

Product: 655-546 Prentox^(R) Prenbay^(TM) 1% Oil Solution (Contains 1% Propoxur)

Material Safety Data Sheet
U.S. Department of Labor (OSHA 29 CFR 1910.1200)

Manufacturer's Name: Prentiss Incorporated
 C. B. 2000
 Floral Park, NY 11001
Telephone Number: (516) 326-1919

Section 1: Chemical Identification

Product: 655-546 Prentox^(R) Prenbay^(TM) 1% Oil Solution (Contains 1% Propoxur)
EPA Signal Word: CAUTION
Active Ingredient (%): Propoxur (1%) (CAS #114-26-1)
Chemical Name: 2-Isopropoxyphenyl methylcarbamate
Chemical Class: Carbamate Insecticide

Section 2: Composition/Information on Ingredients

Material	OSHA PEL	ACGIH TLV	NTP/IARC/OSHA Carcinogen
Propoxur	(TWA) 0.5 mg/M ³	(TWA) 0.5 mg/M ³	No/No/No
2-butoxyethanol (CAS # 111-76-2) ($<10\%$)	120 mg/M ³ (skin) (Vacated) 25 ppm (TWA) (skin) (Vacated) 50 ppm (TWA) (skin) 240 mg/M ³ (TWA) (skin)	20 ppm (TWA) (skin)	
Xylene Range Aromatic Solvent (CAS # 64742-95-6) ($<11\%$) Contains the following regulated ingredients by weight			(TWA) 19 ppm**
1,2,4-Trimethyl Benzene (CAS # 95-63-6) (32.0%)			(TWA) 25 ppm*
Mixed Xylenes (CAS # 1330-20-7) (3.0%)			(TWA) 100 ppm*
Cumene (CAS # 98-82-8) (1.5%)			(TWA) 50 ppm*
Ethyl Benzene (CAS # 100-41-4) (0.5%)			(TWA) 100 ppm*
Petroleum distillate (CAS # 64742-47-8) ($<80\%$)			(TWA) 152 ppm**
Perfume (CAS # N/A) (1%)			N/A

*OSHA and ACGIH **Recommended by manufacturer

Section 3: Hazards Identification

Routes of Exposure:

Inhalation: Yes. **Skin:** Yes. **Ingestion:** Yes.

Acute Exposure (propoxur) (1%): Inhalation, dermal absorption or ingestion of propoxur may result in systemic intoxication due to inhibition of the enzyme cholinesterase. The sequence of development of systemic effects varies with the route of entry, and the onset of symptoms may be delayed an hour or more. First symptoms of poisoning may be nausea, increased salivation, lacrimation, blurred vision and constricted pupils. Other symptoms of systemic poisoning include vomiting, diarrhea, abdominal cramping, dizziness and sweating. After inhalation, respiratory symptoms like tightness of chest, wheezing and laryngeal spasms may be pronounced at first. If the poisoning is severe, then symptoms of

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convulsions, low blood pressure, cardiac irregularities, loss of reflexes and coma may occur. In extreme cases, death may occur due to a combination of factors such as respiratory arrest, paralysis of respiratory muscles or intense bronchoconstrictions. Complete symptomatic recovery from sublethal poisoning usually occurs within 24 hours once the source of exposure is completely removed. Animal studies have shown that propoxur has severe oral toxicity and mild dermal toxicity. It can cause minimal irritation to the conjunctiva with all irritation resolving within 48 hours.

Chronic Exposure (propoxur): Repeated exposure to small amounts of propoxur may result in an unexpected cholinesterase depression causing symptoms such as malaise, weakness, and anorexia that resemble other illnesses such as influenza. Exposure to the concentration that would not have produced symptoms in a person that was not previously exposed may produce severe symptoms of cholinesterase inhibition in a previously exposed person. High doses of propoxur induced bladder cancers when fed to rats in one study. Cancer was not induced in several other feeding studies on rats and other animals. The implications of these studies for humans are not known.

