

MATERIAL SAFETY DATA SHEET

SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY ADDRESS: TopPro SPECIALTIES
P.O. BOX 772099
MEMPHIS, TN 38117
(A Unit of BASF Corp.
and Micro Flo Company)

EMERGENCY TELEPHONE NUMBERS:
(800) 424-9300 (CHEMTREC, transportation and spills)
(800) 900-4044 (Poison Control Center, human health)
(800) 345-4735 (ASPCA, animal health)

PRODUCT NAME : CHLORPYRIFOS PRO 4
CHEMICAL NAME : O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl) phosphorothioate
CHEMICAL FAMILY : Organophosphate
PRODUCT CODE : EPA Reg. No. 51036-154

SECTION 2 - COMPOSITION, INFORMATION OF INGREDIENTS

COMPONENT	PERCENTAGE	CAS NUMBER	OSHA PEL	ACIGH TLV
Chlorpyrifos	44.70%	2921-88-2	0.2 mg/m ³ (skin)	0.2 mg/m ³ (skin)
Aromatic hydrocarbons	50.0 - 55.0	64742-94-5	100 ppm	not listed

SECTION 3 - HAZARDS IDENTIFICATION SUMMARY

(As defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

EMERGENCY OVERVIEW:

- Cholinesterase inhibitor, may be fatal if swallowed.
- Harmful if absorbed through skin or inhaled.
- Causes moderate eye irritation.
- Avoid breathing product vapors or spray mist.
- Avoid contact with eyes, skin or clothing.
- Keep out of reach of children.

Symptoms of over exposure are headaches, nausea, vomiting, cramps, weakness, blurred vision, pin point pupils, tightness in chest, labored breathing, nervousness, sweating, watering of eyes, drooling, muscle spasms and coma.

POTENTIAL HEALTH HAZARDS:

EYE - Irritating, and may injure eye tissue if not removed promptly.
SKIN - Harmful if absorbed through the skin. Large exposures could be fatal.
INHALATION - Vapor or mist concentrations may be harmful if inhaled. High concentrations could be fatal.
INGESTATION - May be fatal if swallowed.

POTENTIAL PHYSICAL HAZARDS: Combustible liquid and vapor.

SECTION 4 - FIRST AID MEASURES

IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

IF SWALLOWED: Do not induce vomiting. Call a physician immediately.

IF IN EYES: Flush eyes with plenty of water for 15 minutes. Call a physician.

NOTE TO PHYSICIAN: This product is an organophosphorus ester that inhibits cholinesterase and also contains a xylene-range aromatic solvent. In cases of severe acute poisoning, the decision of whether to induce vomiting or not should be made by the attending physician. If lavage is performed, endotracheal and/or esophageal control is suggested. Danger from lung aspiration must be evaluated against toxicity when considering emptying the stomach.

ANTIDOTE: Treat symptomatically based on judgment of the attending physician in response to reactions of the patient. Atropine only by injection is an antidote. Oximes such as 2-PAM/protopam, may be therapeutic but should only be used in conjunction with atropine. You may want to contact your supplier or a doctor to ensure that this information is up to date.

SECTION 5 - FIRE FIGHTING MEASURES

FLASHPOINT (method): 150 F (closed cup)

FLAMMABLE LIMITS (LFL-UFL): 2% - 15%

FIRE AND EXPLOSION HAZARD: Combustible liquid. Vapors can form explosive mixtures at temperatures at or above the flashpoint. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

EXTINGUISHING MEDIA: Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.

FIREFIGHTING INSTRUCTIONS: Evacuate area and fight fire from a safe distance. Approach from upwind to avoid hazardous vapors and decomposition products. Fire exposed containers can build up pressure and should be kept cool with water spray if possible. Explosive vapor could form from ruptured containers. Foam fire extinguishing system is preferred to prevent environmental damage from excessive water run off. If water is used, avoid heavy hose streams. If possible, dike and collect water used to fight fire to prevent minimize run off.

FIREFIGHTING EQUIPMENT: Self-contained breathing apparatus with full facepiece.

Wear full firefighting turn-out gear (Bunker gear).

HAZARDOUS COMBUSTION PRODUCTS: Hydrogen chloride, Ethyl sulfide, Diethyl sulfide, Nitrogen oxides.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Clean up spills immediately, using precautions described in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

SMALL SPILL: Absorb spill with inert material such as dry sand, vermiculite or fuller's earth, then place in a chemical waste container. Rinse area with dilute soda ash and place rinsate into chemical waste container.

LARGE SPILL: Same as for small spills; may neutralize with dilute alkaline solutions of soda and ash and place into chemical waste container. Do not allow material to run off into soil, drainage systems, or bodies of water. Notify and consult with proper regulatory authorities.

SECTION 7 - HANDLING AND STORAGE

HANDLING: Use only in a well-ventilated area. Loosen closure cautiously before opening. Do not reuse this container. Empty containers retain product residue (liquid and/or vapor) and can be dangerous.

