



SHANGHAI MINGDOU AGROCHEMICAL CO., LTD

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## MATERIAL SAFETY DATA SHEET OF DELTAMETHRIN 2.5% EC

### 1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

**Supplier:** SHANGHAI MINGDOU AGROCHEMICAL CO., LTD

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**Product name:** Deltamethrin 2.5% EC

**Product use:** Insecticide

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

**Formulation Type:** Emulsifiable concentrate

**Active Ingredients:** Deltamethrin

**Chemical Abstracts name:** [1R-[1 $\alpha$ (S\*),3 $\alpha$ ]]-cyano(3-phenoxyphenyl)methyl

3-(2,2-dibromoethenyl)-2,2-dimethylcyclopropanecarboxylate

**IUPAC name:**

(S)- $\alpha$ -cyano-3-phenoxybenzyl (1R,3R)-3-(2,2-dibromovinyl)-2,2-dimethylcyclopropanecarboxylate

Roth: (S)- $\alpha$ -cyano-3-phenoxybenzyl (1R)-cis-3-(2,2-dibromovinyl)-2,2-dimethylcyclopropanecarboxylate

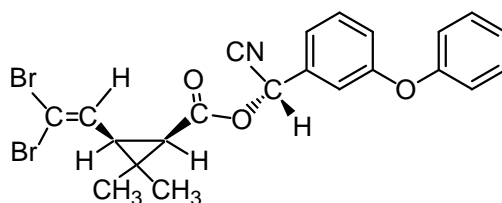
**Chemical Family:** pyrethroid

**CAS NO.** 52918-63-5; 52820-00-5 ((RS)- (1R)-cis- isomer pair)

**Molecular Formula:** C<sub>22</sub>H<sub>19</sub>Br<sub>2</sub>NO<sub>3</sub>

**Molecular Weight:** 505.2

**Structural Formula:**



**Composition:**

INGREDIENT	CAS NO	PROPORTION
Deltamethrin	52918-63-5; 52820-00-5 ((RS)- (1R)-cis- isomer pair)	2.5% Min
Inert ingredients	Not available	97.5% Max

Other ingredients determined not to be hazardous



### 3. HAZARDS IDENTIFICATION

**Emergency overview:** Flammable. Harmful by inhalation and if swallowed. Irritating to respiratory system and skin. Risk of serious damage to eyes. Harmful: may cause lung damage if swallowed.

**Physical hazards:** Flammable liquid.

**Environmental hazards:** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### 4. FIRST AID MEASURES

**General:** Have the product container, label or Material Safety Data Sheet with you when going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given.

**Skin contact:** In case of skin contact, immediately wash with plenty of soap and water for at least 15 minutes. Warm water may increase the subjective severity of the irritation/paresthesia. This is not a sign of systemic poisoning. In case of skin irritation, application of oils or lotions containing vitamin E may be considered. If symptoms persist, call a physician.

**Eye contact:** Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Warm water may increase the subjective severity of the irritation/paresthesia. This is not a sign of systemic poisoning. Apply soothing eye drops, if needed anaesthetic eye drops. Get medical attention if irritation develops and persists.

**Ingestion:** Rinse out mouth and give water in small sips to drink. Do NOT induce vomiting. Risk of product entering the lungs on vomiting after ingestion. If swallowed, seek medical advice immediately and show this container or label.

**Inhalation:** Move to fresh air. Keep patient warm and at rest. If symptoms persist, call a physician.

**Note to physician:** No specific antidote. Treat symptomatically.

### 5. FIRE FIGHTING MEASURES

**Flash point:** 47 °C

**Flammable limits:**

LFL: Not determined.

UFL: Not determined.

**Autoignition temperature:** Not determined.

**Hazardous combustion products:** Dangerous gases are evolved in the event of a fire.

**Extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.



**Media to be avoided:** High volume water jet

**Fire-fighting instructions:** Remove product from areas of fire, or otherwise cool containers with water in order to avoid pressure being built up due to heat. Whenever possible, contain fire-fighting water by diking area with sand or earth.

**Protective equipment for firefighters:** In the event of fire, wear self-contained breathing apparatus.

## 6. ACCIDENT RELEASE MEASURES

**Personal precautions:** Keep people away from and upwind of spill/leak. Avoid contact with spilled product or contaminated surfaces. When dealing with a spillage do not eat, drink or smoke.

**Environmental precautions:** Do not allow to get into surface water, drains and ground water.

**Method for cleaning up:** Keep in suitable, closed containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder). Clean floors and contaminated objects with plenty of water.

## 7. HANDLING AND STORAGE

**Handling:** Read the label before use. Avoid spilling, skin and eye contact. Ventilate well, avoid breathing vapours. Use approved respirator if air contamination is above accepted level. Avoid inhalation of vapours.

**Storage:** Keep in cool, dry, ventilated storage and closed containers. Keep in original container.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limits:** No exposure limits have been established for this material.

**Engineering controls:** Ventilation required. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.

### Personal protective equipment (PPE):

**Respiratory protection:** No specific recommendation made, but respiratory protection must be used if the general level exceeds the Occupational Exposure Level (OEL).

**Skin protection:** Use protective gloves. Wear appropriate clothing to prevent any possibility of liquid contact and repeated or prolonged vapour contact.

