

## MATERIAL SAFETY DATA SHEET

## Dow AgroSciences

## DURSBAN® PRO INSECTICIDE

EMERGENCY PHONE: 800 992-5994  
 MANUFACTURER: DOW AGROSCIENCES LLC  
 INDIANAPOLIS, IN 46268  
 EFFECTIVE DATE: 5/6/99  
 PRODUCT CODE: 46482  
 MSDS: 004949

## 1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT: Dursban® Pro Insecticide  
 COMPANY IDENTIFICATION: DOW AGROSCIENCES  
 9330 ZIONSVILLE ROAD  
 INDIANAPOLIS, IN 46268-1189

## 2. COMPOSITION/INFORMATION ON INGREDIENTS:

Chlorpyrifos: (O,O-dimethyl-O-(3,5,6 trichloro-2-pyridinyl) phosphorothioate) CAS# 002921-88-2 23.5%

Inert ingredients, total, including: 76.5%

Propylene glycol CAS# 000057-55-6

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 ingredients show, the identity may be made available as provided in this standard.

## 3. HAZARDOUS IDENTIFICATIONS:

EMERGENCY OVERVIEW: Hazardous Chemical. Light yellow, cloudy liquid. Petroleum odor. May cause slight eye irritation. Prolonged exposure may cause skin irritation. Cholinesterase inhibitor. Toxic to aquatic organisms, bees, and avian. Avoid heating above 50 deg C (122 deg F); product undergoes exothermic decomposition at approximately 130 deg C (266 deg F). Incompatible with oxidizing materials and strong acids.  
 EMERGENCY PHONE NUMBER: 800 992-5994

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. Corneal injury is unlikely.

SKIN: Prolonged exposure not likely to cause significant skin irritation. A single prolonged exposure is not likely to result in the material being absorbed through skin in harmful amounts. The LD50 for skin absorption in rabbits is >2000 mg/kg.

INGESTION: Single dose oral toxicity is considered to be low. The oral LD50 for male rats was 620 mg/kg. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing larger amounts may cause injury. If aspirated (liquid enters the lung), may cause lung damage or even death due to chemical pneumonia.

INHALATION: At room temperature, vapors are minimal due to low vapor pressure. If material is heated or mist is produced, concentrations may be attained that may be hazardous on single exposure. The LC50 for male and female rats was 2.6 and 1.62 mg/l for 4 hours.

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, or convulsions. Chlorpyrifos produced mild adrenal effects when fed to rats, but only at doses that greatly exceeded any exposures that would be received during use of this product.

CANCER INFORMATION: Chlorpyrifos and other tested components did not cause cancer in long-term animal studies.

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.

## 4. FIRST AID:

EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN: Immediately wash with plenty of soap and water. Consult medical personnel.

INGESTION: Call a physician or Poison Control Center immediately. Do not induce vomiting. Do not put anything into the mouth of an unconscious person.

INHALATION: Remove person to fresh air and if not breathing give artificial respiration, preferably by mouth to mouth. Consult medical personnel.

NOTE TO PHYSICIAN: The decision of whether to induce vomiting or not should be made by an attending physician. If lavage is performed, endotracheal and/or esophageal control is suggested. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Chlorpyrifos is a cholinesterase inhibitor. Treat symptomatically. If exposed, plasma and red blood cell cholinesterase tests may indicate significance of exposure (baseline data are useful). Atropine, only by injection, is the preferable antidote. Oximes, such as 2-PAM/protopam, may be therapeutic if used early; however, use only in conjunction with atropine. In case of severe acute poisoning, use antidote immediately after establishing an open airway and respiration. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

## 5. FIRE FIGHTING MEASURES:

FLASH POINT: 239 deg F, 115 deg C

METHOD USED: SFCC

FLAMMABLE LIMITS:

LFL: Not determined

UFL: Not determined

EXTINGUISHING MEDIA: Foam, CO2, dry chemical

FIRE AND EXPLOSION HAZARDS: Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Toxic irritating gases may be formed under fire conditions.

FIRE-FIGHTING EQUIPMENT: Use positive pressure, self-contained breathing apparatus and full protective equipment.

## 6. ACCIDENTAL RELEASE MEASURES:

ACTION TO TAKE FOR SPILLS: Wear long pants, long-sleeved shirt, and impervious rubber gloves when handling concentrate and cleaning up spills. Absorb spills with an inert absorbent material such as Hozorb, Zorbball, sand, or dirt. Scoop contaminated absorbent material into a container. Thoroughly wash body areas that come into contact with this product. Report large spills to Dow AgroSciences at 800-992-5994.



