

# SAFETY DATA SHEET

according to the Hazardous Products Regulations



## Milbemycin Oxime / Lufenuron / Praziquantel Formulation

Version 6.0      Revision Date: 05/09/2026      SDS Number: 7567906-00015      Date of last issue: 12/08/2025  
Date of first issue: 11/20/2020

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### SECTION 1. IDENTIFICATION

Product name : Milbemycin Oxime / Lufenuron / Praziquantel Formulation  
Other means of identification : No data available

#### Manufacturer or supplier's details

Company name of supplier : Merck & Co., Inc  
Address : 37 McCarville Street  
Charlottetown, PE C1E 2A7  
Telephone : 908-740-4000  
Emergency telephone : 1-908-423-6000  
E-mail address : EHSDATASTEWARD@merck.com

#### Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product  
Restrictions on use : Not applicable


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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the Hazardous Products Regulations

Skin sensitization : Category 1  
Reproductive toxicity : Category 1B  
Specific target organ toxicity : Category 1 (Central nervous system, Lungs, Liver, Stomach)  
- repeated exposure (Oral)

#### GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H317 May cause an allergic skin reaction.  
H360D May damage the unborn child.  
H372 Causes damage to organs (Central nervous system, Lungs, Liver, Stomach) through prolonged or repeated exposure if swallowed.

Precautionary Statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P261 Avoid breathing dust, fume, gas, mist, vapors or spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.

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P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves, protective clothing, eye protection and face protection.

### Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.

P308 + P313 IF exposed or concerned: Get medical attention.

P333 + P313 If skin irritation or rash occurs: Get medical attention.

P362 + P364 Take off contaminated clothing and wash it before reuse.

### Storage:

P405 Store locked up.

### Disposal:

P501 Dispose of contents and container to an approved waste disposal plant.

### Other hazards

Dust contact with the eyes can lead to mechanical irritation.

Contact with dust can cause mechanical irritation or drying of the skin.

May form explosive dust-air mixture during processing, handling or other means.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	Common Name/Synonym	CAS No./Unique ID	Concentration (% w/w)	Trade secret
Starch	Sago starch	9005-25-8*	>= 15 - <= 40	TSC
Glycerine	1,2,3-Propanetriol	56-81-5*	>= 7 - <= 13	TSC
Lufenuron (ISO)	No data available	103055-07-8*	>= 5 - <= 10	TSC
Sucrose	.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl	57-50-1*	>= 3 - <= 7	TSC
Praziquantel	4H-pyrazino-[2,1-a]-isoquinolin-4-one, 2-(cyclohexylcarbonyl)-1,2,3,6,7,11b-hexahydro-	55268-74-1*	>= 1 - <= 5	TSC
Milbemycin Oxime	No data available	129496-10-2*	>= 0.1 - <= 1	TSC

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\* Indicates that the identifier is a CAS No.

TSC- the actual concentration or concentration range is withheld as a trade secret

### SECTION 4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.  
When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.  
Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.  
Remove contaminated clothing and shoes.  
Get medical attention.  
Wash clothing before reuse.  
Thoroughly clean shoes before reuse.
- In case of eye contact : If in eyes, rinse well with water.  
Get medical attention if irritation develops and persists.
- If swallowed : If swallowed, DO NOT induce vomiting.  
Get medical attention.  
Rinse mouth thoroughly with water.
- Most important symptoms and effects, both acute and delayed : May cause an allergic skin reaction.  
May damage the unborn child.  
Causes damage to organs through prolonged or repeated exposure if swallowed.  
Contact with dust can cause mechanical irritation or drying of the skin.
- Protection of first-aiders : Dust contact with the eyes can lead to mechanical irritation.  
First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).
- Notes to physician : Treat symptomatically and supportively.

### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical
- Unsuitable extinguishing media : None known.
- Specific hazards during fire fighting : Exposure to combustion products may be a hazard to health.
- Hazardous combustion products : Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)  
Metal oxides  
Chlorine compounds

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- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Use water spray to cool unopened containers.  
Remove undamaged containers from fire area if it is safe to do so.  
Evacuate area.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.  
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).
- Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Retain and dispose of contaminated wash water.  
Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Sweep up or vacuum up spillage and collect in suitable container for disposal.  
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).  
Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.  
Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.  
Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

### SECTION 7. HANDLING AND STORAGE

- Technical measures : Static electricity may accumulate and ignite suspended dust causing an explosion.  
Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.
- Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.
- Advice on safe handling : Do not get on skin or clothing.  
Avoid breathing dust, fume, gas, mist, vapors or spray.  
Do not swallow.  
Avoid contact with eyes.  
Wash skin thoroughly after handling.  
Handle in accordance with good industrial hygiene and safety

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- practice, based on the results of the workplace exposure assessment  
Keep container tightly closed.  
Minimize dust generation and accumulation.  
Keep container closed when not in use.  
Keep away from heat and sources of ignition.  
Take precautionary measures against static discharges.  
Do not eat, drink or smoke when using this product.  
Take care to prevent spills, waste and minimize release to the environment.
- Conditions for safe storage : Keep in properly labeled containers.  
Store locked up.  
Keep tightly closed.  
Store in accordance with the particular national regulations.
- Materials to avoid : Do not store with the following product types:  
Strong oxidizing agents  
Self-reactive substances and mixtures  
Organic peroxides  
Explosives  
Gases

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Starch	9005-25-8	TWA	10 mg/m <sup>3</sup>	CA AB OEL
		TWA (Total dust)	10 mg/m <sup>3</sup>	CA BC OEL
		TWA (respirable dust fraction)	3 mg/m <sup>3</sup>	CA BC OEL
		TWAEV (total dust)	10 mg/m <sup>3</sup>	CA QC OEL
Glycerine	56-81-5	TWA	10 mg/m <sup>3</sup>	ACGIH
		TWA (Mist)	10 mg/m <sup>3</sup>	CA AB OEL
		TWA (Mist)	10 mg/m <sup>3</sup>	CA BC OEL
		TWA (Respirable mist)	3 mg/m <sup>3</sup>	CA BC OEL
Lufenuron (ISO)	103055-07-8	TWAEV (Mist)	10 mg/m <sup>3</sup>	CA QC OEL
		TWA	200 µg/m <sup>3</sup> (OEB 2)	Internal
Further information: DSEN				
		Wipe limit	100 µg/100 cm <sup>2</sup>	Internal
Sucrose	57-50-1	TWA	10 mg/m <sup>3</sup>	CA AB OEL
		TWA (Total dust)	10 mg/m <sup>3</sup>	CA BC OEL
		TWA (respir-	3 mg/m <sup>3</sup>	CA BC OEL

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		able dust fraction)		
		TWAEV	10 mg/m <sup>3</sup>	CA QC OEL
		TWA	10 mg/m <sup>3</sup>	ACGIH
Praziquantel	55268-74-1	TWA	0.5 mg/m <sup>3</sup> (OEB 2)	Internal
Milbemycin Oxime	129496-10-2	TWA	0.1 mg/m <sup>3</sup> (OEB2)	Internal

**Engineering measures** : Use feasible engineering controls to minimize exposure to compound.  
All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

### Personal protective equipment

**Respiratory protection** : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

**Filter type** : Combined particulates and organic vapor type

**Hand protection** : Chemical-resistant gloves

**Material** : Chemical-resistant gloves

**Eye protection** : Wear safety glasses with side shields or goggles.  
If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles.  
Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

**Skin and body protection** : Work uniform or laboratory coat.

**Hygiene measures** : If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place.  
When using do not eat, drink or smoke.  
Contaminated work clothing should not be allowed out of the workplace.  
Wash contaminated clothing before re-use.  
The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance** : solid

**Color** : brown

**Odor** : characteristic

**Odor Threshold** : No data available

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pH : No data available

Melting point/freezing point : No data available

Initial boiling point and boiling range : No data available

Flash point : Not applicable

Evaporation rate : Not applicable

Flammability (solid, gas) : May form explosive dust-air mixture during processing, handling or other means.

