



Identification of the substance or mixture and of the company/undertaking

Product identifier.

Deltamethrin (BSI, draft E-ISO); deltaméthrine ((f) draft F-ISO)

Relevant identified uses of the substance or mixture and uses advised against

Insecticide

Details of the supplier of the safety data sheet.

SPARCHEM

159, Ashoka Shopping Centre, 2nd Flr.,

L.T. Marg, Mumbai - 400001,

Telephone number: 0091- 22-22642642

E-mail: response@sparchem.com

Emergency telephone number

0091- 22-22642642

Hazards identification

Classification of the substance or mixture

Classification as per Directives 67/548/EEC:

T; R23/25

N; R50-53

Classification as per Regulation (EC) No 1272/2008:

Acute Tox. 3 *, H331

Acute Tox. 3 *, H301

Aquatic Acute 1, H400

Aquatic Chronic 1, H410

Label elements - Pictogram, Signal Word Code(s)

GHS06

GHS09

Hazard statement Code(s)

H331: Toxic if inhaled.

H301: Toxic if swallowed.

H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements

P264: Wash hands thoroughly after handling.

P270: Do not eat, drink or smoke when using this product.

P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P330: Rinse mouth.

P405: Store locked up.

P261: Avoid breathing dust/fume/gas/mist/ vapours/spray.

P271: Use only outdoors or in a well-ventilated area.

P304 + P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P311: Call a POISON CENTER or doctor/physician.

P321: Specific treatment-treat symptomatically.

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

P273: Avoid release to the environment.

P391: Collect spillage.

P501: Dispose of contents/container in accordance with local/regional/national/regulation.

Other hazards

Very toxic to aquatic life with long lasting effects. Does not meet the criteria for vPvB in accordance with Annex XIII of REACH.

Composition/information on ingredients

Substances

Chemical name	CAS No/ EC No	Index No.	Classification (Directives 67/548/EEC)	Classification (Regulation (EC) No 1272/2008)	Con. % w/w
Deltamethrin, (S)-a-cyano-3- phenoxybenzyl (1R,3R)-3-(2,2- dibromovinyl)-2,2- dimethyl-cyclo- propane carboxylate	52918-63-5/ 258-256-6	607-319-00-X	T; R23/25 N; R50-53	Acute Tox. 3 *, H331 Acute Tox. 3 *, H301 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	98.5 (min)

First aid measures

Description of first aid measures

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth. Keep the person calm and comfortable. Rinse mouth.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.

IF EYE CONTACT, immediately flush with plenty of water at least for 15 minutes.

IF ON SKIN: Wash with plenty of soap and water.

Most important symptoms and effects, both acute and delayed

Based on animal studies, these may include excessive salivation, nausea and vomiting, shortness of breath and laboured breathing, coarse tremors, hypersensitivity to external stimuli and general weakness, a burning or itching sensation of the face and/or shoulders, hypotension and slow heart rate. These may be followed by hypertension, increased heart rate and convulsive muscle contractions.

Indication of any immediate medical attention and special treatment needed

The person should stop work immediately, remove contaminated clothing and clean the affected skin area. First, soak up any liquid remaining on the skin with readily disposable material (e. g., talcum powder or absorbent cloth or paper); wash the affected area with warm water and alkaline soap. For eye contamination, wash with copious amounts of 4% sodium bicarbonate or water. Avoid exposing affected skin or eyes to bright light. If the material was swallowed and signs of toxicity are severe, induce vomiting if person is conscious and aspiration of vomit can be avoided. In the event of collapse, apply artificial respiration. Keep in mind that if mouth-to-mouth resuscitation is used, vomit may contain toxic amounts of deltamethrin. Keep the person calm and comfortable and obtain medical assistance as soon as possible.

Firefighting measures

Extinguishing media

If product is involved in a fire, use water spray, foam, dry powder, carbon dioxide or sand. Keep nearby containers and equipment cool with a water stream.

Special hazards arising from the substance or mixture

May give off toxic fumes if heated to decomposition. Do not breathe fumes. Wear self contained breathing apparatus.

Advice for firefighters

Whenever this product involved in a major fire, firefighters to wear boots, overalls, gloves, eye and face protection and breathing apparatus. Keep containers cool with water spray. Cypermethrin is toxic to fish and water should be used only to cool unaffected stock.

Accidental release measures

Personal precautions, protective equipment and emergency procedures.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. Remove ignition sources and need to evacuate the danger area or to consult an expert. When dealing with a spillage do not eat, drink or smoke.

