



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: 3336 PLUS™
EPA Reg. No.: 1001-78
Product Type: Fungicide
Company Name: Cleary Chemicals, LLC
 11901 S. Austin Avenue
 Alsip, IL 60803
 1-800-345-3330

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
 Call CHEMTREC Day or Night: 1-800-424-9300
 For Medical Emergencies Only, Call 1-877-325-1840

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 Certain sections are superseded by federal law governed by EPA for a registered pesticide.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 2B
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. 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.

IF 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	23561-05-8	18.4 – 20.4
Potassium hydroxide	1310-58-3	7.5 – 8.3
Propylene glycol	57-55-6	2.9 – 3.2
Oxalic Acid	144-62-7	2.3 – 2.6
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 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.

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.

Most Important symptoms/effects, acute and delayed: Eye exposure may cause moderate irritation. Skin exposure may cause moderate 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: Do not get on skin or clothing. Avoid contact with eyes. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE)

SAFETY DATA SHEET

3336 PLUS™

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 a cool dry place. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Thiophanate-methyl	NE	NE	NE	NE	NE
Potassium hydroxide	NE	NE	NE	2 (C)	mg/m ³
Propylene glycol	10 (WEEL)	NE	NE	NE	mg/m ³
Oxalic Acid	NE	NE	1	2	mg/m ³
Other Ingredients	NE	NE	NE	NE	NE

NE = Not Established

C = Ceiling

WEEL = Workplace Environmental Exposure Levels

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light tan thick liquid
Odor:	Slight odor of decay
Odor threshold:	No data available
pH:	5.92 (1% w/v in distilled water)
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
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	Not applicable
Relative density:	1.292 g/mL
Solubility(ies):	Insoluble
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	1095 cSt (@ 20° C) and 625 cSt (@ 40° C)

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: Highly alkaline materials, oxidizing agents, lime sulfur, bordeaux mixture, copper compounds.

Hazardous Decomposition Products: Under fire conditions may produce oxides of carbon, nitrogen and sulfur.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Skin contact, Eye contact

Symptoms of Exposure:

Eye Contact: Moderately irritating based on toxicity studies.

Skin Contact: Moderately 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 LD₅₀: > 2,000 mg/kg (female)

Dermal: Rat LD₅₀: >2,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >2.03 mg/L

Eye Irritation: Rabbit: Moderately irritating (MMTS = 28.3)

Skin Irritation: Rabbit: Moderately irritating (PDII = 3.9)

Skin Sensitization: Guinea Pig: Is not considered a skin sensitizer.

Subchronic (Target Organ) Effects: Repeated overexposure to thiophanate methyl may cause mild anemia and affect the liver and thyroid. Overexposure to propylene glycol has been associated with kidney toxicity, liver toxicity (animals) and lactic acidosis. Very high dose acute exposure may result in CNS and cardiac effects.

Carcinogenicity / 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. Overexposure to propylene glycol has been associated with kidney toxicity, liver toxicity (animals) and lactic acidosis.

Reproductive Toxicity: Thiophanate methyl did not cause reproductive toxicity in multi-generation studies in rats. In the mouse, propylene glycol was not a reproductive toxicant.

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. In a series of animal studies, propylene glycol was not a developmental toxicant.

Genotoxicity: There have been some positive and some negative studies, but the weight of evidence is that thiophanate methyl is not mutagenic. Propylene glycol was consistently nonmutagenic.

Assessment of Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on Thiophanate Methyl Technical:

96-hour LC ₅₀ Bluegill:	>41 ppm	Bobwhite Quail 8-day Dietary LC ₅₀ :	>10,000 ppm
96-hour LC ₅₀ Rainbow Trout:	8.3 ppm	Mallard Duck Oral LD ₅₀ :	4,640 mg/kg
48-hour EC ₅₀ Daphnia:	5.4 ppm	48-hour Honey Bee Contact LD ₅₀ :	>100 µg/bee
96-hour LC ₅₀ Mysid:	1.1 ppm		

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. Not bioaccumulative.

Thiophanate methyl is moderately toxic to freshwater fish and invertebrates as well as estuarine and marine invertebrates and slightly toxic to estuarine and marine fish and practically non-toxic to birds.

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 this container to hold materials other than pesticides or dilute pesticides (rinsate). After emptying and cleaning, it may be allowable to temporarily hold rinsate or other pesticide-related materials in the container. Contact your state regulatory agency to determine allowable practices in your state. Offer for recycling, if available.

Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

14. TRANSPORTATION INFORMATION

DOT

< 2 gallons per completed package

Non Regulated

≥ 2 gallons but < 119 gallons per completed package

UN 3082, Environmentally hazardous substances, liquid, n.o.s., 9, III, (thiophanate-methyl), RQ

≥ 119 gallons per completed package

UN 3082, Environmentally hazardous substances, liquid, n.o.s., 9, III, (thiophanate-methyl), Marine Pollutant, RQ

IMDG

UN 3082, Environmentally hazardous substances, liquid, 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.

WARNING. Causes skin irritation. Harmful if swallowed. Harmful if absorbed through skin. Causes moderate eye irritation. Do not get on skin or clothing. Avoid contact with eyes.

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) 18.4 – 20.4% equivalent by weight in product

Reportable Quantity (RQ) under U.S. CERCLA:

Thiophanate-methyl (CAS No. 23564-05-8) 10 pounds
Potassium hydroxide (CAS No. 1310-58-3) 1,000 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: Thiophanate-methyl is known to the state of California to cause developmental effects in males and females.

16. OTHER INFORMATION**National Fire Protection Association (NFPA) Hazard Rating:**

Rating for this product: Health: 1 Flammability: 1 Reactivity: 0

Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

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