

MATERIAL SAFETY DATA SHEET



Emergency Phone: 800-992-5994
Dow AgroSciences LLC
Indianapolis, IN 46268

KELTHANE* MF Miticide

Effective Date: 12/9/03
Product Code: 89005
MSDS: 007750

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Kelthane* MF Miticide

COMPANY IDENTIFICATION:

Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN 46268-1189

2. COMPOSITION/INFORMATION ON INGREDIENTS:

Dicofol: 4-chloro-alpha-4-chlorophenyl)-alpha-(trichloromethyl)benzene-methanol	CAS # 000115-32-2	43.5%
Other Ingredients, Total, Including Methyl Oleate	CAS # 000112-62-9	56.5%

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). In addition, other substances not 'Hazardous' per this OSHA Standard may be listed. Where proprietary ingredient shows, the identity may be made available as provided in this standard.

3. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW

Hazardous chemical. Amber liquid with a mild odor. May cause eye irritation with corneal injury. May cause skin irritation. The LD₅₀ for skin absorption is >5000 mg/kg. The oral LD₅₀ is 1835-5022 mg/kg. The aerosol LC₅₀ is >1.51 mg/L for 4 hours. Toxic to aquatic invertebrates, fish, algae, and birds.

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POTENTIAL HEALTH EFFECTS: This section includes possible adverse effects, which could occur if this material is not handled in the recommended manner.

EYE: May cause severe irritation with corneal injury, which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

SKIN: Brief contact may cause moderate skin irritation with local redness. Skin contact may cause an allergic skin reaction in a small proportion of individuals. Prolonged skin contact is unlikely to result in absorption of harmful amounts. The LD₅₀ for skin absorption in rats is >5000 mg/kg.

INGESTION: Low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. The oral LD₅₀ for rats is 1835 mg/kg (females) and 2491-5022 mg/kg (males).

INHALATION: At room temperature, exposure to vapor is minimal due to low volatility. If material is heated or aerosol/mist is produced, concentrations may be attained that are sufficient to cause respiratory irritation and other effects. The aerosol LC₅₀ for rats is >5.0 mg/L for 4 hours.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:

Dicofol, in animals, effects have been reported on the following organs: liver, kidney, adrenal gland, heart, blood, and reproductive organs.

CANCER INFORMATION: Dicofol has caused an increase in benign tumors in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): Dicofol did not cause birth defects in laboratory animals. Has been toxic to the fetus in laboratory animals only at doses toxic to the mother.

REPRODUCTIVE EFFECTS: Dicofol, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals.

4. FIRST AID:

EYE: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

SKIN: Remove material from skin immediately by washing with soap and plenty of water. Remove contaminated clothing and shoes while washing. Seek medical attention if irritation persists. Wash clothing before reuse. Discard items, which cannot be decontaminated, including leather articles such as shoes, belts, and watchbands.

INGESTION: Call a 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 the poison control center or doctor. Never give anything by mouth to an unconscious person.

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INHALATION: Move person to fresh air; if effects occur, consult a physician.

NOTE TO PHYSICIAN: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES:

FLASH POINT: 199°F (93°C)

METHOD USED: Setaflash Closed Cup

FLAMMABLE LIMITS

LFL: Not applicable

UFL: Not applicable

EXTINGUISHING MEDIA: Use the following extinguishing media when fighting fires involving this material: carbon dioxide, dry chemical and water spray.

UNUSUAL HAZARDS: Pesticide particulates can become airborne. Combustion generates toxic fumes of the following: hydrogen chloride and chlorine gas.

FIREFIGHTING EQUIPMENT: Wear self-contained breathing apparatus (pressure demand NIOSH approved or equivalent) and full protective gear.

SPECIAL PROCEDURES: Contain run-off. Remain upwind. Avoid breathing smoke. Use water spray to cool containers exposed to fire.

6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS/LEAKS: Contain small spills with inert materials (e.g. sand, earth) and transfer spilled material to suitable containers for recovery or disposal. Avoid use of water; product is highly toxic to aquatic life. Avoid breathing vapor. Keep spectators away. Floor may be slippery; use care to avoid falling. Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

Wear appropriate protective equipment when handling a spill of this material. If exposed to material during clean-up operations see Section 4 for actions to follow. Remove all contaminated clothing promptly. Wash all exposed skin areas with soap and water immediately after exposure. Thoroughly launder clothing before reuse. Do not take clothing home to be laundered.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE:

Keep out of reach of children. Avoid eye contact. Wash thoroughly with soap and water after handling. Do not swallow. Do not store this material near food, feed, or drinking water. Store in a well-ventilated area. The maximum recommended storage temperature for this material is 150°F (65°C). Do not store this material in containers made of mild steel. Store in a well-ventilated area. Keep container tightly closed when not in use.

Triple rinse (or equivalent) and puncture empty container. Dispose empty container in a sanitary landfill as allowed by state and local authorities.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

These precautions are suggested for conditions where the potential for exposure exists. Emergency conditions may require additional precautions.

EXPOSURE GUIDELINE(S):

Dicofol: Dow AgroSciences Industrial Hygiene Guide is 0.1 mg/M³ TWA, skin and 0.3 mg/M³ STEL, skin.

ENGINEERING CONTROLS: Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use chemical goggles. Eye wash fountain should be located in immediate work area.

