Deltamethrin

sc-24013

Material Safety Data Sheet

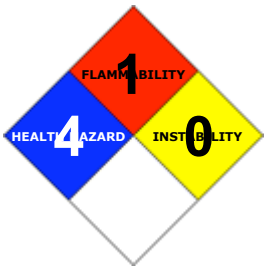
Hazard Alert Code Key:	EXTREME	HIGH	MODERATE	LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Deltamethrin

STATEMENT OF HAZARDOUS NATURE
CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER
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Santa Cruz, California 95060
800.457.3801 or 831.457.3800
EMERGENCY:
ChemWatch
Within the US & Canada: 877-715-9305
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(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS
C22-H19-Br2-N-O3, "cyclopropanecarboxylic acid, 3-(2, 2-dibromoethenyl)-2, 2-dimethyl-, ", "cyano(3-phenoxyphenyl)methyl ester, (1R-[1alpha, (S*), 3-alpha])-", "1R-[1-alpha, (S*), 3-alpha])-cyano(3-phenoxyphenyl)methyl-", "3-(2, 2-dibromovinyl)-2, 2-dimethylcyclopropanecarboxylate", "3-(2, 2-dibromoethenyl)-2, 2-dimethylcyclopropanecarboxylate", "(S)-alpha-cyano-3-phenoxybenzyl-(1R)-cis-3-(2, 2-dibromovinyl)-", "2, 2-dimethylcyclopropane carboxylate", "alpha-cyano-3-phenoxybenzyl-DL-cis-3-(2, 2-dibromovinyl)-", "2, 2-dimethylcyclopropanecarboxylate", "3-(2, 2-dibromoethenyl)-2, 2-dimethylcyclopropanecarboxylic acid", "cyano(3-phenoxyphenyl)-methyl ester", "alpha-1-cyano-3-phenoxylbenzyl-D-cis-2, 2-dimethyl-3-(2, 2-", dibromovinyl)-, "cyclopropane carboxylate [52820-00-5]", Decamethrin, Butoflin, "FMC 45498", "NRDC 161", Dekametrin, Decamethrine, Butox, K-Othrin, "OMS 1988", Deltamethrine, Esbecythrin, Othrine, "RU 22974", pyrethrum/pyrethroid/pyrethrin

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

		Min	Max
Flammability:	1		
Toxicity:	3		
Body Contact:	2		
Reactivity:	1		
Chronic:	2		

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

Harmful in contact with skin.
Toxic by inhalation and if swallowed.
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 40 gram may be fatal or may produce serious damage to the health of the individual.
■ A few cases of attempted suicides with deltamethrin formulations (mainly EC), all non-fatal, have been reported in anti-poison centres. Three non-fatal cases of deltamethrin poisoning have been described following ingestion of several grams of the product
Male and female weanling rats (20 of each sex per group) were dosed (by gavage) with 0, 0.1, 1, 2.5, or 10 mg deltamethrin in PEG 200/kg body weight per day for 13 weeks. No treatment-related effects were observed on food and water consumption, mortality, urinalysis, and haematology. Neurological examinations and ophthalmoscopy did not reveal any abnormalities. At the highest dose level, a slight hyperexcitibility was observed among some rats in week 6. Lower body weight gain was noted in males at 2.5 and 10 mg/kg. No clear treatment-related effects were noted in the results of laboratory investigations or on the weights of the organs. Gross and microscopic examination of a variety of tissues and organs did not show any treatment-related findings. Following the 13-week dosage period, 5 males and 5 females per group were allowed to recover for 4 weeks. No evidence of hyperexcitability was observed among the rats; body weight gain was slightly higher in the treated groups than in the controls. The no-observed-effect level was 1 mg/kg body weight.

EYE

■ Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.
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■ Deltamethrin (0.1 g/animal) was administered into the conjunctival sac of the eyes of 6 male albino rabbits, weighing 2.5 kg, with or without rinsing 60 seconds after instillation. Deltamethrin produced transient irritating effects, both with and without rinsing.

