



# MATERIAL SAFETY DATA SHEET

**Emergency Response Telephone Numbers**  
For Spills Call: 1-(800)-424-9300  
Other Emergencies Call: 1-(888)-237-6961

 **Gharda USA**  
P.O. Box 5068  
Brookfield, CT 06804

## I. MATERIAL IDENTIFICATION

Product Name: **Pilot 4E**  
EPA Registration No.: 70907-4

<b>INGREDIENTS:</b>	<b>(% w/w)</b>
Chlorpyrifos (CAS Reg. No. 2921-88-2) O,O-Diethyl O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate	45.0%
Inert Ingredients <sup>1</sup>	55.0%

<sup>1</sup>Aromatic hydrocarbon solvent (CAS No. 70693-06-0) and proprietary emulsifier.

Chemical Class: Organophosphate Insecticide

EPA Signal Word: Warning

## II. HAZARDOUS INGREDIENTS

<b>MATERIAL</b>	<b>OSHA PEL</b>	<b>ACGIH TLV</b>
Active Ingredient: Chlorpyrifos	0.2 mg/m <sup>3</sup> (skin)	0.2 mg/m <sup>3</sup> (skin)
Inert Ingredients: Trade Secret	N/A	N/A

## III. HEALTH HAZARD INFORMATION

**EYE:** May cause moderate eye irritation and/or 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. Prolonged or repeated exposure may cause skin irritation. Similar products have been reported to have skin sensitizing potential in guinea pigs, but there is no evidence of skin sensitizing properties in the manufacture and use of this product.

**SKIN ABSORPTION:** A single prolonged exposure may result in the material being absorbed in harmful amounts. Moderately toxic by skin absorption: EPA Toxicity Category II (200 - 2000 mg/kg).

**INGESTION:** Single dose oral toxicity is moderate. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause serious injury, even death. See below for systemic effects. If aspirated (liquid enters the lung), may cause lung damage or even death due to chemical pneumonia.

**INHALATION:** Moderately toxic by inhalation: EPA Toxicity Category III (2 – 20 mg/l). Excessive exposure to the solvent may cause respiratory tract irritation and central nervous system depression. Signs and symptoms of central nervous system depression, in order of increasing exposure, are headache, dizziness, drowsiness, and incoordination.

**SYSTEMIC (OTHER TARGET ORGAN) 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. Active ingredient 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. At high concentrations, the solvent has been reported to cause effects in a number of target organs and systems including the liver, kidney, and bone marrow.

**CANCER INFORMATION:** Active ingredient did not cause cancer in long-term animal studies.

**TERATOLOGY (BIRTH DEFECTS):** Active ingredient did not cause birth defects in laboratory animals. Solvent was toxic to the fetus in laboratory animal tests. Extremely high concentrations of the solvent (producing toxicity to the adult animal) caused developmental toxicity in mice. No malformations were induced at exposures less than those causing severe toxicity to the adult animals. No malformations were induced at exposures less than those causing severe toxicity to the adult animals.

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**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. In a 3-generation reproduction study on the solvent, the only effects observed were at exposures that produced severe toxicity to the parent animals.

**MUTAGENICITY (EFFECTS ON GENETIC MATERIAL):** Based on a majority of negative data and some equivocal or marginally positive results, the active ingredient is considered to have minimal mutagenic potential. Results of in vitro ('test tube') and animal mutagenicity tests on the aromatic solvent have been negative.

## V. PHYSICAL HAZARD INFORMATION

### CHEMICAL & PHYSICAL PROPERTIES:

Color:	Amber
Physical State:	Liquid
Odor:	Solvent-type odor
Boiling Point:	290°F (143°C)
Density:	8.9 lbs/gal (1.07 g/cc)
Vapor Pressure:	<10mmHg @ 25°C
Vapor Density:	Not determined
Solubility:	Emulsifiable in water
pH:	5.5 as an aqueous dispersion
Viscosity:	50 cps
Stability:	Stable in commercial packaging (high density polyethylene) and under normal storage conditions.

