

Schering-Plough Animal Health Corporation  
556 Morris Avenue  
Summit, NJ 07901

## MATERIAL SAFETY DATA SHEET

Schering-Plough urges each user or recipient of this MSDS to read the entire data sheet to become aware of the hazards associated with this material.

### SECTION 1. IDENTIFICATION OF SUBSTANCE AND CONTACT INFORMATION

**MSDS NAME:** **Saber Extra Insecticide Ear Tag**

**SYNONYM(S):** None

**MSDS NUMBER:** SP000912

**EMERGENCY NUMBER(S):** Schering-Plough Security Control Center (908) 820-6921 (24 hours)

Transportation Emergencies - CHEMTREC:  
(800) 424-9300 (Inside Continental USA)  
(703) 527-3887 (Outside Continental USA)

Rocky Mountain Poison Center (For Human Exposure):  
(303) 595-4869

Animal Health Technical Services:  
For Animal Adverse Events: Small Animals and Horses: (800) 224-5318  
For Animal Adverse Events: Livestock: (800) 211-3573  
For Animal Adverse Events: Poultry: (800) 219-9286

**INFORMATION:** Animal Health Technical Services:  
For Small Animals and Horses: (800) 224-5318  
For Livestock: (800) 211-3573  
For Poultry: (800) 219-9286

**SCHERING-PLOUGH MSDS HELPLINE:** (800) 770-8878 (US and Canada)  
(908) 473-3371 (Worldwide)  
Monday to Friday, 9am to 5pm (US Eastern Time) .

### SECTION 2. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

Flexible plastic ear tag  
Violet  
Odor unknown

Harmful if swallowed.  
May be harmful if absorbed through skin.

Toxic to fish and aquatic organisms.  
May cause long-term adverse effects in the aquatic environment.

#### POTENTIAL HEALTH EFFECTS:

The toxicological properties of this material have not been fully characterized in humans or animals. Therefore, laboratory or process control systems and appropriate work practices should be in place to minimize the potential for inhalation exposure, skin contact, eye contact, or ingestion when working with this material.

The U.S. Environmental Protection Agency's (EPA) labeling criteria indicate that this product is harmful if swallowed, absorbed through the skin, or inhaled.

Skin exposure to the active ingredient or prolonged exposure to the insecticide ear tag may produce tingling, itching, burning, prickling, glowing, flushing, numbness, or a chapped feeling. Symptoms may be delayed, or may persist for up to 30 hours. Symptoms usually occur around the face but may involve the arms and hands. This material may cause mild eye or mechanical irritation. Exposure to high concentrations may induce neurotoxic effects including staggered gait, muscle tremors, and convulsions.

Piperonyl butoxide is used to enhance the action of pyrethrin and pyrethroid insecticides. Clinical effects from piperonyl butoxide exposure include nausea, vomiting, diarrhea, loss of appetite, and mild central nervous system depression. It has been reported to cause decreases in the number of red blood cells, white blood cells and platelets in the circulating blood.

#### LISTED CARCINOGENS

CHEMICAL NAME	CAS NUMBER	OSHA	IARC	NTP	ACGIH
Piperonyl Butoxide.	51-03-6		3 Classification not possible from current data.		

Piperonyl Butoxide is classified by IARC as a Group 3 carcinogen (unclassifiable as to carcinogenicity in humans).

### SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

**CHEMICAL NAME:** Pyrethroid Insecticide  
**PRODUCT USE:** Veterinary product  
**CHEMICAL FORMULA:** Pesticide impregnated ear tag

The formulation for this product is proprietary information and is a mixture of hazardous and/or non-hazardous materials. This mixture contains the listed hazardous components in concentrations >1%; other hazardous components may be present in concentrations <1%. No carcinogens or potential carcinogens listed by NTP, IARC, or OSHA are present in concentrations >0.1% in this mixture.

#### CHEMICAL COMPOSITION

CHEMICAL NAME	CAS NUMBER	PERCENT
Piperonyl Butoxide.	51-03-6	13
Lambda Cyhalothrin.	91465-08-6	10

**ADDITIONAL INFORMATION:** This MSDS is written to provide health and safety information for individuals who will be handling the final product formulation during research, manufacturing, and distribution. For health and safety information for individual ingredients used during manufacturing, refer to the appropriate MSDS for each ingredient. Refer to the package insert or product label for handling guidance for the consumer.

### SECTION 4. FIRST AID MEASURES

**INHALATION:** Remove to fresh air. Administer artificial respiration if breathing has ceased. IMMEDIATELY consult a physician.

**SKIN CONTACT:** In case of skin contact, while wearing protective gloves, carefully remove any contaminated clothing, including shoes, and wash skin thoroughly with soap and water. If irritation or symptoms occur or persist, consult a physician.

**EYE CONTACT:** In case of eye contact, immediately rinse eyes thoroughly with plenty of water. If wearing contact lenses, remove only after initial rinse, and continue rinsing eyes for at least 15 minutes. If irritation occurs or persists, consult a physician.

**INGESTION:** DO NOT induce vomiting. Do not attempt to give anything by mouth to a seizing, drowsy or unconscious person. If alert, rinse mouth, drink a glass of water and IMMEDIATELY consult a physician.

### SECTION 5. FIRE FIGHTING MEASURES

#### FLAMMABILITY DATA:

Flash Point: > 200 deg C

## SECTION 5. FIRE FIGHTING MEASURES

### SPECIAL FIRE FIGHTING PROCEDURES:

Wear full protective clothing and self-contained breathing apparatus (SCBA).

### SUITABLE EXTINGUISHING MEDIA:

Water spray, carbon dioxide, dry chemical, halon or foam.

See Section 9 for Physical and Chemical Properties.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### PERSONAL PRECAUTIONS:

Wear appropriate personal protective equipment as specified in Section 8.

### SPILL RESPONSE / CLEANUP:

All spills should be handled according to site requirements and based on precautions cited in the MSDS. In the case of liquids, use proper absorbent materials. In manufacturing and large-scale operations, HEPA vacuuming prior to wet mopping or cleaning is required.

### ENVIRONMENTAL PRECAUTIONS:

This product is toxic to aquatic organisms. Do not allow product to reach ground water, water course, sewage or drainage systems.

See Sections 9 and 10 for additional physical, chemical, and hazard information.

## SECTION 7. HANDLING AND STORAGE

### HANDLING:

Ensure adequate ventilation. No special containment is required. Transported materials should be in contamination-free containers with appropriate labels. Use of secondary containers is suggested where appropriate. Cover containers appropriately during material transfer or transportation.

### STORAGE:

Store in a cool, dry, well ventilated area. Store out of direct sunlight.

See Section 8 for exposure controls and additional safe handling information.

## SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

### EXPOSURE CONTROLS:

For laboratories and small-scale operations, no special containment is required. Work may be performed on the benchtop if materials are non-volatile or not dusty. Otherwise, materials should be handled in a properly functioning chemical fume hood, ventilated enclosure or controlled by local exhaust ventilation.

For manufacturing and large-scale operations, traditional process technologies are acceptable. Mechanical engineering controls, such as local exhaust ventilation, is preferred at dust or aerosol generating points. Recirculation of air from operating areas is not permitted into non-production or non-operating areas.

### RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT (PPE):

Respiratory Protection:	Respirators are not normally required; however, appropriate respiratory protection may be required in situations where exposure (e.g. spills, process upsets, or non-routine maintenance) may exceed any available recommended exposure limit. Consult your site safety staff for guidance.  In manufacturing and large-scale operations, powered air purifying respirators (PAPRs) or positive-pressure air supplied respirators with full-face coverage may be required dependent on the level of exposure. Appropriate respiratory protection is required in situations where exposure (e.g. spills, process upsets, or non-routine maintenance) may exceed any available recommended exposure limit. Consult your site safety staff for guidance.
Skin Protection:	Gloves that provide an appropriate barrier to the skin are recommended if there is potential for contact with this material. Consult your site safety staff for guidance.
Eye Protection:	Safety glasses with side shields. Use of goggles or full face protection may be required based on hazard, potential for contact, or level of exposure. Consult your site safety staff for guidance.
Body Protection:	In small scale or laboratory operations, lab coats or other equivalent protective clothing is required. In large-scale or manufacturing operations, lab coats or other equivalent protective clothing is required.

## EXPOSURE LIMIT VALUES

No exposure limits are available for this material.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**FORM:** Flexible plastic ear tag  
**COLOR:** Violet  
**ODOR:** Odor unknown  
**SOLUBILITY:**  
Water: Not determined

See Section 5 for flammability/explosivity information.

### SECTION 10. STABILITY AND REACTIVITY

**STABILITY/ REACTIVITY:**  
Stable under normal conditions.

**INCOMPATIBLE MATERIALS / CONDITIONS TO AVOID:**  
Open flames and high temperatures.

**HAZARDOUS DECOMPOSITION PRODUCTS / REACTIONS:**  
No dangerous decomposition is expected if used according to manufacturer's specifications.

### SECTION 11. TOXICOLOGICAL INFORMATION

The information presented below pertains to the following individual ingredients, and not to the mixture(s).

#### ACUTE TOXICITY DATA

**INHALATION:**  
Future Phrase

Piperonyl Butoxide: Inhalation LC50 (4hr): > 5 mg/L (unspecified species)

**SKIN:**  
Lambda Cyhalothrin (92.6% purity): Dermal LD50: 632 - 696 mg/kg (rat)  
Mortality was observed within 2 to 3 days. Clinical effects observed included decreased activity, tiptoe gait, splayed gait, loss of stability, dehydration, urinary incontinence, piloerection, and an upward curvature of the spine.

Lambda Cyhalothrin was not irritating to rabbit skin.

Piperonyl Butoxide: Dermal LD50: 200 mg/kg (rabbit); > 7950 mg/kg (rat)  
Piperonyl Butoxide was not damaging but may be irritating to the skin of rabbits, rats, cats, and dogs.

**EYE:**  
Lambda Cyhalothrin produced moderate irritation in rabbit eyes.

Piperonyl Butoxide was not damaging but may be irritating to the eyes of rabbits, rats, cats, and dogs.

**ORAL:**  
Lambda Cyhalothrin: Oral LD50: 54 - 100 mg/kg (rat)  
Mortality was observed between the days 1 to 3. Clinical effects noted at doses of 11.3 mg/kg and higher included ataxia, decreased activity, splayed gait, upward curvature of the spine, urinary incontinence, piloerection, salivation, dehydration, or ungroomed appearance.

No clinical or hematological effects were observed in six human volunteers given a single oral dose of 5 mg of lambda cyhalothrin (equivalent to 0.05 to 0.07 mg/kg).

Piperonyl Butoxide: Oral LD50: 6150 - 11500 mg/kg (rat); 2500 - 5000 mg/kg (rabbit); > 7500 (cat and dog)

**SENSITIZATION:**  
Undiluted piperonyl butoxide was not sensitizing in rabbit skin.

#### REPEAT DOSE TOXICITY DATA

**SUBCHRONIC / CHRONIC TOXICITY:**

Lambda Cyhalothrin: Subacute (5-days) to chronic (1-year) oral studies were conducted in mice, rats, rabbits, and dogs. Dosages varied with species ranging from 0.5 to 25 mg/kg/day. Decreased body weight and food consumption, and neurological signs associated with pyrethroid toxicity (e.g. ataxia, unsteady or abnormal gait, and hyperexcitability) were observed. [NOEL: 5 mg/kg/day (rats) and 0.5 mg/kg/day (dogs)]

Subacute (5-days) to chronic (1-year) oral studies using cyhalothrin were conducted in mice, rats, rabbits, and dogs. Dosages varied with species ranging from 0.1 to 310 mg/kg/day. The adverse effects observed included decreased body weight and food consumption, neurologic signs associated with pyrethroid toxicity (e.g. ataxia, unsteady or abnormal gait, and hyperexcitability), increased rate of respiration, hematology changes, increased liver and kidney weight, increased serum liver enzymes, liver histopathology, and mortality at high dose levels [NOEL: 0.65 mg/kg/day (mice); 0.5 mg/kg/day (rat, dogs); and 20 mg/kg/day (rabbit)]

A carcinogenicity study in mice and a combined carcinogenicity/chronic toxicity study in rats was conducted with cyhalothrin. Rats were orally administered 0.47 to 14 mg/kg/day of cyhalothrin for two years. Adverse effects included hyperactivity and piloerection, emaciation, increased serum enzymes (liver), and a thickening of the fore stomach. There was no treatment-related histopathology [NOEL: 2.3 mg/kg/day]. Mice orally administered 1.8 to 53 mg/kg/day of cyhalothrin for two years exhibited decreased body weight gains and increased adrenal weights [NOEL: 1.8 mg/kg/day].

Piperonyl Butoxide: Mice given 0.3 to 0.9% in their diet for 20 days had increased liver weights and other signs of liver toxicity. Repeat dose toxicity studies on piperonyl butoxide were conducted in mice, rats, and dogs in studies ranging from 7 weeks to 1 year in duration, and at dosage levels ranging from 62.5 to 30,000 mg/kg. Effects on body weight, food consumption, organ weights, and the liver were observed.

**REPRODUCTIVE / DEVELOPMENTAL TOXICITY:**

Cyhalothrin: There were no signs of fetotoxicity or teratogenicity in rats and rabbits. Decreased litter size was noted in a 2-generation reproduction study in rats given oral dosages of 6.1 mg/kg/day.

Piperonyl Butoxide: Teratogenicity was reported in a rabbit study. Fetotoxicity (fetal deaths and reduced body weights) and teratogenicity (limb deformity and decreased digits) were observed in mice and rats given oral dosages as high as 1800 mg/kg on days 9 through 11 of gestation. Effects on litter sizes, pup survival, pup weights, and behavioral parameters were observed in 1-, 2-, and 3-generation reproductive studies in rats and mice given dosages as high as 8000 mg/kg or 0.8% in the diet. In addition, deviations in neurobehavioral changes were also noted in mice in subsequent generations.

**MUTAGENICITY / GENOTOXICITY:**

Lambda Cyhalothrin: Negative in in vitro chromosome aberration assays in human lymphocytes and human HELA cells, in an in vitro mouse lymphoma TK+/- forward gene mutation assay, in an in vivo bonbe marrow cytogenetic assay in mice, and in Ames assays.

Piperonyl Butoxide: Not mutagenic in bacteria, silkworms, cultured mammalian cells, an Ames assay, and a dominant lethal test. It was negative in an unscheduled DNA synthesis study and in a chromosome aberration study. It induced sister chromatid exchanges in cultured Chinese hamster ovary cells in both the presence and absence of metabolic activation, and was positive in a mouse lymphoma assay with metabolic activation. Equivocal results were noted in a point mutation assay without metabolic activation, and it was negative with activation.

**CARCINOGENICITY:**

This material or product has not been evaluated for carcinogenicity.

Lambda Cyhalothrin: No carcinogenic effects were noted in chronic feeding studies in rats and mice.

Piperonyl Butoxide: Liver tumors were noted in rats given concentrations as high as 2.4% in the diet for approximately two years. Hepatocellular carcinomas were induced in male mice administered concentrations as high as 1.2% in the diet for a year. However, in other studies, no carcinogenic effects were noted in mice or rats.

**SECTION 12. ECOLOGICAL INFORMATION**

There are no data for the final product or its formulation(s). The information presented below pertains to the following ingredient(s).

**ECOTOXICITY DATA****INGREDIENT ECOTOXICITY**

Lambda Cyhalothrin: 48-hr EC50 (daphnid): 0.04 - 0.76 mg/L  
Lambda Cyhalothrin: 96-hr LC50 (rainbow trout): 0.24 - 11.2 mg/L

Piperonyl Butoxide: 48-hr LC50 (ceriodaphnid): 330 ug/L  
Piperonyl Butoxide: 96-hr LC50 (bluegill): 4.2 ug/L  
Piperonyl Butoxide: 96-hr LC50 (rainbow trout): 3.4 ug/L

**ENVIRONMENTAL DATA****OTHER INGREDIENT ENVIRONMENTAL DATA:**

Piperonyl Butoxide is potentially biodegradable based on data from related chemicals.

**SECTION 13. DISPOSAL CONSIDERATIONS**

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### MATERIAL WASTE:

Disposal must be in accordance with applicable federal, state/provincial, and/or local regulations. Incineration is the preferred method of disposal, when appropriate. Operations that involve the crushing or shredding of waste materials or returned goods must be handled to meet the ECG or OEG.

### PACKAGING AND CONTAINERS:

Disposal must be in accordance with applicable federal, state/provincial, and/or local regulations.

## SECTION 14. TRANSPORT INFORMATION

This material is not subject to the transportation regulations of DOT, IATA, and the IMO. Refer to site-specific procedures and requirements for additional guidance.

### ADR CLASSIFICATION:

Proper Shipping Name: Environmentally hazardous substance, solid, n.o.s. (lambda cyhalothrin)  
Hazard Class: 9  
UN Number: UN 3077  
Packing Group: III  
Classification Code: M7

### ADDITIONAL INFORMATION:

Although this material is regulated only under the ADR, both the IATA and IMO have special provisions that allow the shipper to transport materials under the shipping name "Environmentally hazardous substance, solid, n.o.s." if the material is being transported under both ADR and either IATA or IMO regulations.

## SECTION 15. REGULATORY INFORMATION

### TSCA LISTING

CHEMICAL NAME	TSCA
Piperonyl Butoxide.	Listed.

### U.S. STATE REGULATIONS

CHEMICAL NAME	California Proposition 65	CARTK	NJRTK	CTRTK	MARTK
Piperonyl Butoxide.			Substance no. 3732 Listed.		

Fields in the above tables that do not contain data indicate that those materials have not been listed by local regulations.

## SECTION 16. OTHER INFORMATION

Although reasonable care has been taken in the preparation of this document, we extend no warranties and make no representations as to the accuracy or completeness of the information contained therein, and assume no responsibility regarding the suitability of this information for the user's intended purposes or for the consequence of its use. Each individual should make a determination as to the suitability of the information for their particular purpose(s).

### DEPARTMENT ISSUING MSDS:

Global Safety and Environmental Affairs  
Occupational and Environmental Toxicology  
Schering-Plough Corporation  
556 Morris Avenue  
Summit, NJ 07901 USA.

### SCHERING-PLOUGH MSDS HELPLINE:

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(908) 473-3371 (Worldwide)  
Monday to Friday, 9am to 5pm (US Eastern Time) .

### MSDS CREATION DATE:

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