

**MATERIAL SAFETY DATA SHEET****1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

Product Name : Chlorpyrifos 20% EC

Common Name : Chlorpyrifos

IUPAC Name : O,O-diethyl O-3,5,6-trichloro-2-pyridyl phosphorothioate

Chemical Abstracts Name : O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate

CAS No. : 2921-88-2

Chemical formula : $C_9H_{11}Cl_3NO_3PS$

Molecular weight : 350.6

Chemical Family : Organophosphate

Use : Insecticide

Company Name : Solas Cropotech Private Limited.

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2. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Content % (w/w)
Chlorpyrifos a.i.	[2921-88-2]	20.00
Others	-	80.00



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3. HAZARDS IDENTIFICATION

- Health Hazards** : Organophosphate works by damaging an enzyme in the body called acetylcholinesterase. This enzyme is critical for controlling nerve signals in the body. The damage to this enzyme kills pests and may cause unwanted side effects in exposed humans. . Extraordinary absorbed doses may rarely cause headache, dizziness, weakness, diarrhea, nausea and vomiting, salivation, watery eyes, and small pupils. Severe symptoms are seizures, slow pulse, difficulty breathing, and coma.
- Emergency** : Warning! Keep out of reach of children. Toxic if swallowed and by inhalation.
- Skin and Eyes** : Avoid contact with skin and eyes.
- Entry route** : Ingestion, Inhalation, Contact with eye or skin.
- Symptoms of poisoning** : Confusion, anxiety, loss of memory, loss of appetite, disorientation, depression, and personality changes. Other symptoms such as weakness, headache, diarrhea, nausea and vomiting also may occur.

4. FIRST AID MEASURES

- Ingestion** : DO NOT induce vomiting. Rinse any residual product from mouth and lips. Give water to drink and seek medical advice.
- Eye** : Immediately flush eyes with running water until product is removed. Seek medical advice if irritation persists.
- Skin** : Remove contaminated clothing. Wash thoroughly under running water using a mild soap to remove all products. Seek medical advice if irritation, reddening



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	and/or other damage occurs.
Inhalation	: Remove victim from exposure. Keep at rest until fully recovered. Seek medical advice if effects persist.
Advice to Physician	: No specific Antidote. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Specific Hazard	: There is no risk of an explosion from this product under normal circumstances if involved in a fire.
Extinguishing Media	: Extinguish fire using media suited to burning material. If containers are ruptured contain all runoff. CO ₂ , Foam or dry chemical are preferred. Soft stream water fog or fine water sprays if no alternatives. Contain all runoff.
Hazard From Combustion products	: If involved in a fire, it will emit toxic and noxious fumes of oxides of carbon, nitrogen or sulfur. Firefighters to wear self-contained breathing apparatus and suitable protective clothing if risk to of exposure to vapour or smoke.
Protective equipment	: Wear full protective clothing and self-contained breathing apparatus. Do not breathe or contact smoke, gases or vapours generated.

6. ACCIDENTAL RELEASE MEASURES

In Case of Emergency	: Isolate and post spill area. Wear cotton overalls buttoned to the neck and wrist, washable hat, elbow-length PVC gloves and eye/face protection to prevent skin and eyes being affected. Evacuate unprotected and unnecessary personnel from area of spill. If material is leaking from a container, stop the leak only if this can be done safely. Prevent spillage entering drains or watercourses. Contain spill and absorb spilled material with absorbent material such as sand, clay or cat litter and dispose of waste as per regulations.
Clean up Procedures	: To decontaminate spill area, tools and equipment, wash with detergent and water and add the solution to



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the drums of wastes already collected and label contents. Do NOT allow spilled product or wash solution to enter sewers, drains, dams, creeks or any other waterways.

7. HANDLING AND STORAGE

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| Handling | : Ensure containers are kept closed until using product. Avoid contact with eyes and skin. Wear cotton overalls buttoned to the neck and wrist, washable hat and elbow-length PVC gloves. |
| Storage | : DO NOT store near (or allow to contact) fertilizers, fungicides or pesticides. Store in the closed original container, in a cool well ventilated area, out of direct sunlight. Store in a room or place away from children, animals, food, feed stuffs, seed and fertilizers. |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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| Engineering Controls | : Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations. |
| Ingestion | : DO NOT eat, drink or apply cosmetics, where there is a potential for exposure to the product. |
| Eye Protection | : Safety goggles, chemical splash goggles or face shield for eyes protection should be used. Safety showers and eye wash should be easily available. |
| Skin Protection | : Chemical resistant gloves, coveralls socks, apron and chemical resistant foot covering should always be used while handling the product. |
| Respiratory protection | : Always use NIOSH/MSHA approved respiratory protection equipment with a universal filter type including particle filter. |
| General Protection | : Avoid contact with eyes and skin. While handling the product wear cotton overalls buttoned to the neck and wrist. Elbow-length PVC gloves and face shield. After use and before eating, drinking and smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves and contaminated clothing. |