SKIN

■ Skin contact with the material may be harmful; systemic effects may resultfollowing absorption.
■ The material is not thought to be a skin irritant (as classified using animal models). Abrasive damage however, may result from prolonged exposures.
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■ Deltamethrin can induce skin sensations in exposed workers. Several non-fatal cases of poisoning have been reported through occupational exposure resulting from neglect of safety precautions. Numbness, itching, tingling, and burning of the skin and vertigo are symptoms that are frequently reported. Occasionally, a transient papular or blotchy erythema has been described. Most of these symptoms are transient and disappear within 5 - 7 days. No long-term adverse effects have been reported.
Guinea pigs did not show sensitisation after topical application
A case of poisoning in an agricultural worker as a result of skin contamination with a liquid containing 5 g deltamethrin/litre has been described. He developed paraesthesia in the legs, mouth, and tongue, and diarrhoea. Following washing of the skin and administration of antihistamines, he still had tingling sensations in his toes after 24 h, but was fully recovered after 48 h. Among plant workers dermally exposed to technical deltamethrin or its formulations, cutaneous and mucous manifestations were observed. Initial lesions were tenacious and painful pruritus, especially observed after exposure to hot water or perspiration, followed by a blotchy local burning sensation with blotchy erythema for about 2 days. Thereafter, slight and regular desquamation, restricted to the contaminated area, occurred. Cutaneous signs were sometimes accompanied by itching of the face (mainly around the mouth) and/or rhinorrhoea or lachrymation.
Apart from the above-mentioned effects, no long-term or persistent effect, or allergic diseases were reported in 70 workers, who had been exposed from 1977 - 87 in a deltamethrin- manufacturing and -formulating plant in France.
■ Alpha-substituted synthetic pyrethroids can cause "pins and needles" of the skin with a stinging or burning sensation sometimes progressing to tingling and numbness. Tears, sensitivity to light and swelling of the eyes can occur on direct contact.
■ Open cuts, abraded or irritated skin should not be exposed to this material.
■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

■ Inhalation of dusts, generated by the material, during the course of normal handling, may produce toxic effects.
■ The material is not thought to produce respiratory irritation (as classified using animal models). Nevertheless inhalation of dusts, or fume, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.
■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.
■ Inhalation of deltamethrin spray causes transient irritation of nose and mouth, sometimes with sniffs and sneezes. Hyper-excitability and/or convulsions may be present with overexposure.
■ This material, like natural pyrethrins, may cause central stimulation with nausea, vomiting, stomach upset, diarrhea, hypersensitivity, inco-ordination, tremors, muscle paralysis, convulsion, coma and respiratory failure. Type II compounds cause a "Type II syndrome" characterized by irregular jerky movements, increased saliva production without tears, upper abdominal pain, nausea and vomiting, headache, dizziness, loss of appetite, tiredness, chest tightness, blurred vision, "pins and needles", palpitations, coarse muscle jerks in limbs and altered consciousness.

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CHRONIC HEALTH EFFECTS

■ Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems.
There is some evidence that inhaling this product is more likely to cause a sensitization reaction in some persons compared to the general population.
There is limited evidence that, skin contact with this product is more likely to cause a sensitization reaction in some persons compared to the general population.
There is some evidence that human exposure to the material may result in developmental toxicity. This evidence is based on animal studies where effects have been observed in the absence of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not secondary non-specific consequences of the other toxic effects.
Chronic poisoning by natural pyrethrins may result in convulsion, tetanic paralysis, rapid and uneven heart beat, liver and kidney damage, or death.
The natural pyrethrins may produce hypersensitivity, especially following previous sensitising exposure. In general, repeated exposures over 2 or 3 years are required to elicit a response and involve exposure to pyrethrum rather than its individual components (including pyrethrins). The sesquiterpene lactone (pyrethrosin) and the pyrethrum glycoproteins account for the immediate and delayed hypersensitivity seen in guinea pigs following a single injection of ground chrysanthemum in Freud's adjuvant. Mild erythematic vesicular dermatitis (with papules), pruritus, localized oedema (particularly of the face, lips and eyelids), rhinitis, tachycardia, pallor and sweating are the most common syndromes. An initial skin sensitisation can progress to marked dermal oedema and skin cracking. Pyrethrum dermatitis appears to increase in hot weather or under conditions were heavy perspiration is produced. The active ingredients of pyrethrum (except pyrethrin II) are inactive in patch tests. Those patients allergic to ragweed pollen are particularly sensitive to pyrethrin.
Rats fed on a diet of pyrethrins for 5000 ppm for 2 years showed some signs of tissue damage including liver lesions, bile duct proliferation and focal necrosis of the liver cells. A no-effect level of 1000 ppm found in animal experiments correspond to a daily dose of 3600 mg/man.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
cis-deltamethrin	52918-63-5	> 95

Section 4 - FIRST AID MEASURES

SWALLOWED

· Give a slurry of activated charcoal in water to drink. NEVER GIVE AN UNCONSCIOUS PATIENT WATER TO DRINK. · At least 3 tablespoons in a glass of water should be given.

