



CURE CHEM INDIA

The Chemical People

A-85, 1ST FLOOR, MASOODPUR MAIN ROAD, VASANT KUNJ, NEW DELHI-110070 (INDIA)
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MATERIAL SAFETY DATA SHEET

Chlorpyrifos 48 % EC

1. PRODUCT IDENTIFICATION

Common name: Chlorpyrifos 48% EC

Chemical name: (IUPAC name: O,O-diethyl O-3,5,6-trichloropyridin-2-yl phosphorothioate

Product use and class: insecticide, organophosphate

Manufacturer: CURE CHEM INDIA A85, FIRST FLOOR MASOODPUR MAIN ROAD, VASANT KUNJ, NEW DEHLI- 110070 (INDIA)

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2. COMPOSITION (INFORMATION ON INGREDIENTS)

COMPONENT	CAS No.	Content (W/V)
Chlorpyrifos	2912-88-2	48% Min
Other ingredient	N/A	Up to 1 L

3. HAZARDS IDENTIFICATION

Toxicity class: WHO II; EPA II. Chlorpyrifos is a moderately toxic insecticide.

Likely routes of exposure: Skin and eye contact, ingestion and inhalation.

Ingestion: Highly toxic by ingestion.

Inhalation: Moderately toxic by inhalation.

Skin contact: Minimally toxic and may cause mild skin irritation.

Eye contact: May cause moderate eye irritation.

4. FIRST AID MEASURES



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Skin contact: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Seek medical attention if ill effect or irritation develops.

Eye contact: In case of eye contact, immediately rinse with clean water for 10-15 minutes. Contact ophthalmologist immediately.

Ingestion: DO NOT INDUCE VOMITING. If swallowed, rinse mouth with water (only if the person is conscious). Seek medical attention immediately. For advice, contact the National Poisons Centre or a doctor immediately.

Inhalation: Assure fresh air breathing. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention if breathing difficulty persists.

Note to Physician: Antidote as for organophosphate poisoning.

5. FIRE FIGHTING MEASURES

Flammable Class: This product is flammable.

Prevention: Keep away from sources of ignition. No smoking.

Extinguishing media: use Dry chemical, Water, Carbon dioxide and Foam.

Surrounding fires: Use water spray or fog for cooling exposed containers.

Special exposure hazards: May form flammable vapour-air mixture.

Protection against fire: Do not enter fire area without proper protective equipment, including respiratory protection.

Special procedures: Exercise caution when fighting any chemical fire. Avoid (reject) fire-fighting water to enter environment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: No smoking. Keep public away from danger area. Spill should be handled by trained cleaning personnel properly equipped with respiratory and eye protection.

Environmental precautions: Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

Clean up methods: Clean up any spills as soon as possible, using an absorbent material to collect it. Use suitable disposal containers.

7. HANDLING AND STORAGE

Handling:

Remove sources of naked flame or sparks. Chlorpyrifos 48 % EC is harmful by inhalation or if swallowed. Avoid contact with eyes and skin and inhalation of fumes. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the insecticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal



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areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination

Storage: Keep in its original container in isolated, dry, cool and well-ventilated area. Avoid cross contamination with other pesticides and fertilisers. Keep under lock and key out of reach of unauthorised persons, children and animals. Keep away from incompatible substances. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Remove all sources of ignition or naked flame. It is essential to provide adequate ventilation. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire and other applicable regulations.

PERSONAL PROTECTIVE EQUIPMENT: If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal equipment including approved respiratory protection.

Respirator: An approved full-face respirator suitable for protection from dusts and mists of pesticides is required. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

Clothing: Employee must wear appropriate protective (impervious) clothing and equipment to prevent skin contact with the substance.

Gloves: Employee must wear appropriate chemical resistant protective gloves to prevent contact with this substance.

Eye protection: Employee must wear splash-proof safety goggles and face-shield to prevent contact with this substance.

Emergency eyewash: Where there is any possibility that an employee's eyes may be exposed to this substance; the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Homogeneous clear straw coloured liquid.

Odour: Slight odour (aromatic solvent).

Flammability: Flammable (due to solvent).

Flash point: 30⁰C (Tag Closed Cup method).35⁰C (Pensky Martins closed cup).



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Oxidising properties: As neither the active substance nor the formulant are oxidising, the preparation is not expected to be oxidising.

pH: 6.2.

Specific gravity: 1.069 ± 0.005 g/cm³ at 20⁰C

Storage stability: Stable under normal storage conditions:

Solubility in water: Immediately forms an emulsion in water.

Solubility in organic solvents: (All solubility figures for technical material at 25⁰C): heptane: 1213 ± 40 g/l, acetone: 1331 ± 33 g/l, xylene: 1341 ± 21 g/l, 1, 2-dichloroethane: 1388 ± 31 g/l, ethyl acetate: 1323 ± 41 g/l, 1-octanol: 301 ± 8 g/l, methanol: 949 ± 60 g/l

Partition-coefficient in n-octanol / water: Kow (log Pow) = 4.5 (data for technical material).

Boiling point: 137⁰C

10. STABILITY AND REACTIVITY

Stability:

The product is stable at room temperature in normal warehouse conditions in original packaging.

