

**Albendazole / Closantel Sodium Formulation**

Version 5.1      Revision Date: 30.09.2023      SDS Number: 10843088-00011      Date of last issue: 04.04.2023  
Date of first issue: 26.08.2022

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifier**

Trade name : Albendazole / Closantel Sodium Formulation

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Use of the Sub-stance/Mixture : Veterinary product

Recommended restrictions on use : Not applicable

**1.3 Details of the supplier of the safety data sheet**

Company : MSD  
20 Spartan Road  
1619 Spartan, South Africa

Telephone : +27119239300

E-mail address of person responsible for the SDS : EHSDATASTEWARD@msd.com

**1.4 Emergency telephone number**

+1-908-423-6000

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**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****Classification (REGULATION (EC) No 1272/2008)**

Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

**2.2 Label elements****Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :



Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.  
H410 Very toxic to aquatic life with long lasting effects.

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Precautionary statements : **Prevention:**  
 P272 Contaminated work clothing should not be allowed out of the workplace.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves.  
**Response:**  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
 P362 + P364 Take off contaminated clothing and wash it before reuse.  
 P391 Collect spillage.

Hazardous components which must be listed on the label:  
 Albendazole Sulfoxide

**2.3 Other hazards**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**SECTION 3: Composition/information on ingredients****3.2 Mixtures****Components**

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Closantel	57808-65-8 260-967-1	Acute Tox. 3; H301 Aquatic Acute 1; H400 Aquatic Chronic 1; H410  M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	>= 2,5 - < 10
Albendazole Sulfoxide	54029-12-8	Acute Tox. 4; H302 Skin Sens. 1B; H317 Repr. 2; H361d STOT SE 2; H371 (Gastrointestinal tract, Central nervous system) STOT RE 2; H373 (Gastrointestinal tract, Central nervous system, Immune system, Liv-	>= 1 - < 2,5

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		er) Aquatic Acute 1; H400 Aquatic Chronic 1; H410	
		M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10	
Octamethylcyclotetrasiloxane	556-67-2 209-136-7 014-018-00-1	Flam. Liq. 3; H226 Repr. 2; H361f Aquatic Chronic 1; H410	$\geq 0,025 - < 0,1$
		M-Factor (Chronic aquatic toxicity): 10	

For explanation of abbreviations see section 16.

## SECTION 4: First aid measures

### 4.1 Description of 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.
- Protection of first-aiders : 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).
- 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 : Flush eyes with water as a precaution.  
Get medical attention if irritation develops and persists.
- If swallowed : If swallowed, DO NOT induce vomiting.  
Get medical attention.  
Rinse mouth thoroughly with water.  
Never give anything by mouth to an unconscious person.

### 4.2 Most important symptoms and effects, both acute and delayed

- Risks : May cause an allergic skin reaction.

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**4.3 Indication of any immediate medical attention and special treatment needed**

Treatment : Treat symptomatically and supportively.

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**SECTION 5: Firefighting measures****5.1 Extinguishing media**

Suitable extinguishing media : Water spray  
Alcohol-resistant foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : None known.

**5.2 Special hazards arising from the substance or mixture**

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>)  
Sulphur oxides  
Chlorine compounds  
Iodine compounds  
Metal oxides

**5.3 Advice for firefighters**

Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

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.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions : Use personal protective equipment.  
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

**6.2 Environmental precautions**

Environmental precautions : Avoid release to the environment.  
Prevent further leakage or spillage if safe to do so.  
Prevent spreading over a wide area (e.g. by containment or oil barriers).  
Retain and dispose of contaminated wash water.

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Local authorities should be advised if significant spillages cannot be contained.

### 6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. 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.

### 6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : Use only with adequate ventilation.

Advice on safe handling : Do not get on skin or clothing.  
Do not breathe mist or vapours.  
Do not swallow.  
Avoid contact with eyes.  
Wash skin thoroughly after handling.  
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment  
Do not eat, drink or smoke when using this product.  
Take care to prevent spills, waste and minimize release to the environment.

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.

### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep in properly labelled containers. Store in accordance with the particular national regulations.

