



Interprovincial Cooperative Limited

CITADEL 480

MATERIAL SAFETY DATA SHEET

1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Citadel 480*
Product Use: Organophosphate Insecticide
Product Number: 27479

Manufacturer/Supplier: INTERPROVINCIAL COOPERATIVE LTD.
945 Marion St.
Winnipeg, Manitoba
R2J 0K7 www.ipco.ca

Effective Date: January 01/2012

This product is regulated under authority of the Pest Control Products Act

2: HAZARD IDENTIFICATION

Target organs: Eyes, skin, respiratory system, digestive system, nervous system.

Signs and symptoms of short-term (acute) exposure:

Inhalation: This material can cause rapid organophosphorous poisoning. Symptoms of poisoning may include headache, nausea, vomiting, blurred vision, tightness in chest, drooling and frothing of mouth and nose, convulsions, coma and death.

Skin contact: Direct skin contact causes moderate irritation.

Eye contact: Direct eye contact may cause moderate irritation.

Ingestion: Causes symptoms similar to those listed for inhalation. This product presents an aspiration hazard. Aspiration into the lungs during ingestion could cause life-threatening lung injury.

Effects of long-term (chronic) exposure: Prolonged or repeated overexposure may cause behavioral changes. Prolonged or repeated skin contact may cause drying and cracking of the skin (dermatitis). Prolonged or repeated overexposure may cause liver effects.

3: COMPOSITION AND INFORMATION ON INGREDIENTS

COMPONENT	CAS NUMBER	% (W/W)
Chlorpyrifos	2921-88-2	44.24 – 46.98
Solvent Naphtha (Petroleum) Heavy Aromatic	64742-94-5	46.94– 49.84
Other ingredients:		5.82 – 6.18
Naphthalene	91-20-3	
1, 2, 4-Trimethylbenzene	95-63-6	

Ingredients not listed are proprietary or non-hazardous

4: FIRST AID MEASURES

In case of poisoning, call a physician or poison control centre IMMEDIATELY.

Inhalation: Immediately remove victim to fresh air. If breathing has stopped, begin artificial respiration immediately. Transport to a clinic or hospital immediately.

In case of emergency call CANUTEC at 613-885-6666

Interprovincial Cooperative Ltd.; Information Phone: 204-233-3461

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Skin:	Immediately flush skin with running water for at least 15 minutes, while removing contaminated clothing and shoes. Obtain medical attention immediately. Thoroughly clean contaminated clothing before re-use.
Eyes:	Immediately flush eyes with running water for at least 30 minutes. Get medical attention immediately.
Ingestion:	If ingested, induce vomiting immediately, only as directed by medical personnel. Never give anything by mouth if victim is unconscious or convulsing. Transport to a clinic or hospital immediately.
Note to physician:	Chlorpyrifos is a cholinesterase inhibitor affecting the central and peripheral nervous systems and producing respiratory and cardiac depression. Decontamination procedures such as whole body washing, gastric lavage and administration of activated charcoal are often required. Administer atropine sulphate in large doses. Two to four mg intravenously or intramuscularly as soon as cyanosis is overcome. Repeat at 5 to 10 minute intervals until signs of atropinization appear. Obidoxime chloride (Toxogonin), alternatively pralidoxime chloride (2-PAM), is a pharmacological antidote and may be administered as an adjunct to, but not a substitute for atropine, which is a symptomatic and often life-saving antidote. DO NOT GIVE MORPHINE OR TRANQUILIZERS. At first sign of pulmonary edema, the patient should be given supplemental oxygen and treated symptomatically. Continued absorption of Chlorpyrifos may occur and relapse may occur after initial improvement. VERY CLOSE SUPERVISION OF THE PATIENT IS INDICATED FOR AT LEAST 48 HOURS.

5: FIRE-FIGHTING MEASURES

Unusual Fire & Explosion Hazards:	Toxic fumes under high temperature conditions. Contain water from fire fighting to prevent entry into water supplies...
Extinguishing Media:	Carbon Dioxide, Foam, Water Fog, and Dry Chemical
Special Oxidizing Material Hazards:	Not Established
Hazardous Combustion Products:	Hydrogen chloride, ethyl mercaptan, diethyl sulfide, carbon oxides, nitrogen oxides, sulfur oxides, various chlorinated solvents.
Special Fire Fighting Procedures:	Use water spray to cool fires exposed containers or structures. Use water spray to disperse vapours; re-ignition is possible. Use self-contained breathing apparatus and protective clothing.

6: ACCIDENTAL RELEASE MEASURES

In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations.

7: HANDLING AND STORAGE

Store in a cool, well-ventilated area. Keep away from heat, sparks and filling of containers. Keep away from children; prevent contact with eyes, skin, and clothing. Do not store near fertilizers, foodstuffs, seed, insecticides or fungicides.

Do not contaminate irrigation ditches or domestic water supplies. If this happens notify police and local authorities.

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8: EXPOSURE CONTROLS AND PERSONAL PROTECTION**Exposure Limits:**

Chlorpyrifos	
LD50-ORAL:	168 mg/kg Rat
LD50-DERMAL:	> 2000 mg/kg Rabbit
T.L.V. (ACGIH):	Not Established
LC50:	> 4.36 mg/L (4 hrs) Rat
Solvent Naphtha (Petroleum), Heavy Aromatic	
LD50-ORAL:	> 3,000 mg/kg Rat
LD50-DERMAL:	> 3160 mg/kg Rabbit
T.L.V. (ACGIH):	Total Hydrocarbons: 100 mg/m ³
LC50:	Not Established
Special Engineering Controls:	Local exhaust ventilation required.
Eye Protection:	CSA approved safety glasses with side shields or goggles.
Respiratory Protection:	A NIOSH/MSHA approved air-purifying respirator equipped with organic vapor cartridges near or below TLV. Air supplied respirator above TLV or unknown concentrations.
Hand and Arm:	PVC or rubber gloves.
Feet:	Rubber boots.
Body:	Coveralls.
Other Personal Protection:	Recommendations listed above indicate the type of equipment which will provide protection against overexposure to this product. Conditions of use, adequacy of engineering or other control measures, and actual exposures will dictate the need for specific protective devices at your workplace.