Environmental precautions

Do not discharge into the drains/surface water/groundwater.

Methods and material for containment and cleaning up

Keep spectators away from leaking or spilled product. Prohibit smoking and the use of naked flames in the immediate vicinity. Transfer any product remaining in damaged or leaking containers into a clean, empty drum, and label the drum.

Absorb spillage and cover contaminated areas with lime, damp sawdust, and, earth, or other

absorbent material and place in a secure container for safe disposal. Contain a large spillage by a barrier of earth or sandbags. Prevent spreading to other cargo, vegetation, or waterways. Clean contaminated floors and objects thoroughly with plenty of water, observing environmental regulations.

Reference to other sections

Information regarding personal protective equipment, see section 8.

Information regarding waste disposal, see section 13.

Handling and storage

Precautions for safe handling

Wear full protective clothing by those handling concentrates. Adequate washing facilities should be available at all times and should be close to site of handling. Eating, drinking and smoking should be prohibited during handling. Wash hands after use and to remove contaminated clothing and protective equipment before entering eating areas.

Conditions for safe storage, including any incompatibilities

It should be stored in clearly labelled rigid and leak proof containers and away from containers of food and drink. Storage should be under lock and key and secure from access by children and other unauthorized persons. Store in a well-ventilated place. Do not store together with oxidizing & strong alkalies materials.

Specific end use(s)

When opening a container and mixing, protective impermeable boots, clean overalls impermeable gloves, eye protection and a respirator should be worn. Avoid contact to mouth and eyes. Before eating, drinking or smoking, hands and other exposed skin should be thoroughly washed with alkaline soap.

Exposure controls/personal protection

Control parameters

Occupational exposure limit

Exposure limit values are not available.

DNEL and PNEC values

Not available

Exposure controls

Appropriate engineering controls

Mechanical ventilation should be used when handling this product in closed spaces.

Individual protection measures, such as personal protective equipment

General precautions

Do not inhale vapours.

Eye/face protection

Wear safety goggles with imperforated side shield and face shield.

Skin protection

Avoid contact with skin. Wear apron, boots and full protective suit.

Respiratory protection

Wear dust mask. Use respiratory protection in case of insufficient exhaust ventilation or prolonged exposure.

Thermal hazards

Whenever this product involved in a major fire, firefighters to wear boots, overalls, gloves, eye and face protection and breathing apparatus.

Environmental exposure controls

Keep away from food, drink and animal feed stuff. This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheet.

Physical and chemical properties

Information on basic physical and chemical properties

Appearance

Off white powder

Odour

Odorless

Odour threshold

Not available

PH

4.59, CV = 0.6% (ca 20°C) (1% dispersion)

Melting point/freezing point

101°C

Initial boiling point and boiling range

Not applicable

Flash point

Not available

Evaporation rate

Not available

Flammability (solid, gas)

Not applicable

Upper/lower flammability or explosive limits

Non-explosive

Vapour pressure

$<5.0 \times 10^{-4}$ Pa at ca 25°C

Relative density

1.5868 (CV = 0.4%)

Solubility(ies)

Water: pH 4 Buffer < 3.24 ng/mL at 20°C

Partition coefficient: n-octanol/water

log P KOW = 5.96

Auto-ignition temperature

Not available

Decomposition temperature

Not available

Viscosity

Not available

Explosive properties

Non-explosive

Oxidising properties

Non-oxidizer

Other information

Does not dissociate in water

Stability and reactivity

Reactivity

Unstable under alkaline conditions.

Chemical stability

Stable for two years at ambient conditions.

Possibility of hazardous reactions

Reactions with strong alkalis. Incompatible with oxidizing materials.

Conditions to avoid

Avoid excessive heat and flame.

Incompatible materials

Strong Alkaline materials.

Hazardous decomposition products

When handled and stored appropriately, no dangerous decomposition products are known.

Toxicological information

Information on toxicological effects Acute toxicity, oral, dermal, inhalation

Oral LD50: > 50-300 mg/kg bw (m) (Rats)

Dermal LD50: >2000 mg/kg bw (Rats)

Inhalation LC50 : 1.2791 mg/l (Rats)

Skin Corrosion/Irritation

Non-irritant to skin of rabbits

serious eye damage/irritation

Non-irritant to eye of rabbits

respiratory or skin sensitisation

Non-sensitiser to skin of Guinea pigs

germ cell mutagenicity

Non-mutagenic

Carcinogenicity

Non-carcinogenic

Reproductive toxicity

Non-reprotoxic and teratogenic

STOT-single exposure

Not applicable

STOT-repeated exposure

Not applicable

Aspiration hazard

Chemical pneumonitis resulting from aspiration of the solvent into the lungs is a hazard that occurs when liquid formulations are used.