Advice on common storage : Do not store with the following product types:

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Strong oxidizing agents  
Gases

**7.3 Specific end use(s)**

Specific use(s) : No data available

**SECTION 8: Exposure controls/personal protection****8.1 Control parameters****Occupational Exposure Limits**

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Closantel	57808-65-8	TWA	$\geq 10 < 100 \mu\text{g}/\text{m}^3$ (OEB 3)	Internal
Albendazole Sulfoxide	54029-12-8	TWA	$40 \mu\text{g}/\text{m}^3$ (OEB 3)	Internal
Further information: DSEN				
		Wipe limit	$100 \mu\text{g}/100 \text{cm}^2$	Internal

**Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:**

Substance name	End Use	Exposure routes	Potential health effects	Value
Propylene glycol	Workers	Inhalation	Long-term local effects	$10 \text{mg}/\text{m}^3$
	Workers	Inhalation	Long-term systemic effects	$168 \text{mg}/\text{m}^3$
	Consumers	Inhalation	Long-term local effects	$10 \text{mg}/\text{m}^3$
	Consumers	Inhalation	Long-term systemic effects	$50 \text{mg}/\text{m}^3$
Octamethylcyclotetra-siloxane	Workers	Inhalation	Long-term systemic effects	$73 \text{mg}/\text{m}^3$
	Workers	Inhalation	Long-term local effects	$73 \text{mg}/\text{m}^3$
	Consumers	Inhalation	Long-term systemic effects	$13 \text{mg}/\text{m}^3$
	Consumers	Inhalation	Long-term local effects	$13 \text{mg}/\text{m}^3$
	Consumers	Ingestion	Long-term systemic effects	$3,7 \text{mg}/\text{kg bw}/\text{day}$

**Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:**

Substance name	Environmental Compartment	Value
Albendazole Sulfoxide	Water	$0,00004 \text{mg}/\text{l}$
Propylene glycol	Fresh water	$260 \text{mg}/\text{l}$
	Freshwater - intermittent	$183 \text{mg}/\text{l}$
	Marine water	$26 \text{mg}/\text{l}$
	Sewage treatment plant	$20000 \text{mg}/\text{l}$
	Fresh water sediment	$572 \text{mg}/\text{kg dry weight (d.w.)}$

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	Marine sediment	57,2 mg/kg dry weight (d.w.)
	Soil	50 mg/kg dry weight (d.w.)
Octamethylcyclotetrasiloxane	Fresh water	0,0015 mg/l
	Marine water	0,00015 mg/l
	Sewage treatment plant	10 mg/l
	Fresh water sediment	3 mg/kg dry weight (d.w.)
	Marine sediment	0,3 mg/kg dry weight (d.w.)
	Soil	0,54 mg/kg dry weight (d.w.)
	Oral (Secondary Poisoning)	41 mg/kg food

## 8.2 Exposure controls

### Engineering measures

Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections).

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).

Minimize open handling.

### Personal protective equipment

Eye/face 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.

Hand protection

Material : Chemical-resistant gloves

Remarks : Consider double gloving.

Skin and body protection : Work uniform or laboratory coat.  
 Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.  
 Use appropriate degowning techniques to remove potentially contaminated clothing.

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

Filter type : Particulates type (P)

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

Appearance : suspension  
 Colour : white, off-white

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Odour	:	odourless
Odour Threshold	:	No data available
pH	:	8,5 - 10,5
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	1,035 - 1,051
Density	:	No data available
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	Not applicable
Auto-ignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	70 - 300 m <sup>2</sup> /s
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.

**9.2 Other information**

Flammability (liquids)	:	No data available
Molecular weight	:	No data available
Particle size	:	< 80 µm



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**SECTION 10: Stability and reactivity****10.1 Reactivity**

Not classified as a reactivity hazard.

**10.2 Chemical stability**

Stable under normal conditions.

**10.3 Possibility of hazardous reactions**

Hazardous reactions : Can react with strong oxidizing agents.

**10.4 Conditions to avoid**

Conditions to avoid : None known.

**10.5 Incompatible materials**

Materials to avoid : Oxidizing agents

**10.6 Hazardous decomposition products**

No hazardous decomposition products are known.

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**SECTION 11: Toxicological information****11.1 Information on toxicological effects**

Information on likely routes of exposure : Inhalation  
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

**Components:****Closantel:**

Acute oral toxicity : LD50 (Rat, female): 262 mg/kg

**Albendazole Sulfoxide:**

Acute oral toxicity : LD50 (Mouse): 1.500 mg/kg

LD50 (Rat): 2.400 mg/kg

Acute toxicity (other routes of administration) : LD50 (Rat): 265 mg/kg  
Application Route: Intravenous

**Octamethylcyclotetrasiloxane:**

Acute oral toxicity : LD50 (Rat): > 4.800 mg/kg

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Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): 36 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat): > 2.375 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****Albendazole Sulfoxide:**

Species : Rabbit  
Result : No skin irritation

**Octamethylcyclotetrasiloxane:**

Species : Rabbit  
Result : No skin irritation

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****Albendazole Sulfoxide:**

Species : Rabbit  
Result : No eye irritation

**Octamethylcyclotetrasiloxane:**

Species : Rabbit  
Result : No eye irritation

**Respiratory or skin sensitisation****Skin sensitisation**

May cause an allergic skin reaction.

