



SAFETY DATA SHEET

SENTINEL® SPECTRUM® Chews (milbemycin oxime/lufenuron/praziquantel)

1. IDENTIFICATION

Product Name	SENTINEL® SPECTRUM® Chews (milbemycin oxime/lufenuron/praziquantel)
Recommended use of the chemical and restrictions on use	
Identified uses	For the prevention of heartworm disease, the prevention and control of flea populations and for the treatment and control of adult roundworm, adult hookworm, adult whipworm, and adult tapeworm infections in dogs.
Restrictions on Use	Federal law restricts this drug to use by or on the order of a licensed veterinarian.
Company Identification	Virbac AH, Inc. P.O. Box 162059 Fort Worth, Texas 76161 (800) 338-3659
Customer Information Number	
Emergency Telephone Number	
CHEMTREC Number	(800) 424-9300
Other Emergency Number:	Human Toll-free 833-224-2009 Animal Toll-free 833-224-2013
Issue Date	March 6, 2020
Supersedes Date	May 15, 2019

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. HAZARD IDENTIFICATION

Hazard Classification

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

Chronic Hazards to the Aquatic Environment - Category 1 (OSHA non-mandatory)

Label Elements

Hazard Symbols



Signal Word: Warning

Hazard Statements

Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention

Avoid release to the environment.

Response

Collect spillage.



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2. HAZARD IDENTIFICATION

Storage

None

Disposal

Dispose of contents/container in accordance with local regulation.

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

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 chew 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.



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4. FIRST - AID MEASURES

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



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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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.

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



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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

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.



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11. TOXICOLOGICAL INFORMATION

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.

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
Aquatic Chronic - Category 1, Very toxic to aquatic life with long lasting effects.

Milbemycin Oxime

LC50 (Common carp) 0.059 mg/l 48hr
LC50 (Daphnia pulex) >300 mg/l 3hr
Aquatic Chronic - Category 1, Very toxic to aquatic life with long lasting effects.

Mobility in soil

No relevant studies identified.

Persistence/Degradability

Lufenuron: Not readily biodegradable.

Bioaccumulative Potential

No relevant studies identified.

Other adverse effects

No relevant studies identified.



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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 excluded from the US EPA Toxic Substance Control Act and is regulated under the Food, Drug and Cosmetic Act.

SARA Title III Sect. 311/312 Categorization

None

SARA Title III Sect. 313

The following chemicals are listed in Section 313 at or above de minimis concentrations: None.

16. OTHER INFORMATION

Legend

ACGIH: American Conference of Governmental Industrial Hygienists

BOD: Biological Oxygen Demand

CAS#: Chemical Abstracts Service Number

FIFRA: Federal Insecticide, Fungicide and Rodenticide Act

IARC: International Agency for Research on Cancer

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

N/A: Denotes no applicable 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

TSCA: Toxic Substance Control Act

Revision Date: March 9, 2020

Replaces: May 15, 2019

Changes made: Update to emergency numbers.

Information Source and References

This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

Prepared By: EnviroNet LLC.

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16. OTHER INFORMATION

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