Flammability (liquids) : Not applicable

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : Not applicable

Relative vapor density : Not applicable

Relative density : No data available

Density : No data available

Solubility(ies)  
Water solubility : soluble

Partition coefficient: n-octanol/water : Not applicable

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity  
Viscosity, kinematic : Not applicable

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Molecular weight : No data available

Particle characteristics  
Particle size : No data available

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Not classified as a reactivity hazard.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	May form explosive dust-air mixture during processing, handling or other means. Can react with strong oxidizing agents.
Conditions to avoid	:	Heat, flames and sparks. Avoid dust formation.
Incompatible materials	:	Oxidizing agents
Hazardous decomposition products	:	No hazardous decomposition products are known.

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Skin contact  
Ingestion  
Eye contact

#### Acute toxicity

Not classified based on available information.

#### Product:

Acute oral toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: > 2,000 mg/kg Method: Calculation method

#### Components:

##### Starch:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg

##### Glycerine:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg
Acute dermal toxicity	:	LD50 (Guinea pig): > 5,000 mg/kg

##### Lufenuron (ISO):

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg LD50 (Mouse): > 2,000 mg/kg
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Acute inhalation toxicity : LC50 (Rat): 2,350 mg/m<sup>3</sup>  
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

### Sucrose:

Acute oral toxicity : LD50 (Rat): 29,700 mg/kg

### Praziquantel:

Acute oral toxicity : LD50 (Rat): 2,480 mg/kg  
LD50 (Mouse): 2,454 mg/kg  
LD50 (Dog): > 200 mg/kg  
LD50 (Rabbit): 1,050 mg/kg

### Milbemycin Oxime:

Acute oral toxicity : LD50 (Rat): 532 - 863 mg/kg  
LD50 (Mouse): 722 - 946 mg/kg  
Acute inhalation toxicity : LC50 (Rat): 1,200 mg/m<sup>3</sup>  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg

### Skin corrosion/irritation

Not classified based on available information.

### Components:

#### Glycerine:

Species : Rabbit  
Result : No skin irritation

#### Lufenuron (ISO):

Species : Rabbit  
Method : Draize Test  
Result : No skin irritation

#### Praziquantel:

Species : Rabbit  
Method : Draize Test  
Remarks : slight irritation

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Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation

### Serious eye damage/eye irritation

Not classified based on available information.

### Components:

#### Starch:

Species : Rabbit  
Result : No eye irritation

#### Glycerine:

Species : Rabbit  
Result : No eye irritation

#### Lufenuron (ISO):

Species : Rabbit  
Result : No eye irritation  
Method : Draize Test

#### Praziquantel:

Species : Rabbit  
Result : Mild eye irritation  
Method : Draize Test

#### Milbemycin Oxime:

Species : Rabbit  
Result : No eye irritation

### Respiratory or skin sensitization

#### Skin sensitization

May cause an allergic skin reaction.

#### Respiratory sensitization

Not classified based on available information.

### Components:

#### Starch:

Test Type : Maximization Test  
Routes of exposure : Skin contact  
Species : Guinea pig  
Result : negative

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### Lufenuron (ISO):

Test Type : Maximization Test  
Species : Guinea pig  
Assessment : May cause sensitization by skin contact.  
Result : Sensitizer

### Praziquantel:

Test Type : Maximization Test  
Routes of exposure : Dermal  
Species : Guinea pig  
Result : Not a skin sensitizer.

### Milbemycin Oxime:

Routes of exposure : Skin contact  
Species : Guinea pig  
Result : negative

### Germ cell mutagenicity

Not classified based on available information.

### Components:

#### Starch:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

#### Glycerine:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test  
Result: negative

Test Type: Bacterial reverse mutation assay (AMES)  
Result: negative

Test Type: Chromosome aberration test in vitro  
Result: negative

Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)  
Result: negative

### Lufenuron (ISO):

Genotoxicity in vitro : Test Type: Ames test  
Result: negative

Test Type: Mouse Lymphoma  
Test system: Chinese hamster cells  
Result: negative

Test Type: Cytogenetic assay

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Genotoxicity in vivo	:	Test system: Chinese hamster ovary cells Result: negative
	:	Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro) Test system: rat hepatocytes Result: negative
	:	Test system: Human lymphocytes Result: negative
	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Result: negative
Germ cell mutagenicity - Assessment	:	Test Type: Unscheduled DNA synthesis test (UDS) in testicular cells Species: Rat Result: negative
	:	Weight of evidence does not support classification as a germ cell mutagen.

