Allethrin

sc-202921

Material Safety Data Sheet

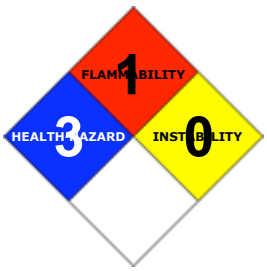
Hazard Alert Code Key:	EXTREME	HIGH	MODERATE	LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Allethrin

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

NFPA



SUPPLIER
Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800
EMERGENCY:
ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS
C19-H26-O3, "cyclopropanecarboxylic acid, 2, 2-dimethyl-3-(2-methyl-1-propenyl)-, ", "2-methyl-4-oxo-3-(2-propenyl)-2-cyclopenten-1-yl ester", "dl-2-allyl-4-hydroxy-3-methyl-2-cyclopenten-1-one, ", d-l-chrysanthemummonocarboxylate, "3-allyl-4-keto-2-methylcyclopentenyl chrysanthemummonocarboxylate", "3-allyl-2-methyl-4-oxo-2-cyclopenten-1-yl chrysanthemate", "dl-3-allyl-2-methyl-4-oxocyclopent-2-enyl dl-cis trans chrysanthemate", "(+)-allelrethonyl (+)-cis, trans-chrysanthemate", "allylrethronyl dl-cis-trans-chrysanthemate", Bioaltrina, "cinerin I allyl homolog", "d-trans allethrin", "allethrin I", "allyl homolog of cinerin I", "allyl cinerin I", Depallethrin, "ENT 17, 510", Pynamin, Exthrin, "FDA 1446", Pynamin-forte, "Necarboxylic acid", "FMC 249", Pyresin, "NIA 249", Pallethrine, Pyresyn, "OMS 468", "pyrethroid insecticide / synthetic pyrethrins/ pesticide", "for bioallethrin: RTECS No.: GZ 1472000", "cyclopropanecarboxylic acid, 2, 2-dimethyl-3-(2-methylpropenyl)-, (+)-(E)-", ", ", "ester with (+)-2-allyl-4-hydroxy-3-methyl-2-cyclopenten-1-one", "AI 3-29024", d-T-allethrin, trans-(+)-allethrin, "d-allethrolone chyrsanthemumate", "(+)-allethronyl (+)-trans-chrysanthemumate", "S-trans -bioallethrin", Esbiothrin, Esbioallethrin, Esdepallethrine, Esbiol, RU-16121, "for racemic mixture RTECS No.: GZ 1476000", "cyclopropanecarboxylic acid, 2, 2-dimethyl-3-(2-methylpropenyl)-, ester", "with 2-allyl-4-hydroxy-3-methyl-2-cyclopenten-1-one, cis-mixed", "withtrans-2, 2-dimethyl-3-(2-methylpropenyl)cyclopropanecarboxylic acid", "esterwith 2-allyl-4-hydroxy-3-methyl-2-cyclopenten-1-one (1:4)"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

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

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

Chronic: 2

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

Harmful by inhalation, in contact with skin 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

■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
■ Ingestion of pyrethroids may produce nausea and vomiting, abdominal pain and diarrhea. Large doses may produce central nervous system disturbances resulting in tremor, muscular incoordination, weakness of the limbs, convulsions, coma and death from respiratory depression.
■ Rats fed on a diet of allethrin for 16 weeks exhibited tremor and convulsions at dose levels of 10000 mg/kg. No gross effects were seen at 5000 mg/kg. At near-lethal doses, allethrins are likely to cause hyperactivity, tremors and convulsions.

EYE

■ There is some evidence to suggest that this material can causeeye irritation and damage in some persons.
■ Irritation of the eyes may produce a heavy secretion of tears (lachrymation).
■ Instilled 10% and 50% solutions of allethrin dissolved in olive oil produced eye-lid-closure, slight conjunctival hyperaemia and eye-discharge in rabbits. Lachrymation was observed in the group treated with the 50% solution.

SKIN

■ Skin contact with the material may be harmful; systemic effects may resultfollowing absorption.
■ The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives .
■ Allethrin did not produce dermal sensitisation in guinea pigs although repeated applications in an olive oil carrier did produce slight lymphocytic and monocytic infiltration of the dermis.
■ 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.
■ Skin contact with natural pyrethrins may result in severe dermatitis and may also be associated with allergic rhinitis and asthma. Absorption through the skin may result in a toxic syndrome similar to that produced by inhalation. Systemic effects, following skin absorption, may include liver and kidney damage. Prolonged or repeated exposure may cause central nervous system effects and allergic skin reaction.