## IV. FIRST AID PROCEDURES

**EYES:** Flush eyes with plenty of water for 15 minutes. Get medical attention.

**SKIN:** Immediately wash skin with plenty of soap and water. Get medical attention. Before washing, remove contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

**INGESTION:** Call a physician or poison control center immediately. Do not induce vomiting. Contains an aromatic hydrocarbon solvent. Do not give anything by mouth to an unconscious person.

**INHALATION:** Remove to fresh air if symptoms of cholinesterase inhibition appear and get medical attention immediately.

**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.

### FIRE AND EXPLOSION HAZARDS:

Flash Point: 176°F to 181°F (80°C to 83°C)

Method Used: TCC

Flammability Limits: LFL: 1%  
UFL: 6% (aromatic solvent)

Extinguishing Media: Foam, CO<sub>2</sub>, and dry chemical.

Fire & Explosion Precautions: Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Toxic irritating gases may be formed under fire conditions. Rapid decomposition above 320-392°F (160-200°C). Violent rupture of containers due to over-pressurization may occur at temperatures generated during a fire.

Fire-Fighting Equipment: Wear positive pressure, self-contained breathing apparatus and use full protective equipment if product is involved in fire.

### REACTIVITY:

Stability: (CONDITIONS TO AVOID) Avoid heating above 176°F (80°C). Chlorpyrifos undergoes exothermic decomposition at approximately 266°F (130°C), which can lead to

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higher temperatures, and violent decomposition if generated heat is not removed. Contains petroleum derivative solvent, which will burn.

Incompatibility: (SPECIFIC MATERIALS TO AVOID) None known.

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

Hazardous Polymerization: Will not occur.

## VI. ENVIRONMENTAL PROTECTION

**IN CASE OF SPILL OR LEAK:** Absorb spills with an absorbent material such as HAZORB, ZORBALL, or dirt. Thoroughly wash body areas which come into contact with this product. Contain spill to keep out of sewers. For large spills, consult manufacturer.

**WASTE DISPOSAL METHOD:** Do not contaminate food, feed, or water by storage or disposal. Pesticide wastes are toxic. Improper disposal of excess pesticides, spray mixture, or rinsate is a violation of federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the hazardous waste representative at the nearest EPA regional office for guidance.

**ENVIRONMENTAL PRECAUTIONS:** This pesticide is toxic to birds and wildlife, and is extremely toxic to fish and aquatic organisms. Do not apply directly to water. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites.

## VII. PERSONAL PROTECTION AND PRECAUTIONS

### EXPOSURE GUIDELINE(S):

Chlorpyrifos: ACGIH TLV and OSHA PEL are 0.2 mg/m<sup>3</sup> (Skin).

Aromatic hydrocarbon solvent: None established. Supplier recommends a guideline of 100 ppm for the total product, which is a mixture of petroleum hydrocarbons.

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

**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.

**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. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse.

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

### 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. Keep away from food, feedstuffs and domestic water supplies.

## VIII. DOT HAZARDOUS MATERIALS INFORMATION

**PROPER SHIPPING NAME:** Organophosphorus Pesticide, Liquid, Toxic (Chlorpyrifos)

**HAZARD CLASS OR DIVISION:** 6.1

**IDENTIFICATION NUMBER:** UN 3018

**PACKING GROUP:** III

**ADDITIONAL INFORMATION:** As per DOT Regulations, Chlorpyrifos is designated as a Marine Pollutant and has a Reportable Quantity (RQ) of one pound (0.454 kg).

## IX. REGULATORY INFORMATION

**SARA HAZARD CATEGORY:** This product has been reviewed according to the EPA "Hazardous 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

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**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 sections II and VII of this MSDS.

Chemical Name	CAS Number	List
Chlorpyrifos	2921-88-2	NJ3, PA1, PA3
Aromatic hydrocarbons, C9-11	70693-06-0	NJ1

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:

Category	Rating
Health	2
Flammability	2
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:

Category:

Chemical Name	CAS Number	RQ	% in Product
Chlorpyrifos	2921-88-2	1	45.0%

Issue Date: May 11, 2000

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 available as provided in this standard.

**NOTICE:** The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, expressed 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.

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