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

Manufacturer's Name: **Prentiss Incorporated**
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Section 1: Chemical Identification

Product: 655-802 **Prentox® Larva Lur contains Propoxur**
EPA Signal Word: Caution – Aviso

Active Ingredient: Propoxur (2%) (CAS #114-26-1)
Chemical Name: (2-(1-Methylethoxy) phenol methylcarbamate)
Chemical Class: Carbamate Insecticide

Section 2: Composition/Information on Ingredients

Material:	OSHA PEL	ACGIH TLV
Propoxur (2-(1-Methylethoxy) phenol methylcarbamate)	0.5 mg/M^3	0.5 mg/M^3

Section 3: Hazards Identification

Symptoms of Acute Exposure:

Inhalation, dermal absorption or ingestion of this material 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. Animal studies have shown that this product is mildly toxic by the oral and dermal routes. It can cause mild irritation to the conjunctiva with all irritation resolving within 7 days.

Chronic Effects of Exposure:

Repeated exposure to small amounts of this material may result in 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 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 mammals. The implications of these studies for humans are not known.

Carcinogenicity:
The active ingredient in this product is not listed by NTP, IARC or regulated as a carcinogen by OSHA.
Medical Conditions 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.
Physical Properties:
Appearance: Green granular material resembling chicken feed.
Odor: Peanut oil odor.

Section 4: First Aid Measures

In case of poisoning, call a physician immediately. Have patient lie down and keep quiet.
If Swallowed: Call a physician or poison control center immediately. Drink 1 or 2 glasses of water and induce vomiting by touching back of throat with finger. If person is unconscious, do not give anything by mouth and do not induce vomiting.
If on Skin: Remove contaminated clothing and was skin immediately with soap and warm water.
If in Eyes: Flush with plenty of water. Call a physician if irritation persists.
Note to Physician: This product contains the carbamate insecticide propoxur, a cholinesterase inhibitor. Cholinesterase inhibition results in stimulation of the central nervous system, the parasympathetic nervous system and the somatic motor nerves. If the symptoms of carbamate poisoning are present, the administration of atropine sulfate is indicated. Administer atropine sulfate in large, therapeutic doses. In mild cases, start treatment by giving 1-2 mg of atropine intravenously every 15 minutes until signs of atropinization appear (dry mouth, flushing and dilated pupils if pupils were originally pinpoint). In severe cases, start treatment by giving 2-4 mg of atropine intravenously every 5-10 minutes until fully atropinized. Dosages for children should be appropriately reduced. Do not use oximes such as 2-PAM unless organophosphate intoxication is also suspected. Do not give morphine. Watch for pulmonary edema, which may develop in serious cases of poisoning even after 24 hours. At first sign of pulmonary edema, place patient in oxygen tent and treat symptomatically.

Section 5: Fire Fighting Measures

Fire and Explosion:
Flash Point (Method Used): N/A
Flammable Limits: LEL: N/A UEL: N/A
Extinguishing Media: Water, dry chemical.
Special Fire Fighting Procedures: Keep out of smoke. Fight fire from upwind position. Use self-contained breathing equipment. Contain runoff by diking to prevent entry into sewers or waterways. Equipment or materials involved in pesticide fires may become contaminated.
Unusual Fire and Explosion Hazards: Dust explosion hazard. During routine handling of this material there should be little risk of a dust explosion. However, tests on similar materials indicate that an explosive mixture can develop. Therefore, appropriate preventative measures should be taken. If a large dust cloud develops, turn off any devices that may cause a spark and leave the area until the cloud disperses.

Section 6: Accidental Release Measures

Isolate area and keep unauthorized people away. Do not walk through spilled material. Avoid breathing dusts and skin contact. Wear proper protective equipment. Carefully sweep up spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with detergent and bleach solution. Repeat. Rinse with water. Contaminated soil may have to be removed and disposed of. Do not allow material to enter streams, sewers or other waterways, or to contact vegetation. Dispose of wastes as described in Section 13, Disposal Considerations.

Section 7: Handling and Storage

Store in a cool dry area designated specifically for pesticides. Avoid sustained temperatures above 100º F. Do not store near any material intended for use or consumption by humans or animals. Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is potential for exposure to the material. Always wash thoroughly after handling.

Section 8: Exposure Controls/Personal Protection

Respiratory protection: If necessary under the conditions of use, wear NIOSH approved dust/mist respirator approved for pesticides.

Ventilation: Control exposure level through use of general and local exhaust ventilation. Prevent spread of airborne dust.

Protective Gloves: Avoid skin contact. Use chemical resistant gloves and boots to prevent dermal exposure.

Eye Protection: Use goggles to prevent dust from getting into eyes.

Other protective clothing or equipment: Clean water should be available for washing in case of eye or skin contamination. Educate and train employees in safe use of product. Follow all label instructions. Launder clothing after use. Wash thoroughly after handling.

