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: 655-796	**Prentox(R) Prenbay(TM) 1.5 EC**	
EPA Signal Word:	DANGER	
Active Ingredient (%):	Propoxur (19.6%)	(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
Emulsifier 1 (confidential) (3-5%)	N/A	N/A	
Emulsifier 2 (confidential) (3-5%)	N/A	N/A	
Methyl n-amyl ketone (CAS# 110-43-0) (50-60%)	(TWA) 100 ppm	(TWA) 50 ppm	
Cosolvent (confidential) (10-20%)	N/A	N/A	

Section 3: Hazards Identification

Routes of Exposure:

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

Acute Exposure: Inhalation, dermal absorption or ingestion of this product 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 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. The solvents in this product can be irritating to the skin, eyes, nose and throat. In high vapor concentrations, drowsiness can occur. Based on EPA Toxicity Category criteria, this product is moderately toxic orally and minimally toxic dermally. Animal studies have shown that this product is a severe eye irritant and can cause irreversible eye damage.

Chronic Exposure: 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. Repeated skin contact with the solvents in this product can cause drying, cracking or irritation of the skin.
Carcinogenicity: This product is not listed by NTP, IARC or regulated as a carcinogen by OSHA.
Medical Conditions Generally Aggravated by Exposure: No specific medical conditions are known which may be aggravated by exposure to the active ingredient in this product; however, any disease, medication or prior exposure which reduces normal cholinesterase activity may increase susceptibility to the toxic effects of the active ingredient.

Section 4: First Aid Measures

Emergency and First Aid Procedures: Call a Poison Control Center, physician or the National Pesticide Information Center at 1-800-858- 7378 for treatment advice. **If swallowed:** Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the Poison Control Center or physician. Do not give anything by mouth to an unconscious or convulsing person. **Note to physician:** ANTIDOTE – administer atropine sulfate in large therapeutic doses. Repeat as necessary to the point of tolerance. Probable mucosal damage may contraindicate the use of gastric lavage. **If inhaled:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, and then give artificial respiration, preferably mouth-to-mouth, if possible. **If on skin:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. **If in eyes:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first five minutes, then continue rinsing eye.

Section 5: Fire Fighting Measures

Flash Point (Method Used): 109º F. Setaflash
Flammable Limits: **LEL:** N/D **UEL:** N/D
Extinguishing Media: Dry chemical, foam.
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 coveralls over long sleeved shirt, long pants, chemical resistant footwear and socks and chemical resistant gloves made of barrier laminate or butyl rubber 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. Keep unauthorized people away. Dispose of wastes as below.
Waste disposal method: 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. **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: Store in a cool, dry place and in such manner as to prevent cross contamination with other pesticides, fertilizers or food and feed. Do not store below 32^{o} F. Keep away from sunlight, radiators, stoves and other heat. Store in original container out of the reach of children, preferably in a locked storage area. Handle an open container in a manner as to prevent spillage. If container is leaking, invert to prevent leakage. If the container is leaking or material is spilled for any reason or cause, carefully dam up spilled material to prevent runoff.

Applicators and handlers must wear coveralls over long sleeved shirt, long pants, chemical resistant footwear and socks and chemical resistant gloves made of barrier laminate or butyl rubber and a chemical resistant apron.

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 or butyl rubber.

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 (H_2O = 1):	0.915 @ 20 C.
Vapor Pressure (mmHg):	9.7 X 10 -6 mm Hg @ 20 C. (for propoxur)
Melting Point:	N/D
Vapor Density (Air = 1):	N/D
Evaporation Rate (Butyl Acetate = 1):	N/D
Solubility in Water:	Emulsifies.
Appearance and Odor:	Water white liquid, strong, sweet odor.

Section 10: Stability and Reactivity

Stability:	Stable.
Conditions to avoid for stability:	Sustained temperatures above 90º F.
Incompatibility:	Alkaline materials and strong oxidizers.
Hazardous Decomposition or Byproducts:	CO, CO_2, CH_3NCO, CH_3NH_2, Methyl isocyanate.
Hazardous Polymerization:	Will not occur.
Conditions to avoid for Hazardous Polymerization:	None.

