus (sheepshead minnow)): 0.00048 mg/l Exposure time: 96 h
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	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.00039 mg/l Exposure time: 96 h
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Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Mysidopsis bahia (opossum shrimp)): 0.0037 µg/l Exposure time: 48 h
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	:	EC50 (Daphnia magna (Water flea)): 0.0035 mg/l Exposure time: 48 h
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	:	LC50 (Gammarus fasciatus (freshwater shrimp)): 0.0003 µg/l Exposure time: 96 h
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Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): > 9.1 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: No toxicity at the limit of solubility
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M-Factor (Acute aquatic toxicity)	:	1,000,000
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Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): 0.000022 mg/l Exposure time: 36 d
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	:	NOEC (Pimephales promelas (fathead minnow)): 0.000017 mg/l Exposure time: 260 d
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Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.0041 µg/l
Exposure time: 21 d

M-Factor (Chronic aquatic toxicity) : 1,000,000

Persistence and degradability**Components:****Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl):**

Biodegradability : Biodegradation: > 60 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Result: Not readily biodegradable.
Biodegradation: 36 %
Exposure time: 28 d
Method: Closed Bottle test

deltamethrin (ISO):

Stability in water : Hydrolysis: 0 %(30 d)

Bioaccumulative potential**Components:****Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl):**

Partition coefficient: n-octanol/water : log Pow: 2.7

deltamethrin (ISO):

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 1,800

Partition coefficient: n-octanol/water : log Pow: 4.6

Mobility in soil**Components:****deltamethrin (ISO):**

Distribution among environmental compartments : log Koc: 7.2

Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS**Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.
Contaminated packaging : Empty containers should be taken to an approved waste han-

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ding 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. (deltamethrin (ISO), Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl))
Class	:	9
Packing group	:	III
Labels	:	9

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (deltamethrin (ISO), Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl))
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. (deltamethrin (ISO), Alpha-(4-(1,1,3,3-Tetramethylbutyl)phenyl)-omega-hydroxypoly(oxy-1,2-ethanediyl))
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.

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.

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

Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.

Environmental Protection and Management Act and : Not applicable
Environmental Protection and Management (Hazardous Substances) Regulations

Fire Safety (Petroleum and Flammable Materials) : Not applicable
Regulations

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

AICS : not determined

DSL : not determined

IECSC : not determined

16. OTHER INFORMATION**Further information**

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

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;

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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, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; 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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