EYE

■ If this product comes in contact with the eyes: · Immediately hold eyelids apart and flush the eye continuously with running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN

■ For chronic or short term repeated exposures to pyrethrum and synthetic pyrethroids: Mammalian toxicity of pyrethrum and synthetic pyrethroids is low, in part because of poor bioavailability and a large first pass extraction by the liver. The most common adverse reaction results from the potent sensitizing effects of pyrethrins.
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Diazepam may be useful in controlling hyper-excitability and/or convulsions.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Negligible
Upper Explosive Limit (%):	Not available
Specific Gravity (water=1):	Not available.
Lower Explosive Limit (%):	Not available

EXTINGUISHING MEDIA

· Foam.
· Dry chemical powder.

FIRE FIGHTING

· Alert Emergency Responders and tell them location and nature of hazard.
· Wear full body protective clothing with breathing apparatus.
When any large container (including road and rail tankers) is involved in a fire,
consider evacuation by 800 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

· Combustible solid which burns but propagates flame with difficulty.

· Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
Combustion products include: carbon monoxide (CO), carbon dioxide (CO2), hydrogen bromide, other pyrolysis products typical of burning organic material.
May emit poisonous fumes.

FIRE INCOMPATIBILITY

■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids,chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:
Chemical goggles.
Gloves:
Respirator:
Particulate

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
· Clean up waste regularly and abnormal spills immediately.
· Avoid breathing dust and contact with skin and eyes.
· Wear protective clothing, gloves, safety glasses and dust respirator.
· Use dry clean up procedures and avoid generating dust.
· Vacuum up or sweep up. NOTE: Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).
· Dampen with water to prevent dusting before sweeping.
· Place in suitable containers for disposal.
MAJOR SPILLS
· Clear area of personnel and move upwind.
· Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

· Avoid all personal contact, including inhalation.
· Wear protective clothing when risk of exposure occurs.
Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
· Do NOT cut, drill, grind or weld such containers.
· In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

RECOMMENDED STORAGE METHODS

■ Glass container.
· Lined metal can, Lined metal pail/drum
· Plastic pail.
For low viscosity materials
· Drums and jerricans must be of the non-removable head type.
· Where a can is to be used as an inner package, the can must have a screwed enclosure.
All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.

STORAGE REQUIREMENTS

· Store in original containers.
· Keep containers securely sealed.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Peak ppm	Peak mg/m³	TWA F/CC	Notes
Canada - Alberta Occupational Exposure Limits	cis-deltamethrin (Pyrethrum)		5						
Canada - British Columbia Occupational Exposure Limits	cis-deltamethrin (Pyrethrum)		5						S

US NIOSH Recommended Exposure Limits (RELs)	cis-deltamethrin (Pyrethrum)		5			
US OSHA Permissible Exposure Levels (PELs) - Table Z1	cis-deltamethrin (Pyrethrum)		5			
US ACGIH Threshold Limit Values (TLV)	cis-deltamethrin (Pyrethrum)		5			TLV Basis: liver damage; lower respiratory tract irritation
US - Minnesota Permissible Exposure Limits (PELs)	cis-deltamethrin (Pyrethrum)		5			
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	cis-deltamethrin (Pyrethrum)		5			
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	cis-deltamethrin (Pyrethrum)		5			
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	cis-deltamethrin (Pyrethrum)		5			
US - California Permissible Exposure Limits for Chemical Contaminants	cis-deltamethrin (Pyrethrum)		5			
US - Idaho - Limits for Air Contaminants	cis-deltamethrin (Pyrethrum)		5			
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	cis-deltamethrin (Pyrethrum)		5			
US - Hawaii Air Contaminant Limits	cis-deltamethrin (Pyrethrum)		5		10	
US - Alaska Limits for Air Contaminants	cis-deltamethrin (Pyrethrum)		5			
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	cis-deltamethrin (Pyrethrum)		5		10	
Canada - Yukon Permissible Concentrations for Airborne	cis-deltamethrin (Pyrethrum)	-	5	-	10	

Contaminant Substances				
US - Washington Permissible exposure limits of air contaminants	cis-deltamethrin (Pyrethrum)	5	10	
US - Michigan Exposure Limits for Air Contaminants	cis-deltamethrin (Pyrethrum)	5		
Canada - Prince Edward Island Occupational Exposure Limits	cis-deltamethrin (Pyrethrum)	5		TLV Basis: liver damage; lower respiratory tract irritation
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	cis-deltamethrin (Pyrethrum)	5		
Canada - Nova Scotia Occupational Exposure Limits	cis-deltamethrin (Pyrethrum)	5		TLV Basis: liver damage; lower respiratory tract irritation
US - Oregon Permissible Exposure Limits (Z-1)	cis-deltamethrin (Pyrethrum)	5		
Canada - Northwest Territories Occupational Exposure Limits (English)	cis-deltamethrin (Pyrethrum)	5	10	

ENDOELTABLE

PERSONAL PROTECTION




RESPIRATOR

Particulate
Consult your EHS staff for recommendations

EYE

· Safety glasses with side shields.
· Chemical goggles.

