Material Safety Data Sheet

ESTEEM® Ant Bait

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-APPROVED PRODUCT LABELING (attached to and accompanying the product container). This MSDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products is regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling. All necessary and appropriate precautionary, use, and storage, and disposal information is set forth on that labeling. It is a violation of federal law to use a pesticide product in any manner not prescribed on the EPA-approved label.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: ESTEEM® Ant Bait
VC NUMBER(S): 1306 & 1505
ITEM: 69700
SYNONYM(S): None
EPA REGISTRATION NUMBER: 59639-114

MANUFACTURER
VALENT USA CORPORATION
P.O. Box 8025
1600 Riviera Avenue, Suite 200
Walnut Creek, CA 94596-8025

EMERGENCY TELEPHONE NUMBERS
HEALTH EMERGENCY OR SPILL (24 hr):
(800) 892-0099
TRANSPORTATION (24 hr.): CHEMTREC
(800) 424-9300 or (202) 483-7616

PRODUCT INFORMATION
AGRICULTURAL PRODUCTS: (800) 682-5368
PROFESSIONAL PRODUCTS: (800) 898-2536

The current MSDS is available through our website or by calling the product information numbers listed above. (www.valent.com)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Weight/Percent	ACGIH Exposure Limits	OSHA Exposure Limits
Pyriproxyfen (2-[1-Methyl-2-(4-phenoxyphenoxy)ethoxy] pyridine) * (95737-68-1)	0.45 - 0.55	None	None
Others ** (No CAS#)	99.45 - 99.55	None	None

* Active Ingredient

** Other ingredients, which are maintained as trade secrets, are any substances other than an active ingredient contained in ths product. Some of these may be hazardous, but their identity is withheld because they are considered trade secrets. The hazards associated with the other ingredients are addressed in this document. Specific information on other ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling **1-800-892-0099** at any time.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

CAUTION

- Harmful if swallowed.
- Avoid contact with eyes and skin.
- Avoid breathing dust.
- Keep out of reach of children.

POTENTIAL HEALTH EFFECTS

Acute Toxicity (Primary Routes of Exposure)

Signs and Symptoms of Systemic Effects: The acute toxicity of this product is relatively low; transient, minimal signs of toxicity were observed in animals at high oral doses.

Acute Eye Contact: This product can cause brief and/or minor eye irritation. The expected adverse health effects resulting from an exposure may include redness and possible swelling.

Acute Skin Contact: This product can cause brief and/or minor irritation. The expected adverse health effects resulting from an exposure may include redness and possibly some minor swelling.

This product is slightly toxic when absorbed through the skin.

This product is not expected to cause allergic skin reactions.

Acute Ingestion: This product is minimally toxic when ingested.

Acute Inhalation: Based on an evaluation of the ingredients and/or similar products, this product may be minimally toxic when inhaled.

Exposure to high concentrations in the air may result in respiratory irritation. Signs and symptoms may include, but not be limited to, nasal discharge, sore throat, coughing and difficulty in breathing.

Chronic Toxicity (including cancer): Repeated high exposures to Pyriproxyfen Technical produced changes in the liver, kidney and red blood cells but did not produce cancer in test animals.

Overall, this product is not expected to be a chronic hazard when used according to label directions.

Developmental Toxicity (birth defects): No developmental toxicity was produced in animals exposed to Pyriproxyfen Technical, even at doses that were toxic to the pregnant animal.

Reproductive Toxicity: Pyriproxyfen Technical did not produce reproductive toxicity in animal studies.

Potentially Aggravated Medical Conditions: Individuals with preexisting diseases of the liver, kidney, red blood cell or central nervous system may have increased susceptibility to the toxicity of excessive exposures.

4. FIRST AID MEASURES

EMERGENCY NUMBER (800) 892-0099

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact **1-800-892-0099** for emergency medical treatment information.

EYE CONTACT:
Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

SKIN CONTACT:
Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

INGESTION:
Call a poison control center or doctor immediately for treatment advice. Have a 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 doctor. Do not give anything by mouth to an unconscious person.