9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance & Odour:	Brown, Colour "Solvent" odour
Specific Gravity:	(@ 20°C): 1.0850
Vapour density:	Solvent Naphtha (Petroleum), Heavy Aromatic: > 4.6 (Air =1)
Solubility in water:	Emulsifies
Solubility in liquids:	Not established
Freezing point:	< 5°C
% volatile by volume:	Not applicable
Boiling point:	Solvent Naphtha (Petroleum), Heavy Aromatic: 184 - 205°C
Odour threshold (ppm):	Not established
Coefficient of water/oil distribution:	Not applicable
Vapour pressure:	Solvent Naphtha (Petroleum), Heavy Aromatic: 0.40 Kpa @ 20°C
Evaporation rate:	Solvent Naphtha (Petroleum), Heavy Aromatic: < 0.06 (n-butyl acetate = 1)
pH: (1% Sol'n):	5.9
Viscosity:	3.6 cps at 20°C
Flash Point & Method:	(°C): 64 (Tag Closed Cup)
Flammable Limits (% in air):	Lower: 1.8 Solvent Naphtha (Petroleum), Heavy Aromatic Upper: 11.4 Solvent Naphtha (Petroleum), Heavy Aromatic
Autoignition Temperature	Solvent Naphtha (Petroleum), Heavy Aromatic: 433°C

10: STABILITY AND REACTIVITY

Decomposition Temp:	Above 130°C for the Chlorpyrifos component of the formulation
Stability:	Stable under normal conditions.
Materials to Avoid:	Strong alkalis, amines and strong oxidizing compounds.
Hazardous Decomposition Products:	Hydrogen chloride, ethyl mercaptan, diethyl sulfide, carbon oxides, nitrogen oxides, sulfur oxides, various chlorinated solvents

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Hazardous Polymerization
or Condensation:

Will not occur.

Conditions to Avoid:

Avoid heating above 50°C. Product undergoes exothermic decomposition at approximately 130°C, which can lead to higher temperatures and violent decomposition if heat generated is not removed.

11: TOXICOLOGICAL INFORMATION

Skin Absorption:	Acute dermal LD50 (Rat)	> 4000 mg/kg.
Ingestion:	Acute oral LD50 (rat)	350 mg/kg.
Inhalation:	LC50	2.16 mg/L (4 hr, nose-only exposure) Rat
T.W.A. (ACGIH):	Total Hydrocarbons:	100 mg/m ³
Chronic Health Hazards:	Prolonged or repeated exposure may lead to kidney or central nervous system symptoms.	
Mutagenicity Data:	None observed in test animals. This product does not contain any materials above reportable levels.	
Carcinogenicity Data:	This product does not contain any materials above reportable levels which are classified as carcinogenic by IARC, ACGIH, OSHA or NTP.	
Teratogenicity Data:	None observed in test animals. This product does not contain any materials above reportable levels.	
Reproductive Effects:	None observed in test animals. This product does not contain any materials above reportable levels.	

12: ECOLOGICAL INFORMATION**Data on Chlorpyrifos:**

96-Hour LC50 (mg/L): 3000 (Rainbow Trout)

48-Hour EC50 (mg/L): 1700 (Daphnia)

Oral LD50 (mg/kg): 13.3 (Bobwhite Quail)

Dietary LC50 (ppm): 75.6 (Mallard Duck)

Oral LD50 (mg/mg): 0.36 (Bee)

Chemical Fate Information: The product should not be allowed to enter drains or water courses or be deposited where it can affect ground or surface waters. Do not discharge product unmonitored into the environment. This material is highly toxic to fish, aquatic invertebrates and insects. It is toxic to aquatic plants, but it is less harmful to birds and not harmful to soil micro- and macroorganisms. The active ingredient, Chlorpyrifos, is readily biodegradable. It undergoes rapid degradation in the environment and, without problems, in sewage treatment plants. No adverse effects are observed at concentrations up to 100 mg/L in waste water treatment plants. Degradation occurs both aerobically and anaerobically, and biologically as well as abiotically. Chlorpyrifos is not mobile in soil, but is strongly absorbed to soil. Chlorpyrifos has the potential to bioaccumulate, but it is rapidly excreted (with a half life 2-3 days). The bioaccumulation factor of Chlorpyrifos is measured to be 1375 for whole fish (rainbow trout).

13: DISPOSAL CONSIDERATIONS

Dispose of waste materials in an approved incinerator or waste treatment/disposal facility in accordance with applicable regulations. Do not dispose of wastes in local sewer or with normal waste

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14: TRANSPORT INFORMATION

Shipping Name:	Organophosphorus Pesticide, Liquid, Toxic, (Chlorpyrifos)
Classification:	6.1 P.I.N.: UN3018
Packing Group:	III

15: REGULATORY INFORMATION

Pest Control Products Act
Registration Number: 27479
For Information Phone: 204-233-3461
MSDS Status/
Revised Sections:
Replaces MSDS Dated: September 01, 2009

16: OTHER INFORMATION

WHMIS Ratings: B3, DB1, D2B
Notice: The enclosed information is supplied as a customer service and is provided in good faith. Although it has been based on data drawn from sources deemed to be reliable, IPCO cannot guarantee its accuracy and assumes no responsibility for conditions resulting from its use.

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