

Safety Data Sheet

Issue Date: 15-Jan-2018

Revision Date: 22-Jan-2018

Version 1

1. IDENTIFICATION

Product Identifier

Product Name Pilot® 4E Chlorpyrifos Agricultural Insecticide

Other means of identification

SDS # GCI-005

Registration Number(s) EPA Reg. No. 93182-7
UN/ID No UN3018

Recommended use of the chemical and restrictions on use

Recommended Use Liquid insecticide for agricultural insect control. It is diluted with water prior to use. Refer to product label for further details.

Details of the supplier of the safety data sheet

Manufacturer Address

GHARDA CHEMICALS INTERNATIONAL INC.
760 Newtown-Yardley Road
Suite 110
Newtown, PA USA 18940
Website: www.ghardausa.com
For further information contact: 1 (215) 968-9474

Emergency Telephone Number

Emergency Telephone (24 hr) MEDICAL EMERGENCY (24 hr): PROPHARMA (866)-359-5660
TRANSPORTATION OR SPILL (24 hr): CHEMTREC (800) 424-9300

2. HAZARDS IDENTIFICATION

Emergency Overview This chemical is a product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-EPA registered chemicals. Please see Section 15 for additional EPA information.

Appearance Light yellow liquid

Physical state Liquid

Odor Slight Petroleum-like

Classification

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Vapors)	Category 3
Aspiration toxicity	Category 1
Flammable Liquids	Category 4

Signal Word

Danger

Hazard statements

Harmful if swallowed
Toxic if inhaled
May be fatal if swallowed and enters airways
Combustible liquid

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area
 Keep away from heat/sparks/open flames/hot surfaces. — No smoking
 Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Call a POISON CENTER or doctor
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 Do NOT induce vomiting
 In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards

Very toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight-%
Aromatic solvent	64742-95-6	55
Chlorpyrifos	2921-88-2	45

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

First Aid Measures

General Advice	Provide this SDS to medical personnel for treatment.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a poison control center or doctor for treatment advice.
Skin Contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Inhalation	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

Ingestion Immediately call a poison center or doctor/physician. Do not induce vomiting unless told to do so by a poison control center or doctor. Do NOT give liquids. Never give anything by mouth to an unconscious person.

Most important symptoms and effects

Symptoms Harmful if swallowed. Toxic if inhaled. May be fatal if swallowed and enters airways.

Indication of any immediate medical attention and special treatment needed

Notes to Physician 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. Note: Contains Petroleum Distillate – vomiting may cause aspiration pneumonia.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Unsuitable Extinguishing Media Do not use direct water stream.

Specific Hazards Arising from the Chemical

Not determined.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Isolate area. Evacuate personnel to safe areas. Stay upwind and away from spill. Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Clean-Up Absorb spills with an absorbent material such as HAZORB, ZORBALL, or dirt. Thoroughly wash body areas, which come in contact with this product. Contain spill to keep out of sewers. Report large spills to CHEMTREC: 1 (800) 424-9300. Vapor explosion hazard, keep out of sewers. Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Pump with explosion-proof equipment. If available, use foam to smother or suppress.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling

Handle in accordance with good industrial hygiene and safety practice. Use personal protection recommended in Section 8. Avoid contact with skin, eyes or clothing. Avoid breathing dust/fume/gas/mist/vapors/spray. Empty containers retain product residue and can be hazardous. Do not cut, grind, weld, or drill on or near this container. Use non-sparking hand tools and explosion-proof electrical equipment. Avoid excessive heat and ignition sources.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep container tightly closed and store in a cool, dry and well-ventilated place. Store locked up.

Incompatible Materials

Oxidizing materials. Bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Chlorpyrifos 2921-88-2	TWA: 0.1 mg/m ³ inhalable fraction and vapor S*	(vacated) TWA: 0.2 mg/m ³ (vacated) S*	TWA: 0.2 mg/m ³ STEL: 0.6 mg/m ³

Appropriate engineering controls

Engineering Controls

Showers. Eyewash stations. Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/Face Protection

Use chemical goggles. Refer to the product label for additional personal protective clothing and equipment.

