Material Safety Data Sheet

Date Printed: 14/DEC/2004
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Version 1.2
According to 91/155/EEC

1 - Product and Company Information

Product Name	DELTAMETHRIN PESTANAL, 250 MG
Product Number	45423
Company	Sigma-Aldrich Pte Ltd #08-01 Citilink Warehouse Singapore 118529 Singapore
Technical Phone #	65 271 1089
Fax	65 271 1571

2 - Composition/Information on Ingredients

Product Name	CAS #	EC no	Annex I Index Number
DELTAMETHRIN	52918-63-5	258-256-6	607-319-00-X

Formula	C22H19Br2NO3
Molecular Weight	505.21 AMU
Synonyms	Butox * Cislin * Crackdown * Decamethrin * Decamethrine * Decis * Dekametrin (Hungarian) * Deltagran * Deltamethrin * Deltamethrine * Deltametryna (Polish) * FMC 45498 * K-Othrin * K-Othrine * NRDC 161 * OMS 1988 * RU 22974 * RUP 987

3 - Hazards Identification

SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT
Toxic by inhalation and if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4 - First Aid Measures

AFTER INHALATION
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

AFTER SKIN CONTACT
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

AFTER EYE CONTACT
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

AFTER INGESTION
If swallowed, wash out mouth with water provided person is

conscious. Call a physician immediately.

5 - Fire Fighting Measures

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

SPECIAL RISKS
Specific Hazard(s): Emits toxic fumes under fire conditions.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

6 - Accidental Release Measures

PERSONAL PRECAUTION PROCEDURES TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

7 - Handling and Storage

HANDLING
Directions for Safe Handling: Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE
Conditions of Storage: Keep tightly closed.

8 - Exposure Controls / Personal Protection

ENGINEERING CONTROLS
Safety shower and eye bath. Use only in a chemical fume hood.

GENERAL HYGIENE MEASURES
Wash contaminated clothing before reuse. Wash thoroughly after handling.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory Protection: Government approved respirator.
Hand Protection: Compatible chemical-resistant gloves.
Eye Protection: Chemical safety goggles.

9 - Physical and Chemical Properties

Appearance Physical State: Solid

Property	Value	At Temperature or Pressure
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	98 °C	
Flash Point	100 °C	Method: closed cup

Flammability	N/A
Autoignition Temp	N/A
Oxidizing Properties	N/A
Explosive Properties	N/A
Explosion Limits	N/A
Vapor Pressure	N/A
SG/Density	N/A
Partition Coefficient	N/A
Viscosity	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
Evaporation Rate	N/A
Bulk Density	N/A
Decomposition Temp.	N/A
Solvent Content	N/A
Water Content	N/A
Surface Tension	N/A
Conductivity	N/A
Miscellaneous Data	N/A
Solubility	N/A

10 - Stability and Reactivity

STABILITY
Stable: Stable.
Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS
Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Hydrogen bromide gas.

HAZARDOUS POLYMERIZATION
Hazardous Polymerization: Will not occur

11 - Toxicological Information

RTECS NUMBER: GZ1233000

ACUTE TOXICITY

LD50
Oral
Rat
9.36 mg/kg
Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Convulsions or effect on seizure threshold. Kidney, Ureter, Bladder:Urine volume increased.

LC50
Inhalation
Rat
785 mg/m3
2H
Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Convulsions or effect on seizure threshold. Gastrointestinal:Changes in structure or function of salivary glands.

LD50
Skin
Rat
> 800 mg/kg

LD50
Intravenous
Rat
2526 UG/KG
Remarks: Behavioral:Convulsions or effect on seizure threshold. Behavioral:Ataxia. Gastrointestinal:Changes in structure or function of salivary glands.

LD50
Oral
Mouse
20 mg/kg
Remarks: Behavioral:Somnolence (general depressed activity). Behavioral:Convulsions or effect on seizure threshold. Kidney, Ureter, Bladder:Urine volume increased.

LD50
Intraperitoneal
Mouse
10 MG/KG

LD50
Intracerebral
Mouse
26100 UG/KG

LD50
Oral
Dog
> 300000 mg/kg

LD50
Intravenous
Dog
3440 UG/KG
Remarks: Behavioral:Tremor. Lungs, Thorax, or Respiration:Dyspnea. Gastrointestinal:Changes in structure or function of salivary glands.