Medical Conditions Generally Aggravated by Exposure (propoxur): No specific medical conditions are known which may be aggravated by exposure. However, any disease, medication or prior exposure which reduces normal cholinesterase activity may increase susceptibility to the toxic effects of the propoxur.

Toxicity of other components:

Xylene Range Aromatic Solvent (<11%): Composed of xylenes, ethylbenzenes and aromatic naphtha containing trimethylbenzenes. Eye contact is slightly irritating but does not injure eye tissue. Frequent or prolonged contact may irritate skin and cause dermatitis. Skin contact is of a low order of toxicity but may aggravate existing dermatitis conditions. Inhalation of high vapor or aerosol concentrations are irritating to the eyes and the respiratory tract, may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects including death.

2-butoxyethanol (<10%): Overexposure to high concentrations by inhalation of vapor cause irritation of the respiratory tract, experienced as nasal discomfort and discharge, with chest pain and coughing. Headache, nausea, vomiting, dizziness and drowsiness may occur. Eye contact causes severe irritation, experienced as discomfort or pain, excess blinking and tear production, with marked excess redness and swelling of the conjunctiva. Brief skin contact may cause slight irritation with itching and local redness. Prolonged contact may cause more severe irritation, with discomfort or pain, local redness and swelling, and possible tissue destruction. Skin absorption effects may include those described for swallowing. Moderately toxic and prolonged or widespread contact may result in the absorption of potentially harmful amounts of material. Moderately toxic if swallowed, may cause headache, dizziness, incoordination, nausea, vomiting, diarrhea and general weakness.

Petroleum distillate (<80%): Eye contact is slightly irritating but does not injure eye tissue. Frequent or prolonged skin contact may irritate skin and cause dermatitis and may aggravate existing dermatitis condition. Low order of toxicity via skin contact. Inhalation of high vapor/aerosol concentrations (greater than 700 ppm, attainable at elevated temperatures well above ambient) are irritating to the eyes and respiratory tract, and may cause headaches, dizziness, anesthesia, drowsiness, unconsciousness and other central nervous system effects, including death. Ingestion of small amounts into the respiratory system during ingestion or vomiting may cause mild to severe pulmonary injury, possibly progressing to death. Minimally toxic by ingestion.

Section 4: First Aid Measures

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Emergency and First Aid Procedures: **If swallowed:** Contains petroleum distillate. DO NOT INDUCE VOMITING. Get immediate medical attention. **Note to physician:** Propoxur is a cholinesterase inhibitor. Atropine is antidotal. **If inhaled:** Remove victim to fresh air. Apply artificial respiration if indicated. **If on skin:** Wash immediately with soap and warm water. Wash hands, arms and face thoroughly with soap and warm water before eating or smoking. Wash all contaminated clothing with soap and hot water before reuse. **If in eyes:** Flush eyes with plenty of water. Get medical attention if irritation persists.

Section 5: Fire Fighting Measures

Flash Point (Method Used): 115° F. closed cup.

Flammable Limits: **LEL:** N/D **UEL:** N/D

Extinguishing Media: Dry chemical, CO₂, foam, water fog.

Special Fire Fighting Procedures: Fight fire from upwind position. Use self contained air supply. Do not breathe vapors. Use goggles or other eye protection. Avoid skin contact. This product is toxic to wildlife. Prevent spread of contaminated runoff. Equipment used to fight pesticide fires may become contaminated. **Unusual Fire and Explosion Hazards:** Keep containers cool. Propoxur may generate isocyanates upon decomposition.

Section 6: Accidental Release Measures

Wear long sleeved shirt, long pants, shoes and socks and chemical resistant gloves made of barrier laminate, butyl rubber, nitrile rubber or Viton® to avoid skin contact with this product. Avoid breathing spray mist. Cover the spilled areas with generous amounts of absorbent material, such as clay, diatomaceous earth, sand or sawdust. Sweep the contaminated absorbent onto a shovel and put the sweepings into a salvage drum. Dispose of wastes as below.

