

# SAFETY DATA SHEET



## Albendazole / Closantel Sodium Formulation

Version 8.0 Revision Date: 14.04.2025 SDS Number: 10843088-00016 Date of last issue: 06.07.2024 Date of first issue: 26.08.2022

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1 Product identifier

Trade name : Albendazole / Closantel Sodium Formulation  
Other means of identification : Closal (A005093)

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

Use of the Substance/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

---

### 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

# SAFETY DATA SHEET



## Albendazole / Closantel Sodium Formulation

Version 8.0 Revision Date: 14.04.2025 SDS Number: 10843088-00016 Date of last issue: 06.07.2024 Date of first issue: 26.08.2022

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

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	>= 1 - < 2,5

# SAFETY DATA SHEET



## Albendazole / Closantel Sodium Formulation

Version  
8.0

Revision Date:  
14.04.2025

SDS Number:  
10843088-00016

Date of last issue: 06.07.2024  
Date of first issue: 26.08.2022

		(Gastrointestinal tract, Central nervous system, Immune system, Liver) Aquatic Acute 1; H400 Aquatic Chronic 1; H410	
Octamethylcyclotetrasiloxane	556-67-2 209-136-7 014-018-00-1	Flam. Liq. 3; H226 Repr. 2; H361f Aquatic Chronic 1; H410 PBTEUH440 vPvBEUH441	>= 0,025 - < 0,1

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.

# SAFETY DATA SHEET



## Albendazole / Closantel Sodium Formulation

---

Version 8.0	Revision Date: 14.04.2025	SDS Number: 10843088-00016	Date of last issue: 06.07.2024 Date of first issue: 26.08.2022
----------------	------------------------------	-------------------------------	---

---

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.

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

Treatment : Treat symptomatically and supportively.

---

## 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.

---

## 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).

**Albendazole / Closantel Sodium Formulation**

Version 8.0	Revision Date: 14.04.2025	SDS Number: 10843088-00016	Date of last issue: 06.07.2024 Date of first issue: 26.08.2022
----------------	------------------------------	-------------------------------	---

**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.  
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.

**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.

# SAFETY DATA SHEET



## Albendazole / Closantel Sodium Formulation

Version 8.0 Revision Date: 14.04.2025 SDS Number: 10843088-00016 Date of last issue: 06.07.2024 Date of first issue: 26.08.2022

### 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:  
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	45 $\mu\text{g}/\text{m}^3$ (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 $\text{mg}/\text{m}^3$
Octamethylcyclotetrasiloxane	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 $\text{mg}/\text{kg bw/day}$

#### 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 $\text{mg}/\text{l}$

## Albendazole / Closantel Sodium Formulation

Version 8.0 Revision Date: 14.04.2025 SDS Number: 10843088-00016 Date of last issue: 06.07.2024 Date of first issue: 26.08.2022

	Freshwater - intermittent	183 mg/l
	Marine water	26 mg/l
	Sewage treatment plant	20000 mg/l
	Fresh water sediment	572 mg/kg dry weight (d.w.)
	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)

**Albendazole / Closantel Sodium Formulation**

Version 8.0 Revision Date: 14.04.2025 SDS Number: 10843088-00016 Date of last issue: 06.07.2024  
Date of first issue: 26.08.2022

---

**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties**

Appearance	:	suspension, Aqueous solution
Colour	:	white, off-white
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
Flammability (liquids)	:	No data available
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**

Molecular weight	:	No data available
------------------	---	-------------------

**Albendazole / Closantel Sodium Formulation**

Version 8.0      Revision Date: 14.04.2025      SDS Number: 10843088-00016      Date of last issue: 06.07.2024  
Date of first issue: 26.08.2022

---

Particle size : < 80 µm

---

**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.

---

**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 ) : LD50 (Rat): 265 mg/kg

**Albendazole / Closantel Sodium Formulation**

Version 8.0      Revision Date: 14.04.2025      SDS Number: 10843088-00016      Date of last issue: 06.07.2024  
Date of first issue: 26.08.2022