LD50
Skin
Rabbit
2000 mg/kg

LD50
Oral
Duck
> 4640 mg/kg

IRRITATION DATA

Eyes
Rabbit
0.1 ml
24H

SENSITIZATION
Sensitization: May cause allergic respiratory and skin reactions

SIGNS AND SYMPTOMS OF EXPOSURE
Symptoms of exposure may include burning sensation, coughing,

wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

ROUTE OF EXPOSURE

Skin Contact: Causes severe skin irritation.
Skin Absorption: Harmful if absorbed through skin. Readily absorbed through skin.
Eye Contact: Causes severe eye irritation.
Inhalation: Toxic if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.
Ingestion: May be fatal if swallowed.
Multiple Routes: High concentrations are extremely destructive to tissues of the mucous membranes and upper respiratory tract, eyes, and skin.

TARGET ORGAN INFORMATION

Central nervous system. Cardiovascular system.

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC CARCINOGEN LIST

Rating: Group 3

CHRONIC EXPOSURE - MUTAGEN

Human
100 MG/L
Cell Type: lymphocyte
Micronucleus test

Human
110 UMOL/L
Cell Type: lymphocyte
DNA inhibition

Human
60 MG/L
Cell Type: lymphocyte
Sister chromatid exchange

Rat
5600 UG/KG
Intraperitoneal
Micronucleus test

Rat
5600 UG/KG
Intraperitoneal
Other mutation test systems

Rat
5600 UG/KG
Subcutaneous
Other mutation test systems

Rat

5600 UG/KG
Oral
Other mutation test systems

Rat
11200 UG/KG
Intraperitoneal
Cytogenetic analysis

Rat
11200 UG/KG
Subcutaneous
Cytogenetic analysis

Rat
11200 UG/KG
Oral
Cytogenetic analysis

Mouse
325 MG/KG
Intraperitoneal
24H
Micronucleus test

Mouse
500 UMOL/L
Cell Type: leukocyte
DNA inhibition

Mouse
10080 UG/KG
Oral
2W
Dominant lethal test

CHRONIC EXPOSURE - TERATOGEN

Species: Rat
Dose: 10 MG/KG
Route of Application: Oral
Exposure Time: (6-15D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Dose: 30 MG/KG
Route of Application: Oral
Exposure Time: (7-16D PREG)
Result: Specific Developmental Abnormalities: Musculoskeletal system.

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 70 MG/KG
Route of Application: Oral
Exposure Time: (7-20D PREG)
Result: Effects on Newborn: Growth statistics (e.g., reduced weight gain).

Species: Rat

Dose: 21 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (21D MALE)
Result: Paternal Effects: Other effects on male.

Species: Mouse
Dose: 50 MG/KG
Route of Application: Oral
Exposure Time: (8-12D PREG)
Result: Effects on Newborn: Live birth index (# fetuses per litter; measured after birth). Effects on Newborn: Viability index (e.g., # alive at day 4 per # born alive).

12 - Ecological Information

No data available.

13 - Disposal Considerations

SUBSTANCE DISPOSAL
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

14 - Transport Information

RID/ADR
UN#: 3349
Class: 6.1
PG: II
Proper Shipping Name: Pyrethroid pesticide, solid, toxic

IMDG
UN#: 3349
Class: 6.1
PG: II
Proper Shipping Name: Pyrethroid pesticide, solid, toxic
Marine Pollutant: No
Severe Marine Pollutant: No
Technical Name: X

IATA
UN#: 3349
Class: 6.1
PG: II
Proper Shipping Name: Pyrethroid pesticide, solid, toxic
Technical Name: Required

15 - Regulatory Information

CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES
ANNEX I INDEX NUMBER: 607-319-00-X
INDICATION OF DANGER: T N
Toxic. Dangerous for the environment.
R-PHRASES: 23/25 50/53
Toxic by inhalation and if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic

environment.
S-PHRASES: 24 28 36/37/39 38 45 60 61
Avoid contact with skin. After contact with skin, wash immediately with plenty of water. Wear suitable protective clothing, gloves, and eye/face protection. In case of insufficient ventilation, wear suitable respiratory equipment. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.

COUNTRY SPECIFIC INFORMATION

Germany
WGK: 3

SWITZERLAND
SWISS POISON CLASS: 3

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16 - Other Information

WARRANTY
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2004 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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