

Monocrotophos -MATERIAL SAFETY DATA SHEET

Manufacturer/information service:

ZHEJIANG RAYFULL CHEMICALS CO.,LTD

ADD: NO.113 PUXING ROAD, PUZHOU INDUSTRIAL PARK, LONGWAN DISTRICT, WENZHOU ZHEJIANG P.R. CHINA

Tel: +86-577-88905587

Fax: +86-577-88905567

Email: info@rayfull.com

sales@rayfull.com

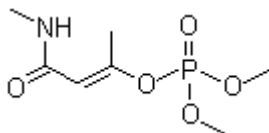
1. Chemical Product Identification

Product Name: Monocrotophos

Molecular Formula: C₇H₁₄N₀₅P

Molecular Weight: 223.2

Structural Formula:



Chemical Name: Dimethyl (E)-1-methyl-2-(methylcarbamoyl)vinyl phosphate (IUPAC)

Form: Semi-solid

Color: Dark brown

Odor: Mild odor.

CAS No.: 6923-22-4

2. Composition / Information on Ingredients

Composition	CAS No.	Content %
Monocrotophos	6923-22-4	80.0
Other ingredients		20.0

3. Hazards Identification

It can affect you when breathed in and quickly enters the body by passing through the skin

4. First Aid Measures

In case poisoning symptoms appear, call physician immediately. Meanwhile, remove the patient immediately to open air. Remove the clothing and wash contaminated body parts. Induce vomiting by putting fingers inside throat or give one tablet spoon salt with lukewarm water. Continue this process till the vomit is cleared. Gastric lavage with 5 % sodium bicarbonate may be given. Use artificial respiration, if needed be, with oxygen under pressure

5. Fire-Fighting Measures

Fire: Combustible under specific conditions. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.

Explosion: Risk of fire and explosion if formulations contain flammable/explosive solvents.

6. Accidental Release Measures

Dealing with spills and disposal may result in the potential for increased personal exposure. During such operations it is recommended that the following protective clothing is worn: Cotton overalls buttoned to the neck and wrist Waterproof gloves contain spill, sweep up or shovel and place in properly labelled sealed drums for safe disposal. Deal with all spillages immediately. If contamination of drains, streams, watercourses etc. is unavoidable, warn the local water authority.

7. Handling and Storage

Prior to working with Monocrotophos you should be trained on its proper handling and storage. Monocrotophos is not compatible with alkaline pesticides; black iron; drum steel; stainless steel; and brass. Store in tightly closed containers in a cool, well-ventilated area. Sources of ignition, such as smoking and open flames, are prohibited where Monocrotophos is used, handled, or stored in a manner that could create a potential fire or explosion hazard.

8. Exposure Controls/Personal Protection

Clothing: Avoid skin contact with Monocrotophos. Wear protective gloves and clothing. Safety equipment suppliers/manufacturers can provide recommendations on the most protective glove/clothing material for your operation. All protective clothing (suits, gloves, footwear, headgear) should be clean, available each day, and put on before work.

Eye Protection: For solid Monocrotophos wear impact resistant eye protection with side shields or goggles. Wear indirect-vent, impact and splash resistant goggles when working with liquids. Wear a face shield along with goggles when working with corrosive, highly irritating or toxic substances.

9. Physical and Chemical Properties

Melting point : 54-55°C

Boiling point :125°C

Density : 1.22kg/L@20°C

Vapor pressure: 2.9×10^{-1} mPa at 20°C

Solubility : in water 100%

In organic solvent(20°C) : methonal 100% ; acetone 70% ;
n-octyl alcohol 25% ; [toluene](#) 6%

10. Stability and Reactivity

Chemical stability: Stable under normal conditions of use. No dangerous action known under normal conditions.

Hazardous polymerisation: None

Conditions to avoid: Extreme heat and fire

Incompatible materials: None known

11. Toxicological Information

Acute Toxicity: Monocrotophos is a direct acting cholinesterase inhibitor capable of penetration through the skin. The dose which kills half of the test animals, the LD50, is 17-18 mg/kg for male rats and 20 mg/kg for female rats. The LD50 for dermal exposure is 126 mg/kg for male rats, 112 mg/kg for female rats, and 354 mg/kg for rabbits. The concentration in air at which half of the test animals die, the LC50, is 0.8 mg/l air. Monocrotophos is not irritating to skin and eyes. Symptoms of monocrotophos poisoning are similar to those of other organophosphate compounds. Its cholinesterase inhibiting activity causes nervous system effects. Cases of human poisoning are characterized by muscular weakness, blurred vision, profuse perspiration, confusion, vomiting, pain, and small pupils. There is a risk of death due to respiratory failure.

Chronic Toxicity: No Information Available.

Reproductive Effects: Rats who received doses of 2 mg/kg/day monocrotophos produced fetuses with lower than average length and weight. This dose is much higher than expected from normal application of this pesticide.

Teratogenic Effects: No teratogenic effects were found at 2 mg monocrotophos/kg/day in rats, the highest dose tested .

Mutagenic Effects: Studies show that monocrotophos may be weakly mutagenic.

Carcinogenic Effects: Monocrotophos is not carcinogenic in rats at 0.45 mg/kg/day, the highest dose tested. No significant carcinogenic lesions were observed when rats were exposed to monocrotophos aerosol at concentrations from 97-308 mg/m³ for one hour.

Organ Toxicity: Monocrotophos affects the central nervous system by inhibiting cholinesterase, an enzyme essential for normal nerve impulse transmission.

12. Ecological And Ecotoxicological Information

Effects on Birds: Monocrotophos is highly toxic to birds. The LD50 is 0.76 mg/kg for California quail, 0.94 mg/kg for bobwhite quail, 1.58 mg/kg for Canada goose, 3.3 mg/kg for European starling and 4.76 mg/kg for mallard ducks.

Effects on Aquatic Organisms: Monocrotophos is moderately toxic to fish. The LC50 (48hrs) is 7 mg/l for rainbow trout and 23 mg/l for bluegill sunfish. Monocrotophos causes reproductive damage to crustaceans exposed for long periods of time.

Effects on Other Animals (Nontarget species): Monocrotophos is highly toxic to bees. It may also kill non-target birds which eat insects poisoned with monocrotophos.

13. Disposal Considerations

Do not wash away into sewer. Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place. Personal protection: complete protective clothing including self-contained breathing apparatus.

14. Transport Information

Not applicable.

15. Regulatory Information

Not applicable.

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 presented 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 produce formulations containing this product, it is the recipients sole responsibility to ensure the transfer of all relevant information from this MSDS to their own MSDS.