Thiomyl
Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product identifier	Thiomyl
Other means of identification	None
Recommended use	Fungicide
Recommended restrictions	None known.
Company	Southern Agricultural Insecticides, Inc. P.O. Box 218 Palmetto, FL 34220
Company Telephone/Fax:	941) 722-3285/(941) 723-2974
Emergency Telephone Number:	(800) 424-9300 (CHEMTREC)Category 2
EPA Reg. No.:	1001-63-829

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

HEALTH HAZARDS:

Acute toxicity, inhalation	Category 4
Skin irritation	Category 2
Eye irritation	Category 2A
Specific target organ toxicity - Repeated exposure	Category 2

ENVIRONMENTAL HAZARDS:

Hazardous to aquatic environment, acute	Category 2
Hazardous to aquatic environment, chronic	Category 2

SIGNAL WORD:

WARNING

HAZARD STATEMENTS:

Harmful if inhaled. Causes skin irritation. Causes eye irritation. May cause damage to organs (liver and thyroid) through prolonged or repeated exposure. Toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

Do not breathe dust/mist/spray. Use only outdoors or in well-ventilated area. Wear protective gloves/eye/protection/face protection.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

F IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Get medical advice/attention if you feel unwell.

Avoid release to the environment. Collect spillage.
Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION /INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	BY WEIGHT
Thiophanate-methyl	23564-05-8	48.5 - 51.5
Kaolin	1332-58-7	41 -43.6
Crystalline silica (quartz)	14808-60-7	< 0.5
Titanium dioxide	13463-67-7	< 1.0
Hydrated, amorphous silica	112926-00-8	< 1.0
Other Ingredients	Trade Secret	Trade Secret

Synonyms: Dimethyl-4-4' -o-phenylenebis- 3-thioallophanate

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If in Eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
If Swallowed: Call a poison control center or doctor immediately for treatment advice. Do not give any liquid to the person. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.
Most Important symptoms/effects, acute and delayed: Eye exposure may cause mild irritation. Skin exposure may cause slight irritation.
Indication of Immediate medical attention and special treatment if needed, if necessary: None expected.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.
Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.
Unusual Fire and Explosion Hazards: If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.
Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as oxides of carbon and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.
Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.
Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.
Methods for Cleanup and Disposal: Avoid creation of dusty conditions. Scrape up and place in appropriate closed container. Wash entire spill area with a detergent slurry, absorb and sweep into container for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.
Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING: Avoid contact with eyes or clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.
STORAGE: Store in the original container in a dry, temperature controlled area. Do not store in a manner where cross-contamination with other pesticides, fertilizers, food or feed could occur. If spilled during storage or handling, contain/recapture spillage and dispose of in accordance with the Pesticide Disposal Instructions.

8. EXPOSURECONTROLS/PERSONALPROTECTION

Engineering Controls:
Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.
Eye/Face Protection: Not normally required. To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.
Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.
Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.
General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

	OSHA		ACGIH		
Component	**TWA**	**STEL**	**TWA**	**STEL**	**Unit**
Thiophanate-methyl	NE	NE	NE	NE	
Kaolin	5(R)* 15(T)	NE	2(R) 2(T)	NE	rnq/rn^3
Crystalline silica (quartz)	10 mg/m^3/%Si0$_2$+2 (R)	NE	0.025 (R)	NE	mg/m^3
Titanium dioxide	15	NE	10	NE	mq/rn^3
Hydrated, amorphous silica	80 mg/m^3/%Si0$_2$	NE	NE	NE	rnq/m^3
Other Ingredients	NE	NE	NE	NE	

NE = Not Established
* Based on PNOR (Particulates Not Otherwise Regulated)
R= Respirable Fraction
T= Total Dust

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Greyish white colored powder
Odor:	Mild sulfur smell
Odor threshold:	No data available
pH:	6-7
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	No data available
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upperllower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	16-19 lb/ft" depending on manufacturing batch
Solubility(ies):	Dispersible
Partition coefficient: n-octanollwater:	No data available

Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	No data available

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity:	Not reactive
Chemical Stability:	This material is stable under normal handling and storage conditions.
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur.
Conditions to Avoid:	Excessive heat. Do not store near heat or flame.
Incompatible Materials:	Strong oxidizing agents: bases and acids.
Hazardous Decomposition Products:	Under fire conditions may produce oxides of carbon, nitrogen and sulfur.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Dermal, inhalation
Symptoms of Exposure:
Eye Contact: Mildly irritating based on toxicity studies.
Skin Contact: Minimally toxic and slightly irritating based on toxicity studies.
Ingestion: Slightly toxic if ingested based on toxicity studies.
Inhalation: Low inhalation toxicity based on toxicity studies.
Delayed, immediate and chronic effects of exposure: None reported.