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## 7. HANDLING AND STORAGE:

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: See label. Keep out of reach of children. Do not swallow. Avoid contact with eyes, skin, and clothing. Avoid breathing vapors and spray mist. Handle concentrate in ventilated area. Wash thoroughly with soap and water after handling and before eating, chewing gum, using tobacco, using the toilet or smoking. Keep away from food, feedstuffs, and water supplies. For health and safety information on end-use dilutions of up to 1% Dursban insecticides, see the Health and Safety Fact Sheet, Form No. 312-10-014, available from Dow AgroSciences.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

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

## EXPOSURE GUIDELINE(S):

CHLORPYRIFOS: ACGIH TLV and OSHA PEL are 0.2 mg/M3. Skin. ACGIH classifies as A4.

PROPYLENE GLYCOL: AIHA WEEL is 50 ppm total, 10 mg/M3 aerosol only.

POLYGLYCOL P2000: AIHA WEEL for polypropylene glycols is 10 mg/M3.

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

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:

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guidelines. When respiratory protection is required use a NIOSH approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration.

SKIN PROTECTION: No precautions other than clean body-covering clothing should be needed.

EYE/FACE PROTECTION: Use safety glasses.

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

## 9. PHYSICAL AND CHEMICAL PROPERTIES:

BOILING POINT: Not determined  
VAPOR PRESSURE: Not determined  
VAPOR DENSITY: Not determined  
SOLUBILITY IN WATER: Emulsifiable  
SPECIFIC GRAVITY: 1.0271 g/mL @ 19.9 deg C  
APPEARANCE: Light yellow, cloudy liquid  
ODOR: Petroleum odor  
pH: 4.52 (10.5% dilution in water)

## 10. STABILITY AND REACTIVITY:

STABILITY (CONDITIONS TO AVOID): Avoid heating above 50 deg C (122 deg F). Chlorpyrifos undergoes exothermic decomposition at approximately 130 deg C (266 deg F) which can lead to higher temperatures and violent decomposition if generated heat is not removed.

INCOMPATIBILITY (SPECIFIC MATERIALS TO AVOID): Oxidizing materials and strong acid. If in contact with organic materials and finely divided inorganic materials such as clay, rock wool insulation, rags, paper etc., this product may undergo spontaneous combustion.

HAZARDOUS DECOMPOSITION PRODUCTS: Nitrogen oxides, hydrogen chloride, and other toxic, irritating vapors may be formed if product is involved in fire.

HAZARDOUS POLYMERIZATION: 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 (K<sub>oc</sub> > 5000).

DEGRADATION & PERSISTENCE: Based largely or completely on information for chlorpyrifos.

The photolysis for half life in water is 1-4 weeks.

Tropospheric half-life is estimated to be 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: Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 < 0.1 mg/L in most sensitive species).

Material is highly toxic to birds on a dietary basis (LC50 is between 50 and 500 ppm).

Material is moderately toxic to birds on an acute basis (LD50 is between 51 and 500 mg/kg).

## 13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: Do not contaminate water, food, or feed by storage or disposal. Excess pesticide 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:

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.

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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Tennessee Farmers Co-op

260631 Monroe Farmers Cooperative

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

CHEMICAL NAME	CAS NUMBER	LIST
1,2-PROPANEDIOL	000057 55-6	PA1
CHLORPYRIFOS	002921-88-2	NJ3, PA1, PA3
NJ3-New Jersey Workplace Hazardous Substance (present at > or = to 1.0%).		
PA1-Pennsylvania Hazardous Substance (present at > or = to 1.0%).		
PJ3-Pennsylvania Environmental Hazardous Substance (present at > or = 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:

Category	Rating
Health	2
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 Number	RQ	% in Product
Chlorpyrifos	002921-88-2	1	23.5%

## 14. OTHER INFORMATION:

MSDS STATUS: Changed company name and telephone number  
 REVISED SECTIONS: 2,3,6,7,8,10,12,14  
 REFERENCE: DR-0148-2335  
 REPLACES MSDS DATED: 1/27/97  
 DOCUMENT CODE: D03 092-001  
 REPLACES DOCUMENT CODE: D03-046-482

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

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COMPAS Code: 12900693