

DURSBAN[®] 2E INSECTICIDE MATERIAL SAFETY DATA SHEET

Manufacturer's Name & Address

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I NOMENCLATURE:

Product Name: DURSBAN[®] 2E INSECTICIDE EPA Reg. 829-279
Chemical Name: O,O-Diethyl O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate
Synonyms: Accepted common name: Chlorpyrifos; Tradenames: Dursban[™], Lorsban[™]
Chemical Family: Organophosphate insecticide

II INGREDIENTS:

| | | |
|---|------------|---|
| Chlorpyrifos | | 24.7% |
| Xylene range aromatic solvent and emulsifiers | | 75.3% |
| Hazardous ingredients < 1% | CAS No | Exposure guidelines |
| Chlorpyrifos | 2921-88-2 | OSHA TWA 0.2 Mg/M3 Skin X |
| Xylenes | 1330-20-7 | OSHA PEL 100 ppm, TWA 100 ppm, STEL 150 ppm |
| Ethyl Toluenes | 25550-14-5 | ACGIH TWA 25 ppm |
| Trimethyl benzenes | 25551-13-7 | OSHA TWA 25 ppm |
| Ethyl benzene | 100-41-4 | OSHA PEL 100 ppm, TWA 100 ppm, STEL 125 ppm |

III PHYSICAL PROPERTIES:

Boiling Point: <280°F Specific Gravity: 0.97 Vapor Pressure: < 10 mmHg @ 25° C Vapor
Density: (air=1) (solvent) 3.5 Solubility In Water: Emulsifiable (technical chlorpyrifos) .0002 g/100 g
Appearance/Odor: Clear yellow /Brown liquid. Odor: hydrocarbon/mercaptan odor

IV FIRE AND EXPLOSION DATA:

Flash Point: (Minimum) 100°F Flammability limits in air % by volume: (solvent) LFL 1% UFL 6%
Extinguishing Media: Foam system is preferred, CO₂, dry chemical. Water spray may be useful to cool containers.

Special Fire Fighting Procedures: Use positive self contained breathing apparatus. Water stream may splash and spread flaming liquid.

Unusual Fire & Explosion Hazards: Violent eruption of containers due to overpressurization may occur. Toxic irritating gases may be formed. Rapid decomposition of chlorpyrifos at 320-392°F.

V FIRST AID:

First Aid for EYE Exposure: May cause severe irritation with corneal injury. Flush with gently flowing water immediately and continuously for 15 minutes. Lift eyelids while flushing, to get water flush under eyelids. Remove contact lenses while flushing. See a physician.

First Aid for SKIN Exposure: Immediately wash exposed skin with plenty of soap and water. Remove contaminated clothing and shoes. Call a physician if irritation persists. Wash clothing (seperately from household laundry) before reuse. Destroy contaminated shoes.

First Aid for INHALATION: Remove to fresh air. If symptoms of cholinesterase inhibition appear or breathing is impaired, get immediate medical attention.

First Aid if SWALLOWED: . Call a physician or transport to emergency medical facility immediately. Do not induce vomiting. Contains an aromatic petroleum solvent. Do not give anything by mouth to an unconscious person.

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 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 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 judgement of the physician in response to reactions of the patient.

VI HEALTH HAZARD DATA:

EYE: May cause moderate eye irritation. May cause slight corneal injury. Effects may be slow to heal. Vapors may irritate eyes.

SKIN CONTACT: Short single exposure not likely to cause significant skin irritation. A test of guinea pigs indicated that this product may have weak skin sensitizing potential. However, experience in the manufacture and use of this product and similar products has not provided evidence for skin sensitizing properties.

SKIN ABSORPTION: A single prolonged exposure may result in the material being absorbed in harmful amounts. The LD50 for skin absorption in rabbits is expected to be < 1000 mg//Kg

INGESTION: Single dose oral toxicity for rats is expected to be 135-470 mg/kg based on similar formulations of greater concentrations of chlorpyrifos. Small amounts swallowed incidental to normal handling are not likely to cause injury; swallowing larger amounts may cause injury. If aspirated (liquid enters lung) may cause lung damage or even death due to chemical pneumonia.

INHALATION: Excessive vapor concentrations of solvent are attainable and could be hazardous on single exposure

SYMPTOMS of OVER EXPOSURE: Repeated and excessive exposure may produce organophosphate type cholinesterase inhibition. Signs and symptoms of excessive exposure to chlorpyrifos may be headaches, dizziness, incoordination, muscle twitching and tremors, nausea, abdominal cramps, diarrhea, sweating, pinpoint pupils, blurred vision, salivation, tearing, tightness of chest, excessive urination, convulsions. Solvents in the solvent system have been reported to cause liver, kidney, and blood effects at high exposure levels

CANCER INFORMATION: None of the formulation ingredients are listed as carcinogens IARC, NTP, OSHA. Chlorpyrifos did not cause cancer in long term animal studies.

