

MATERIAL SAFETY DATA SHEET

THIODAN® 50 WP INSECTICIDE



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This document has been prepared to meet the requirements of the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200; the EC directive, 91/155/EEC and other regulatory requirements. The information contained herein is for the concentrate as packaged, unless otherwise noted.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: THIODAN® 50 WP INSECTICIDE
PRODUCT CODE: 190; 1591
ACTIVE INGREDIENT: Endosulfan
CHEMICAL FAMILY: Organochlorine Pesticide
MOLECULAR FORMULA: C₉H₆Cl₆O₃S (endosulfan)
SYNONYMS: FMC 5462; Hexachlorohexahydromethano-2,4,3-benzodioxathiepin oxide; IUPAC: (1,4,5,6,7,7-hexachloro-8,9,10-trinorborn-5-en-2,3-ylenebismethylene) sulfite

MANUFACTURER

FMC CORPORATION
 Agricultural Products Group
 1735 Market Street
 Philadelphia, PA 19103 USA

Emergency Telephone Numbers:

Emergency Phone (FMC) 800-331-3148 (U.S.A. & Canada)
Emergency Phone (FMC) 716-735-3765 (Reverse charges)
CHEMTREC (800) 424-9300 (U.S.A. & Canada)
 (202) 483-7616 (All other countries)

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS #</u>	<u>Wt.%</u>	<u>PEL/TLV</u>	<u>EC No.</u>	<u>EC Class</u>
Endosulfan	115-29-7	50	0.1 mg/m3 (skin)	602-052-00-5	R24/25-36
Silica, quartz	14808-60-7	<4.4	0.1 mg/m3 (resp dust)	None	None
Propylene Glycol	57-55-6	<1.3	10.0 mg/m3 WEEL	None	None
Surfactant Blend	0000-00-0	<0.3	None	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS:

- Tan powder with a sharp, acrid, sulfur dioxide-like odor.
- Slightly combustible. May support combustion at elevated temperatures.
- Thermal decomposition and burning may form toxic by-products.

- For large exposures or fire, wear personal protective equipment.
- Highly toxic to fish and aquatic organisms. Keep out of drains and water courses.
- Highly toxic if swallowed, and moderately toxic if inhaled.

POTENTIAL HEALTH EFFECTS: Effects from overexposure result from either swallowing or inhaling this product. Symptoms of overexposure include convulsions, tremors, decreased locomotion and oral discharge.

MEDICAL CONDITIONS AGGRAVATED: None presently known.

4. FIRST AID MEASURES

EYES: Flush with water for at least 15 minutes. If irritation occurs and persists, obtain medical attention.

SKIN: Wash with plenty of soap and water.

INGESTION: Drink 1 or 2 glasses of water and induce vomiting by touching the back of the throat with a finger or by giving syrup of ipecac. Never induce vomiting or give anything by mouth to an unconscious person. See a medical doctor.

INHALATION: Remove to fresh air. If breathing difficulty or discomfort occurs and persists, contact a medical doctor.

NOTES TO MEDICAL DOCTOR: This product is highly toxic if swallowed, moderately toxic if inhaled, and mildly toxic if absorbed through the skin. It is mildly irritating to the eyes, and non-irritating to the skin. Endosulfan is a central nervous system stimulant absorbable through oral, inhalation or dermal routes. It may cause convulsions. Central nervous system stimulation can be controlled with diazepam (i.v.) or barbituric acid derivatives. Epinephrine is contraindicated due to cardiac muscle stimulation. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Foam, CO₂ or dry chemical. Soft stream water fog only if necessary. Contain all runoff.

EXPLOSION HAZARDS: Slightly combustible. This material may support combustion at elevated temperatures.

FIRE FIGHTING PROCEDURES: Isolate fire area. Evacuate downwind. Wear full protective clothing and self-contained breathing apparatus. Do not breathe smoke, gases or vapors generated.

HAZARDOUS DECOMPOSITION PRODUCTS: Sulfur dioxide, hydrogen chloride, carbon dioxide, carbon monoxide, aldehydes.