**Respiratory sensitisation**

Not classified based on available information.

**Components:****Albendazole Sulfoxide:**

Test Type : Maximisation Test  
Exposure routes : Dermal  
Assessment : Probability or evidence of low to moderate skin sensitisation rate in humans

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Result : positive

Test Type : Maximisation Test

Exposure routes : Dermal

Result : Sensitiser

**Octamethylcyclotetrasiloxane:**

Test Type : Maximisation Test

Exposure routes : Skin contact

Species : Guinea pig

Method : OECD Test Guideline 406

Result : negative

**Germ cell mutagenicity**

Not classified based on available information.

**Components:****Closantel:**

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

Genotoxicity in vivo : Test Type: Rodent dominant lethal test (germ cell) (in vivo)  
Species: Mouse  
Application Route: Ingestion  
Result: negative

**Albendazole Sulfoxide:**

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

Test Type: Chromosomal aberration  
Test system: Chinese hamster ovary cells  
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test  
Species: Mouse  
Cell type: Bone marrow  
Result: negative

**Octamethylcyclotetrasiloxane:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

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

Test Type: Chromosome aberration test in vitro  
Result: negative

Genotoxicity in vivo : Test Type: Mutagenicity (in vivo mammalian bone-marrow

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cytogenetic test, chromosomal analysis)  
Species: Rat  
Application Route: Inhalation  
Result: negative

**Carcinogenicity**

Not classified based on available information.

**Components:****Closantel:**

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

**Albendazole Sulfoxide:**

Species : Mouse  
Application Route : Oral  
Exposure time : 2 Years  
NOAEL : 400 mg/kg body weight  
Result : negative

Species : Rat  
Application Route : Oral  
Exposure time : 2 Years  
NOAEL : 20 mg/kg body weight  
Result : negative

Carcinogenicity - Assessment : No evidence of carcinogenicity in animal studies.

**Reproductive toxicity**

Not classified based on available information.

**Components:****Closantel:**

Effects on foetal development : Test Type: Three-generation reproduction toxicity study  
Species: Rat  
Application Route: Ingestion  
Result: negative

**Albendazole Sulfoxide:**

Effects on fertility : Test Type: Fertility  
Species: Rat  
Application Route: Oral  
Fertility: NOAEL: 30 mg/kg body weight  
Result: No effects on fertility

Effects on foetal development : Test Type: Development  
Species: Rat  
Application Route: Oral  
Developmental Toxicity: LOAEL: 10 mg/kg body weight

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Result: Embryotoxic effects., Skeletal malformations

Test Type: Development  
 Species: Rabbit  
 Application Route: Oral  
 Developmental Toxicity: LOAEL: 30 mg/kg body weight  
 Result: Embryotoxic effects., Skeletal malformations, Maternal toxicity observed.

Test Type: Development  
 Species: Rat  
 Application Route: Oral  
 Developmental Toxicity: NOAEL: 5,8 mg/kg body weight  
 Result: Effects on postnatal development

Test Type: Development  
 Species: Rat  
 Application Route: Oral  
 Developmental Toxicity: LOAEL: 7 mg/kg body weight  
 Result: Embryotoxic effects and adverse effects on the offspring were detected.

Reproductive toxicity - Assessment : Suspected of damaging the unborn child.

**Octamethylcyclotetrasiloxane:**

Effects on fertility : Test Type: Two-generation reproduction toxicity study  
 Species: Rat  
 Application Route: Inhalation  
 Method: OPPTS 870.3800  
 Result: positive

Effects on foetal development : Test Type: Embryo-foetal development  
 Species: Rabbit  
 Application Route: Inhalation  
 Result: negative

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, based on animal experiments.

**STOT - single exposure**

Not classified based on available information.

**Components:****Albendazole Sulfoxide:**

Exposure routes : Oral  
 Target Organs : Gastrointestinal tract, Central nervous system  
 Assessment : May cause damage to organs.

**STOT - repeated exposure**

Not classified based on available information.

