

MATERIAL SAFETY DATA SHEET

Metalaxyl 98% TC

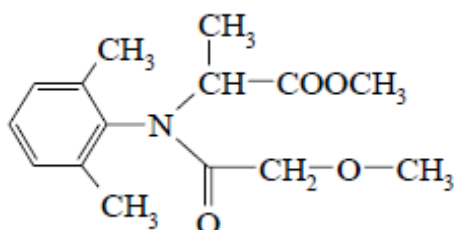
1. Chemical Product Identification

Product Name: Metalaxyl

Molecular Formula: $C_{15}H_{21}NO_4$

Molecular Weight: 279.3

Structural Formula:



CAS Registry Number: 57837-19-1

CIPAC Code Number: 365

Chemical Names:

Methyl *N*-(2-methoxyacetyl)-*N*-(2,6-xylyl)-DL-alaninate (IUPAC)

Methyl *N*-(2,6-dimethylphenyl)-*N*-(methoxyacetyl)-DL-alaninate (CA)

Form: Crystalline solid

Color: White

Odor: Odorless

Manufacturer/information service:

SHANGHAI TENGLONG AGROCHEM CO., LTD.

Tel: 86-21 5506 3225

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2. Composition / Information on Ingredients

Composition	CAS No.	Content (w/w, %)
Metalaxyl	57837-19-1	98.0
Other ingredients	---	2.0

3. Hazards Identification

Symptoms of Acute Exposure: May cause eye irritation

Hazardous Decomposition Products: Can decompose at high temperature forming toxic gases

Unusual fire, Explosion and Reactivity Hazards: During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

4. First Aid Measures

Have the product container, label or Material Safety Data Sheet with you when you

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calling a Poison control center or doctor, or going for treatment.

Ingestion: If swallowed, call a Poison control center or a Doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow.

Do not induce vomiting unless to do so by a Poison Control center or Doctor.

Do not give anything by mouth to an unconscious person.

Eye: If in eyes, Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye.

Call a poison control center or doctor for treatment advice.

Skin: Wash affected area with plenty of soap and water for 15 – 20 minutes.

Remove contaminated clothing. Launder contaminated clothing separately. Get medical attention.

Inhalation: Move person to fresh air. If person is not breathing give artificial respiration, preferably mouth to mouth if possible. Call a Poison control center or doctor for further treatment advice.

Note to Physician: There is no specific antidote if this product is ingested.

Treat symptomatically.

5. Fire-Fighting Measures

Fire and Explosion:

Flash point: 155°C

Flammable Limits (% in Air): Not Available

Auto ignition Temperature: Not Available

Unusual Fire, Explosion and Reactivity Hazards: During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In case of Fire: Use dry, chemical, foam or CO₂ extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

6. Accidental Release Measures

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions in protective equipment section. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

7. Handling and Storage

Store the product in a well-ventilated, secure area out of reach of children and domestic animals. Do not use or store near heat or open flame. Do not store food,

beverages, tobacco or feed in storage area. Prevent eating, drinking, smoking and cosmetic application in areas where there is a potential exposure to the product. Wash thoroughly with soap and water after handling.

8. Exposure Controls/Personal Protection

Applicable control measures, including engineering controls: Please refer to the product label for personal protective clothing/equipment.

Personal protective equipment for each exposure route:

Ingestion: Do not eat, drink, smoke or apply cosmetics in areas where there is a potential for exposure to the material. Always wash thoroughly after handling.

Eye Contact: To avoid eye contact, wear safety glasses with side shields or chemical goggles.

Skin Contact: To avoid skin contact, wear rubber gloves, rubber boots, long-sleeved shirt, long pants and a head covering.

Inhalation: To avoid breathing dust, wear pesticide respirator with particulate prefilters. Select N or R or P type as appropriate for the oil characteristics of any other air contaminants present. Filter efficiency ranges from 95-99.7% as appropriate for the size distribution of dust present.

Applicators: Please refer to product label for personal protective clothing and Equipment

9. Physical and Chemical Properties

Form: Crystalline solid

Color: White

Odor: Odorless

Specific gravity: 1.21

Water Solubility: 7100 mg/L @ 20 °C

Solubility in Other Solvents: v.s. in methanol, benzene, and hexane

Melting Point: 71.8-72.3 °C

Vapor Pressure: 0.293 mPa @ 20 °C

Partition Coefficient: Not Available

Adsorption Coefficient: 50 (estimated)

10. Stability and Reactivity

Chemical stability: Stable under normal use and storage conditions.

