

**MATERIAL SAFETY DATA SHEET**

Dow Chemical U.S.A. Midland, MI 48674 Emergency Phone: 517-636-4400

Product Code: 25998

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**PRODUCT NAME: DURSBAN (R) 4E INSECTICIDE (PINTS)**

Effective Date: 12/24/85 Date Printed: 04/04/86

MSDS:000974

**1. INGREDIENTS:**

0,0-diethyl 0-(3,5,6-trichloro-2-pyridinyl) phosphorothioate, (chlorpyrifos)	CAS# 002921-88-2	44.4%
Inert ingredients:		55.6%
Xylene range aromatic solvent	CAS#064742-95-6	
Proprietary emulsifiers		

Substances listed in the Ingredients Section are those identified as being present at a concentration of 1% or greater, or 0.1% if the substance is on the list of potential carcinogens cited in OSHA Hazard Communication Standard. Where proprietary ingredient shows, the identity of this substance may be made available as provided in 29 CFR 1910.12000(1).

**2. PHYSICAL DATA:**

BOILING POINT: 290F  
VAP PRESS: <10 mmHg @ 25C  
VAP DENSITY: >1  
SOL. IN WATER: Emulsifies  
SP. GRAVITY: 1.079  
APPEARANCE: Yellow liquid.  
ODOR: Not available.

**3. FIRE AND EXPLOSION HAZARD DATA:**

FLASH POINT: 106F, 41C  
METHOD USED: TCC

FLAMMABLE LIMITS  
LFL: 1.1%  
UFL: 6.0% (xylene range aromatic)

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### 3. FIRE AND EXPLOSION HAZARD DATA: (CONTINUED)

EXTINGUISHING MEDIA: Foam, alcohol foam, CO<sub>2</sub>, dry chemical

FIRE & EXPLOSION HAZARDS: Foam system is preferred because uncontrolled water can spread possible contamination. Toxic irritating gases may be formed. Rapid decomposition above 160-200C. Violent rupture of containers due to over-pressurization may occur.

FIRE-FIGHTING EQUIPMENT: Use positive-pressure self-contained air supply.

### 4. REACTIVITY DATA:

STABILITY: (CONDITIONS TO AVOID) Avoid heating above 60C temperature. Chlorpyrifos undergoes exothermic decomposition which can lead to higher temperatures and violent decomposition if heat developed is not removed. Contains petroleum derivative solvent - will burn.

INCOMPATIBILITY: (SPECIFIC MATERIALS TO AVOID) Base. Consult manufacturer for specific cases.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride, ethyl sulfide, diethyl sulfides and nitrogen oxides.

HAZARDOUS POLYMERIZATION: Will not occur.

### 5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS/LEAKS: Absorb spills with material such as sand, sawdust, Zorb-all (R), or dirt. Wash exposed body areas thoroughly after handling. Contain spill by diking to keep out of sewers. For large spills, barricade area, eliminate ignition sources, and consult manufacturer.

DISPOSAL METHOD: Dispose of according to local, state and federal regulations. Bury clean-up waste in location away from domestic water supplies.

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## 6. HEALTH HAZARD DATA:

**EYE:** May cause moderate eye irritation. May cause moderate corneal injury.

**SKIN CONTACT:** Prolonged or repeated exposure may cause severe irritation, even a burn. May rarely cause an allergic skin response.

**SKIN ABSORPTION:** A single prolonged exposure may result in material being absorbed in harmful amounts. The LD50 for skin absorption in rabbits is 1185 mg/kg.

**INGESTION:** Single dose oral toxicity is low. The oral LD50 for male and female rats is 940 and 530 mg/kg, respectively. Amounts ingested incidental to industrial handling are not likely to cause injury; however ingestion of larger amounts may cause injury. If aspirated (liquid enters the lung), may cause lung damage or even death due to chemical pneumonia, a condition caused by petroleum and petroleum-like solvents.

**INHALATION:** The LC50 for female rats is 2.2 mg/l for 4 hours. Excessive exposure may produce organophosphate type cholinesterase inhibition. Excessive vapor concentrations of solvent are attainable and could be hazardous on single exposure. Signs and symptoms of excessive exposure, in order of increasing concentration, may be eye and upper respiratory tract irritation, feeling of increased body heat, central nervous system effects such as headache, dizziness, incoordination, drowsiness, unconsciousness.

**SYSTEMIC & OTHER EFFECTS:** Excessive exposure may produce organophosphate type cholinesterase inhibition. Signs and symptoms of excessive exposure to active ingredient 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. Repeated excessive exposures to high concentrations of solvent may cause liver and kidney injury and effects on blood cells. Active ingredient did not cause cancer in animal studies. Data on solvent are inadequate to evaluate carcinogenicity. Active ingredient did not cause

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## 6. HEALTH HAZARD DATA: (CONTINUED)

birth defects in laboratory animals. Exaggerated doses of solvent given orally to pregnant rats resulted in an increase in cleft palate, a common developmental abnormality in mice. Inhalation exposure of solvent to pregnant rats resulted in toxicity to the fetus at concentrations nontoxic to the mother but did not cause any birth defects. In animal studies, active ingredient has been shown not to interfere with reproduction. Based on a majority of negative data and some equivocal or marginally positive results, active ingredient is considered to have minimal mutagenic potential. Results of mutagenicity studies on solvent have been negative in vitro ("test tube") tests and inconclusive in animals.

## 7. FIRST AID:

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

**SKIN:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. Destroy contaminated shoes.

**INGESTION:** Do not induce vomiting. Call a physician and/or transport to emergency facility.

**INHALATION:** Remove to fresh air. If not breathing, give mouth-to-mouth resuscitation. If breathing is difficult, give oxygen. Call a physician.

**NOTE TO PHYSICIAN:** The decision of whether to induce vomiting or not should be made by an attending physician. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. Suggest serum and/or rbc cholinesterase determination. Atropine by injection is the preferable antidote. Oximes may or may not be therapeutic but it is recommended they not be used in place

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## 7. FIRST AID: (CONTINUED)

of atropine. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

## 8. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINE: ACGIH TLV is 0.2 mg/m<sup>3</sup> for chlorpyrifos; the STEL is 0.6 mg/m<sup>3</sup>. ACGIH TLV and OSHA PEL are 100 ppm for xylene; the STEL is 150 ppm.

VENTILATION: Control airborne concentrations below the exposure guideline. Use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations. Lethal concentrations may exist in areas with poor ventilation.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus.

SKIN PROTECTION: Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron, or full-body suit will depend on operation. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse. Contaminated leather items, such as shoes, belts and watchbands, should be removed and destroyed.

EYE PROTECTION: Use chemical goggles. If vapor exposure causes eye irritation, use a full-face respirator.

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9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: See label. Keep out of reach of children. Do not swallow. Do not get in eyes or on skin. Avoid breathing mist or vapors. Keep away from heat and open flame. Handle concentrate in ventilated area. Wash thoroughly after handling. Depending on degree of exposure of personnel, consider monitoring blood cholinesterase levels. If in doubt, seek advice from the Dow Chemical Company. Keep away from food, feedstuffs and domestic water supplies.

MSDS STATUS: Revised sections 1, 2, 3, 4, 5, 6, 7, 8, and 9.

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Express Or Implied, Is Made. Consult The Dow Chemical Company  
For Further Information.