Ecological information

Toxicity

Fish, *Poecilia reticulata*

LC50 (96 h): 1.74 µg/l

Daphnia magna

EC50 (24 h) 4.15 µg/l

Algae, *Chlorella vulgaris*

EC50: 22.77 µg/ml

Bees, *Apis indica*

LD50: 0.52 ppm

Earthworms, *Lampito mauritii*

LD50 :> 1000 mg/kg dry soil weight

Birds, Japanese Quails

LD50: > 5000 ppm

Persistence and degradability

In soil, undergoes microbial degradation within 1-2 weeks. Kd 3790-30 000, Koc 4.6×10^5 - 1.63×10^7 cm³/g, confirms strong adsorption by soil colloids and no risk of leaching. DT50 (lab., aerobic) 21-25 d, (anaerobic) 31-36 d. In field, DT50 <23 d. Soil photolysis DT50 9 d.

Bioaccumulative potential

Pyrethroids have bioconcentration factors (BCFs) that are far lower than those predicted from the correlation between the Kow partition coefficient and BCF. The low accumulation can be attributed to metabolism by the fish and to the reduced bioavailability to fish of deltamethrin bound by dissolved organic carbon and suspended colloids.

Mobility in soil

According to the pesticide mobility classification system developed by Helling & Turner, deltamethrin is classified as a low-mobility to immobile compound in soils.

Results of PBT and vPvB assessment

Very toxic to aquatic life with long lasting effects. Does not meet the criteria for vPvB in accordance with Annex XIII of REACH.

Other adverse effects

When used as recommended, it is unlikely that deltamethrin or its degradation products will reach levels of adverse environmental significance.

Disposal considerations

Waste treatment methods

Product Disposal

Avoid exposure, if possible by the use of appropriate protective clothing and masks.

Waste that contains Alpha-cypermethrin should be burnt in an appropriate high-temperature incinerator with effluent scrubbing. Where no incinerator is available, contaminated absorbents or surplus products should be decomposed by hydrolysis at pH 12 or above. Contact with a suitable hydrolysing agent is required to ensure degradation of the active ingredient to a safe level.

Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage to streams, watercourses, open waterways, ditches, fields with drainage systems, or to the catchment areas of boreholes, wells, springs, or ponds.

Package disposal

Decontaminate empty, damaged, or leaking containers with a 10% sodium carbonate solution added at the rate of at least 1 litre per 20-litre drum. Puncture containers to prevent reuse. Dispose of container in accordance with local regulation.

Transport information

UN number

3349

UN proper shipping name

PYRETHROID PESTICIDE, SOLID, TOXIC

Transport hazard class(es)

ADR: 6.1

IMDG: 6.1

ICAO/IATA: 6.1

RID: 6.1

Packing group

III

Environmental hazards

Deltamethrin designated as marine pollutant

Special precautions for user

Ensure that containers are sound and that labels are securely fixed and undamaged before dispatch. Do not load together with food and animal feed.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not relevant

Regulatory information

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

Deltamethrin has been classified under Dangerous substances Directive (67/548/EEC) & Regulation No 1272/2008.

Chemical safety assessment

Chemical safety assessment has been performed by World Health Organization for the International Programme on Chemical Safety.

Other information

Indication of changes

Changes have been made in all section.

Abbreviations and acronyms

LD50: Lethal Dose, 50%

LC50: Lethal Concentration, 50%

STOT: Specific Target Organ Toxicity

DNEL: Derived No Effect Level

PNEC: Predicted No Effect Concentration

ADR: International Carriage of Dangerous Goods by Road

IMDG: International Maritime Dangerous Goods

ICAO/IATA: International Civil Aviation Organization /International Airlines Travel Agent

RID: International Carriage of Dangerous Goods by Rail

Key literature references and sources for data

-Our study reports

- World Health Organization for the International Programme on Chemical Safety.

-BCPC, Pesticide Manual

- Document I, Evaluation report according to Directive 98/8/EC)

Text of R-phrases mentioned in Section 3:

23/25: Toxic by inhalation and if swallowed.

R50: Very toxic to aquatic organisms.

R53: May cause long-term adverse effects in the aquatic environment.

Text of the hazard statements mentioned in Section 3:

H331: Toxic if inhaled.

H301: Toxic if swallowed.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

Training

Training of workers in techniques to avoid contact with substance is essential.

Liability

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