### Sucrose:

Genotoxicity in vitro	:	Test Type: In vitro mammalian cell gene mutation test Result: negative
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### Praziquantel:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
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Genotoxicity in vivo	:	Test Type: Chromosomal aberration Test system: Chinese hamster cells Result: negative
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Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Rat Result: negative
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### Milbemycin Oxime:

Genotoxicity in vitro	:	Test Type: Bacterial reverse mutation assay (AMES) Result: negative
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Genotoxicity in vivo	:	Test Type: Chromosome aberration test in vitro Result: negative
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Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse
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|||      Result: negative

### **Carcinogenicity**

Not classified based on available information.

### **Components:**

#### **Glycerine:**

||| Species : Rat  
||| Application Route : Ingestion  
||| Exposure time : 2 Years  
||| Result : negative

#### **Lufenuron (ISO):**

||| Species : Rat  
||| Application Route : Ingestion  
||| Exposure time : 18 month(s)  
||| Result : negative

||| Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

#### **Praziquantel:**

||| Species : Hamster  
||| Application Route : Oral  
||| Exposure time : 80 weeks  
||| NOAEL : 100 mg/kg body weight  
||| Result : negative  
||| Remarks : No significant adverse effects were reported

||| Species : Rat  
||| Application Route : Oral  
||| Exposure time : 104 weeks  
||| NOAEL : 250 mg/kg body weight  
||| Result : negative  
||| Remarks : No significant adverse effects were reported

### **Reproductive toxicity**

May damage the unborn child.

### **Components:**

#### **Glycerine:**

||| Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative

||| Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat

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Application Route: Ingestion  
Result: negative

### Lufenuron (ISO):

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Oral  
General Toxicity Parent: NOAEL: 8.3 mg/kg wet weight  
Early Embryonic Development: NOAEL: 20.9 mg/kg body weight  
Result: Animal testing did not show any effects on fertility.

Effects on fetal development : Test Type: Development  
Species: Rat  
Application Route: Oral  
General Toxicity Maternal: NOAEL: 500 mg/kg body weight  
Developmental Toxicity: NOAEL: 1,000 mg/kg body weight  
Symptoms: No adverse effects.  
Remarks: No significant adverse effects were reported

Test Type: Fertility/early embryonic development  
Species: Rat  
Application Route: Ingestion  
General Toxicity Maternal: NOAEL: 20.9 mg/kg body weight  
Embryo-fetal toxicity.: 8.3 mg/kg body weight  
Result: Fetal abnormalities.

Reproductive toxicity - Assessment : Clear evidence of adverse effects on development, based on animal experiments.

### Praziquantel:

Effects on fertility : Test Type: Fertility  
Species: Rat  
Remarks: No significant adverse effects were reported

Test Type: Fertility  
Species: Mouse  
Remarks: No significant adverse effects were reported

Effects on fetal development : Test Type: Development  
Species: Rat  
Remarks: No significant adverse effects were reported

Test Type: Development  
Species: Mouse  
Remarks: No significant adverse effects were reported

### Milbemycin Oxime:

Effects on fertility : Test Type: One-generation reproduction toxicity study  
Species: Dog

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Application Route: Ingestion  
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Ingestion  
Result: negative

Test Type: Embryo-fetal development  
Species: Rabbit  
Application Route: Ingestion  
Result: negative

Test Type: Embryo-fetal development  
Species: Dog  
Application Route: Ingestion  
Result: negative

### STOT-single exposure

Not classified based on available information.

### Components:

#### Lufenuron (ISO):

Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

### STOT-repeated exposure

Causes damage to organs (Central nervous system, Lungs, Liver, Stomach) through prolonged or repeated exposure if swallowed.

### Components:

#### Lufenuron (ISO):

Routes of exposure : Oral  
Target Organs : Central nervous system, Lungs, Liver, Stomach  
Assessment : Shown to produce significant health effects in animals at concentrations of 10 mg/kg bw or less.