Work/Hygienic practices: Medical surveillance: Plasma and/or red blood cell cholinesterase activity can be used to detect excessive absorption of propoxur. It is preferable to establish a pre-exposure base line value for comparisons. If significant cholinesterase depression occurs, no further exposure should be allowed until cholinesterase values return to normal.

Section 9: Physical and Chemical Properties

Appearance: Green granular material resembling chicken feed.
Odor: Peanut oil odor.
Density: 20 lb./cu. ft.

Section 10: Stability and Reactivity

Reactivity:

Stability:	Stable.
Conditions to avoid for stability:	Avoid sustained temperatures above 100º F
Incompatibility:	Strong oxidizers.
Hazardous Polymerization:	Will not occur.

Hazardous Decomposition or Byproducts: CO, CO_2, CH_3NCO, and CH_3N_2

Section 11: Toxicological Information

Acute Toxicity/Irritation Studies (similar product containing 2% propoxur):

Ingestion:	Slightly Toxic	
	Rat Oral LD_{50} (male)	>2012 mg/kg
	Rat Oral LD_{50} (female)	>1795 mg/kg
Dermal:	Slightly Toxic	
	Rabbit Dermal LD_{50}	>2000 mg/kg
Inhalation:	Rabbit Inhalation LC_{50} (4 hour)	>0.85 mg/L
	Rabbit Inhalation LC_{50} (1 hour) (Extrapolated from 4 hour)	>3.4 mg/L
Eye Contact:	Rabbit: Mild irritation to conjunctivae, resolving in 7 days.	
Skin Contact:	Rabbit: Not a dermal irritant.	
Skin Sensitization:	Guinea Pig: Not a sensitizer.	

Subchronic Toxicity (Technical Propoxur – 96%):

In a 3-month dermal toxicity study, rabbits were treated with propoxur at levels up to and including the limit dose (1000 mg/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/cubic meter for 6 hours/day, 5 days/week for period of either 4 or 8 weeks, cholinesterase inhibition occurred.

Chronic Toxicity (Technical Propoxur – 96%):

In a 1-year study, dogs were administered propoxur at dietary concentrations of 200, 600 or 1800 ppm. The high dose was increased to 3600 ppm during week 41 and subsequently to 5400 ppm from week 45 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, 1000 or 5000 ppm. Treatment at 5000 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/day, 5 days/week for 2 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.

Carcinogenicity (Technical Propoxur – 96%):

Propoxur was investigated for carcinogenic effects in a 2-year feeding study in mice. Dietary concentrations of 500, 2000 or 8000 ppm were employed in the study. An increased incidence of benign liver adenomas occurred in male mice at 2000 ppm and greater. When rats were fed propoxur for 2 years in a single type of diet, urinary bladder neoplasias were observed at concentrations of 1000 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 8000 ppm. In a 2-year inhalation study on rats, propoxur

was determined to be non-carcinogenic at liquid aerosol concentrations up to and including the maximum tested concentration of 50.5 mg/m^3.

Mutagenicity (Technical Propoxur – 96%):

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.

Developmental Toxicity (Technical Propoxur – 96%):

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 for 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 (Technical Propoxur – 96%):

In reproduction studies using rats, propoxur was administered at dietary concentrations ranging from 30 to 6000 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 Technical – 96%):

Propoxur has been investigated for delayed neurotoxicity in acute and subacute studies using hens. Maximum levels tested in acute studies were 100 and 1000 mg/kg via intraperitoneal 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 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 cholinergic toxicity was 25 mg/kg for both sexes. In a 13-week neurotoxicity study, propoxur was administered to rats at a dietary concentration of 5600, 2000 or 8000 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 8000 ppm.

Section 12: Ecological Information

Ecological data is not available for propoxur. The registered use patterns for this product do not include any use patterns requiring the development of such data.

Section 13: Disposal Considerations

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Disposal: Completely empty container. Then dispose of empty container in a sanitary landfill or by incineration or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Section 14: Transport Information

DOT Classification: Not regulated.
B/L Freight Classification: Insecticides: other than poison.

Section 15: Regulatory Information

OSHA: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200)
TSCA: This product is exempt from TSCA regulation under FIFRA Section 3(2)(B)(ii) when used as a pesticide.
CERCLA Reportable Quantity: 5000 pounds of this formulation (contains 100 pounds of pure propoxur).
SARA Title III:

Section 302 Extremely Hazardous Substances: no components listed.
Section 311/312 Hazard Categories: Immediate Health Hazard, Delayed Health Hazard.
Section 313 Toxic Chemicals: Propoxur (CAS #114-26-1) 2.0%

RCRA Status: When discarded in its purchased form, this product is a listed RCRA hazardous waste and should be managed as a hazardous waste (40 CFR 261.20-24). Propoxur is listed as U411.

Section 16: Other Information:

NFPA Hazard Ratings:

Health	1	0	Least
Flammability:	1	1	Slight
Reactivity:	1	2	Moderate
		3	High
		4	Severe

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