INHALATION:
Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

NOTES TO PHYSICIAN:
None

5. FIRE FIGHTING MEASURES

FLASH POINT: Not applicable
FLASH POINT METHOD: Not applicable

AUTOIGNITION: No data available
EXTINGUISHING MEDIA: Water fog, carbon dioxide, foam, dry chemical

FLAMMABLE LIMITS IN AIR - LOWER (%): Not applicable
FLAMMABLE LIMITS IN AIR - UPPER (%): Not applicable

NFPA RATING:

Health:	1
Flammability:	2
Reactivity:	0
Special:	None

(Least-0, Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using professional judgement. Values were not available in the guidelines or published evaluations prepared by the National Fire Protection Association, NFPA.

FIRE FIGHTING INSTRUCTIONS: Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. Read the entire document.

HAZARDOUS COMBUSTION PRODUCTS: Normal combustion forms carbon dioxide, water vapor and may produce: Oxides of nitrogen. Incomplete combustion can produce carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

VALENT EMERGENCY PHONE NUMBER: (800) 892-0099
CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300
OBSERVE PRECAUTIONS IN SECTION 8: PERSONAL PROTECTION

Stop the source of the spill if safe to do so. Contain the spill to prevent further contamination of the soil, surface water, or ground water. For additional spill response information refer to the North American Emergency Response Guidebook.

FOR SPILLS ON LAND:

CONTAINMENT: Reduce airborne dust. Avoid runoff into storm sewers or other bodies of water.

CLEANUP: Clean up spill immediately. Vacuum or sweep up material and place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waste container.

FOR SPILLS IN WATER:

CONTAINMENT: This material is insoluble in water. This material will sink to the bottom. Stop or reduce contamination of any water. Isolate contaminated water.

CLEANUP: Remove contaminated water for treatment or disposal.

7. HANDLING AND STORAGE

END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

Keep pesticide in original container. Do not store or transport near food or feed. Do not contaminate food or feed. Do not put concentrate into food or drink containers. Do not dilute concentrate in food or drink containers. Store in a cool, dry place, out of direct sunlight.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

END USER MUST READ AND OBSERVE ALL PRECAUTIONS ON PRODUCT LABEL.

EYES: Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear.

RESPIRATORY PROTECTION: Use this material only in well ventilated areas. If operating conditions result in airborne concentrations of this material, the use of an approved respirator is recommended.

SKIN PROTECTION: Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including gloves.

EXPOSURE LIMITS - See Section 2.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Solid, small flakes with the appearance of corn grits.
COLOR:	Golden
ODOR:	Mild soybean oil odor
MELTING POINT:	No data available
BULK DENSITY:	18-22 lb/cubic foot
VAPOR PRESSURE:	Not applicable
pH:	pH: 6.6 @ 25 C 1% (w/v) dispersion in water
SOLUBILITY:	Not applicable

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable at normal ambient temperatures.

INCOMPATABILITY: Not compatible with strong acids or bases. Not compatible with strong oxidizers.

OXIDATION/REDUCTION PROPERTIES: Not reactive with water, monoammonium phosphate, zinc, and potassium permanganate.

EXPLODABILITY: Not expected to be explosive.

ACUTE (Product Specific Information):

Eye Irritation: This product produced brief and/or minor eye irritation in the eyes of test animals. (Toxicity Category III)

Skin Irritation: This product did not produce skin irritation in rabbits (Toxicity Category IV).

Oral Toxicity: The oral LD_{50} in rats is > 5000 mg/kg. (Toxicity Category IV)

Dermal Toxicity: The dermal LD_{50} in rabbits is > 2000 mg/kg. (Toxicity Category III)

Inhalation Toxicity: No product specific data available. Based on information on the ingredients it is expected to be minimally toxic by the inhalation route (Toxicity Category IV).

Skin Sensitization: This product was not a skin sensitizer in animals.

TOXICITY OF PYRIPROXYFEN TECHNICAL

SUBCHRONIC: Subchronic oral toxicity studies conducted with Pyriproxyfen Technical in the rat, mouse and dog indicate a low level of toxicity. Effects observed at high dose levels consisted primarily of decreased body weight; increased liver weights; histopathological changes in the liver and kidney; decreased red blood cell counts, hemoglobin and hematocrit; altered blood chemistry parameters; and, at 5000 and 10000 ppm in mice, a decrease in survival rates. The NOELs from these studies were 1000 ppm (149.4 mg/kg/day) in mice, 100 mg/kg/day in dogs and 400 ppm (23.5 mg/kg/day) in rats. In a 4 week inhalation study of Pyriproxyfen Technical in rats, decreased body weight and increased water consumption was observed at 1000 mg/m^3. The NOEL in this study was 482 mg/m^3. A 21-day dermal toxicity study in rats with Pyriproxyfen Technical did not produce any signs of dermal or systemic toxicity at 1000 mg/kg/day.

CHRONIC/CARCINOGENICITY: Pyriproxyfen Technical has been tested in chronic studies with dogs, rats and mice. Dogs exposed to dose levels of 300 mg/kg/day or higher for 52 weeks showed overt clinical signs of toxicity, elevated levels of blood enzymes and liver damage. The NOEL in this study was 100 mg/kg/day. In a 78 week study in mice, dietary levels of 3000 ppm or greater produced gross and histopathological changes in the kidney. The NOEL in this study was 600 ppm. In a 2-year study in rats, dietary levels of 3000 ppm or greater produced decreased body weights in female rats. The NOEL in the rat study was 600 ppm. No oncogenic response was produced in mice or rats.

DEVELOPMENTAL TOXICITY: Tests for developmental toxicity in rats and rabbits were conducted with Pyriproxyfen Technical. In the study conducted with rats, maternal toxicity (mortality, decreased body weight gain and food consumption and clinical signs of toxicity) was observed at doses of 300 mg/kg/day and greater. The maternal NOEL was 100 mg/kg/day. A transient increase in skeletal variations was observed in rat fetuses exposed to 300 mg/kg/day and greater. The NOEL for prenatal developmental toxicity was 100 mg/kg/day. An increased incidence of visceral and skeletal variations was observed postnatally at 1000 mg/kg/day. The NOEL for postnatal developmental toxicity was 300 mg/kg/day. In the study conducted with rabbits, maternal toxicity (clinical signs of toxicity including one death, decreased body weight gain and food consumption, and abortions or premature deliveries) was observed at oral doses of 300 mg/kg/day or higher. The maternal NOEL was 100 mg/kg/day. No developmental effects were observed in the rabbit fetuses. The NOEL for developmental toxicity in rabbits was 1000 mg/kg/day.

REPRODUCTION: A dietary rat reproduction study was conducted with Pyriproxyfen Technical. Systemic toxicity (reduced body weights, histopathological changes in the liver and kidney, and increased liver weight) was produced at 5000 ppm. The systemic NOEL was 1000 ppm. No effects on reproduction were produced even at 5000 ppm, the highest dose tested.

MUTAGENICITY: Pyriproxyfen Technical was negative in the following tests for mutagenicity: Ames Assay with and without S9, unscheduled DNA synthesis in HeLa S3 cells, *in vitro* gene mutation in V79 Chinese hamster cells, and *in vitro* chromosomal aberration in Chinese hamster ovary cells.

For a summary of the potential for adverse health effects from exposure to this product, refer to Section 3. For information regarding regulations pertaining to this product, refer to Section 15.

12. ECOLOGICAL INFORMATION

AVIAN TOXICITY: Pyriproxyfen Technical is practically non-toxic to avian species. Test results include:

Oral LD_{50} mallard duck: greater than 2000 mg/kg;
Oral LD_{50} bobwhite quail: greater than 2000 mg/kg;
Dietary LC_{50} mallard duck: greater than 5200 ppm;
Dietary LC_{50} bobwhite quail: greater than 5200 ppm;
Reproduction bobwhite quail: NOEC = 600 ppm;
Reproduction mallard duck: NOEC = 600 ppm

AQUATIC ORGANISM TOXICITY: Pyriproxyfen Technical is moderately to highly toxic to fish and moderately to very highly toxic to aquatic invertebrate species. Test results include:

Freshwater species:
LC_{50} (96 hr) Bluegill Sunfish: greater than 270 µg/l;
LC_{50} (96 hr) Rainbow Trout: greater than 325 µg/l;
LC_{50} (21 day) Rainbow Trout: 90 µg/l;
LC_{50} (96 hr) Carp: 450 µg/l;
LC_{50} (96 hr) Killifish: 2660 µg/l;
EC_{50} (48 hr) Daphnia magna: 400 µg/l;
MATC (21 day) Daphnia magna: 20 ppt;
MATC (Early Life Cycle) Rainbow Trout: 5.4 µg/l.

Estuarine species:
LC_{50} (96 hr) Sheepshead Minnow: greater than 1.02 ppm;
LC_{50} (96 hr) Mysid Shrimp: 65 ppb;
EC_{50} (96 hr) Oyster Shell Deposition: 92 ppb.

OTHER NON-TARGET ORGANISM TOXICITY: Pyriproxyfen Technical is practically non-toxic to bees. The acute contact LC_{50} in bees was greater than 100 µg/bee.

13. DISPOSAL CONSIDERATIONS

END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.

DISPOSAL METHODS: Check government regulations and local authorities for approved disposal of this material. Dispose in accordance with applicable laws and regulations.

14. TRANSPORT INFORMATION

DOT (ground) SHIPPING NAME: Insecticide, solid, non-regulated

DOT TECHNICAL SHIPPING NAME: Pyriproxyfen 0.5 % solid
DOT REPORTABLE QUANTITY (RQ): None
UN/NA NUMBER: Not applicable
HAZARD CLASS: Not applicable
REMARKS: None
EXEMPTION REQUIREMENT: None

15. REGULATORY INFORMATION

REGULATIONS UNDER FIFRA: All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

OTHER U.S. FEDERAL REGULATIONS:

CWA Section 311: A component of this product is classified as an oil under Section 311 of the Clean Water Act (40 CFR 110) and the Oil Pollution Act of 1990. Discharge or spills that produce a visible sheen on either surface or in waterways/sewers that lead to surface water must be reported to the National Response Center at 800-424-8802.

Chemical Name	SARA 313 Chemicals	SARA Section 302	CERCLA Reportable Quantity (RQ):
Pyriproxyfen (2-[1-Methyl-2-(4-phenoxyphenoxy)ethoxy] pyridine) * (95737-68-1)	Not listed	Not listed	None
Others ** (No CAS#)	Not listed	Not listed	None

SARA (311, 312):

Immediate Health: Yes
Chronic Health: Yes
Fire: No
Sudden Pressure: No
Reactivity: No

STATE REGULATIONS:
Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities. The state regulations reviewed include: California Proposition 65, Massachusetts Right to Know, Florida Substance List, Michigan Critical Materials List, New Jersey Right to Know, Pennsylvania Right to Know, Rhode Island Right to Know and the Minnesota Hazardous Substance list. For Washington State Right to Know, see Section 2 for Exposure Limit information. For Louisiana Right to Know refer to SARA information listed under U.S. Regulations above.

California Proposition 65: Not listed

CANADIAN REGULATIONS:

WHMIS Hazard Class: Not determined

16. OTHER INFORMATION

REASON FOR ISSUE:	Change the Manufacturer's address. Revised Sections: 1, 9, 10 and 16.
MSDS NO.:	0077
REVISION NUMBER:	3
REVISION DATE:	07/29/2004
SUPERCEDES DATE:	8/15/2001

THE INFORMATION IN THIS MSDS IS BASED ON DATA AVAILABLE TO US AS OF THE REVISION DATE GIVEN HEREIN, AND BELIEVED TO BE CORRECT. CONTACT VALENT USA CORPORATON TO CONFIRM IF YOU HAVE THE MOST CURRENT MSDS.

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