#### Milbemycin Oxime:

Routes of exposure : Ingestion  
Target Organs : Central nervous system  
Assessment : Shown to produce significant health effects in animals at concentrations of 10 mg/kg bw or less.

### Repeated dose toxicity

### Components:

#### Starch:

Species : Rat

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NOAEL :  $\geq 2,000$  mg/kg  
Application Route : Skin contact  
Exposure time : 28 Days  
Method : OECD Test Guideline 410

### Glycerine:

Species : Rat  
NOAEL : 0.167 mg/l  
LOAEL : 0.622 mg/l  
Application Route : inhalation (dust/mist/fume)  
Exposure time : 13 Weeks

Species : Rat  
NOAEL : 8,000 - 10,000 mg/kg  
Application Route : Ingestion  
Exposure time : 2 y

Species : Rabbit  
NOAEL : 5,040 mg/kg  
Application Route : Skin contact  
Exposure time : 45 Weeks

### Lufenuron (ISO):

Species : Rat  
NOAEL : 5.34 mg/kg  
Application Route : oral (feed)  
Exposure time : 4 Months  
Target Organs : Central nervous system, digestive system  
Symptoms : central nervous system effects

Species : Rat  
NOAEL : 1.93 mg/kg  
Application Route : oral (feed)  
Exposure time : 2 y  
Symptoms : central nervous system effects, Convulsions

Species : Mouse  
NOAEL : 2.12 mg/kg  
Application Route : oral (feed)  
Exposure time : 18 Months  
Target Organs : Central nervous system, Liver, Prostate  
Symptoms : central nervous system effects, Convulsions

Species : Dog  
NOAEL : 7.02 mg/kg  
Application Route : oral (feed)  
Exposure time : 1 y  
Target Organs : Central nervous system, Liver, Lungs  
Symptoms : Convulsions, Fatality, Irregularities

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### **Praziquantel:**

Species : Rat  
NOAEL : 1,000 mg/kg  
Application Route : Oral  
Remarks : No significant adverse effects were reported

Species : Dog  
NOAEL : 60 mg/kg  
LOAEL : 180 mg/kg  
Application Route : Oral  
Target Organs : Gastrointestinal tract  
Remarks : No significant adverse effects were reported

### **Milbemycin Oxime:**

Species : Rat  
NOAEL : 3 mg/kg  
LOAEL : 15 mg/kg  
Application Route : Ingestion  
Exposure time : 90 Days  
Symptoms : Liver disorders, Blood disorders

Species : Dog  
LOAEL : 8.6 mg/kg  
Application Route : Ingestion  
Exposure time : 3 Days  
Symptoms : Tremors

### **Aspiration toxicity**

Not classified based on available information.

### **Experience with human exposure**

#### **Components:**

##### **Lufenuron (ISO):**

General Information : Remarks: May be harmful if swallowed.  
May cause neurotoxic effects.

##### **Praziquantel:**

Inhalation : Symptoms: Headache, Tiredness, Dizziness, Gastrointestinal discomfort, decrease body temperature, Allergic reactions

##### **Milbemycin Oxime:**

Ingestion : Symptoms: Salivation, Convulsions, Diarrhea, Weakness, Vomiting, Tremors, Coma  
Remarks: Based on Animal Evidence

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### SECTION 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

##### Components:

##### **Glycerine:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 54,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1,955 mg/l Exposure time: 48 h
Toxicity to microorganisms	:	NOEC (Pseudomonas putida): > 10,000 mg/l Exposure time: 16 h Method: DIN 38 412 Part 8

##### **Lufenuron (ISO):**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 73,100 µg/l Exposure time: 96 h Method: OECD Test Guideline 203  LC50 (Oncorhynchus mykiss (rainbow trout)): > 29,000 µg/l Exposure time: 96 h Method: OECD Test Guideline 203  LC50 (Oncorhynchus mykiss (rainbow trout)): 370 µg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Americamysis): 0.042 µg/l Exposure time: 96 h Method: US-EPA OPPTS 850.1035  EC50 (Daphnia magna (Water flea)): 0.41 µg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Raphidocelis subcapitata (freshwater green alga)): 209 µg/l Exposure time: 72 h Method: OECD Test Guideline 201  EC50 (Scenedesmus subspicatus): 17 µg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 80 µg/l Exposure time: 33 d Method: OECD Test Guideline 210