**Eye protection:** Use approved safety goggles or face shield.

**User safety recommendations:** When using, do not eat, drink or smoke. Remove soiled clothing immediately and clean thoroughly before using again. Wash hands immediately after work, if necessary take a shower.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** Light yellow to brownish liquid.



**Odor:** Aromatic.

**pH:** 4.5~7.5.

**Flash point:** 47 °C.

**Density:** Approx. 0.93 g/cm<sup>3</sup> at 20 °C.

**Water solubility:** Miscible.

## 10. STABILITY AND REACTIVITY

**Chemical stability:** Stable under normal conditions.

**Conditions to avoid:** Extremes of temperature and direct sunlight. Protect from (sun)light, open flame and sources of heat.

**Hazardous decomposition:** CO, CO<sub>2</sub>, NO<sub>x</sub>, HBr and Bromides.

**Incompatible materials:** Strong acids and strong bases.

**Hazardous reactions:** Hazardous polymerization will not occur.

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity:

Oral: LD<sub>50</sub> (rat) 320 - 2000 mg/kg

Dermal: LD<sub>50</sub> (rat) > 2000 mg/kg

Inhalation: LC<sub>50</sub> (rat) >2.0 mg/l

### Irritant properties:

Skin: Irritating to skin. (rabbit)

Eye: Severe eye irritation. (rabbit)

### Allergenic and sensitizing effects:

Not considered to be a skin sensitizer (Guinea pig).

**Chronic toxicity:** In 2-year feeding trials, the reported NEL (no effect level) was 12 mg/kg diet for mice; and 2.1 mg/kg diet for rats. The dose without activity in rats over a 90-day period was 10 mg/kg/day. Suspected chronic exposure effects in humans include the following: choreoathetosis, hypotension, prenatal damage and shock.

**Genetic effects/Mutagenicity:** Deltamethrin has no mutagenic activity.

**Reproductive effects:** A reproductive 3-generation study in rats reported a reproductive NOEL to be greater than 2.5 mg/kg/day. Levels tested were 0, 0.1, 1.0 and 2.5 mg/kg/day. Oral administration of deltamethrin to mice on days 7 to 16 of gestation produced a dosage-related reduction of weight gain but no effect on the number of implants, fetal mortality, fetal weight or malformations.

**Teratogenic effects:** Deltamethrin has no teratogenic activity.



## 12. ECOLOGICAL INFORMATION

The following information is for the active ingredient, Deltamethrin.

### Ecotoxicity:

- Birds Acute oral LD<sub>50</sub>: for mallard ducks >4640 mg/kg.  
Dietary LC<sub>50</sub> (5 days): for mallard ducks >8039, quail >5620 mg/kg diet.
- Fish Toxic to fish under laboratory conditions; LC<sub>50</sub> (96 h) for rainbow trout 0.91, bluegill sunfish 1.4 µg/l. Not toxic to fish under natural conditions.
- Daphnia EC<sub>50</sub> (48 h): 3.5 µg/l.
- Algae EC<sub>50</sub> (96 h): for algae (*Selenastrum capricornutum*) >9.1 mg/l.
- Bees Toxic to bees. LD<sub>50</sub> (oral): 79 ng/bee. LD<sub>50</sub> (contact): 51 ng/bee.
- Earthworm: LC<sub>50</sub> (14 days): for earthworms >1290 mg/kg soil.

**Persistence and degradability:** In soil, degradation occurs within 1-2 weeks. Deltamethrin in pond water was rapidly adsorbed, mostly by sediment, in addition to uptake by plants and evaporation into the air.

**Bioaccumulative potential:** Bio-concentration factor (BCF): 1400.

## 13. DISPOSAL CONSIDERATION

Product: In accordance with current regulations and, if necessary, after consultation with the site operator and/or with the responsible authority, the product may be taken to a waste disposal site or incineration plant.

Contaminated packaging: Triple rinse containers. Do not re-use empty containers. Not completely emptied packagings should be disposed of as hazardous waste.

## 14. TRANSPORT INFORMATION

### Land transport:

- UN Number: 1993  
UN Proper shipping name: Flammable liquid, n.o.s.  
Transport hazard class: 3  
Packing group: III

### Sea transport:

- UN Number: 1993  
UN Proper shipping name: Flammable liquid, n.o.s.  
Transport hazard class: 3  
Packing group: III  
Marine pollutant: Yes



**Air transport:**

UN Number: 1993

UN Proper shipping name: Flammable liquid, n.o.s.

Transport hazard class: 3

Packing group: III

**15. REGULATORY INFORMATION**

**Hazard symbols:**

Xn Harmful

N Dangerous for the environment

**Risk phrases:**

R10 Flammable.

R20/22 Harmful by inhalation and if swallowed.

R37/38 Irritating to respiratory system and skin.

R41 Risk of serious damage to eyes.

R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R65 Harmful: may cause lung damage if swallowed.

**Safety phrases:**

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S35 This material and its container must be disposed of in a safe way.

S39 Wear eye/face protection.

S57 Use appropriate container to avoid environmental contamination.

S62 If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

**16. OTHER INFORMATION**

This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of the how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made the user should contact the company.

END OF MSDS