

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 2
CHEMICAL NAME : (O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl)
phosphorothioate
CHEMICAL FAMILY : Organophosphate
PRODUCT CODE : EPA Reg. No. 51036-152

SECTION 2 - COMPOSITION, INFORMATION OF INGREDIENTS

| COMPONENT | PERCENTAGE | CAS NUMBER | OSHA PEL | ACIGH TLV |
|----------------------|-------------|------------|---------------------------------|---------------------------------|
| Chlorpyrifos | 25.0 | 2921-88-2 | 0.2 mg/M ³ (skin) | 0.2 mg/M ³ (skin) |
| Aromatic hydrocarbon | 60.0 - 70.0 | 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: Pale amber liquid with aromatic odor.

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

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

POTENTIAL HEALTH HAZARDS:

EYE - Moderately irritating to the eyes. Degree of injury will depend on the amount of material that gets into eye and the speed and thoroughness of the first aid treatment.

SKIN - Harmful if absorbed through the skin. Large exposures could be fatal.

INHALATION - Vapor or spray mists concentrations may be harmful if inhaled. High concentrations could be fatal.

INGESTION - May be harmful or fatal if swallowed.

POTENTIAL PHYSICAL HAZARDS: Combustible liquid and vapor.

ENVIRONMENTAL HAZARDS: Toxic to wildlife and domestic animals.

SECTION 4 - FIRST AID MEASURES

IF SWALLOWED: Call a doctor or get medical attention. Do not induce vomiting. Do not give anything by mouth

to an unconscious person. Avoid alcohol.

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for 15 minutes. Get medical attention.

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.

NOTE TO PHYSICIAN: Chlorpyrifos is an organophosphorus ester that inhibits cholinesterase. Treat symptomatically. May pose an aspiration pneumonia hazard. Atropine only by injection is an antidote.

SECTION 5 - FIRE FIGHTING MEASURES

FLASHPOINT (method): 150 F (closed cup)

FLAMMABLE LIMITS (LFL-UFL): Unknown.

FIRE AND EXPLOSION HAZARD: Combustible Liquid. Can form explosive mixtures at temperatures at or above the flashpoint. Irritating and highly toxic gases may be generated by thermal decomposition or combustion.

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

FIREFIGHTING INSTRUCTIONS: Evacuate area and fight fire upwind from a safe distance 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. Dike and collect water used to fight fire to prevent environmental damage due to run off. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water run off.

FIREFIGHTING EQUIPMENT: Self-contained breathing apparatus with full facepiece. Full firefighting turn-out gear (Bunker gear).

HAZARDOUS COMBUSTION PRODUCTS: Hydrogen chloride, Ethyl sulfide, Diethyl sulfide. Oxides of nitrogen, hydrogen, carbon, sulfur, phosphorous.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Clean up spills immediately, observing precautions in Protective Equipment section. Isolate hazard area. Keep unnecessary personnel from entering.

SMALL SPILL: Absorb small spills on sand, vermiculite or other inert absorbent. Place contaminated material in appropriate container for disposal.

LARGE SPILL: Dike large spills using an inert absorbent or impervious material such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow any absorbed material to solidify, and scrape up for disposal. After removal, wash contaminated area with water. Pick up wash liquid with additional absorbent and place in a disposable container. Large spills may be neutralized with dilute alkaline solutions of soda ash, or lime. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.

SECTION 7 - HANDLING AND STORAGE

HANDLING: Use only in a well-ventilated area. Loosen closure cautiously before opening as contents may develop pressure upon prolonged storage. Do not reuse this container.

STORAGE: Store in a well ventilated, dry place away from heat and other sources of ignition. Keep container closed when not in use. 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: (Consult product label for protective equipment that may be more appropriate to different tasks).

EYE PROTECTION - Safety glasses.

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

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

RESPIRATOR - When handling in enclosed areas 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 the toilet.
2. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL DESCRIPTION: Pale amber liquid.

ODOR: Aromatic.

MOLECULAR WEIGHT (technical): 350.5

MOLECULAR FORMULA (technical): C₉H₁₁Cl₃NO₃PS

BOILING POINT: 275 F

MELTING/FREEZING POINT: Not applicable.

SPECIFIC GRAVITY: 0.99 g/ml (8.34 #/gl)

pH: 4.2 (1% w/w in water @ 25 C)

VAPOR PRESSURE (technical): 2.5 Mpa @ 25 C

% VOLATILE: 60.0%

WATER SOLUBILITY: Emulsifies completely.

SECTION 10 - STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable, however may decompose if heated.

CONDITIONS TO AVOID: Avoid temperatures above 105°F(40°C) and below 20°F (-10°C).

INCOMPATIBILITY WITH OTHER MATERIALS: Alkaline conditions and materials, oxidizing materials, acidic conditions and materials, amines.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrogen chloride, Ethyl sulfide, Diethyl sulfide, Oxides of hydrogen, nitrogen, sulfur, carbon, phosphorous.

HAZARDOUS POLYMERIZATION: Product will not undergo polymerization.

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

| | | |
|-----------------------------------|---|----------------|
| Oral LD ₅₀ (rat) | - | 700 mg/Kg |
| Dermal LD ₅₀ (rat) | - | > 2,000 mg/Kg |
| Inhalation LC ₅₀ (rat) | - | 1.92 mg/L |
| Eye Irritation (rabbit) | - | Moderate |
| Skin Irritation (rabbit) | - | Moderate |
| 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 effects during *in vivo* or *in vitro* studies.

ADDITIONAL DATA: Not known to exhibit reproductive or teratogenic (birth defect) effects. Repeated or prolonged low level exposure may cause sensitization to subsequent exposures.

SECTION 12 - ECOLOGICAL INFORMATION

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

FISH TOXICITY: (Technical)

96 hour LC₅₀, Rainbow trout - 7 ug/L

96 hour LC₅₀, Bluegill - 3 ug/L

AVIAN TOXICITY: (Technical)

Oral LD₅₀, Bobwhite quail - 25 mg/Kg

Oral LD₅₀, Mallard duck - 75 mg/Kg

BEE TOXICITY: Highly toxic.

SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE: Pesticide wastes are toxic. Dispose of in accordance with applicable Federal, state and local laws and regulations.

CONTAINER: Refer to product label. Empty metal containers can retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY COULD EXPLODE AND CAUSE INJURY OR DEATH.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. 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.

SECTION 14 - TRANSPORT INFORMATION

DOT SHIPPING DESCRIPTION: RQ, Organophosphorous Pesticide, Liquid, Toxic (chlorpyrifos), 6.1, UN 3018, PG III, ERG #152

DOT HAZARD CLASS: 6.1
UN NUMBER: 3018

DOT PACKING GROUP: 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 and application as a pesticide.

OSHA HAZARD COMMUNICATION STANDARD STATUS: Hazardous

CERCLA REPORTABLE QUANTITY: 1 #

SARA TITLE III STATUS:

302 Extremely Hazardous Substance - No
311/312 Hazard Categories - Immediate
313 Toxic Chemicals - Napthalene (7440-02-0)

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
PREPARED BY: M. Gaskins
REVIEWED BY: S. McNeal
APPROVED BY: K. Branly