INHALED

■ Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.
■ The material is not thought to produce respiratory irritation (as classified using animal models). Nevertheless inhalation of vapors, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.
■ Inhalation of allethrin by mice at a level of 3000 mg/m3 for 4 hours per day, 6 days a week, over 4 weeks resulted in eye-discharge in all animals. Histopathological examination of the lungs revealed bronchopneumonia.
■ 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. There may be aggressive behavior, tremor and weakness.
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■ Inhalation of pyrethrins may produce nausea, vomiting, sneezing, serious nasal discharge, nasal stuffiness and asthma. High concentrations may produce hyperexcitability, incoordination, tremors, muscular paralysis and death (due to respiratory failure).
There have been some reports of transient facial tingling (paraesthesia) which lasts a few hours after exposure.

CHRONIC HEALTH EFFECTS

■ Limited evidence suggests that repeated or long-term occupational exposure may 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.
Racemic allethrin added to the diet of rats for 80 weeks, produced bile-duct proliferation at levels of 1000 mg/kg diet and a decrease in glutamine-oxoloacetic acid transaminase activity at 2000 mg/kg diet. No oncogenic effects were observed at any dose level.
In a two year study on rats, the no-observed-adverse-effect level for.
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	%
allethrin	584-79-2	100
being a mixture of isomers including		
cis-allethrin	34624-48-1	
trans-allethrin	22431-63-6	

Section 4 - FIRST AID MEASURES

SWALLOWED
· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. · Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

EYE
■ If this product comes in contact with the eyes: · Wash out immediately with fresh 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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Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHg):	9.001 x 10(-4) mm
Upper Explosive Limit (%):	Not applicable
Specific Gravity (water=1):	1.005
Lower Explosive Limit (%):	Not applicable

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.
· Slight fire hazard when exposed to heat or flame.
Combustion products include: carbon dioxide (CO2), 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:
Type A-P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
· Remove all ignition sources.
· Clean up all spills immediately.
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
· DO NOT allow clothing wet with material to stay in contact with skin.
· Avoid all personal contact, including inhalation.
· Wear protective clothing when risk of exposure occurs.

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.

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	allethrin (Pyrethrum)		5						
Canada - British Columbia Occupational Exposure Limits	allethrin (Pyrethrum)		5						S
US NIOSH Recommended Exposure Limits (RELs)	allethrin (Pyrethrum)		5						
US OSHA Permissible Exposure Levels (PELs) - Table Z1	allethrin (Pyrethrum)		5						
US ACGIH Threshold Limit Values (TLV)	allethrin (Pyrethrum)		5						TLV Basis: liver damage; lower respiratory tract irritation
US - Minnesota Permissible Exposure Limits (PELs)	allethrin (Pyrethrum)		5						
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air	allethrin (Pyrethrum)		5						

Contaminants							
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	allethrin (Pyrethrum)		5				
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	allethrin (Pyrethrum)		5				
US - California Permissible Exposure Limits for Chemical Contaminants	allethrin (Pyrethrum)		5				
US - Idaho - Limits for Air Contaminants	allethrin (Pyrethrum)		5				
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	allethrin (Pyrethrum)		5				
US - Hawaii Air Contaminant Limits	allethrin (Pyrethrum)		5		10		
US - Alaska Limits for Air Contaminants	allethrin (Pyrethrum)		5				
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	allethrin (Pyrethrum)		5		10		
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	allethrin (Pyrethrum)	-	5	-	10		
US - Washington Permissible exposure limits of air contaminants	allethrin (Pyrethrum)		5		10		
US - Michigan Exposure Limits for Air Contaminants	allethrin (Pyrethrum)		5				
Canada - Prince Edward Island Occupational Exposure Limits	allethrin (Pyrethrum)		5				TLV Basis: liver damage; lower respiratory tract irritation
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	allethrin (Pyrethrum)		5				

Canada - Nova Scotia Occupational Exposure Limits	allethrin (Pyrethrum)	5			TLV Basis: liver damage; lower respiratory tract irritation
US - Oregon Permissible Exposure Limits (Z-1)	allethrin (Pyrethrum)	5			
Canada - Northwest Territories Occupational Exposure Limits (English)	allethrin (Pyrethrum)	5	10		

ENDOELTABLE

PERSONAL PROTECTION




RESPIRATOR

Type A-P Filter of sufficient capacity
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.
For higher monobasic carboxylic esters ;
Butyl, chlorinated polyethylene (CPE), natural rubber, neoprene, nitrile rubber, polyethylene (PE), and PVC are all rated poorly.