SKIN PROTECTION: Use gloves chemically resistant to this material.

RESPIRATORY PROTECTION: For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use a NIOSH approved air-purifying respirator.

APPLICATORS AND ALL OTHER HANDLERS: Refer to the product label for personal protective clothing and equipment.

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9. PHYSICAL AND CHEMICAL PROPERTIES:

COLOR: Amber
STATE: Liquid
ODOR: Mild
pH: Not applicable
VISCOSITY: 160 CPS @ 77°F (25°C)
SPECIFIC GRAVITY (Water = 1): 1.12 to 1.14
@ 68°F (20°C)
VAPOR DENSITY (Air = 1): >1
VAPOR PRESSURE: 2 mmHg @ 68°F (20°C)
(methyl oleate)
MELTING POINT: -15.9°F (-26.6°C) (methyl oleate)
BOILING POINT: 333°F (167°C) (methyl oleate)
SOLUBILITY IN WATER: Emulsifiable in Water
PERCENT VOLATILITY: 40 to 45%
EVAPORATION RATE (BAc = 1): <1

10. STABILITY AND REACTIVITY:

STABILITY: This material is stable under normal storage conditions. Avoid temperatures above 150°F (65°C) to prevent thermal degradation.

INCOMPATIBILITY: Avoid contact with oxidizing agents. Contact with the following will catalyze product deterioration: iron and mild steel.

HAZARDOUS DECOMPOSITION PRODUCTS: There are no known hazardous decomposition products for this material.

HAZARDOUS POLYMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION:

MUTAGENICITY: For dicofol, in-vitro and animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:

ECOTOXICOLOGY:

Based on information for dicofol.
Material is highly toxic to aquatic invertebrates, fish, and algae.
Water flea (*Daphnia magna*), 48 hour EC₅₀: 0.14 mg/L.
Rainbow trout (*Salmo gairdneri*), 96 hour LC₅₀: 0.12 mg/L.

Sheepshead minnow (*Cyprinodon variegatus*), 96 hour LC₅₀: 0.37 mg/L.
Mysid shrimp (*Mysidopsis bahia*), 96 hour LC₅₀: 0.06 mg/L.
Fiddler crab, 96 hour LC₅₀ is greater than water solubility.
Oyster shell (*Crassostrea virginica*), 96 hr deposition EC₅₀: 15 µg/L.
Algae (*Scenedesmus subspicatus*), 96 hr EC₅₀: 75 µg/L.
Bobwhite quail, 8 day dietary LC₅₀: 3010 ppm.
Mallard duck, 8 day dietary LC₅₀: 1651 ppm.
Japanese quail, 8 day dietary LC₅₀: 1418 ppm.
Ring-necked pheasant, 8 day dietary LC₅₀: 2126 ppm.

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: Wastes resulting from the use of this product may be disposed of on site according to label directions or at an approved waste disposal facility. Follow all local, state, and federal requirements for disposal.

14. TRANSPORT INFORMATION:

U.S. DEPARTMENT OF TRANSPORTATION (DOT) INFORMATION:

For non-bulk quantities less than 23 pounds shipped by air or land:
This material is not regulated for transport.

For non-bulk quantities 23 pounds or higher shipped by air or land:
ENVIRONMENTALLY HAZARDOUS SUBSTANCES,
LIQUID N.O.S./ (CONTAINS DICOFOL)/9/UN3082/
PG III/RQ (DICOFOL)

For bulk quantities:
COMBUSTIBLE LIQUID, N.O.S./ (CONTAINS DICOFOL)/
COMBUSTIBLE LIQUID/NA1993/PG III/RQ (DICOFOL)

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15. REGULATORY INFORMATION:

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations.

U.S. REGULATIONS

SARA 313 INFORMATION: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

CHEMICAL NAME	CAS NUMBER	CONCENTRATION
DICOFOL	000115-32-2	43.5%

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

An immediate health hazard
A delayed health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: The following product components are cited on certain state lists as mentioned. Non-listed components may be shown in the composition section of the MSDS.

CHEMICAL NAME	CAS NUMBER	LIST
DICOFOL	000115-32-2	NJ3 NJ2 PA1 PA3

NJ2=New Jersey Environmental Hazardous Substance (present at greater than or equal to 1.0%).
NJ3=New Jersey Workplace Hazardous Substance (present at greater than or equal to 1.0%).
PA1=Pennsylvania Hazardous Substance (present at greater than or equal to 1.0%).
PA3=Pennsylvania Environmental Hazardous Substance (present at greater than or equal to 1.0%).

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATINGS:

Health	2
Flammability	1
Reactivity	0

COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT (CERCLA, or SUPERFUND): This product contains the following substance(s) listed as "Hazardous Substances" under CERCLA, which may require reporting of releases:

Chemical Name	CAS#	RQ	% in Product
Dicofol	000115-32-2	10 lbs.	43.5%

16. OTHER INFORMATION:

MSDS STATUS: Moved to DAS Format
Reference: DR-0378-7459
Replaces MSDS Dated: 6/1/01
Document Code: D03-181-002
Replaces Document code: D03-181-001

The Information Herein Is Given In Good Faith, But No Warranty, Express or Implied, Is Made. Consult Dow AgroSciences for Further Information.