

MATERIAL SAFETY DATA SHEET



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

Effective Date: 5/25/00
Product Code: 63656
MSDS: 006113

LORSBAN* 75WG INSECTICIDE

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Lorsban* 75WG Insecticide

COMPANY IDENTIFICATION:

Dow AgroSciences
9330 Zionsville Road
Indianapolis, IN 46268-1189

2. COMPOSITION/INFORMATION ON INGREDIENTS:

Chlorpyrifos: O,O-Diethyl-O-(3,5,6-Trichloro-2-Pyridinyl) Phosphorothioate	CAS # 002921-88-2	75%
Other Ingredients, Total		25%

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. Tan granule with a mild mercaptan odor. May cause slight eye irritation. The LD₅₀ for skin absorption in rats is >5000 mg/kg. For 1% solution the oral LD₅₀ for rats is >5000 mg/kg. For granules the oral LD₅₀ is >500 mg/kg for rats and mice. Cholinesterase inhibitor.

Toxic to aquatic organisms and avian.

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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 slight eye irritation.

SKIN: A single prolonged exposure is not likely to result in the material being absorbed through the skin in harmful amounts. Prolonged exposure is not likely to cause significant skin irritation. The LD₅₀ for skin absorption in rats is >5000 mg/kg.

INGESTION: For a 1% dilution: Single dose oral toxicity is considered to be low. No hazards anticipated from swallowing small amounts incidental to normal handling operations. The oral LD₅₀ for rats is >5000 mg/kg. For the granules: Single dose oral toxicity is considered to be low to moderate. Small amounts swallowed incidental to normal handling operations is not likely to cause injury; however, swallowing larger amounts may cause serious injury, even death. The oral LD₅₀ is >500 mg/kg for rats and (mice).

INHALATION: Single exposure to dust is not likely to be hazardous. At room temperature, exposures to vapors are unlikely due to the low vapor pressure of chlorpyrifos. Higher temperatures may generate vapor levels sufficient to cause adverse effects. In tests to determine the acute LC₅₀, no deaths occurred in rats exposed for 4 hours to vapors generated by passing air through heated, molten chlorpyrifos; the nominal concentration was 200 mg/M³.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:

Excessive exposure may produce organophosphate type cholinesterase inhibition. Signs and symptoms of excessive exposure to chlorpyrifos may be headache, dizziness, incoordination, muscle twitching, tremors, nausea, abdominal cramps, diarrhea, sweating, pinpoint pupils, blurred vision, salivation, tearing, tightness in chest, excessive urination, convulsions. Chlorpyrifos produced mild adrenal effects when fed to rats, but only at doses that greatly exceeded any exposures that would be received during the use of this product.

CANCER INFORMATION: Chlorpyrifos did not cause cancer in laboratory animals.

TERATOLOGY (BIRTH DEFECTS): Chlorpyrifos did not cause birth defects in laboratory animals.

REPRODUCTIVE EFFECTS: Chlorpyrifos did not interfere with fertility in reproduction studies in laboratory animals. Some evidence of toxicity to the offspring occurred, but only at a dose high enough to produce significant toxicity to the parent animals.

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4. FIRST AID:

EYE: Flush eyes with plenty of water.

SKIN: Wash off in flowing water or shower.

INGESTION: If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Consult medical personnel and seek medical attention immediately.

INHALATION: Remove to fresh air if effects occur. Consult a physician.

NOTE TO PHYSICIAN: Atropine, only by injection, is the preferred antidote. Oximes, such as 2-PAM/Protopam, may be therapeutic if used early; however, use only in conjunction with atropine. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

5. FIRE FIGHTING MEASURES:

FLASH POINT: 299°F (148°C)

FLAMMABLE LIMITS: LFL: Not applicable
UFL: Not applicable

AUTO-IGNITION TEMPERATURE: >752F (>400°C)

HAZARDOUS COMBUSTION PRODUCTS: During a fire, smoke may contain the original material in addition to unidentified toxic and/or irritating compounds. Hazardous combustion products may include and are not limited to sulfur oxides, phosphorus compounds, nitrogen oxides, hydrogen chloride, carbon monoxide, and carbon dioxide.

OTHER FLAMMABILITY INFORMATION: do not permit dust to accumulate. Dust layers can be ignited by spontaneous combustion or other ignition sources. When suspended in air dust can pose an explosion hazard. Container may vent and/or rupture due to fire.

EXTINGUISHING MEDIA: Foam, water, carbon dioxide, or dry chemical. Alcohol resistant foams (ATC type) are preferred if available. General, purpose synthetic foams (including AFFF) or protein foams may function, but much less effectively.