Waste disposal method: This product is toxic to fish, birds and other wildlife. Do not apply directly to water. Do not contaminate water by cleaning equipment or disposal of equipment washwaters. 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. **Container disposal:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

Section 7: Handling and Storage

Precautions for handling and storage: If container is damaged, stop leaks by repositioning the container or by patching or otherwise repairing the leaks. Take care to avoid contact with pesticide and wear protective gear. Do not store, use, pour or spill near heat or open flame. Do not store in car trunk where temperatures may exceed 120° F. Wash hands with soap and warm water before eating or using tobacco products.

Applicators and handlers must wear long sleeved shirt, long pants, shoes and socks and chemical resistant gloves made of barrier laminate, butyl rubber, nitrile rubber or Viton®.

Other precautions: Periodically inspect stored material.

Section 8: Exposure Controls/Personal Protection

Respiratory protection: Wear a respirator approved for pesticides by the National Institute for Occupational Safety and Health (NIOSH).

Ventilation:

Local Exhaust: As required to meet TLV values.

Special: As required to meet TLV values.

Mechanical: As required to meet TLV values.

Other: As required to meet TLV values.

Protective Gloves: Chemical resistant such as barrier laminate, butyl rubber, nitrile rubber or Viton®

Eye Protection: Goggles, or full face shield

Other protective clothing or equipment: Clean water should be available for washing in case of eye or skin contamination.

Work/Hygienic practices: May be harmful if swallowed, inhaled or absorbed through skin. Wear chemical resistant gloves while applying this product. Avoid breathing spray mist. Avoid contact with eyes, skin or clothing. Wash thoroughly after use and before eating or smoking. Do not use as a space spray. Provide adequate ventilation of area being treated. Remove pets and cover fish aquariums before spraying. Do not allow children or pets to contact treated areas until surfaces are thoroughly dry.

Section 9: Physical and Chemical Properties

Boiling Point: N/D

Specific Gravity (H₂O = 1): 0.8134

Vapor Pressure (mmHg): N/D

Melting Point: N/D

Vapor Density (Air = 1): N/D

Evaporation Rate (Butyl Acetate = 1): N/D

Solubility in Water: Virtually insoluble.

Appearance and Odor: Water white liquid, nearly odorless.

Section 10: Stability and Reactivity

Stability: Stable.

Conditions to avoid for stability: Sustained temperatures above 100° F.

Incompatibility: Alkaline materials and strong oxidizers.

Hazardous Decomposition or Byproducts: CO, CO₂, CH₃NCO, CH₃NH₂, Methyl isocyanate.

Hazardous Polymerization: Will not occur.

Conditions to avoid for Hazardous Polymerization: None.

Section 11: Toxicological Information

Acute Toxicity/Irritation Studies:

Ingestion: Slightly Toxic
Oral LD₅₀ (Rat) 4,521 mg/Kg (Female)
>5,000 mg/Kg (Male)

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Dermal:	Slightly Toxic	>5,000 mg/Kg
Inhalation:	Slightly Toxic	>2.07 mg/L
Eye Contact:	Mildly Irritating	
Skin Contact:	Moderately Irritating	
Skin Sensitization:	Not a sensitizer	

Mutagenic Potential: Propoxur Technical (99.6%) is not genotoxic

Reproductive Hazard Potential: Propoxur Technical (99.6%) – In reproduction studies using rats, propoxur was administered at dietary concentrations ranging from 30 to 6,000 ppm. Reproductive effects observed at parentally toxic levels included reductions in the following parameters: gestation rates, mean number of implantation sites, litter size, pup body weights, and survival rate of the young. The parental and reproductive NOELs were 30 and 80 ppm respectively.

Chronic/Subchronic Toxicity Studies: In a one year study, dogs were administered propoxur technical (99.6%) at dietary concentrations of 200, 600 or 1,800 ppm. The high dose was increased to 3,600 ppm during the 41st week and subsequently to 5,400 ppm from the 45th week until the end of the study.