OTHER

· Overalls.
· Eyewash unit.

ENGINEERING CONTROLS

■ Local exhaust ventilation usually required. If risk of overexposure exists, wear an approved respirator.
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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.
Does not mix with water.
Sinks in water.

State	Liquid	Molecular Weight	302.45
Melting Range (°F)	Not available.	Viscosity	Not Available

Boiling Range (°F)	284 (0.1 mm Hg)	Solubility in water (g/L)	Immiscible
Flash Point (°F)	266 d-allethrin	pH (1% solution)	Not applicable.
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available.	Vapor Pressure (mmHg)	9.001 x 10(-4) mm
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	1.005
Lower Explosive Limit (%)	Not applicable	Relative Vapor Density (air=1)	Not available.
Volatile Component (%vol)	Not available.	Evaporation Rate	Not available

APPEARANCE

Clear amber viscous liquid. Practically insoluble in water, soluble in alcohol, petroleum ether, kerosine, carbon tetrachloride, ethylene nitromethane. Harmful. Allethrins are synthetic pyrethroids and are a mixture of stereoisomers, the insecticidal activity and toxicity of which varies. Data is given for the more active (+)-cis and trans isomers 2-methyl-4-oxo-3-(2-propenyl)-2-cyclo penten-1yl-esters of cyclopropane carboxylic acid. The 3S:3R or cis:trans ratio is reported to be 1:1 and the optical ratio of 1R:1S in the acid and the allenthronyl moiety is 1:1 (racemic). Technical grade material contains 75-95% allethrin. d-allethrin is the ester of (1R,cis,trans) acid with racemic allethrolone. Bioalletrin and esbiothrin are the (1R,trans)-acid ester of racemic allethrolone. S-bioallethrine is the ester of the (1R,trans)-acid with (1S)-allethrolone.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

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

STORAGE INCOMPATIBILITY

■ Pyrethrins and permethrins:
· are unstable in the presence of light, heat, moisture and air
· are hydrolysed by oxygen and/ or sunlight
· may react with strong oxidisers to produce fire and explosions
· are incompatible with alkalis.
· Avoid strong bases.
Avoid reaction with oxidizing agents.

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

Section 11 - TOXICOLOGICAL INFORMATION

ALLETHRIN

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.
■ For allethrin:
Acute toxicity: Allethrin is slightly to moderately toxic by dermal absorption and ingestion Short-term dermal exposure to allethrin may cause itching, burning, tingling, numbness, a feeling of warmth, with no dermatitis Exposure to large doses by any route may lead to nausea, vomiting, diarrhea, hyperexcitability, incoordination, tremors, convulsive twitching, convulsions, bloody tears, incontinence, muscular paralysis, prostration and coma. Persons sensitive to ragweed pollen are at increased risk from exposure to allethrin .
Allethrin is a central nervous system stimulant . Heavy respiratory exposure caused incoordination and urinary incontinence in mice and rats .
Chronic toxicity: A dosage of 50 mg/kg/day for 2 years produced no detectable effect in the dog .
In a 90-day dietary study with rats fed 0, 25, 75, 250 or 500 mg/kg of bioallethrin, the NOEL was 25 mg/kg. Rats fed 75 mg/kg exhibited decreased body weight gain, increased liver weights and, in females only, increased levels of serum liver enzymes .
A 6-month study with dogs fed 0, 5, 25 or 125 mg/kg of bioallethrin, effects on the liver were seen at 5 mg/kg .
Teratogenic Effects: No developmental defects were seen in the offspring of rats given doses as high as 195 mg/kg/day .
Mutagenic Effects: Allethrin has been found to be mutagenic under certain conditions in strains of the bacterium Salmonella typhimurium . However, 2 other tests of bioallethrin for mutagenicity (DNA damage and reverse mutation) were negative.
Carcinogenic Effects: Rats fed 2,000 mg/kg of d-allethrin for 2 years did not develop cancer .
Organ Toxicity: Pyrethroids may cause adverse effects on the central nervous system. Long-term feeding studies have caused increased liver and kidney weights and adverse changes in liver tissues in test animals.
ALLETHRIN:

TOXICITY	IRRITATION
Oral (rat) LD50: 860 mg/kg	Nil Reported
Inhalation (rat) LCLo: 13800 mg/m³/4h	Nil Reported
Dermal (rabbit) LD50: 11332 mg/kg	Nil Reported
Oral (rat) LD50: 430 mg/kg	
Inhalation (rat) LC50: 1600 mg/m³/3h	
Dermal (rat) LD50: 25000 mg/kg	
Oral (mouse) LD50: 250 mg/kg	

Inhalation (mouse) LC50: 2720 mg/m³/3h
Dermal (rabbit) LD50: 1545 mg/kg
Oral (rat) LD50: 720 mg/kg
Inhalation (rat) LC50: >2000 mg/m³/2h
Oral (mouse) LD50: 440 mg/kg
Inhalation (mouse) LC50: >2000 mg/m³/2h

for bioallethrin
CAS RN: 28434-00-6
RTECS No.: GZ 14772000
for racemic mixture RTECS No.: GZ 1476000
Excitement, ataxia, urinary tract changes recorded
ADI: 0.03 mg/kg/day
NOEL: 3 mg/kg/day

TOXICITY	IRRITATION
CIS-ALLETHRIN:	
Oral (mouse) LD50: 210 mg/kg	Nil Reported

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
allethrin	HIGH		LOW	MED
trans-allethrin	HIGH		LOW	MED

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. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. 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 or consult manufacturer for recycling options.
· Consult Waste Management Authority for disposal.

Section 14 - TRANSPORTATION INFORMATION

DOT:
Symbols: None Hazard class or Division: 6.1
Identification Numbers: UN3352 PG: III

Label Codes: 6.1 Special provisions: IB3, T7,
TP2, TP28
Packaging: Exceptions: 153 Packaging: Non- bulk: 213
Packaging: Exceptions: 153 Quantity limitations: 60 L
Passenger aircraft/rail:
Quantity Limitations: Cargo 220 L Vessel stowage: Location: A
aircraft only:
Vessel stowage: Other: 40
Hazardous materials descriptions and proper shipping names:
Pyrethroid pesticide, liquid toxic

Air Transport IATA:

ICAO/IATA Class: 6.1 ICAO/IATA Subrisk: None
UN/ID Number: 3352 Packing Group: III
Special provisions: A3
Cargo Only
Packing Instructions: 618 Maximum Qty/Pack: 220 L
Passenger and Cargo Passenger and Cargo
Packing Instructions: 611 Maximum Qty/Pack: 60 L
Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity
Packing Instructions: Y611 Maximum Qty/Pack: 2 L
Shipping Name: PYRETHROID PESTICIDE, LIQUID, TOXIC
*(CONTAINS ALLETHRIN)

Maritime Transport IMDG:

IMDG Class: 6.1 IMDG Subrisk: None
UN Number: 3352 Packing Group: III
EMS Number: F-A , S-A Special provisions: 61 223 274
Limited Quantities: 5 L Marine Pollutant: Yes
Shipping Name: PYRETHROID PESTICIDE, LIQUID, TOXIC

Section 15 - REGULATORY INFORMATION

allethrin (CAS: 584-79-2,28434-00-6) is found on the following regulatory lists;

"Canada Domestic Substances List (DSL)","US - New Jersey Right to Know Hazardous Substances","US Toxic Substances Control Act (TSCA) - Inventory"

Regulations for ingredients

cis-allethrin (CAS: 34624-48-1) is found on the following regulatory lists;

"Canada - Saskatchewan Environmental Persistent or Chronic Hazardous Substances","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - Massachusetts Oil & Hazardous Material List","US - Pennsylvania - Hazardous Substance List","US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances","US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act"

trans-allethrin (CAS: 22431-63-6,28057-48-9,28434-00-6) is found on the following regulatory lists;

"US EPCRA Section 313 Chemical List","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

■ Cumulative effects may result following exposure*.
■ May produce discomfort of the eyes*.
■ Possible respiratory and skin sensitiser*.
* (limited evidence).

Ingredients with multiple CAS Nos

Ingredient Name CAS allethrin 584-79-2, 28434-00-6 trans-allethrin 22431-63-6, 28057-48-9, 28434-00-6

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■ 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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