FIRE FIGHTING INSTRUCTIONS: Keep people away. Isolate fire area and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environmental damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. If material is a molten, do not apply direct water stream. Use fine water spray or foam. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Dust explosion hazard may result from forceful application of fire extinguishing agents. Hand held carbon dioxide or dry chemical extinguishers may be used for small fires. Contain firewater runoff if possible. Fire water runoff, if not contained may cause environmental damage. Review the "Accidental Release Measures" and "Ecological Information" sections of this MSDS.

PROTECTIVE EQUIPMENT FOR FIREFIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

6. ACCIDENTAL RELEASE MEASURES:

ACCIDENTAL RELEASE MEASURES Contain and sweep up small spills. Collect all waste material and place in sealed marked containers for disposal. Report large spills to Dow AgroSciences at 800-992-5994.

7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Good housekeeping and controlling of dusts are necessary for safe handling of this product. No smoking, open flames, or sources of ignition in handling and storage area. Recommend storage in a cool, dry place away from high temperatures, hot pipes, and direct sunlight. Store in original container.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

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

EXPOSURE GUIDELINES: Chlorpyrifos: ACGIH TLV and OSHA PEL are 0.2 mg/M³, Skin. ACGIH classification is A4.

PELs are in accord with those recommended by OSHA, as in the 1989 revision of PELs.

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material. It is intended to alert the reader that inhalation may not be the only route of exposure that measures to minimize dermal exposures should be considered.

ENGINEERING CONTROLS: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RECOMMENDATIONS FOR MANUFACTURING, COMMERCIAL BLENDING, AND PACKAGING WORKERS:

EYE/FACE PROTECTION: Use safety glasses.

SKIN PROTECTION: Use gloves impervious to this material.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. In dusty atmospheres, use a NIOSH approved dust respirator.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Granule

COLOR: Tan

ODOR: Mild mercaptan

BULK DENSITY: 0.58 g/cm³ (tapped)

pH: 7.84 approximately (1% aqueous suspension)

WATER SOLUBILITY: Disperses

10. STABILITY AND REACTIVITY:

STABILITY: Unstable at elevated temperatures. Avoid temperatures above 158°F (70°C). Product can decompose at elevated temperatures.

HAZARDOUS DECOMPOSITION: Hazardous decomposition products depend upon temperature, air supply, and the presence of other materials. Hazardous decomposition products may include and are not limited to hydrogen chloride, organic sulfides, and sulfur dioxide.

INCOMPATIBLE MATERIALS: Avoid contact with oxidizing materials, acids, and bases.

HAZARDOUS POLMERIZATION: Not known to occur.

11. TOXICOLOGICAL INFORMATION:

MUTAGENICITY: Based on a majority of negative data and some equivocal or marginally positive results, chlorpyrifos is considered to have minimal mutagenic potential.

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL FATE:

MOVEMENT & PARTITIONING:

Based largely or completely on information for chlorpyrifos. Bioconcentration potential is moderate (BCF between 100 and 3000 or Log Pow between 3 and 5).

Expected to be relatively immobile in soil (Koc >5000).

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DEGRADATION & PERSISTENCE:

Based largely or completely on information for chlorpyrifos. The photolysis half-life in water is 3-4 weeks. In the atmospheric environment, material is estimated to have a tropospheric half-life of 1.4 hours. Degradation is expected in the soil environment within days to weeks. Under aerobic soil conditions the half-life is generally 30-60 days.

ECOTOXICOLOGY:

Based largely or completely on information for chlorpyrifos. Material is very highly toxic to aquatic organisms on an acute basis ($LC_{50}/EC_{50} < 0.1$ mg/L in most sensitive species). Based on information for the formulation. Material is moderately toxic to birds on a dietary basis (LC_{50} is between 501 and 1000 ppm). Material is moderately toxic to birds on an acute basis (LD_{50} is between 51 and 500 mg/kg). Acute oral LD_{50} for bobwhite (*Colinus virginianus*) is 53 mg/kg. Dietary LC_{50} for bobwhite (*Colinus virginianus*) is 740 ppm.

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: Dispose of in accordance with all local, state, and federal requirements. Do not allow waste to enter ponds, waterways or ditches. Contact Dow AgroSciences for addition information.

14. TRANSPORT INFORMATION:

For DOT regulatory information, if required, consult transportation regulations, product-shipping papers, or contact your Dow AgroSciences representative.

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: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

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
A fire hazard

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

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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
Proprietary Ingredient	Proprietary	NJ1 NJ3 PA1
Chlorpyrifos	002921-88-2	NJ3 PA1 PA3

NJ1=New Jersey Special Health Hazard Substance (present at greater than or equal to 0.1%).

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	1
Flammability	1
Reactivity	1

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
Chlorpyrifos	002921-88-2	1	75%

16. OTHER INFORMATION:

MSDS STATUS: Revised Sections: 5,7,9,10,12, & 15
Reference: DR-0348-6393
Replaces MSDS Dated 5/6/99
Document Code: D03-187-001

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