AGROW ALLIED
Ventures Pvt. Ltd

MATERIAL SAFETY DATA SHEET

1.Product and Company Identification

Product Name : Thiophanate- Methyl 97% TC

Chemical Name : dimethyl [1,2-phenylenebis(iminocarbonothioyl)]bis[carbamate]

Type : Fungicide

Molecular formula : $C_{12}H_{14}N_4O_4S_2$

2.Composition/Information on ingredients

Chemical Name	CAS#	Percent or content(w/v)
Thiophanate-methyl	23564-05-8	≥97%
Inerts	-	≤3%

3.Health Hazards Identification

Emergency overview: Caution! Keep out of reach of children. Harmful if swallowed, inhaled or absorbed through skin. Causes eye irritation. May cause thyroid & liver damage after repeated exposure based on animal data. May cause allergic skin reaction.

Routes of entry: Ingestion, inhalation, absorbed through skin.

Health hazards: Inhalation and skin contact are expected to be the primary routes of occupational exposure to this material. Based on single exposure animal tests, it is considered to be practically non-toxic if swallowed, no more than slightly toxic if absorbed through skin, slightly toxic if inhaled, non-irritating to skin and slightly irritating to eyes. Repeated exposure may cause an allergic skin reaction. Repeated or long-term exposure may cause adverse effects on the liver or thyroid

4.First Aid Measures

General: Have the product container, label or Material Safety Data Sheet with you when going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given.
Skin contact: Wash with plenty of soap and water. Get medical attention if irritation persists.

Eye contact: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Romove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center for treatment advice.

Ingestion: Call a physician or poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

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

Note to physician: No specific antidote. Treat symptomatically.

5.Fire Fighting Measures

Hazardous combustion products: During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing media: Use water spray, carbon dioxide, foam or dry chemical.

Protective equipment for firefighters: Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear and self-contained breathing apparatus. Fire fighting equipment should be thoroughly decontaminated after use.

6.Accidental Release Measures

Personal precautions: Wear protective clothing and personal protective equipment as prescribed in Section 8 “Exposure Controls/Personal Protection”. Keep unprotected persons and animals out of area.

Environmental precautions: Prevent spilled product from entering sewers or natural water. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

Method for cleaning up: Contain spill. Sweep or scoop up and remove to suitable container. Flush with water.

7.Handling and Storage

Handling:
Read the label before use. Keep out of reach of children. Harmful if swallowed. Causes skin irritation and sensitivity. Avoid contact with skin and clothing. After work, remove protective clothing and equipment, wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Clean up spilled material immediately, and wash clothes, equipment and work area after use.

Storage:
Store in tightly closed original container in a cool, dry well-ventilated area out of direct sunlight when not in use. This product can be stored in an unheated building. Do not store with food, feed stuffs, fertilizers and seeds. See product label for further handling/storage precautions relative to the end use of this product.

8.Exposure Controls/Personal Protection

Exposure limits: No exposure limits have been established for this material.
Engineering controls: Provide ventilation if necessary to control exposure levels.
Personal protective equipment (PPE):
Respiratory protection: Where airborne expose is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. If exposures cannot be kept at a minimum with engineering controls, consult respirator manufacturer by NIOSH or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full face positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.
Skin protection: Wear rubber gloves.
Eyes and face protection: Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment immediately available.

9.Physical and Chemical Properties

Appearance: White powder
Melting point: 172°C (decompose)
Flash point: Non-inflammable
Density: Approx 1.45
pH: 5.0~8.0
Solubility in water: Practically insoluble in water
Vapor pressure: Negligible

10.Stability and Reactivity

Chemical stability: Stable under normal conditions.
Conditions to avoid: High temperatures, incompatible materials, excess heat.
Hazardous decomposition products: Nitride, sulfide and carbon dioxide.
Incompatible materials: Incompatible with pesticides alkaline in reaction or copper compounds.
Hazardous reactions: Hazardous polymerization will not occur..

11.Toxicological Information

The following information is for the active ingredient, Thiophanate-methyl.
Acute toxicity:
Oral: LD50 for male rats 7500, female rats 6640, male mice 3510, male rabbits 2270 mg/kg.
Dermal: LD50 for rats >2000 mg/kg.
Inhalation: LC50 for rats 1.7 mg/l.
Irritant properties:
Skin: Mild irritant (rabbit).
Eye: Mild irritant (rabbit).

12.Ecological Information

The following information is for the active ingredient, Thiophanate-methyl.
Ecotoxicity:
Birds Acute oral LD50: for Japanese quail >5000 mg/kg.
Fish LC50 (96 h): for rainbow trout 7.8, carp 11 mg/l.
Daphnia EC50 (48 h): 20.2 mg/l.
Bees Not toxic to bees. LD50: >100 µg/bee.

13. Disposal Considerations

Do not reuse containers. After bag is emptied, dispose of empty bag in a sanitary landfill or by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

14.Transport Information

Product Name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(Thiophenate- Methyl 97% TC)
UN No.	:	3077
UN Hazard Class	:	9
UN Packing Group	:	III
Marine Pollutant status	:	YES
EMS	:	F-A, S-F

15.Regulatory Information

Hazard symbols:
Xn Harmful
N Dangerous for the environment

Risk phrases:

R20 Harmful by inhalation.
R43 May cause sensitization by skin contact.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety phrases:

S2 Keep out of the reach of children.
S7 Keep container tightly closed.
S9 Keep container in a well-ventilated place.
S13 Keep away from food, drink and animal feeding stuffs.
S36 Wear suitable protective clothing.
S39 Wear eye/face protection..

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 the 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 the company.