



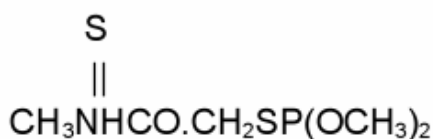
Hangzhou Tianlong Biotechnology Co., Ltd.

Add: Room 1906, Fengqi Times Tower, No.338, Fengqi East Road, Hangzhou, Zhejiang, China.

MATERIAL SAFETY DATA SHEET

1. Chemical Product and company Identification

Product Name: Dimethoate
Molecular Formula: C₅H₁₂NO₃PS₂
Molecular Weight: 299.2
Structural Formula:



Chemical Name:
O,O-dimethyl S-methylcarbamoylmethyl phosphorodithioate
CAS No.: 60-51-5
Supplier: HANZHOU TIANLONG BIOTECHNOLOGY CO., LTD
Address: Room 1906, Fengqi Times Tower, No.338 Fengqi East Road, Hangzhou, China, 310020
Tel: 0086-571-87214516
Fax: 0086-571-87079476

2. Composition / Information on Ingredients

Composition	CAS No.	Content %
Dimethoate	60-51-5	98.0
Other ingredients		2.0

3. Hazards Identification

Route of entry: Inhalation, ingestion, skin and eye contact.

Emergency overview: Harmful if absorbed through skin or inhaled. Causes moderate eye irritation. Avoid breathing product vapors or spray mist. Avoid contact with eyes, skin or clothing. Keep out of reach of children.

Symptoms of over exposure are headaches, nausea, vomiting, cramps, weakness, blurred vision, pin point pupils, tightness in chest, labored breathing, nervousness, sweating, watering of eye, drooling, muscle spasms and coma.

4. First Aid Measures

Skin: Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.

Eyes: First rinse with plenty of water for several minutes (remove contact lenses if easily possible) then take to a doctor.

Inhalation: Fresh air rest. Artificial respiration if indicated. Refer for medical attention.

Ingestion: Induce vomiting (only in conscious persons!). Rest. Refer for medical attention.

5. Fire-Fighting Measures

Extinguishing Media: Use National Fire Protection Association (NFPA) Class B extinguishers carbon dioxide, dry chemical for small fires. Water Spray or foam for larger fires.

Unusual fire and explosion hazards: In common with many organic Chemicals, including the majority of dyes and pigments in powder form.

Special fire fighting procedures: Firefighters should be equipped with self contained breathing apparatus to protect from potentially toxic and irritating fumes.

6. Accidental Release Measures

Personal cautions: Safety glasses or goggles, rubber gloves, shoes plus socks, long-sleeved shirt, and long pants.

Environmental cautions

EX: prevent the contamination of the floor and beds of water.

7. Handling and Storage

Handling and Storage: Store in well-closed, upright containers in a cool, dry well-ventilated area out of reach of children. Do not contaminate water, food or feed by storage or disposal. Do not reuse container. Store between 45-77°F. avoid breathing vapor or particles. Avoid contact with skin or clothing. Remove pets, and cover fish aquariums before applying.

8. Exposure Controls/Personal Protection

Respiratory protection: respirator

Ventilation: No special ventilation is needed. Local exhaust is recommended.

Protective gloves: impermeable gloves.

Eye protective: chemical goggles

Other protective equipment: boots, body-covering clothing, wide-brimmed hat.

9. Physical and Chemical Properties

Appearance: Colorless crystal

Water Solubility: 25 g/L @ 21°C

Solubility in Other Solvents: s. in methanol and cyclohexane; s.s in aliphatic hydrocarbons, aromatic hydrocarbons, diethyl ether, carbon tetrachloride, hexane, and xylene; v.s. in chloroform, benzene

Melting Point: 43-45°C (technical)

Vapor Pressure: 1.1 mPa @ 25°C

Partition Coefficient: 0.6990

Adsorption Coefficient: 20

10. Stability and Reactivity

Stability: Stable

Conditions to avoid: None

Incompatibility (Materials to avoid): None

Hazardous decomposition products: Burning may yield carbon monoxide.

Hazardous polymerization: will not occur.

Conditions to avoid: None

11. Toxicological Information

Acute toxicity: Dimethoate is moderately toxic by ingestion, inhalation, and dermal absorption. The reported acute oral LD50 values for the technical product range from 180 to 330 mg/kg in the rat; although an oral LD50 of as low as 28 to 30 mg/kg has been reported, it is regarded by some as less reflective of the toxicity of current products.

Reproductive effects: When mice were given 9.5 to 10.5 mg/kg/day dimethoate in their drinking water, there was decreased reproduction, pup survival, and growth rates of surviving pups. Adults in this study exhibited reduced weight gain, but their survival was not affected. In a three-generation study with mice, 2.5 mg/kg/day did not decrease reproductive performance or pup survival. Once in the bloodstream, dimethoate may cross the placenta. Impaired reproductive function in humans is not likely under normal conditions.

Teratogenic effects: Dimethoate is teratogenic in cats and rats. A dosage of 12 mg/kg/day given to pregnant cats increased the incidence of extra toes on kittens. The same dosage given to pregnant rats produced birth defects related to bone formation, runting and malfunction of the bladder. Dosages of 3 or 6 mg/kg/day were not teratogenic in cats or rats. No effects were observed in cats and rats at doses of 2.8 mg/kg/day. There were no teratogenic effects seen in the offspring of mice given 9.5 to 10.5 mg/kg/day dimethoate in their drinking water. It is not likely that teratogenic effects will be seen in humans under normal circumstances.

Mutagenic effects: Mutagenic effects due to dimethoate exposure were seen in mice. They were more prominent in male mice given a single high dose of dimethoate than in male mice given one twelfth of the same dose daily for 30 days. Mutagenic effects are unlikely in humans under normal circumstances.

Carcinogenic effects: An increase in malignant tumors was reported in rats given oral doses of 5, 15 or 30 mg/kg/day dimethoate for over a year. The increases were not, however, dose dependent. That is, higher doses did not

necessarily result in higher tumor rates. Thus the evidence of carcinogenicity, even with high-dose, long-term exposure, is inconclusive. This suggests carcinogenic effects in humans are unlikely.

12. Ecological Information

Effects on birds: Dimethoate is moderately to very highly toxic to birds. In Japanese quail, a 5-day dietary LC50 of 341 ppm is reported. It may be very highly toxic to other birds; reported acute oral LD50 values are 41.7 to 63.5 mg/kg in mallards and 20.0 mg/kg in pheasants. Birds are not able to metabolize dimethoate as rapidly as mammals do, which may account for its relatively higher toxicity in these species.

Effects on aquatic organisms: Dimethoate is moderately toxic to fish, with reported LC50 values of 6.2 mg/L in rainbow trout, and 6.0 mg/L in bluegill sunfish. It is more toxic to aquatic invertebrate species such as stoneflies and scuds.

Effects on other organisms: Dimethoate is highly toxic to honeybees. The 24-hour topical LD50 for dimethoate in bees is 0.12 ug per bee.

13. Disposal Considerations

Steps to be taken in case material is released or spilled: clean up-use normal protective equipment

Waste disposal method: Dispose of in accordance with local, state, and federal regulations. Do not put in climate-closed containers.

14. Transport Information

UN NO.: 2783

CLASS.:6.1

Packing group: III

15. Reactivity data

Safe phrase: Keep locked up and out of reach children.

Keep away from food, drink and animal feeding stuffs.

Do not breathe vapour/spray.

Avoid contact with skin and eyes.

Wear suitable protective clothing, gloves and eye/face protection.

Avoid release to the environment.

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.