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**Components:****Albendazole Sulfoxide:**

Exposure routes : Oral  
 Target Organs : Gastrointestinal tract, Central nervous system, Immune system, Liver  
 Assessment : May cause damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity****Components:****Albendazole Sulfoxide:**

Species : Rat  
 LOAEL : 168 mg/kg  
 Application Route : Oral  
 Exposure time : 4 Weeks  
 Target Organs : Gastrointestinal tract, Testis  
 Symptoms : Diarrhoea, Vomiting

Species : Dog  
 LOAEL : 48 mg/kg  
 Application Route : Oral  
 Exposure time : 4 Weeks  
 Target Organs : Gastrointestinal tract  
 Symptoms : Diarrhoea, Vomiting

Species : Mouse  
 LOAEL : 40 mg/kg  
 Application Route : Oral  
 Exposure time : 3 Months  
 Target Organs : Blood, Liver, Nose  
 Symptoms : Hematologic effects, Liver effects

Species : Rat  
 LOAEL :  $\geq 30$  mg/kg  
 Application Route : Oral  
 Exposure time : 6 Months  
 Target Organs : Blood  
 Symptoms : Hematologic effects

Species : Dog  
 LOAEL : 40 mg/kg  
 Application Route : Oral  
 Exposure time : 6 Months  
 Target Organs : Blood, Liver  
 Symptoms : Hematologic effects, Liver effects

Species : Rat  
 NOAEL : 7 mg/kg  
 Application Route : Oral  
 Exposure time : 60 d  
 Target Organs : Liver, Testis  
 Symptoms : Liver effects, male reproductive effects

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**Octamethylcyclotetrasiloxane:**

Species : Rat  
 NOAEL : 1,82 mg/l  
 Application Route : inhalation (vapour)  
 Exposure time : 2 yr

Species : Rabbit  
 NOAEL : >= 960 mg/kg  
 Application Route : Skin contact  
 Exposure time : 3 Weeks

**Aspiration toxicity**

Not classified based on available information.

**Experience with human exposure****Components:****Albendazole Sulfoxide:**

General Information : Symptoms: Allergic reactions, hair loss, Gastrointestinal disturbance, Headache, Dizziness

Skin contact : Target Organs: Skin  
 Symptoms: Allergic reactions  
 Remarks: May cause sensitisation by skin contact.

Ingestion : Target Organs: Gastrointestinal tract  
 Symptoms: Gastrointestinal disturbance, Diarrhoea, Abdominal pain  
 Target Organs: Central nervous system  
 Symptoms: Headache, Dizziness  
 Target Organs: Liver  
 Symptoms: liver function change  
 Target Organs: Immune system  
 Symptoms: immune system effects

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**SECTION 12: Ecological information****12.1 Toxicity****Components:****Closantel:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 0,01 - 0,1 mg/l  
 Exposure time: 96 h  
 Method: OECD Test Guideline 203  
 Remarks: Based on data from similar materials

M-Factor (Acute aquatic toxicity) : 10

M-Factor (Chronic aquatic toxicity) : 10

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**Albendazole Sulfoxide:**

- Toxicity to fish : EC50 (Brachydanio rerio (zebrafish)): 0,042 mg/l  
Exposure time: 144 hrs
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,068 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 (Raphidocelis subcapitata (freshwater green alga)): 0,024 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- M-Factor (Acute aquatic toxicity) : 10
- M-Factor (Chronic aquatic toxicity) : 10

**Octamethylcyclotetrasiloxane:**

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 0,022 mg/l  
Exposure time: 96 h  
Remarks: No toxicity at the limit of solubility
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 0,015 mg/l  
Exposure time: 48 h  
Remarks: No toxicity at the limit of solubility
- Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 0,022 mg/l  
Exposure time: 96 h  
Remarks: No toxicity at the limit of solubility
- EC10 (Pseudokirchneriella subcapitata (green algae)): >= 0,022 mg/l  
Exposure time: 96 h  
Remarks: No toxicity at the limit of solubility
- Toxicity to fish (Chronic toxicity) : NOEC: 0,0044 mg/l  
Exposure time: 14 d  
Species: Oncorhynchus mykiss (rainbow trout)
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,0079 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)
- M-Factor (Chronic aquatic toxicity) : 10

**12.2 Persistence and degradability****Components:****Octamethylcyclotetrasiloxane:**

- Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 3,7 %



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Exposure time: 29 d  
Method: OECD Test Guideline 310

**12.3 Bioaccumulative potential****Components:****Closantel:**

Partition coefficient: n-octanol/water : log Pow: > 4  
Remarks: Expert judgement

**Albendazole Sulfoxide:**

Partition coefficient: n-octanol/water : log Pow: 1,27  
pH: 7

**Octamethylcyclotetrasiloxane:**

Bioaccumulation : Species: Pimephales promelas (fathead minnow)  
Bioconcentration factor (BCF): 12.400  
Method: OPPTS 850.1730

Partition coefficient: n-octanol/water : log Pow: 6,488  
Method: OECD Test Guideline 123

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment****Product:**

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

**Components:****Octamethylcyclotetrasiloxane:**

Assessment : This substance is considered to be persistent, bioaccumulating and toxic (PBT).  
: This substance is considered to be very persistent and very bioaccumulating (vPvB).