Section 11: Toxicological Information

Acute Toxicity:

Ingestion:	Oral LD_{50} (Rat)	168 mg/Kg (Female) 436 mg/Kg (Male)
Dermal:	Dermal LD_{50} Male and female rabbit	>5,000 mg/Kg
Inhalation:	Inhalation LC_{50} Male rat	4.9 mg/L
	Female rat	5.4 mg/L
Eye Contact:	Severe and irreversible irritation to the cornea and conjunctivae was observed.	
Skin Contact:	Rabbit: Not a dermal irritant	

Subchronic Toxicity: In a 3 month dermal toxicity study, rabbits were treated with propoxur at levels up to and including a limit dose (1000mg/Kg) for 6 hours/day, 5 days/week. There were no local or systemic effects observed at any of the levels tested. The no observed effect level (NOEL) was 1000 mg/Kg. In a 13 week oral gavage study using Rhesus monkeys, a dose of 40 mg/Kg/day resulted in cholinergic symptoms lasting 5-15 minutes after administration. These symptoms included salivation, chewing, twitching and rapid respiration. A 50% depression in plasma cholinesterase occurred by 1 hour. This returned to normal by 24 hours after administration. In an inhalation study, in which rats were exposed to propoxur at aerosol concentrations of 15.3, 45.3 or 139.6 mg/M^3 for 6 hours/day, 5 days/week for a period of either 4 or 8 weeks, cholinesterase inhibition occurred.

Chronic Toxicity: In a one year study, dogs were administered propoxur 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 2 year study propoxur 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/M^3 for 6.3 hours a day, 5 days a week for two years. Cholinesterase inhibition occurred at concentrations of 10.4 mg/M^3 and above. The NOEL was determined to be 2.2 mg/M^3.

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/m^3.

Mutagenicity: A large mutagenicity database supports the conclusion that propoxur is not genotoxic. This database includes a special study to evaluate genotoxic potential using urinary bladder cells from propoxur treated rats. This study clearly demonstrated that propoxur and its metabolites are non-genotoxic to urinary bladder cells.

Developmental Toxicity: In a developmental toxicity study using rats, propoxur was administered during gestation by oral gavage at doses of 3, 9 or 27 mg/Kg. The NOEL of maternal toxicity was 3 mg/Kg. No developmental effects were observed at any of the levels tested. In a developmental toxicity study using rabbits, propoxur was administered during gestation at oral doses of 3, 10 or 30 mg/Kg. Developmental toxicity occurred at the maternally toxic level of 30 mg/Kg. The NOEL for maternal and developmental toxicity was 10 mg/Kg.

Reproduction: 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.

Neurotoxicity: Propoxur has been investigated for delayed neurotoxicity in acute and subacute studies using hens. Maximum levels tested in the acute studies were 100 and 1,000 mg/Kg via interperitoneal injection and oral gavage, respectively. Dietary concentrations up to and including 4500 ppm were tested in a 30 day subacute feeding study. There was no indication of propoxur causing neurotoxic effects 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: CARBAMATE, PESTICIDES, LIQUID, TOXIC, FLAMMABLE, N.O.S. (PROPOXUR/METHYL AMYL KETONE), 6.1, UN2991, PG III

B/L Freight Classification: NMFC ITEM 102120, INSECTICIDES; OTHER THAN POISON CLASS 60

International Transportation: Not available.

Section 15: Regulatory Information

OSHA Status: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA Status: This product is exempt from TSCA regulation under FIFRA Section 3 (2) (B) (ii) when used as a pesticide.

SARA Title III Classification:

Section 302, Extremely Hazardous Substances:	No components listed.
Section 311/312:	Acute health hazard, chronic health hazard, fire hazard
Section 313 chemicals:	
Propoxur (19.6%)	(CAS# 114-26-1)

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.

CERCLA Reportable Quantity: 510 lb. of the formulation, which contains 100 lb. of propoxur.

RCRA Status: When discarded in its purchased form, this product is a listed RCRA hazardous waste and should be managed as a hazardous waste under 40 CFR 261.20-24. When discarded in its purchased form, this product meets the criteria of ignitability, and should be managed as a hazardous waste (EPA hazardous waste number D001). Propoxur is listed as U411.

Section 16: Other Information

NFPA Hazard Ratings:

Health	3	Flammability	2	Reactivity	1

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