Effects at the high dose included reduced body weight gain, cholinesterase inhibition, elevated plasma cholesterol levels, increased liver weights and thymus atrophy. An additional study was conducted in which the NOEL was determined to be 70 ppm on the basis of plasma cholesterol. In a two year study propoxur technical (99.6%) was administered to rats at dietary concentrations of 200, 1,000 or 5,000 ppm. Treatment with 5,000 ppm resulted in decreased food consumption, decreased body weight gain, cholinesterase inhibition, neuropathy and muscular atrophy. The NOEL was 200 ppm. Rats were exposed to propoxur at liquid aerosol concentrations of 2.2, 10.4 or 50.5 mg/M³ for 6.3 hours a day, 5 days a week for two years. Cholinesterase inhibition occurred at concentrations of 10.4 mg/M³ and above. The NOEL was determined to be 2.2 mg/M³.

Carcinogenic Potential: Propoxur was investigated for carcinogenic effects in a two year feeding study on mice. Dietary concentrations of 500, 2,000 or 8,000 ppm were employed in the study. An increased incidence of benign liver adenomas occurred in male mice at concentrations of 2,000 ppm and higher.

When rats were fed propoxur for two years in a single type of diet, urinary bladder neoplasias were observed at concentrations of 1,000 ppm and above. Propoxur was not carcinogenic in other types of diets administered to rats at high doses up to and including the maximum tested concentration of 8,000 ppm. In a two year inhalation study on rats, propoxur was determined to be nononcogenic at liquid aerosol concentrations up to and including the maximum tested concentration of 50.5 mg/m³.

Neurotoxicity: Propoxur has been investigated for delayed neurotoxicity in acute and subacute studies using hens. There was no indication of propoxur causing delayed neurotoxicity in any of these studies. In an acute neurotoxicity study using rats, propoxur was administered as a single oral dose at levels of 2, 10 or 25 mg/Kg. The NOEL for motor and locomotor activity was 2 mg/Kg for males and 10 mg/Kg for females based on decreased activity in the figure eight maze. All clinical signs and neurobehavioral effects were ascribed to acute cholinergic toxicity. The NOEL for neurotoxicity for both sexes was 25 mg/Kg. In a 13 week neurotoxicity study, propoxur was administered to rats at dietary concentrations of 500, 2,000 or 8,000 ppm. Evidence of toxicity at the mid and high dose included reduced body weight and feed consumption, body weight related effects on grip strength, foot splay and organ weights, and clinical chemical findings (cholinesterase inhibition and liver enzyme induction). Primary neurobehavioral changes were not evident at any dose level. There were no micropathological findings in neural or muscle tissues. Excluding cholinergic responses, the NOEL for neurotoxicity is 8,000 ppm.

Section 12: Ecological Information

This product is toxic to wildlife and aquatic invertebrates. Do not apply directly to water. Do not contaminate water by cleaning of equipment or disposal of wastes. Do not apply as a landscape treatment (to lawns, shrubs, trees or garden plants).

Section 13: Disposal Considerations

Waste disposal method – follow container label instructions for disposal of wastes generated during use in compliance with the FIFRA product label. Container Disposal – Plastic containers – triple rinse or equivalent. Puncture and dispose of in a sanitary landfill, or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. Metal containers – triple rinse or equivalent. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures outlined by State and local authorities.

Section 14: Transport Information

DOT Classification: Not DOT regulated in available quantities
B/L Freight Classification: NMFC item 102120, INSECTICIDES; OTHER THAN POISON CLASS 60
International Transportation: Not available.

Section 15: Regulatory Information

SARA Title III Classification:

Section 311/312: Acute health hazard, chronic health hazard, fire hazard

Section 313 chemicals:

Propoxur (1%)	(CAS# 114-26-1)
1,2,4-trimethyl benzene (<3.5%)	(CAS# 95-63-6)
Ethyl Benzene (<1%)	(CAS# 100-41-4)
Mixed Xylenes (<0.5%)	(CAS# 1330-20-7)
Cumene (<0.2%)	(CAS# 98-82-8)
Glycol Ethers (<10%)	(CAS# N/A)

This product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III and of 40 CFR 372. Any copies or redistribution of this MSDS must include this notice.

Section 16: Other Information

NFPA Hazard Ratings:

Health	1	Flammability	2	Reactivity	0
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