Skin and Body Protection

Wear protective gloves and protective clothing. Selection of specific items such as gloves, boots, apron, or full-body suit will depend on operation.

Respiratory Protection

Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use a positive-pressure supplied-air respirator. For emergency and other conditions where the exposure guideline may be greatly exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. In confined or poorly ventilated areas, use an approved positive-pressure supplied-air respirator.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	Liquid	Odor	Slight Petroleum-like
Appearance	Light yellow liquid	Odor Threshold	Not determined
Color	Light yellow		
Property	Values	Remarks • Method	
pH	5.5	(as an aqueous dispersion)	
Melting Point/Freezing Point	Not determined		

Boiling Point/Boiling Range	236 °C / 456 °F
Flash Point	80-82 °C / 176-181 °F
Evaporation Rate	Not determined
Flammability (Solid, Gas)	Not determined
Flammability Limits in Air	
Upper Flammability Limits	6% (solvent)
Lower Flammability Limit	1%
Vapor Pressure	2 mmHg @38°C
Vapor Density	Not determined
Relative Density	Not determined
Water Solubility	Not determined
Solubility in other solvents	Not determined
Partition Coefficient	Not determined
Auto-ignition Temperature	Not determined
Decomposition Temperature	Not determined
Kinematic Viscosity	Not determined
Dynamic Viscosity	Not determined
Explosive Properties	Not determined
Oxidizing Properties	Not determined

Other Information

Density 8.9 lbs/gal

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Unstable at elevated temperatures.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid

Do not expose to temperatures exceeding 50 °C/122°F. Chlorpyrifos undergoes exothermic decomposition at approximately 266°F (130°C) which can lead to higher temperatures and violent decomposition if generated heat is not removed. Generation of gas during decomposition can cause pressure in closed systems. Contains petroleum derivative solvent which will burn.

Incompatible Materials

Oxidizing materials. Bases.

Hazardous Decomposition Products

Hazardous decomposition products may include and are not limited to hydrogen chloride, ethyl sulfide, diethyl sulfide and nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information**

Eye Contact May cause moderate eye irritation and slight corneal injury. Vapors may irritate eyes.

Skin Contact Prolonged exposure may cause moderate skin irritation. Repeated exposure may cause skin irritation and allergic skin reactions in some individuals.

Inhalation	Excessive exposure may cause irritation to upper respiratory tract and lungs, and central nervous system depression.
Ingestion	Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing amounts larger than that may cause injury.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Aromatic solvent 64742-95-6	= 8400 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	= 3400 ppm (Rat) 4 h
Chlorpyrifos 2921-88-2	= 135 mg/kg (Rat) = 82 mg/kg (Rat)	= 2 g/kg (Rabbit) > 5000 mg/kg (Rabbit) = 202 mg/kg (Rat)	> 200 mg/m ³ (Rat) 4 h

Information on physical, chemical and toxicological effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	A test in guinea pigs indicated that this product may have weak skin sensitization potential; however, experience in the manufacture and use of this product has not provided evidence for skin sensitizing properties. The product did not sensitize human subjects when tested at an end-use dilution. A single prolonged exposure is not likely to result in the material being absorbed through the skin in harmful amounts.
Germ cell mutagenicity	Results of in-vitro (test tube) and animal mutagenicity tests on the aromatic solvent have been negative. Based on a majority of negative data and some equivocal or marginally positive results, the active ingredient is considered to have minimal mutagenic potential.
Carcinogenicity	Chlorpyrifos did not cause cancer in long-term animal studies.
Reproductive toxicity	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.
Teratogenicity	Chlorpyrifos did not cause birth defects in laboratory animals.
Aspiration hazard	If aspirated (liquid enters the lungs), may cause lung damage or even death due to chemical pneumonia.

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document .