HANDS/FEET

■ Wear chemical protective gloves, eg. PVC.
NOTE: The material may produce skin sensitization in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
· frequency and duration of contact,
· chemical resistance of glove material,
· glove thickness and
· dexterity
Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).
· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.

· Contaminated gloves should be replaced.
Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

OTHER

· Overalls.
· Eyewash unit.

ENGINEERING CONTROLS

· Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
· Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.
Does not mix with water.

State	Divided solid	Molecular Weight	505.24
Melting Range (°F)	208.4- 213.8	Viscosity	Not Applicable
Boiling Range (°F)	Not available.	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	Not Available	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapour Pressure (mmHG)	Negligible
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	Not available.
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	17.5
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

APPEARANCE

White crystals with practically no odour. Insoluble in water. Soluble in ethanol, acetone and dioxane. Also available as a racemic mixture [CAS 52820-00-5]. Persists on timber over one year but is biologically degraded in soil.

log Kow 5.43

Material	Value

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

· Presence of incompatible materials.
· Product is considered stable.

STORAGE INCOMPATIBILITY

· Avoid strong bases.
Avoid reaction with oxidizing agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

CIS-DELTAMETHRIN

TOXICITY AND IRRITATION

CIS-DELTAMETHRIN:
■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Oral (rat) LD50: 30 mg/kg	Skin (rabbit): Primary Irritation
Oral (rat) LD50: 67-130 mg/kg* Index: 1.2 - 2.4	
Inhalation (rat) LC50: 785 mg/m³/2h (slight) * *	
Oral (rat) LD50: 80 mg/kg **(Environmental Health	
Dermal (rabbit) LD50: 2000 mg/kg * Criteria 97: WHO - 1990)	
Dermal (rat) LD50: >2000 mg/kg	

NOTE: LD50 depends on cis-trans ratio
and may be lower than quoted [ILO]
for racemic mixture: CAS RN: 52820-00-5
Mutation DNA inhibition Human lymphocytes Manufacturer *

CARCINOGEN

BROMINE COMPOUNDS (ORGANIC OR INORGANIC)	US Environmental Defense Scorecard Suspected Carcinogens	Reference(s)	P65-MC

Section 12 - ECOLOGICAL INFORMATION

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
This material and its container must be disposed of as hazardous waste.
Avoid release to the environment.
Refer to special instructions/ safety data sheets.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
cis-deltamethrin	HIGH		LOW	LOW

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.
¦ Puncture containers to prevent re-use and bury at an authorized landfill.
Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:
· Reduction
· Reuse
· Recycling
· Disposal (if all else fails)
This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.
DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.
· Recycle wherever possible.
· Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION

DOT:
Symbols: None Hazard class or Division: 6.1
Identification Numbers: UN2588 PG: II
Label Codes: 6.1 Special provisions: IB8, IP2,
IP4, T3,
TP33
Packaging: Exceptions: 153 Packaging: Non- bulk: 212
Packaging: Exceptions: 153 Quantity limitations: 25 kg
Passenger aircraft/rail:
Quantity Limitations: Cargo 100 kg Vessel stowage: Location: A
aircraft only:
Vessel stowage: Other: 40
Hazardous materials descriptions and proper shipping names:
Pesticides, solid, toxic, n.o.s.

Air Transport IATA:

ICAO/IATA Class: 6.1 ICAO/IATA Subrisk: None
UN/ID Number: 2588 Packing Group: II
Special provisions: A3
Cargo Only
Packing Instructions: 615 Maximum Qty/Pack: 100 kg
Passenger and Cargo Passenger and Cargo
Packing Instructions: 613 Maximum Qty/Pack: 25 kg
Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity
Packing Instructions: Y613 Maximum Qty/Pack: 1 kg
Shipping Name: PESTICIDE, SOLID, TOXIC, N.O.S. *(CONTAINS
CIS-DELTAMETHRIN)

Maritime Transport IMDG:
IMDG Class: 6.1 IMDG Subrisk: None
UN Number: 2588 Packing Group: II
EMS Number: F-A , S-A Special provisions: 61 274
Limited Quantities: 500 g Marine Pollutant: Yes
Shipping Name: PESTICIDE, SOLID, TOXIC, N.O.S.

Section 15 - REGULATORY INFORMATION

cis-deltamethrin (CAS: 52918-63-5,52820-00-5) is found on the following regulatory lists;
"OSPAR Substances removed from the List of Substances of Possible Concern"

Section 16 - OTHER INFORMATION

Ingredients with multiple CAS Nos
Ingredient Name CAS cis-deltamethrin 52918-63-5, 52820-00-5

Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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