6. ACCIDENTAL RELEASE MEASURES

RELEASE NOTES: Isolate and post spill area. Wear protective clothing and personal protective equipment as prescribed in Section 8, "Exposure Controls/Personal Protection". Keep unprotected persons and animals out of the area.

Keep material out of lakes, streams, ponds and sewer drains. Large spills should be covered to prevent dispersal. For dry material, use a wet sweeping compound or water to prevent the formation of dust. If water is used, prevent runoff or dispersion of excess liquid by diking and absorbing with a non-combustible absorbent such as clay, sand or soil. Vacuum, shovel or pump all waste material, including absorbent, into a drum and label contents for disposal.

To clean and neutralize spill area, tools and equipment, wash with a suitable solution of caustic or soda ash, and an appropriate alcohol (i.e., methanol, ethanol or isopropanol). Follow this by washing with a strong soap and water solution. Absorb, as above, any excessive liquid and add to the drums of waste already collected. Repeat if necessary. Dispose of drummed waste according to the method outlined in Section 13, "Disposal Considerations".

7. HANDLING AND STORAGE

GENERAL PROCEDURES: Store in a cool, dry, well-ventilated place. Do not use or store near heat, open flame or hot surfaces. Keep out of reach of children and animals. Store in original containers only. Carefully open containers. After partial use, fold and roll back bags, clamp and close tightly. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Use local exhaust at all process locations where dust may be emitted. Ventilate all transport vehicles prior to unloading.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: For dust exposure, wear chemical protective goggles or a face shield.

RESPIRATORY: For dust exposure wear, as a minimum, a properly fitted half-face or full-face air-purifying respirator which is approved for pesticides (U.S. NIOSH/MSHA, EU CEN or comparable certification organization). Respirator use and selection must be based on airborne concentrations.

PROTECTIVE CLOTHING: Depending upon concentrations encountered, wear coveralls or long-sleeved uniform and head covering. For larger exposures as in the case of spills, wear full body cover barrier suit, such as a PVC suit. Leather items - such as shoes, belts and watchbands - that become contaminated should be removed and destroyed. Launder all work clothing before reuse (separately from household laundry).

WORK HYGIENIC PRACTICES: Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking or using tobacco. Shower at the end of the workday.

GLOVES:

Wear chemical protective gloves made of materials such as rubber, neoprene, or PVC. Thoroughly wash the outside of gloves with soap and water prior to removal. Inspect regularly for leaks.

COMMENTS: Personal protective recommendations for mixing or applying this product are prescribed on the product label. Information stated above provides useful, additional guidance for individuals whose use or handling of this product is not guided by the product label.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR: Sharp, acrid, sulfur dioxide-like

APPEARANCE: Tan powder

SOLUBILITY IN WATER: Disperses

MOLECULAR WEIGHT: 406.95 (endosulfan)

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Excessive heat and fire.

STABILITY: Stable

POLYMERIZATION: Will not occur

11. TOXICOLOGICAL INFORMATION

DERMAL LD₅₀: >2000 mg/kg (rabbit)

ORAL LD₅₀: 41.2 mg/kg (rat)

INHALATION LC₅₀: 0.23 mg/L/4 hr (rat)

ACUTE EFFECTS FROM OVEREXPOSURE: This product is highly toxic if swallowed, moderately toxic if inhaled, and mildly toxic if absorbed through the skin. It is mildly irritating to the eyes, and non-irritating to the skin. Signs of toxicity in laboratory animals included clonic convulsions, tremors, ataxia, decreased locomotion, chromorhinorrhea and oral discharge. In humans, ingestion of large amounts of propylene glycol has resulted in reversible central nervous system depression including stupor, rapid breathing and heartbeat, profuse sweating and seizures.

CHRONIC EFFECTS FROM OVEREXPOSURE: No data available for the formulation. In chronic studies with laboratory animals, endosulfan showed no evidence of carcinogenicity. Endosulfan caused toxic nephropathy in rat chronic feeding studies. In a two-generation reproduction study with laboratory animals, endosulfan caused decreased litter weights at the highest dose. Endosulfan was non-mutagenic in a battery of tests. Repeated overexposure to crystalline silica for extended periods has caused acute silicosis. IARC has classified crystalline silica, inhaled in the form of quartz or cristobalite from occupational sources, as carcinogenic to humans (Group 1). NTP has classified respirable crystalline silica (quartz, cristobalite and tridymite) as "reasonably anticipated to be carcinogenic". Repeated overexposure to propylene glycol can produce central nervous system depression, hemolysis and minimal kidney damage.