Conditions to avoid: None known

Incompatibility with other materials: None known

Hazardous decomposition products: Can decompose at high temperatures forming toxic gases.

Hazardous polymerization: Will not occur

11. Toxicological Information

Acute toxicity: The oral LD₅₀ in rats is 669 mg/kg and the dermal LD₅₀ is greater than 3100 mg/kg, indicating slight toxicity by ingestion and dermal application.

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Rabbits exhibited slight eye and skin irritation, but guinea pigs displayed no sensitization after metalaxyl exposure. No information was available regarding the inhalation toxicity of metalaxyl.

Chronic toxicity: A 90-day study of rats exposed to 0.1 to 2.5 mg/kg/day in diet, showed some cellular enlargement in the liver at the highest dose. In a similar study with dogs fed diets of approximately 0.04 to 0.8 mg/kg/day for 6 months, the dogs were adversely affected by the highest dose. Manifestations included increased blood alkaline phosphatase and increased liver-to-brain weight ratio.

Reproductive effects: A three-generation rat study where animals were fed up to 2.5 mg/kg/day showed no compound related maternal toxicity or reproductive effects. These data suggest that metalaxyl is unlikely to cause reproductive effects.

Teratogenic effects: Rats given a dosage of 120 mg/kg/day by stomach tube on days 6 to 15 of gestation exhibited no embryotoxicity or teratogenicity, nor did rabbits given a dosage of 20 mg/kg/day by the same route on days 6 to 18. These data suggest that metalaxyl is not teratogenic.

Mutagenic effects: Studies including a dominant lethal assay in male mice indicate that metalaxyl has no mutagenic potential.

Carcinogenic effects: Available studies of the carcinogenicity of metalaxyl are inconclusive.

Organ toxicity: The liver is the primary target organ for metalaxyl in animal systems.

12. Ecological and Ecotoxicological Information

Effects on birds: Metalaxyl is reported to be practically nontoxic to birds.

Effects on aquatic organisms: Metalaxyl is practically nontoxic to freshwater fish. The 96-hour LC₅₀ values in rainbow trout, carp, and bluegill are all above 100 mg/L. Freshwater aquatic invertebrates are slightly more susceptible to metalaxyl. Daphnia magna, a small freshwater crustacean, has an LC₅₀ of 12.5 to 28 mg/L, depending on the product formulation. This indicates that metalaxyl is slightly toxic to this organism. There is little tendency for metalaxyl to accumulate in the edible portion of fish. Metalaxyl did not accumulate beyond seven times the background concentration and it was quickly eliminated after exposed fish were placed in fresh (metalaxyl-free) water.

Effects on other organisms: Metalaxyl is nontoxic to bees.

Breakdown in soil and groundwater: Under field conditions, metalaxyl has a half-life of 7 to 170 days in the soil environment. A representative half-life in moist soils is about 70 days. Increased sunlight may increase the rate of breakdown in the soil. It is poorly sorbed by soils and highly soluble in water; these properties in combination with its long persistence pose a threat of contamination to groundwater. It readily leaches in sandy soil, although increased organic matter may decrease the rate of leaching. In a large-scale, national survey, metalaxyl was detected in the groundwater of several states at concentrations of 0.27 ug/L to 2.3 mg/L.

Breakdown in water: At pH levels of 5 to 9 and temperatures of 20 to 30°C, the half-life in water was greater than 4 weeks. However, exposure to sunlight reduced the half-life to 1 week.

Breakdown in vegetation: Plants absorb foliar applications through the leaves and stems, and can translocate the compound throughout the plant. Metalaxyl is not absorbed directly from the soil by plants. The parent compound is the major residue in potato tubers and grapes, but in potato leaves and on lettuce, metabolites are the major product.

13. Disposal Considerations

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, provincial, and federal health and environmental guidelines.

14. Transport Information

UN No.: 3077

IMCO Class: 9

IMDG PG: 3077

Packing Group: III

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s

Environmental risk: 9 Marine pollutant

15. Regulatory Information

Not Applicable.

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.