

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product Name : Cypermethrin 94% TC
Chemical Name : (RS)- α -cyano-3-phenoxybenzyl (1RS, 3RS; 1RS, 3SR)-3-(2,2-dichlorovinyl)-2, 2-dimethylcyclopropanecarboxylate
Type : Insecticide
Molecular formula : $C_{22}H_{19}Cl_2NO_3$

2. Composition/Information on ingredients

Chemical Name	CAS#	Percent or content(w/w)
Cypermethrin, Active	52315-07-8	94.0% m/m
Emulsifier and solvent	-	6.0% m/m

3. Health Hazards Identification

Adverse Effects on Human Health : The results of experimental animal studies suggest that following massive over exposure, neurological signs and symptoms could occur

4. First Aid Measures

Eye Contact : Flush eyes promptly with clear water for 10-15 minutes or use physiological saline or phosphate buffer solution holding the eyelids open

Skin Contact : Remove contaminated clothing. Wash affected area with soap and water.

Inhalation : In case of inhalation, carry the victim to fresh air. Keep open all doors and windows. Provide artificial respiration, if needed.

Antidote (Medical Treatment) : Treat the victim symptomatically. When a large quantity of material is ingested, perform gastric lavage followed by saline cathartic with sodium sulfate solution. Inject diazepam or barbiturates to control seizures and shaking.

5. Fire Fighting Measures

Flash Point	:	> 120°C
Explosibility	:	Non-explosive
Oxidizing / Reducing Properties	:	None
Auto-ignition Temperature	:	Not auto-flammable
Fire and Explosion Hazards	:	Slight fire hazard when exposed to intense heat or flame
Firefighting Media	:	Dry chemical, carbon dioxide, foam and water for cooling containers
Extinguishing Procedure	:	Wear breathing apparatus and full protective clothing. Evacuate people to safe area. Move the containers from fire area. If possible, dike fire control material for later disposal.

6. Accidental Release Measures

Soil Spill	:	Dike the area. Absorb on sand or other absorbent media and place in closed container for proper disposal
Water Spill	:	Absorb the material by activated carbon using suction hoses to remove trapped material
Occupational Spill	:	Do not touch spilled material. Stop leak, if possible. Absorb on sand or other absorbent material and put in clean container for disposal.

7. Handling and Storage

Handling	:	Do not drop the containers. Keep tightly closed. Avoid breathing of vapours and bodily contact.
Storage	:	Store in a dry cool, well-ventilated and secured place under lock and key. Do not store foodstuff and animal feed in the same storage. Keep the containers in properly laid stocks with sufficient passage for free movement.

8.Exposure Controls/Personal Protection

Respiratory	:	Approved respirator
Eye and Face	:	Safety goggles or face shield
Hands	:	Gloves
Body	:	Long pant, long sleeve shirt, apron, boots, and hat
Ventilation	:	Provide local exhaust
Industrial Hygiene	:	Safety shower and eyewash should be provided at work place. Do not eat, drink or smoke while working. Wash hands before meals and after work with soap and water.

9.Physical and Chemical Properties

State	:	Liquid to semi solid
Colour	:	Bark brown
Odour	:	Odorless
Density	:	1.23 @ 20°C
Vapour Pressure	:	2.3×10^{-4} mPa
Boiling	:	N/A
Octanol / Water Coefficient	:	$K_{ow} \log P = 6.48$
Refractive Index	:	ND ₂₀ 1.5632 – 1.5680
Solubility in Water	:	0.0038 mg/l
Solubility in Solvents	:	Acetone, chloroform, cyclohexanone, xylene > 450 g/l, ethanol 340 g/l, hexane 104 g/l
Evaporation Rate	:	Negligible
pH	:	Slightly acidic

10. Stability and Reactivity

Stability	:	Stable to heat in wide range of ambient conditions
Heat	:	Stable to air
Air	:	Relatively stable to light even in field situations
Light	:	Relatively stable in neutral and weekly acidic media, with optimum stability at pH 4. Hydrolyzed in alkaline media.
Media	:	
Incompatibility	:	Incompatible to highly acidic and alkaline materials
Decomposition	:	Decomposes on heating at higher temperature above 250°C
Thermal Decomposition	:	On combustion may emit toxic fumes of HCl, HCN and oxides of carbon and nitrogen
Oxidizing / Reducing Properties	:	None
Corrosiveness	:	May corrode iron upon prolonged contact
Polymerization	:	No hazardous polymerization has been reported to occur

11. Toxicological Information

Route of Entry	:	Absorption through skin, inhalation and ingestion
Symptoms of Poisoning	:	Headache, salivation, lachrymation, tremor, ataxia, weakness, allergic reactions, convulsion and facial sensations

Acute Toxicity

Rat Oral LD ₅₀	:	7180 mg/kg
Mice Oral LD ₅₀	:	138 mg/kg
Skin, Rabbits LD ₅₀	:	> 2000 mg/kg
Rats LD ₅₀	:	> 3000 mg/kg

Inhalation

Rats LC ₅₀ (4 h)	:	2.5 mg/l of air
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12. Ecological Information

Acute Oral LD₅₀

Chicken	:	> 2000 mg/kg
Mallard Ducks	:	> 10000 mg/kg

Fish LC₅₀ (48 h)

Common Carp	:	4.58 µg/l
Sheephead minnow	:	2.37 µg/l
Rainbow trout	:	0.69 µg/l

Bees LD₅₀

Oral	:	0.035 µg/bee
Topical	:	0.02 µg/bee

<i>Daphnia</i> EC ₅₀ (48 h)	:	0.15 µg/l
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Earthworms LC ₅₀ (14 d)	:	> 200 mg/kg soil
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Other Beneficial spp.	:	Not toxic to Collembola
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Bioaccumulation	:	When in contact with the material, some bioaccumulation was noticed in fish but on transfer of test species to fresh water rapidly declined the concentration of the material
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13. Disposal Considerations

Disposal of containers and waste materials must be in accordance with government regulation. The material can be neutralized by the treatment of lime solution. While hydrolyzing, ensure complete neutralization of the product by maintaining pH at 12 and by proper stirring. Residue may be incinerated at higher temperature using good scrubbing system.

14. Transport Information

Product Name : PYPETHROID PESTICIDE, LIQUID, TOXIC
- (Cypermethrin TC)

UN No.	:	3352
UN Hazard Class	:	6.1
UN Packing Group	:	III
Marine Pollutant status	:	YES
EMS	:	F-A, S-A

15.Regulatory Information

Technical grade not for direct use. Appropriate formulations made out is used for pest control programmers. Avoid spraying over bodies of water. Do not contaminate ponds, waterways or ditches with product or with used containers. Use the formulated product only as per recommended application rates and areas. It is unlikely that cypermethrin and its degradation product will reach levels of environment significance, when used according to dose recommendation.

16.Other Information

The data presented in this Material Safety Data Sheet are believed to be correct and faithful. Agrow Allied Ventures Pvt. Ltd. does not make guarantee or warranties of any kind regarding the completeness or accuracy of results obtained upon reliance on these data.

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