

MATERIAL SAFETY DATA SHEET

Chlorpyrifos 48% EC

1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Product name: Chlorpyrifos 48% EC

Active Ingredient: Chlorpyrifos

Type of Pesticide: Insecticide

Formulation: EMULSIFIABLE CONCENTRATE

Supplier: Shanghai Tenglong Agrochem Co., Ltd..

Telephone: +86-21-5506 3225 FAX: +86-21-5506 3699

2. HAZARDS IDENTIFICATION

A summary of possible hazards to people applying and handling the pesticide as recommended:

Inhalation: May result in systemic poisoning.

Ingestion: May result in systemic poisoning.

Skin contact: May result in systemic poisoning.

Eye contact: Redness, tears.

Effects and symptoms: Exposure may result in excessive sweating, weakness, salivation, nausea, bradycardia, tachycardia, bronchorrhea, cough, bronchospasm, lung oedema, small pupils, central nervous depression, fasciculation and convulsions, headache, faintness and giddiness.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Percent: 48%

CAS Number: 2921-88-2

OSHA PEL: NOT ESTABLISHED

ACGIH TLV: NOT ESTABLISHED

Other Recommended Limit: NONE RECOMMENDED

4. FIRST AID MEASURES

Eyes: Flush continuously w/water for 15-20mins.

Skin: Flush continuously w/water for 15-20mins. If no burns occur, use soap & water to clean.

Inhalation: Remove to fresh air. Give oxygen/CPR if breathing difficulty. If in shock, keep warm & quiet.

Ingestion: Induce vomiting. Don't give liquids if unconscious/convulsing. If vomiting, watch closely to make sure airway. Doesn't become obstructed by vomit.

Antidote: Atropine sulfate. Obtain medical attention.



5. FIRE FIGHTING MEASURES

General Information: Combustible. Gives off irritating or toxic fumes (or gases) in a fire. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Substance is noncombustible.

Fire Fighting Procedures: Wear fire fighting protective equipment and a full faced self contained breathing apparatus. Cool fire exposed containers with water spray.

Extinguishing Media: CO₂/Dry chemical powder/spray.

Unusual Fire/Explosion Hazard: **Emits toxic fumes under fire conditions.**

6. ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Place under an inert atmosphere.

Spill Release Procedures: Evacuate area. Wear appropriate OSHA regulated equipment. Ventilate area. Sweep up & place in an appropriate container. Hold for disposal. Wash contaminated surfaces to remove any residues.

7. HANDLING AND STORAGE

Handling Precautions: Wash thoroughly after handling. Avoid skin & eye contact. Avoid ingestion and inhalation. Do not ingest or inhale.

Storage Precautions: Store in a cool, dry place. Store only w/compatible chemicals. Keep tightly closed. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

Other Precautions: Persons not properly trained should not handle this chemical/its container. Avoid contact w/eyes, skin & clothing. Avoid breathing vapors. Products may not be used as drugs/cosmetics/ agricultural /food additives/household chemicals. Keep away from food, feedstuffs & domestic water.

8. PERSONAL PROTECTION

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Respiratory Protection: Use appropriate OSHA/MSHA approved safety equipment.

Ventilation: This chemical should be handled only in a hood.

Protective Gloves: Required.

Eye Protection: Eyes shields.

Work Hygienic Practices: Remove/laundry contaminated clothing before reuse.

Supplemental Safety and Health: First aid cont'd: obtain medical attention in all cases. Antidote: Atropine sulfate. Vapor pressure: 0.0000187.



9. PHYSICAL & CHEMICAL PROPERTIES

Solubility of the pesticide in aqueous and/or organic solvents:

Partially soluble in water, readily soluble in acetone, benzene, chloroform, methanol and iso-octane.

Emulsifiability: Stable Uniform

Physical description: Stable and homogeneous liquid

Wettability: N/A

Stability/compatibility: Stable under normal conditions. Avoid strong oxidizing agents, strong acids, and strong bases.

Spraying/dusting properties: N/A

Moisture content: 0.4% max

Melting point: chlorpyrifos 41.5-43.5°C (pure)

Setting point: N/A

Boiling point: chlorpyrifos 160°C (pure)

Vapor pressure: Chlorpyrifos: 2.4×10^{-5} mm Hg at a temperature of 25°C (Pure).

Accelerated storage:

After storage at $54 \pm 2^\circ\text{C}$ for 14 days, the determined average active content shall not be lower than 95%,

Flammability: Not flammable

Active ingredient by weight/volume: chlorpyrifos 480g/L

Acidity/Alkalinity: Acidity (As H_2SO_4): 0.2% max

Tolerance limits for the characteristics in (k) above (where applicable):

N/A

Estimated quantities of the product marketed during the last two years and the current year:

N/A

10. STABILITY & REACTIVITY

Chemical Stability: Stable under ordinary conditions of use and storage.

Conditions to Avoid: High temperatures, incompatible materials, dust generation, heat, flame, other sources of ignition, moisture. Exposure to moist air or water.