Incompatibility:

Chlorpyrifos is incompatible with alkaline materials such as Bordeaux mixture or Lime Sulphur. Chlorpyrifos may be incompatible with pesticides containing carboxylic acid amide groups or other strongly basic groups such as Thiram and Captan. A compatibility test is required before using with other products. Do not physically mix concentrate directly with other herbicides or pesticide concentrates; always dilute first.

Thermal decomposition:

Product undergoes decomposition at temperature above 160⁰C. Avoid heating above ambient temperature. Hydrogen chloride and organic sulphides are released when the product decomposes on heating.

11. TOXICOLOGICAL INFORMATION

Acute oral LD₅₀: 324.64 mg/kg in rats. (Calculated)

Acute dermal LD₅₀: 4 505.44 mg/kg in rats. (Calculated)

Acute inhalation LC₅₀ (4 h): 9.79 mg/l of air in rats for technical material.

Acute skin irritation: Causes mild irritation.

Acute eye irritation: Causes moderate irritation.

Dermal sensitization: This product is a non-sensitising substance to guinea pigs.

Carcinogenicity: Studies did not detect carcinogenic activity. No human information available. The solvent was not found to be carcinogenic.

Teratogenicity: (Technical) No teratogenic effects were observed in the offspring of rats orally administered 1 mg/kg/day on days 6.15 of gestation.



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Mutagenicity: (Technical) No mutagenicity recorded in gene mutation test, chromosomal recombination and dominant lethal tests.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGY: (technical)

Birds:

Toxic to birds: LD₅₀ for chickens: 32 to 102 mg/kg

Fish: Highly toxic to fish.

Rainbow trout: LC₅₀ (96 hr): 0.007 – 0.051 mg/l

Bluegill sunfish LC₅₀ (96 hr): 0.002 – 0.010- mg/l

Daphnia: Highly toxic. LC₅₀ (48 h) 1.7 µg/l

Bees: Toxic to bees. LD₅₀ (oral): 360 ng/bee, LD₅₀ (topical): 70 ng/bee

Earthworms: LC₅₀ (14 d): for Eisenia foetida 210 mg/kg soil

Soil micro-organisms: EC/LC₅₀ mg/kg: Toxic to Collembola

Degradability: (Technical material)

Rapidly metabolised and excreted mainly in the urine with the degradation product appearing mainly due to dealkylation. Diethyl phosphate, diethylthio phosphate and phenotic derivate were found.

Laboratory – determined chlorpyrifos soil degradation half-lives vary tremendously, and half-life estimates in different soils have ranged from less than 10 days to greater than 120 days. Environmental factors can greatly influence the degradation rate of chlorpyrifos in soil; the most important being moisture, pH, organic content, and pesticide formulation. Chlorpyrifos in formulation can be classified as non-persistent.

Mobility: Chlorpyrifos is non-mobile in soil.

Accumulation: Contamination of ground water is unlikely to occur by chlorpyrifos, accumulation in the air or contamination by wet or dry deposition is not to be expected.

13. DISPOSAL CONSIDERATIONS

Pesticide disposal:

Contaminated absorbents, surplus product, etc., should be burned in a high-temperature incinerator (> 1000⁰C) with effluent gas scrubbing. Where no incinerator is available surplus product should be or diluted and buried in designated landfill. Never pour untreated waste or surplus products into public sewers or where there is any danger of run-off or seepage into water systems. Comply with local legislation applying to waste disposal.

Package product wastes:

Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is destroyed. Combustible containers should be disposed of in pesticide incinerators. Non-combustible containers must be triply rinsed with water and then be punctured and transported to a scrap metal facility for recycling or disposal in approved landfill site. Comply with any local legislation applying to disposal.

14. TRANSPORT INFORMATION



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UN NUMBER: 3017

Road Transport ADR/IRD:

Class: 6.1 (3.3)

Packing group: III

Shipping name: Organophosphorous pesticide, liquid, toxic, flammable, (chlorpyrifos).

Air Transport ICAO/IATA: Class: 6.1 (3.3) packing group: III Shipping name:

Organophosphorous pesticide, liquid, toxic, flammable, (chlorpyrifos).

Maritime Transport IMDG/IMO:

Class: 6.1 (3.3)

Packing group: III

Shipping name: Organophosphorous pesticide, liquid, toxic, flammable, (chlorpyrifos).

15. REGULATORY INFORMATION

Symbol: Xn, F

Indication of danger: Harmful and Flammable substance

Risk phrases: R10 Flammable.

R 24/25: Toxic in contact with skin and if swallowed.

R 50: Very toxic to aquatic organisms.

R 57: Toxic to Bees.

Safety phrases:

S 1: Keep locked up.

S 2: Keep out of reach of children.

S 16: Keep away from sources of ignition – No smoking.

S 23: Do not breathe vapour/spray.

S 24/25: Avoid contact with skin and eyes.

S 28: After contact with skin, wash immediately with plenty of water and non-abrasive soap.

S 36/37/39: Wear protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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 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 this company. Always read the product label for use on specific plant/crop diseases and do not use this MSDS as a substitute for the actual product label. Our responsibility for products sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available on request.



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