ATEmix (oral)	776 mg/kg
ATEmix (dermal)	>5000 mg/kg
ATEmix (inhalation-vapor)	2.7 mg/L

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Very toxic to aquatic life with long lasting effects. This pesticide is toxic to fish, aquatic invertebrates, small mammals and birds. DO NOT apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. Cover or incorporate spills. DO NOT contaminate water when cleaning equipment or disposing of equipment water or rinsate. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. DO NOT apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Aromatic solvent 64742-95-6		9.22: 96 h Oncorhynchus mykiss mg/L LC50	6.14: 48 h Daphnia magna mg/L EC50
Chlorpyrifos 2921-88-2		0.11 - 0.13: 96 h Pimephales promelas mg/L LC50 flow-through 0.008: 96 h Cyprinus carpio mg/L LC50 static 0.00717: 96 h Poecilia reticulata mg/L LC50 0.002 - 0.032: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 0.011: 96 h Oncorhynchus mykiss mg/L LC50 0.00717: 96 h Poecilia reticulata mg/L LC50 semi-static 0.0047 - 0.0075: 96 h Lepomis macrochirus mg/L LC50 flow-through 0.0013: 96 h Lepomis macrochirus mg/L LC50 static 0.001: 96 h Oncorhynchus mykiss mg/L LC50 static 0.0026: 96 h Lepomis macrochirus mg/L LC50	0.00012 - 0.00023: 48 h Daphnia magna mg/L EC50 Static 0.00009 - 0.00012: 48 h Daphnia magna mg/L EC50 Flow through

Persistence/Degradability

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.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
Chlorpyrifos 2921-88-2	4.96

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes

Open dumping is prohibited. Improper disposal of excess pesticide, 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.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

California Hazardous Waste Status

Chemical Name	California Hazardous Waste Status
Chlorpyrifos 2921-88-2	Toxic

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT

UN/ID No UN3018
Proper Shipping Name Organophosphorous Pesticides, Liquid, Toxic (Chlorpyrifos)
Hazard Class 6.1
Packing Group III
Marine Pollutant Yes.

IATA

UN/ID No UN3018
Proper Shipping Name Organophosphorous Pesticides, Liquid, Toxic (Chlorpyrifos)
Hazard Class 6.1
Packing Group III
Marine Pollutant Yes

IMDG

UN/ID No UN3018
Proper Shipping Name Organophosphorous Pesticides, Liquid, Toxic (Chlorpyrifos)
Hazard Class 6.1
Packing Group III
Marine Pollutant Yes

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL/NDSL	EINECS/E LINCS	ENCS	IECSC	KECL	PICCS	AICS
Aromatic solvent	X	X	X		X	Present	X	X
Chlorpyrifos	X	X	X	Present	X	Present	X	X

Legend:

- TSCA - United States Toxic Substances Control Act Section 8(b) Inventory*
- DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List*
- EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*
- ENCS - Japan Existing and New Chemical Substances*
- IECSC - China Inventory of Existing Chemical Substances*
- KECL - Korean Existing and Evaluated Chemical Substances*
- PICCS - Philippines Inventory of Chemicals and Chemical Substances*
- AICS - Australian Inventory of Chemical Substances*

US Federal Regulations

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Chlorpyrifos 2921-88-2	1 lb		RQ 1 lb final RQ RQ 0.454 kg final RQ

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Chlorpyrifos	1 lb			X

US State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Chlorpyrifos 2921-88-2	X	X	X

EPA Pesticide Registration Number EPA Reg. No. 93182-7

EPA Pesticide Label

SIGNAL WORD: WARNING

May Be Fatal If Swallowed. Harmful If Absorbed Through The Skin. Causes Moderate Eye Irritation. Avoid contact with skin, eyes or clothing

Difference between SDS and EPA pesticide label

	EPA	OSHA
Signal Word	Warning	Danger
Acute toxicity - Oral	May Be Fatal If Swallowed	Harmful if swallowed
Acute toxicity - Inhalation	NA	Toxic if inhaled
Acute toxicity - Dermal	Harmful if absorbed through the skin	NA
Serious eye damage/eye irritation	Causes Moderate Eye Irritation	NA
Aspiration toxicity	NA	May be fatal if swallowed and enters airways

16. OTHER INFORMATION**NFPA****Health Hazards****Flammability****Instability****Special Hazards**

2

2

1

Not determined

HMIS**Health Hazards****Flammability****Physical hazards****Personal Protection**

Not determined

Not determined

Not determined

Not determined

Issue Date:

15-Jan-2018

Revision Date:

22-Jan-2018

Revision Note:

New format

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet