



SAFETY DATA SHEET

Sentinel Spectrum® (milbemycin oxime/lufenuron/praziquantel)

1. IDENTIFICATION

Product Name	Sentinel Spectrum® (milbemycin oxime/lufenuron/praziquantel)
Recommended use of the chemical and restrictions on use	
Identified uses	Chewable Tablets for Worm and Flea Prevention and Control in Dogs and Puppies
Restrictions on Use	Not for human use.
Company Identification	Virbac AH, Inc. P.O. Box 162059 Fort Worth, Texas 76161
Customer Information Number	(800) 338-3659
Emergency Telephone Number	
CHEMTREC Number	(800) 424-9300
Other Emergency Number:	1-800-338-3659 for medical emergencies
Issue Date	April 10, 2015
Supersedes Date	This is the first issue.

Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2. HAZARDS IDENTIFICATION

Hazard Classification
Acute Hazards to the Aquatic Environment – Category 1 (OSHA non-mandatory)

Label Elements
Hazard Symbols



Signal Word: Warning

Hazard Statements
Very toxic to aquatic life.

Precautionary Statements

Prevention
Avoid release to the environment.

Response
Collect spillage.

Storage
None

Disposal
Dispose of contents/container in accordance with local regulation.



2. HAZARD IDENTIFICATION

Other Hazards

None

Specific Concentration Limits

The values listed below represent the percentages of ingredients of unknown toxicity.

Acute oral toxicity	<10%
Acute dermal toxicity	<10%
Acute inhalation toxicity	20 - 30%
Acute aquatic toxicity	>90%

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms:

This product is a mixture.

Component Name	CAS Number	Concentration
Milbemycin oxime	122674-17-3	<1%
Lufenuron	103055-07-8	5 – 10%
Praziquantel	55268-74-1	1 – 5%
Starch	NA	25 – 35%

Each flavored chew contains:

2.3, 5.75, 11.5 or 23.0 mg of Milbemycin oxime

46, 115, 230, or 460 mg of Lufenuron

22.8, 57, 114, or 228 mg of Praziquantel

4. FIRST - AID MEASURES

Description of necessary first-aid measures

Eyes

Not an expected route of entry. If tablet contacts eye, flush thoroughly with water. If pain or irritation persists contact a physician.

Skin

Wash skin with soap and water.

Ingestion

Contact a physician immediately if ingested. Physician may call a poison control center for advice concerning human ingestion.

Inhalation

Not applicable

Most important symptoms/effects, acute and delayed

Aside from the information found under Description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed

Notes to Physicians

Treat symptomatically.



5. FIRE - FIGHTING MEASURES

Extinguishing Media

Use extinguishing media appropriate for surrounding materials.

Unusual Fire and Explosion Hazards

Can release hazardous vapors during a fire.

Protective Equipment for Fire-Fighting

Wear full protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear appropriate protective clothing.

Environmental Precautions

Prevent the material from entering drains or watercourses.

Methods and materials for containment and cleaning up

Sweep and dispose of small amounts in trash. Large amounts should be disposed of in a sanitary landfill.

7. HANDLING AND STORAGE

Precautions for safe handling

Wear appropriate protective clothing.

Conditions for safe storage

Store in original container at controlled room temperatures between 59°F and 77°F (15°C - 25° C). Keep out of sunlight. Keep away from children. Wash hands after dispensing to dog and before eating, drinking or smoking.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Milbemycin Oxime

Manufacturer's recommended limit: 0.12 mg/m³ 8h TWA

Lufenuron

Manufacturer's recommended limit: 0.15mg/m³ 8h TWA

Praziquantel

None established

Starch

ACGIH: TLV 10mg/m³ 8h TWA

OSHA: PEL 15 mg/m³ total dust, 5 mg/m³ respirable fraction

Appropriate engineering controls

No specific measures necessary. Good general room ventilation is expected to be adequate to control airborne levels.



8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Individual protection measures

Respiratory Protection

Not required under normal conditions of use.

Skin Protection

Not required under normal conditions of use. Workers should wash hands before eating, drinking or smoking.

Eye/Face Protection

Not required under normal conditions of use.

Body Protection

Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical State Solid

Color Brown

Odor Characteristic beef- bacon flavor

Odor Threshold No data available

pH Not applicable

Density No data available

Boiling Range/Point (°C/F) Not applicable

Melting Point (°C/F) Not applicable

Flash Point (°C/F) Not applicable

Vapor Pressure Not applicable

Evaporation Rate (BuAc=1) Not applicable

Solubility in Water Soluble

Vapor Density (Air = 1) Not applicable

VOC Not applicable

Partition coefficient (n-octanol/water) Not applicable

Viscosity Not applicable

Auto-ignition Temperature No data available

Decomposition Temperature No data available

Upper explosive limit No data available

Lower explosive limit No data available

Flammability (solid, gas) No data available

10. STABILITY AND REACTIVITY

Reactivity

Data is not available

Chemical Stability

Stable under normal conditions.

Possibility of hazardous reactions

Hazardous polymerization will not occur.

Conditions to Avoid

Heat - high temperatures



10. STABILITY AND REACTIVITY

Incompatible Materials

None known.

Hazardous Decomposition Products

None known.

11. TOXICOLOGICAL INFORMATION

See product insert and/or packaging for additional information.

Acute Toxicity

Milbemycin oxime

Oral LD50 (rat) >2000 mg/kg

Dermal LD50 (rat) >2000 mg/kg

Inhalation LD50 (rat) 1220 mg/m³ 4h

Lufenuron

Oral LD50 (rat) >2000 mg/kg

Dermal LD50 (rat) >2000 mg/kg

Inhalation LD50 (rat) >2350 mg/m³ 4h

Praziquantel

Oral LD50 (rat) 2840 mg/kg

Dermal LD50 (rat) >2000 mg/kg

Specific Target Organ Toxicity (STOT) – single exposure

Praziquantel: Acute overexposure (ingestion) may cause dizziness, headache, drowsiness, malaise, abdominal pain.

Specific Target Organ Toxicity (STOT) – repeat exposure

Praziquantel: Chronic overexposure may cause nausea, lethargy, diarrhea, itching, fever and rash.

Serious Eye damage/Irritation

Milbemycin oxime: Not irritating to eyes in rabbit studies.

Lufenuron: Not irritating to eyes in rabbit studies.

Praziquantel: Not irritating to eyes in rabbit studies.

Skin Corrosion/Irritation

Milbemycin oxime: Not irritating to skin in rabbit studies.

Lufenuron: Not irritating to skin in rabbit studies.

Praziquantel: Not irritating to skin in rabbit studies.

Respiratory or Skin Sensitization

Milbemycin oxime: Not sensitizing in guinea pig study.

Lufenuron: Sensitizing in guinea pig in Maximisation Test.

Praziquantel: Not sensitizing in guinea pig study.

Carcinogenicity

Product: Not considered carcinogenic by NTP, IARC, and OSHA.

Praziquantel: Long term studies in rats and golden hamsters did not reveal any carcinogenic effect.

Lufenuron: Not carcinogenic in rat and mouse studies.



11. TOXICOLOGICAL INFORMATION

Germ Cell Mutagenicity

Milbemycin oxime: Negative results for in vivo and in vitro animal studies.

Lufenuron: Negative results for in vivo and in vitro animal studies.

Praziquantel: Negative results for in vivo and in vitro animal studies.

Reproductive Toxicity

Praziquantel: Studies in rats and rabbits have shown no evidence of impaired fertility or harm to the fetus. An increase of the abortion rate was found in rats at three times the single human therapeutic dose.

Lufenuron: Did not show teratogenic effects in animal experiments.

Milbemycin oxime: Not teratogenic in rat and rabbit studies.

Aspiration Hazard

Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Lufenuron

LC50 (Rainbow Trout) >73 mg/l 96hr

LC50 (Daphnia magna) 0.0011 – 0.0013 mg/l 48hr

EC50 (green algae) 10 mg/l 72hr

Milbemycin Oxime

LC50 (Common carp) 0.059 mg/l 48hr

LC50 (Daphnia pulex) >300 mg/l 3hr

Mobility in soil

Ivermectin: Ivermectin is metabolized in the soil. Water solubility is limited and it binds to soil very tightly. It does not bioconcentrate in fish and is not taken up from soil into plants.

Persistence/Degradability

Lufenuron: Not readily biodegradable.

Bioaccumulative Potential

No relevant studies identified.

Other adverse effects

No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with all applicable local and national regulations.

14. TRANSPORT INFORMATION

Contact supplier for transport information.



15. REGULATORY INFORMATION

United States TSCA Inventory

This product is a drug and therefore is not regulated under the US EPA Toxic Substance Control Act.

Canada DSL Inventory

This product contains ingredients that are not listed on the Domestic Substance List (DSL).

California Proposition 65

This product contains the following materials which the State of California has found to cause cancer, birth defects or other reproductive harm: Butylated Hydroxyanisole (BHA) (<0.05%)

SARA Title III Sect. 311/312 Categorization

None

SARA Title III Sect. 313

This product contains a chemical that is listed in Section 313 at or above de minimis concentrations. The following listed chemicals are present: None

16. OTHER INFORMATION

Legend

ACGIH: American Conference of Governmental Industrial Hygienists

CAS#: Chemical Abstracts Service Number

IARC: International Agency for Research on Cancer

LD50: Lethal Dose 50%

NA: Denotes no information found or available

NTP: National Toxicology Program

OSHA: Occupational Safety and Health Administration

PEL: Permissible Exposure Limit

STEL: Short Term Exposure Limit

TLV: Threshold Limit Value

VOC: Volatile Organic Compounds

Revision Date: April 10, 2015

Replaces: This is the first issue.

Changes made: Not applicable

Prepared By: EnviroNet LLC.

The information and recommendations presented in this SDS are based on sources believed to be accurate. Virbac AH, Inc. assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make **NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED**, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.