STORAGE: KEEP OUT OF REACH OF CHILDREN! Store away from heat (>100 F) and keep from freezing (<20 F). If product crystallizes, store at 50 to 80 F and agitate to redissolve crystals. Do not use direct heat to warm. Keep away from food, feed and drinking water.

SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION

ENGINEERING CONTROLS: Local exhaust ventilation may be necessary to control any air contaminants to

within their TLVs during the use of this product. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION - Safety glasses.

CLOTHING - Long-sleeved shirt and long pants. Shoes plus socks.

Exception: Applicator's who submerge containerized or balled/burlapped plants in tanks must wear: Chemical-resistant footwear and chemical-resistant apron.

GLOVES - Chemical-resistant such as barrier laminate or viton.

RESPIRATOR - When handled in an area where exposure limits may be exceeded, use a respirator with either an organic vapor removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C), or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE.

If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS:

1. Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet.
2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
3. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Pale, amber liquid.

ODOR: Aromatic.

MOLECULAR WEIGHT: 350.5

MOLECULAR FORMULA: C₉H₁₁Cl₃NO₃PS

BOILING POINT: 275 F

MELTING POINT: 105 F (technical)

SPECIFIC GRAVITY: 1.08 g/ml @ 25 C (9.0 #/gl)

pH: 3.8

VAPOR PRESSURE: 2.5 mPa @ 25 C (technical)

VAPOR DENSITY: Unknown

% VOLATILE: 50.0%

WATER SOLUBILITY: Emulsifies completely

SECTION 10 - STABILITY AND REACTIVITY

CHEMICAL STABILITY: Normally stable. However, product will decompose if heated above 300 F for an extended period, which significantly increases the risk of explosion.

CONDITIONS TO AVOID: Avoid temperatures above 100°F (60°C).

INCOMPATIBILITY WITH OTHER MATERIALS: Strong alkalis, amines and oxidizers.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride, Ethyl sulfide, Diethyl sulfide, Nitrogen oxides. Especially during combustion.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Oral LD ₅₀ (rat, female) -	350 mg/Kg	
Dermal LD ₅₀ (rat)	-	> 2,000 mg/Kg

Inhalation LC ₅₀ (rat)	-	1.50 mg/L
Eye Irritation (rabbit)	-	Moderate irritant
Skin Irritation (rabbit)	-	Moderate irritant
Sensitization (guinea pig)	-	Non-sensitizer

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing cholinesterase depression.

CARCINOGEN STATUS:

OSHA	-	Not listed
NTP	-	Not listed
IARC	-	Not listed

MUTAGENIC DATA: No evidence of mutagenic effects during *in vivo* and *in vitro* assays.

ADDITIONAL DATA: Chlorpyrifos is not known to exhibit reproductive or birth defects. Repeated or prolonged low level exposures may cause sensitization to subsequent exposures that mimic acute exposures.

SECTION 12 - ECOLOGICAL INFORMATION

ENVIRONMENTAL SUMMARY: This pesticide is extremely toxic to fish, birds, bees and other wildlife. Do not apply directly to water, or to areas where surface water is present. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites.

FISH TOXICITY: (Technical)

96 hour LC₅₀, Rainbow trout - 48 ug/L

AVIAN TOXICITY: (Technical)

Oral LD₅₀, Bobwhite quail - 83 mg/Kg

BEE TOXICITY: Highly toxic.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE: Pesticide wastes are toxic and hazardous. Dispose of in accordance with applicable federal, state and local laws and regulations. Do not discharge or pour into soil, drainage system or bodies of water.

CONTAINER: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or if allowed by state and local authorities, by burning (plastic containers). If burned, stay out of smoke.

SECTION 14 - TRANSPORT INFORMATION

DOT SHIPPING DESCRIPTION: RQ, Organophosphorus Pesticides, Liquid, Toxic (Chlorpyrifos), 6.1, UN 3018, PG III; ERG#152

DOT HAZARD CLASS: 6.1

UN NUMBER: UN 3018

DOT PACKING GROUP: PG III

DOT PRIMARY/SUBSIDIARY LABEL: Keep Away From Food

DOT PRIMARY/SUBSIDIARY PLACARD: Keep Away From Food

DOT EMERGENCY RESPONSE GUIDE #: 152

SECTION 15 - REGULATORY INFORMATION

FIFRA: All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act. The regulatory information presented below is pertinent only when this product is handled outside of the normal use as a pesticide.

OSHA HAZARD COMMUNICATION STANDARD STATUS: Regulated

CERCLA REPORTABLE QUANTITY: 1#

SARA TITLE III STATUS:

302 Extremely Hazardous Substance	-	No
311/312 Hazard Categories	-	Immediate, fire
313 Toxic Chemicals	-	No

CALIFORNIA PROP 65 STATUS: Not listed

SECTION 16 - OTHER INFORMATION

DISCLAIMER: The information presented herein is based on available data from reliable sources and is correct to the best of Micro Flo's knowledge. Micro Flo makes no warranty, express or implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions. We disclaim all liability for injury or damage stemming from any improper use of the material or product described herein.

REVISED DATE: July 14, 1999
REVISED FOR: Addition of Poison Control Emergency Numbers
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