**MATERIAL SAFETY DATA SHEET****9. PHYSICAL AND CHEMICAL PROPERTIES**

Colour	: Pale yellow - Off-white liquid
Odour	: Aromatic hydrocarbon odour
Physical state	: Liquid
pH	: 5.0 (4.120°C (5% in water)
Specific Gravity	: 0.94 @20°C (water = 1)
Solubility	: Emulsifies

10 STABILITY AND REACTIVITY

Chemical Stability	: Stable under normal conditions.
Conditions to Avoid	: Avoid direct sunlight.
Incompatible Materials	: Strong oxidizing agents, bases, chlorates, nitrates.
Hazardous decomposition products	: When heated to decompose it emits toxic fumes of bromide ion, cyanide ion, nitrogen oxides. Hazardous Decomposition Products: Carbon monoxide.
Hazardous Reactions	: No polymerization will occur.

11. TOXICOLOGICAL INFORMATION

Acute Oral LD₅₀	: > 200 mg/kg body weight (Rat)
Acute Dermal LD₅₀	: >2000 mg/kg body weight (Rat)
Acute Inhalation LC₅₀	: 1.43 mg/l 4h (rat)
Skin Irritation	: Moderate Irritant (Rabbit)
Eye Irritation	: Irritating to eyes (Rabbit)
Skin Sensitization	: Not a skin sensitizer (Guinea pig)

12. ECOLOGICAL INFORMATION

Bird	: Acute oral LD ₅₀ for mallard ducks >490 mg/kg
Fish	: LC ₅₀ (96 h) for rainbow trout 0.007- 0.053 mg/L
Bees	: Oral: LC ₅₀ (48 h) > 360 ng/bee Contact :LC ₅₀ (h) > 70 ng/bee



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13. DISPOSAL CONSIDERATIONS

- Disposal** : This material must be disposed of as a Hazardous Waste. Disposal should be in accordance with local, nation or state rule and regulations.
- Disposal of empty Containers** : Break, crush, or puncture and deliver empty packaging for appropriate disposal to an approved waste management facility. If an approved waste management facility is not available, bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations. DO NOT burn empty containers or product.

14. TRANSPORT INFORMATION

- Shipping Name** : PESTICIDES, ORGANOPHOSPHORUS, LIQUID, TOXIC N.O.S. (Chlorpyrifos)
- UN No.** : 2783
- Class** : 6.1
- Packing group** : III
- Marine pollutant** : Yes

**MATERIAL SAFETY DATA SHEET****15. REGULATORY INFORMATION****Hazard
symbol****Dangerous for
the environment
(N)**

Risk	R24/25 - Toxic in contact with the skin and if swallowed.
Phrase	R36 - Irritating to the eyes. R65 - harmful: may cause lung damage if swallowed. R33 - Danger of cumulative effects
Safety	S2 - Keep out of reach of children.
Phrase	S13 - Keep away from food, drink and other animal foodstuffs. S24/25 - Avoid contact with skin and eyes. S36/37/39 - Wear suitable protective clothing, gloves and eye/face protection.

16. OTHER INFORMATION

All information and instructions provided in this Material Safety Data Sheet (MSDS) are based on the current state of scientific and technical knowledge at the date indicated on the present MSDS and are resented in good faith and believed to be correct. This information applies to the PRODUCT AS SUCH. In case of new formulations or mixes, it is necessary to ascertain that a new danger will not appear. It is the responsibility of persons on receipt of this MSDS to ensure that the information contained herein is properly read and understood by all people who may use, handle, dispose or in any way come in contact with the product. If the recipient subsequently produces formulations containing this product, it is the recipient's sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS. Accordingly, no guarantee or warrantee expressed or implied is made by Solas Cropotech Private Limited, as to the results to be obtained based upon the user's use of the information, nor does Solas Cropotech Private Limited, assume any liability arising out of user's use of the information.

Date: 11/05/2025
