

Product Safety Data Sheet

1. Chemical product and company identification

- 1.1. *Prepared Date* : Jan. 26 . 2024
1.2. *Product information* : -
Trade name : **Deltafast 50 EC**
1.3. *Information about manufacturer / supplier* :
Saudi Delta Company for Chemical Industries
Riyadh – Saudi Arabia – 3rd Industrial City
Tel. 00966-11-2654533 Fax. 00966-11-2654532
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2. Information on ingredients

2.1. *Chemical properties (Component substances)*

The product is a mixture of one active ingredient , emulsifiers , and solvent.

- Lambda-Cyhalothrin: 5% (w/v) (Non systemic insecticide with contact and stomach action, and repellent properties.)
Gives rapid knockdown and long residual activity.
- Emulsifiers: 6% w/v (Anionic / Nonionic type)
- Aromatic Solvent: Up to 100% v

2.1.1. **Lamda-Cyhalothrin:-**

- IUPAC Name :A reaction product comprising equal quantities of (S)-α cyano-3-phenoxybenzyl (Z)-(1R, 3R)-3-(2-chloro-3,3,3-trifluoroprop-1-enyl)-2,2-dimethylcyclopropanecarboxylate and (R)- α-cyano-3-phenoxybenzyl (Z)- (1S,3S)-3-(2-chloro-3,3,3-trifluoroprop-1 –enyl)-2,2-dimethyl = cyclopropanecarboxylate. .
Roth: (S)- α-cyano-3- phenoxybenzyl (Z)- (1R)-cis-3(2-chloro-3,3,3-trifluoropropenyl)-2,2-dimethyl= cyclopropanecarboxylate and (R)- α-cyano-3-phenoxybenzyl (Z)-(1S)-cis-3(2-chloro-3,3,3-trifluoro=propenyl)-2,2-dimethylcyclopropanecarboxylate (1:1)
- **CAS No.** : [91465-08-6], Development codes: PP321; ICIA 0321
- **Official Codes** : OMS 3021
- **Composition** :Tech. Grade is about 81% w/w.

- **Mol. Wt** : 449.9
- **Mol. Formula** : $C_{23}H_{19}ClF_3NO_3$
- **Form** : Colorless solid (tech. is a dark brown/green solidified melt.)
- **Melting point** : 49.2°C (tech. 47.5 – 48.5°C)
- **B.P.** : Does'nt boilt at atmospheric pressure.
- **V.P.** : 2×10^{-4} mPa (20°C, est); 2×10^{-1} mPa (60°C interpolated).
- **Kow Log P** : 7 (20°C), Henry: 2×10^{-2} Pam³ mol⁻¹.
- **S.G./Density** : 1.33g/ml (25°C)
- **Solubility** : In water . 0.005 mg/l (20°C). In acetone methanol, toluene, hexane, ethyl acetate > 500g/l.
- **Stability** : Stable to light. Stable on storage for more than 6 months at 15-25°C.
- **pKa** : > 9 (hydrolysis prevents measurement).
- **F.P** : 185°C(tech., pensky-Martens closed cup).

2.1.2. Emulsifiers :

A combined anionic/nonionic emulsifiers specially intended for formulation of pesticide .

Composition : 15-30% calcium dodecyl benzenesulfonate .
10-20% n-Butanol .
30-60% polyalkyleneoxidederivative .

Appearance : Clear yellow-brown liquid and cloudy yellow liquid

Density : 0.99-1.01 gm/ml (20 °C)

Flash point : 37 °C .

Pour point : 2-3 °C .

Viscosity : 1150 mPa s .

Solubility : Soluble in Isopropanol , Octanol , water , and exylene in soluble in kerosene and mineral oil

2.1.3. Aromatic Solvent:

CAS No. : 68920-06-9 SHA : 086803

Composition : Dimethylbenzene (ortho , meta , and para isomers).

Properties : Volatile . Petroleum distillate (75-100% aromatic hydrocarbon) , B.P. : 175-300 °F

3. Hazard Identification

- 3.1. **Dangerous Substances:** Lambda-Cyhalothrin has a low mammalian toxicity.
3.2. **Important Hazardous:** Solvent may be present aspiration hazardous.
3.3. **Signs and Symptoms of over-exposure :**

Pyrethroids have generally low toxicity to mammals , forming the basis of their favorable selectivity . Although all pyrethroids are convulsants they can be divided into two major classes based on neurophysiological toxicological , and pharmacological effects in a variety of species .