CARCINOGENICITY

<u>Chemical Name</u>	<u>NTP Status</u>	<u>IARC Status</u>	<u>OSHA Status</u>	<u>Other</u>
Silica, quartz	Anticipated	Listed	Not listed	(ACGIH) Not Listed

12. ECOLOGICAL INFORMATION

Unless otherwise indicated, the data presented below are based on the active ingredient.

ENVIRONMENTAL DATA: In natural waters, endosulfan is more readily degraded at pH 7 (half-life = 5 weeks) than at pH 5.5 (half-life = 5 months). The half-life in soils varies with soil type and environmental conditions, with 120 days being average under agricultural conditions. The α - and β -isomers degrade at different rates, with the β -isomer being more persistent. Endosulfan has a slight potential for movement in soils, however, the potential is decreased with increasing organic matter content of the soil. The bioconcentration factor for endosulfan varies by species and length of exposure but is generally less than 100.

ECOTOXICOLOGICAL INFORMATION: Endosulfan is considered highly toxic to fish with LC50 values of 1.0 to 10.0 $\mu\text{g/L}$. Crustaceans and mollusks are less sensitive with LC50 values of 10 to 1600 $\mu\text{g/L}$. Endosulfan is slightly toxic to birds and oral LD50 values range from 200 to 1000 mg/kg.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Open dumping or burning of this material or its packaging is prohibited. If spilled material cannot be disposed of by use according to label instructions, an acceptable method of disposal is to incinerate in accordance with local, state and national environmental laws, rules, standards and regulations. However, because acceptable methods of disposal may vary by location, and regulatory requirements may change, the appropriate agencies should be contacted prior to disposal.

EMPTY CONTAINER: Non-returnable containers which held this material should be cleaned, prior to disposal, by triple-rinsing. Containers which held this material may be cleaned by being triple-rinsed, and recycled, with the rinsate being incinerated.

14. TRANSPORT INFORMATION**U.S. DOT (DEPARTMENT OF TRANSPORTATION)**

PROPER SHIPPING NAME: Organochlorine pesticides, solid, toxic, n.o.s.

TECHNICAL NAME: Endosulfan

PRIMARY HAZARD CLASS/DIVISION: 6.1

UN/NA NUMBER: UN2761

PACKING GROUP: II

REPORTABLE QUANTITY (RQ): Listed (endosulfan)

U.S. SURFACE FREIGHT CLASS: Insecticides, NOI, Poison other than Class A Poison. NMFC Item 102100.

MARINE POLLUTANT #1: endosulfan (Severe Marine Pollutant)

NAERG: 151

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311 HAZARD CATEGORIES (40 CFR 370): Immediate, Delayed

SECTION 312 THRESHOLD PLANNING QUANTITY (40 CFR 370): The threshold planning quantity (TPQ) for this product, if treated as a mixture, is 10,000 lbs. This product contains the following ingredients with a TPQ of less than 10,000 lbs.: endosulfan (10 lbs.)

SECTION 313 REPORTABLE INGREDIENTS (40 CFR 372): This product contains the following ingredients subject to Section 313 reporting requirements: (glycol ethers)

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355): Endosulfan

SECTION 302.4 REPORTABLE QUANTITY (40 CFR 355)

<u>Chemical Name</u>	<u>RQ</u>
Endosulfan	1 lb.

CERCLA (COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT):

<u>Chemical Name</u>	<u>Wt.%</u>	<u>RQ</u>
Endosulfan	50	1 lb.
Propylene Glycol	<1.3	1 lb.

COMMENTS: Australian Hazard Code : 3XE

U.S. EPA Signal Word : DANGER-POISON

16. OTHER INFORMATION

Thiodan - Hoechst AG Trademark; FMC Logo - FMC Trademark

Section(s) Revised : New Format