Incompatibilities with Other Materials: For Sulfuric Acid: Water, potassium chlorate, potassium perchlorate, potassium permanganate, sodium, lithium, bases, organic material, halogens, metal acetylides, oxides and hydrides, metals (yields hydrogen gas), strong oxidizing and reducing agents and many other reactive substances. For Dimethylformamide: Bromine, carbon tetrachloride, chromic anhydride, 2,5-dimethylpyrrole, phosphorus oxychloride, hexachlorobenzene, magnesium nitrate, methylene diisocyanate, phosphorus trioxide, triethyl aluminum, organic nitrates, acidic and alkaline materials, and other halogenated compounds. Contact with iron or strong oxidizers may cause fires and explosions; may react violently with alkyl



aluminums. Methylene diisocyanate can polymerize violently on contact with DMF. For Tris: Copper, brass, aluminum, and oxidizing agents.

Hazardous Decomposition Products: Oxides of sulfur, hydrogen, carbon monoxide, carbon dioxide, amines, oxides of nitrogen.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

- (a) Classification (in accordance with the WHO guidelines)
In accordance with the WHO Guidelines: Class II
- (b) Dermal and oral mammalian toxicity (LD50)
Acute toxicity-oral; LD50=409mg/kg (rat)
Acute toxicity-Dermal: LD50>2000mg/kg (rat)
- (c) Two weeks cumulative mammalian toxicity of the product:
No significant dermal damage was observed.
- (d) Mean acute dermal and oral toxicity of rat and one other animal species of the product:
Rat acute oral: LD50=409mg/kg dermal: LD50>2000mg/kg
Rabbit: acute oral: LD50>2000mg/kg Dermal: LD50>2000mg/kg
- (e) Allergenicity of the pesticide:
Guinea pig maximization test: sensitizer.
- (f) Publication of the products toxicology: N/A

12. ECOLOGICAL INFORMATION

Special side effects on mammal, other organisms and the environment:

Bioaccumulative potential: Chlorpyrifos does not bioaccumulate in aquatic organisms.

Ecotoxicity : LD50 = 480 mg/kg (birds).

LC50 = 7.0 mg/l, 96 hours (rainbow trout).

LC50 = 0.1 mg/l, 48 hours (Daphnia) (MCW).

LC50 = 1.6 mg/l, 48 hours (Daphnia) (Pesticide Manual).

NOEC > 0.4 mg/l (Selenastrum capricornutum) (Pesticide Manual).

Toxic to bees

A summary of possible hazards to people and other animal species using treated products

Inhalation: May result in systemic poisoning.

Ingestion: May result in systemic poisoning.

Skin contact: May result in systemic poisoning.

Eye contact: Redness, tears.

Effects and symptoms: Exposure may result in excessive sweating, weakness, salivation, nausea, bradycardia, tachycardia, bronchorrhea, cough, bronchospasm, lung oedema, small pupils, central nervous depression, fasciculation and convulsions, headache, faintness and giddiness.



13. DISPOSAL INFORMATION

The waste air HCl and SO₂ go through the absorbing tower, react with water and liquid alkali, then form chlorhydric acid soluble, which can be reused. The last gas will be gone off into the air, which conforms to the GB standard.

The waste water will be evaporated, concentrated and incinerated, the evaporated water will be reused, and the residue conform to the GB standard.

14. TRANSPORT INFORMATION

See section 7. 第七部分和运输没有关系，请修改。

15. REGULATORY INFORMATION

Safety:

- (a) Recommended precautions in handling the pesticide product
Protect yourself by reducing skin and eye exposure. Wear coveralls, brimmed hard hat, goggles, respirator, unlined nitrile or neoprene gloves and neoprene overboots or rubber boots. In addition, wear a waterproof apron when handling the pesticide concentrate. Follow directions for Cleaning of Clothes and Equipment before reuse.
- (b) Safety interval between treatment of animal or crop and harvest/consumption in both temperate and tropical climates
Once per season as a foliar, seedling or soil treatment. Maximum of 9 weekly applications on potato foliage. Recommended first aid in case of over exposure or poisoning
- (c) Recommended first aid in case of over exposure or poisoning
Inhalation: Remove victim to fresh air. Keep victim warm and at rest. If breathing is difficult: give oxygen. If not breathing: apply artificial respiration. Immediately get medical attention.
Ingestion: Induce vomiting only if victim is conscious. Never give anything by mouth to an unconscious person. Wash out mouth with water. If breathing is difficult: give oxygen. If not breathing: apply artificial respiration. Immediately get medical attention.
Skin contact: Remove contaminated clothing. Wash off with plenty of water and soap. Get medical attention.
Eye contact: Wash off with plenty of water for at least 15 minutes. Immediately consult an eye specialist.
- (d) Recommended treatment after exposure
Engineering measures: Ventilation required. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.
Hygiene measures: Wash hands thoroughly after handling. Wash clothing separately before re-use.

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.

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.

Tenglong Agrochem