The non cyano pyrethroids (type I) include the agents permethrin and tetramethrin and cause hyperactivity, tremor and predominantly clonic convulsions. And the pyrethroids containing α -cyano substituent (type II) include the agents cypermethrin, tetramethrin , and fenvalerate have nerve effects and toxicological manifestations, and the signs of poisoning resemble those of picrotoxinin and include salivation, hyperactivity , choreoathetosis , and clonic/tonic convulsions .

4. First aid Measures

Eyes	:immediately flush for 15 minutes with large amount of water.
Skin	:remove all contaminated clothing at once ; thoroughly wash with soap and water
Ingestion	:Don't induce vomiting or administer liquids . Vomiting should be induced only under professional supervision. Keep patient prone and quiet . Only a physician should induce vomiting as first aid for this slightly toxic substance due to increased risk of chemical pneumonia or pulmonary edema caused by aspiration of the hydrocarbon solvent .

5. Fire Fighting Measures

5.1. Extinguishing media :

- 5.1.1. Suitable:Carbon dioxide, foam, water fog, dry chemical and halogenated agents.
5.1.2. Not to be used: Don't use water except in case important fire.
5.1.3. Protection against fire: Keep a way from sources of ignition.

6. Accidental Release Measures

6.1. Personal precautionary measures :

- 6.1.1. **Respiratory protection** : In case of insufficient ventilation wear a pesticide respirator jointly approved by the local authorities .
- 6.1.2 **Protective gloves**: wear heavy duty , natural rubber gloves ,or Chemical resistant gloves such as Barrier laminate or Nitrile Rubber or. Neoprene rubber or viton .
- 6.1.3 **Eye protection** : wear safety goggles .
- 6.1.4. **Other protection** : wear water-proff pants , coat , hat , rubber boots or rubber overshoes.

6.2. Environmental Precaution : Stop any eventual leakage.

6.3. **After spillage / leakage on soil**: Liquid spillage should be dammed off and pumped into containers; soak up remainder with absorbent material and dispose of in accordance with local regulations .

7. Handling and Storage

- 7.1. Don't apply when weather conditions favor drift from treated area . Don't contaminate lakes , streams , ponds . When using don't eat , drink , or smoke . Don't breathe spray . Wash hands and exposed skin before meals and after work. Wash out container thoroughly and dispose of safely . Store in original container in a cool , dry , well-ventilated , secure area out of reach of children and animals store in original container , tightly closed in a safe place .

8. Exposure controls , Personal Protections .

- 8.1. **Personal Protection**: Don't breathe spray, after treatment, wash and change clothes prior anything else like eating, drinking, or smoking.
- 8.2. **Respiratory Protection** : Wear a suitable mask.
- 8.3. **Skin Protection** : Wear a suitable protective clothing mask.
- 8.4. **Eye Protection** : Wear eye, face protection.
- 8.5. **Ingestion** : Don't eat, drink, or smoke during application

9. Physical and chemical properties

9.1. Shape	: Liquid
9.2. Colour	: Colourless- to-Yellowish
9.3. Odour	: Aromatic
9.4. Product Use	: Agricultural use (Insecticide)
9.5. Melting point	: Not applicable
9.6. Boiling point	: Not available
9.7. Specific gravity (20o)	: 0.907
9.8. Vapour pressure	: Not available
9.9. Viscosity (CPS) 25 oC	: 20
9.10. Solubility in water 25 oC	::Forms a white emulsion
9.11. Flash point oC	: > 25 °C
9.12. PH (1% aq. Emul.) w/v	: 4 - 6
9.13. Flammable limits	: Not available.

10. Stability and Reactivity

- 10.1. **Hazardous Decomposition:** Lambda-Cyhalothrin decomposes on burning producing toxic fumes including nitrogen oxides, hydrogen chloride and hydrogen fluoride.
- 10.2. **Dangerous products of decomposition :** Non known .