Toxicological Data:
Data from laboratory studies conducted are summarized below:
Oral: Rat LD_{50} > 5,000 mg/kg (female)
Dermal: Rat LDs_{50}: >5,000 mg/kg
Inhalation: Rat 4-hr LC_{50}: <2.04 mg/L
Eye Irritation: Rabbit: Mildly irritating (MMTS=1 0.0)
Skin Irritation: Rabbit: Slightly irritating (PDII = 0.3)
Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.

Subchronic (Target Organ) Effects: Repeated overexposure to thiophanate methyl may cause mild anemia and affect the liver and thyroid.
Carcinogenicity I Chronic Health Effects: Prolonged overexposure to thiophanate methyl may affect the liver and thyroid. Thiophanate methyl produced dose-dependent increases in benign liver tumors in mice and thyroid tumors in rats. This product contains clay. Crystalline silica (e.g. quartz) is a naturally occurring component of clay. Inhalation of crystalline silica may cause pulmonary fibrosis (silicosis). Crystalline silica has been classified by IARC as carcinogenic to humans (Group 1), by the U.S. National Toxicology Program as a known human carcinogen and by ACGIH as a suspected human carcinogen (A2).
Reproductive Toxicity: Thiophanate methyl did not cause reproductive toxicity in multi-generation studies in rats.
Developmental Toxicity: In a rabbit study with thiophanate methyl, slight skeletal variations and decreased fetal weights were observed at doses that were also toxic to mother animals.
Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that thiophanate methyl is not mutagenic.

Assessment of Carcinogenicity:
This product contains substances that are considered to be probable or suspected human carcinogens as follows:

	Regulatory Agency Listing As Carcinogen			
Component	**ACGIH**	**IARC**	**NTP**	**OSHA**
Thiophanate-methyl	No	No	No	No
Kaolin	No	No	No	No
Crystalline silica (quartz)	A2	1	Yes	No
Titanium dioxide	No	2B	No	No
Hydrated, amorphous silica	No	No	No	No

Other Ingredients	No	No	No	No

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on Thiophanate-methyl Technical:

96-hour LC_{50} Bluegill: >41 ppm
96-hour LC_{50} Rainbow Trout: 8.3 ppm
48-hour EC_{50} Daphnia: 5.4 ppm
96-hour LC_{50} Mysid: 1.1 ppm

Bobwhite Quail 8-day Dietary LC_{50}: >10,000 ppm
Mallard Duck Oral LD_{50}: 4,640 mg/kg
48-hour Honey Bee Contact LD_{50}: >100 µg/bee

Environmental Fate:

Thiophanate methyl degrades primarily to MBC whether on foliage, in soil or in water in a matter of days. Both photolysis and hydrolysis are important routes of degradation. MBC is microbially degraded, but stable to aqueous photodegradation, stable to hydrolysis at pH values ranging from 5 to 7 and stable to soil photolysis. Metabolism under aerobic and anaerobic conditions in both soil and water proceeds at a slow rate. Under application conditions, average half-lives are about 20 to 50 days, but may be as short as a few days with repeated use.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:
Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide is a violation of Federal law.
Container Handling and Disposal: Nonrefillable container. Do not reuse or refill this container. Securely wrap original container in several layers of newspaper and discard in trash. Offer for recycling, if available. When all water soluble bags are used, dispose of empty foil package in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.
Home Use Disposal: If empty: Nonrefillable container. Do not reuse or refill this container. Offer for recycling, if available. If partly filled: Call your local solid waste agency or 1-800-CLEANUP for disposal instructions. Never place unused product down any indoor or outdoor drain.

14. TRANSPORTATION INFORMATION

DOT

< 20 pounds per completed package
Non Regulated

≥20 pounds to 882 pounds per completed package
UN 3077, Environmentally hazardous substances, solid, n.o.s., 9, III, (thiophanate-methyl), RQ

IMO/IMDG

UN 3077, Environmentally hazardous substances, solid, n.o.s., 9, III, (thiophanate-methyl), Marine Pollutant

IATA

Non-regulated

15. REGULATORY INFORMATION

EPA FIFRA INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Causes moderate eye irritation. Avoid contact eyes or clothing.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:
Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):
Immediate and Delayed

Section 313 Toxic Chemical(s):
Thiophanate-methyl (CAS No. 23564-05-8) 48.5 - 51.5 equivalent by weight in product

Reportable Quantity (RQ) under U.S. CERCLA:
Thiophanate-methyl (CAS No. 23564-05-8) 10 pounds

RCRA Waste Code:
Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

State Information:
Other state regulations may apply. Check individual state requirements.

California Proposition 65: This product contains chemicals known to the state of California to cause cancer and developmental effects in males and females.

16. OTHER INFORMATION
National Fire Protection Association (NFPA) Hazard Rating:
Rating for this product: Health: 0 **Flammability:** 0 **Reactivity:** 1
Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Disclaimer:
To the best of our knowledge, the information contained herein is accurate. However, Southern Agricultural Insecticides, Inc. does not assume any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All material may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.

November, 2015