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NOEC (Oncorhynchus mykiss (rainbow trout)): 20 µg/l  
Exposure time: 359 d  
Method: OECD Test Guideline 229

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 8.38 µg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

NOEC (Daphnia magna (Water flea)): 90 µg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

NOEC (Chironomus riparius (harlequin fly)): 2 µg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

### Praziquantel:

Toxicity to fish : LC50 (Carassius auratus (goldfish)): 29.2 mg/l  
Exposure time: 96 hrs  
Method: OECD Test Guideline 203

LC50 (Danio rerio (zebra fish)): 31.6 mg/l  
Exposure time: 96 hrs  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 35 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition of activated sludge  
Method: OECD Test Guideline 209

### Milbemycin Oxime:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.16 µg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.03 µg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50: > 87 µg/l  
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.01 µg/l

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### Persistence and degradability

#### Components:

##### **Glycerine:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 92 %  
Exposure time: 30 d  
Method: OECD Test Guideline 301D

### Bioaccumulative potential

#### Components:

##### **Glycerine:**

Partition coefficient: n-octanol/water : log Pow: -1.75

##### **Lufenuron (ISO):**

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
Bioconcentration factor (BCF): 28  
Method: OECD Test Guideline 305

Partition coefficient: n-octanol/water : log Pow: 5.12

##### **Sucrose:**

Partition coefficient: n-octanol/water : Pow: < 1

##### **Praziquantel:**

Partition coefficient: n-octanol/water : log Pow: 2.012  
pH: 7

##### **Milbemycin Oxime:**

Bioaccumulation : Bioconcentration factor (BCF): 440

Partition coefficient: n-octanol/water : log Pow: 7

### Mobility in soil

#### Components:

##### **Lufenuron (ISO):**

Distribution among environmental compartments : log Koc: 5.38  
Method: OECD Test Guideline 106

### Other adverse effects

No data available

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### Endocrine disrupting properties

No data available

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Do not dispose of waste into sewer.  
Dispose of in accordance with local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.  
If not otherwise specified: Dispose of as unused product.

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### UNRTDG

UN number : UN 3077  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Milbemycin Oxime, Lufenuron (ISO))

Class : 9  
Packing group : III  
Labels : 9  
Environmentally hazardous : yes

#### IATA-DGR

UN/ID No. : UN 3077  
Proper shipping name : Environmentally hazardous substance, solid, n.o.s.  
(Milbemycin Oxime, Lufenuron (ISO))

Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo aircraft) : 956  
Packing instruction (passenger aircraft) : 956  
Environmentally hazardous : yes

#### IMDG-Code

UN number : UN 3077  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Milbemycin Oxime, Lufenuron (ISO))

Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes

### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

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### Domestic regulation

#### TDG

UN number : UN 3077  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.  
(Milbemycin Oxime, Lufenuron (ISO))  
Class : 9  
Packing group : III  
Labels : 9  
ERG Code : 171  
Marine pollutant : yes(Milbemycin Oxime, Lufenuron (ISO))

#### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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## SECTION 15. REGULATORY INFORMATION

### The ingredients of this product are reported in the following inventories:

AICS : not determined  
CA. DSL : not determined  
CN IECSC : not determined

#### Canadian lists

No substances are subject to CEPA Section 84 Ministerial Conditions.

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## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
CA AB OEL : Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)  
CA BC OEL : Canada. British Columbia OEL  
CA QC OEL : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for air-borne contaminants  
ACGIH / TWA : 8-hour, time-weighted average  
CA AB OEL / TWA : 8-hour Occupational exposure limit  
CA BC OEL / TWA : 8-hour time weighted average  
CA QC OEL / TWA EV : Time-weighted average exposure value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for

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Standardization; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organization for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MERCOSUR - The Agreement for the Facilitation of the Transport of Dangerous Goods; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Sources of key data used to compile the Material Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

Revision Date : 05/09/2026  
Date format : mm/dd/yyyy

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.

CA / Z8