TERATOLOGY: Chlorpyrifos did not cause birth defects in laboratory animals. A similar solvent system was toxic to the fetus in laboratory animal tests, but only at doses that were toxic to the mothers.

Malformations were not induced at exposures less than those causing severe toxicity to adult 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 doses high enough to produce significant toxicity to the parent animals. In a 3 generation reproduction study on a similar solvent system, the only effects observed were at exposures that produced severe toxicity to the parent animals.

MUTAGENICITY: Results of in-vitro and animal mutagenicity tests on a similar solvent system have been negative. Based on a majority of negative data, chlorpyrifos is considered to have minimal mutagenic potential.

VII Reactivity:

Stability: Stable at ambient temperatures. Avoid heating above 122^o F

Conditions to Avoid: Heat and ignition sources. Chlorpyrifos undergoes exothermic decomposition at approximately 266o F which can lead to higher temperatures and violent decomposition if generated heat is not removed. Caution, contains petroleum derivative solvent and product will burn.

Materials to Avoid: Oxidizers and alkaline materials.

Hazardous Decomposition Products: Under fire conditions, hydrogen chloride, ethyl sulfide, diethyl sulfide and nitrogen oxides can be formed.

Hazardous Polymerization: Will not occur.

VIII SPILL OR LEAK PROTECTION AND DISPOSAL:

Steps To Be Taken If Spilled: Confine spills. Eliminate ignition sources. Absorb spills with dry material such as sand, sawdust, absorbent clay or dirt, and sweep up for disposal. Contain spill to keep out of sewers and water sources.

Waste Disposal: Do not contaminate food, feed, or water by disposal, storage, or cleaning of equipment.

Pesticide, spray mixture or rinse that can not be used according to label instructions, must be disposed according to applicable Federal, State, and local regulations. Contact your State Pesticide or Environmental Control Agency or the hazardous waste representative at the nearest EPA regional office for guidance. See label instructions for disposal. Product is toxic to marine life. Do not contaminate domestic water or other water sources..

IX SPECIAL PROTECTION

Respiratory: Product is intended for outdoor use. See exposure guidelines in section II. Where adequate ventilation is not available and where exposure to spray mist would occur, wear a NIOSH approved respirator for pesticide use.

Ventilation: Keep wind to your back when mixing or spraying. If material is handled in confined area, assure adequate ventilation.

Gloves: To avoid skin contact wear neoprene or nitrile rubber gloves..

Eye Protection: Wear goggles or glasses with side shields, particularly when handling concentrate.

Other Protective Equipment: Clean, long sleeved shirt, long pants, shoes with socks. . Do not wear contaminated clothing. Wash contaminated clothing separately from household wash. Near by source of running water for eye wash and washing contaminated skin.

X SPECIAL PRECAUTIONS:

Handling Precautions: Avoid ingestion. Avoid contact of skin or eyes with concentrate or diluted spray. Do not breathe vapors or spray mist. Handle concentrate in well ventilated area. Keep away from heat and ignition sources. Avoid container damage. Wash thoroughly after handling.

Storage Precautions: Store in cool well ventilated area. Do not put leaking or damaged containers in storage. Avoid ignition sources. Do not store with feed or food or oxidizers KEEP OUT OF REACH OF CHILDREN

XI REGULATORY INFORMATION: (not meant to be all-inclusive----selected regulations represented)

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

Xylene (mixed isomers) CAS# 1330-20-7 12-15%

Ethylbenzene CAS# 100-41-4 1-2%

SARA HAZARD CATEGORY: This product is considered under, applicable definitions, to meet the following categories of sections 311 and 312 Sara Title III.

An Immediate Health Hazard, A Delayed Health Hazard A Fire Hazard

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by OSHA Hazard Communications Standard; 29CFR 1910.1200

NFPA RATINGS (for similar formulations) Health 2 Flammability 2 Reactivity 1

This information relates solely to the designated product and is not inclusive for combinations with other materials. This information is given without warranty or representation. Information is based on data we believe to be correct as of the date hereof. This information is furnished solely for your consideration, investigation, and verification. Before using any product READ THE LABEL.

REF: DowElanco MSS Dursban HF 4/93, Mobil T500-100 MSS 12/94, Merck Index 11th Edit.

CFR 29 7/95 CFR 40 1/95 CFR49 parts 171-172-173, 5/97 JJKeller Regulatory Cross Ref 10/94