11. Toxicological Information (For Technical grade)

MAMMALIAN TOXICOLOGY:

- 11.1 **Oral:** Acute oral LD₅₀ for male rats 79, female rats 56, mice 20mg/kg.
- 11.2. **Skin and eye:** Acute percutaneous LD₅₀ for rats 632-696mg/kg. Mild eye irritant; non- irritant to skin (rabbits). Not a skin sensitizer (guinea pigs).
- 11.3. **Inhalation** : LC₅₀ (4h) 0.06 mg/l air (Total particulate).
- 11.4. **NOEL** (1y) for dogs 0.5 mg/kg daily.
- 11.5. **ADI** 0.005 mg/kg .
- 11.6. **Other** :Non-mutagenic in the Ames test.
- 11.7. **Toxicity class** WHO (a.i.)II; EPA (formulation) II.
- 11.8. **EC hazard** T+; R261 | T; R25 | Xn; R21 | N; R50, R53

12. Ecological Data (For Technical grade)

- 12.1. **Birds:** Acute oral LD₅₀ for mallard ducks > 3950mg/kg. Dietary LC₅₀ for quail >5300mg/kg. No accumulation of residues in eggs or tissues.
- 12.2. **Fish:** LC₅₀ (96h) for bluegill sunfish 0.21, rainbow trout 0.36µg/l.
- 12.3. **Daphnia:** EC₅₀ (48h) 0.36 µg/l.
- 12.4. **Algae** ErC₅₀ (96 h) for Selenastrum capricornutum > 1000µg/l.
- 12.5. **Other aquatic spp:** Intrinsic toxicity to aquatic organisms is greatly reduced by rapid loss from the water by adsorption and degradation..
- 12.6. **Bees:** LD₅₀ (oral) 38ng/bee; (contact) 909ng/bee.
- 12.7. **Worms:** LC₅₀ for Eisenia foetida > 1000mg/kg soil.
- 12.8. **Other beneficial spp.:** Toxic to some non-target arthropods. Effects under field

13. Disposal Considerations

13.1. Pesticides Disposal

Pesticide wastes are toxic . Improper disposal of excess pesticide , spray mixture , or rinsate is a violation of Federal law . If these wastes cannot be disposed of use according to label instructions contact .

Environmental Control Agency , or the Hazardous Waste representative at the nearest EPA Regional Office for guidance .

13.2. Container disposal

13.2.1. Metal containers : Triple rinse (or equivalent) . Then offer for recycling or reconditioning , or puncture and dispose of in a sanitary landfill , or by other procedures approved by local authorities. Do not cut or weld metal containers .

13.2.2. Plastic containers : Triple rinse (or equivalent) . Then offer for recycling or reconditioning , or puncture and dispose of in a sanitary landfill , or incineration , or , if allowed by authorities , by burning . If burned, stay out of smoke .

13.2.3. Returnable / Refillable Sealed Containers : Don't rins container. Do not empty remaining formulated product . Do not break seals . Return intact to point of purchase .

14. Transport Information

UN NO. : 3082

IMO CLASS : 3

UN PROPER SHIPPING NAME : PYRETHROID, PESTICIDES, LIQUID, TOXIC

GGVE/GGVS : 3 IMDG-Code : 3 RID/ADR : 3

UN PACKING GROUP : III IATA/ICAO : 3

15. Regulatory Information

15.1. Toxicity Classifications : Moderately Hazardous

Warning Symbol :



15.2. R-Phrase

R21/22 : Harmful in contact with skin and if swallowed

R36/38 : Irritating to eyes and skin .

R10 : Flammable

R20 : Harmful by inhalation

15.3 S-Phrase

S22 : Don't breath dust .

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

S37/39 : Wear suitable gloves and eye / face protection ..

S25 : Avoid contact with eyes .

16. Other Information

Note to Physician :

Like the natural pyethrins , the synthetic derivative is expected to have relatively minor toxicity in humans ; in fact , any significant acute toxic effects are more likely from a carrier hydrocarbon solvent . Consequently , induction of vomiting may increase th likelihood of the most important toxic potential , chemical pneumonia , and so should either be avoided or done only under medical supervision . Ingestion of a large amount calls for gastric lavage , with care (Trendelenburg position , suction available , cuffed endotracheal tube if patient is unconscious) to avoid intrapulmonary as-poration . A saline cathartic (sodium or magnesium sulfate) , 15-30 gm dissolved in water should be given , as should 15-30 gm activated charcoal as a slurry in water . Digestible fats , oils or alcohol may increase absorption and so should . Skin contact (vapor or powder) may be followed by transient tingling or numbness , usually of the face , but this subsides without treatment .