**12.6 Other adverse effects****Product:**

Endocrine disrupting potential : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

- |                        |   |  |
|------------------------|---|--|
| Product                | : | Dispose of in accordance with local regulations.<br>According to the European Waste Catalogue, Waste Codes are not product specific, but application specific.<br>Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.<br>Do not dispose of waste into sewer. |
| Contaminated packaging | : | Empty containers should be taken to an approved waste handling site for recycling or disposal.<br>If not otherwise specified: Dispose of as unused product.  |

### SECTION 14: Transport information

#### 14.1 UN number

- |      |   |         |
|------|---|---------|
| ADN  | : | UN 3082 |
| ADR  | : | UN 3082 |
| RID  | : | UN 3082 |
| IMDG | : | UN 3082 |
| IATA | : | UN 3082 |

#### 14.2 UN proper shipping name

- |      |   |   |
|------|---|---|
| ADN  | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(Closantel, Albendazole Sulfoxide) |
| ADR  | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(Closantel, Albendazole Sulfoxide) |
| RID  | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(Closantel, Albendazole Sulfoxide) |
| IMDG | : | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.<br>(Closantel, Albendazole Sulfoxide) |
| IATA | : | Environmentally hazardous substance, liquid, n.o.s.<br>(Closantel, Albendazole Sulfoxide) |

#### 14.3 Transport hazard class(es)

- |      | Class | Subsidiary risks |
|------|-------|------------------|
| ADN  | :     | 9                |
| ADR  | :     | 9                |
| RID  | :     | 9                |
| IMDG | :     | 9                |
| IATA | :     | 9                |

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**14.4 Packing group****ADN**

Packing group           : III  
Classification Code     : M6  
Hazard Identification Number : 90  
Labels                   : 9

**ADR**

Packing group           : III  
Classification Code     : M6  
Hazard Identification Number : 90  
Labels                   : 9  
Tunnel restriction code   : (-)

**RID**

Packing group           : III  
Classification Code     : M6  
Hazard Identification Number : 90  
Labels                   : 9

**IMDG**

Packing group           : III  
Labels                   : 9  
EmS Code                : F-A, S-F

**IATA (Cargo)**

Packing instruction (cargo aircraft) : 964  
Packing instruction (LQ)           : Y964  
Packing group                       : III  
Labels                               : Miscellaneous

**IATA (Passenger)**

Packing instruction (passenger aircraft) : 964  
Packing instruction (LQ)           : Y964  
Packing group                       : III  
Labels                               : Miscellaneous

**14.5 Environmental hazards****ADN**

Environmentally hazardous   : yes

**ADR**

Environmentally hazardous   : yes

**RID**

Environmentally hazardous   : yes

**IMDG**

Marine pollutant               : yes

**IATA (Passenger)**

Environmentally hazardous   : yes

**IATA (Cargo)**

Environmentally hazardous   : yes

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**14.6 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.

**14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**

Remarks : Not applicable for product as supplied.

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**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

The components of this product are reported in the following inventories:

AICS : not determined

DSL : not determined

IECSC : not determined

**15.2 Chemical safety assessment**

A Chemical Safety Assessment has not been carried out.

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**SECTION 16: Other information**

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

**Full text of H-Statements**

H226 : Flammable liquid and vapour.  
H301 : Toxic if swallowed.  
H302 : Harmful if swallowed.  
H317 : May cause an allergic skin reaction.  
H361d : Suspected of damaging the unborn child.  
H361f : Suspected of damaging fertility.  
H371 : May cause damage to organs if swallowed.  
H373 : May cause damage to organs through prolonged or repeated exposure if swallowed.  
H400 : Very toxic to aquatic life.  
H410 : Very toxic to aquatic life with long lasting effects.

**Full text of other abbreviations**

Acute Tox. : Acute toxicity  
Aquatic Acute : Short-term (acute) aquatic hazard  
Aquatic Chronic : Long-term (chronic) aquatic hazard  
Flam. Liq. : Flammable liquids  
Repr. : Reproductive toxicity  
Skin Sens. : Skin sensitisation  
STOT RE : Specific target organ toxicity - repeated exposure  
STOT SE : Specific target organ toxicity - single exposure

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ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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 Organisation 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; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; 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

**Further information**

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

**Classification of the mixture:**

Skin Sens. 1	H317
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

**Classification procedure:**

Calculation method
Calculation method
Calculation method

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.

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