---

||| administration)      Application Route: Intravenous

**Octamethylcyclotetrasiloxane:**

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

**Albendazole / Closantel Sodium Formulation**Version  
8.0Revision Date:  
14.04.2025SDS Number:  
10843088-00016Date of last issue: 06.07.2024  
Date of first issue: 26.08.2022**Components:****Albendazole Sulfoxide:**

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

**Albendazole / Closantel Sodium Formulation**Version  
8.0Revision Date:  
14.04.2025SDS Number:  
10843088-00016Date of last issue: 06.07.2024  
Date of first issue: 26.08.2022

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 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

# SAFETY DATA SHEET



## Albendazole / Closantel Sodium Formulation

Version 8.0      Revision Date: 14.04.2025      SDS Number: 10843088-00016      Date of last issue: 06.07.2024  
Date of first issue: 26.08.2022

	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 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.
<b>Octamethylcyclotetrasiloxane:</b>	
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

## SAFETY DATA SHEET



## Albendazole / Closantel Sodium Formulation

Version Revision Date: SDS Number: Date of last issue: 06.07.2024  
8.0 14.04.2025 10843088-00016 Date of first issue: 26.08.2022

|| Assessment : May cause damage to organs.

## STOT - repeated exposure

|| Not classified based on available information.

## 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

**Albendazole / Closantel Sodium Formulation**

Version 8.0      Revision Date: 14.04.2025      SDS Number: 10843088-00016      Date of last issue: 06.07.2024  
Date of first issue: 26.08.2022

---

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

**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

---

**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
------------------	---	--

## SAFETY DATA SHEET



## Albendazole / Closantel Sodium Formulation

Version Revision Date: SDS Number: Date of last issue: 06.07.2024  
8.0 14.04.2025 10843088-00016 Date of first issue: 26.08.2022

M-Factor (Acute aquatic toxicity)	:	10
M-Factor (Chronic aquatic toxicity)	:	10
<b>Albendazole Sulfoxide:</b>		
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
<b>Octamethylcyclotetrasiloxane:</b>		
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

**Albendazole / Closantel Sodium Formulation**

Version 8.0      Revision Date: 14.04.2025      SDS Number: 10843088-00016      Date of last issue: 06.07.2024  
Date of first issue: 26.08.2022

---

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

Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 3,7 %  
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 : Substance is persistent, bioaccumulative, and toxic (PBT).  
: Substance is very persistent and very bioaccumulative (vPvB).

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

Endocrine disrupting potential : The substance/mixture does not contain components consid-

# SAFETY DATA SHEET



## Albendazole / Closantel Sodium Formulation

Version 8.0	Revision Date: 14.04.2025	SDS Number: 10843088-00016	Date of last issue: 06.07.2024 Date of first issue: 26.08.2022
-------------	---------------------------	----------------------------	---

tial  
ered 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.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

Product	: Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities. Do not dispose of waste into sewer.
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

### 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. (Closantel, Albendazole Sulfoxide)
ADR	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Closantel, Albendazole Sulfoxide)
RID	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Closantel, Albendazole Sulfoxide)
IMDG	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Closantel, Albendazole Sulfoxide)
IATA	: Environmentally hazardous substance, liquid, n.o.s. (Closantel, Albendazole Sulfoxide)

### 14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADN	: 9	

# SAFETY DATA SHEET



## Albendazole / Closantel Sodium Formulation

Version 8.0      Revision Date: 14.04.2025      SDS Number: 10843088-00016      Date of last issue: 06.07.2024  
Date of first issue: 26.08.2022

---

**ADR** : 9  
**RID** : 9  
**IMDG** : 9  
**IATA** : 9

### 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

# SAFETY DATA SHEET



## Albendazole / Closantel Sodium Formulation

Version 8.0      Revision Date: 14.04.2025      SDS Number: 10843088-00016      Date of last issue: 06.07.2024  
Date of first issue: 26.08.2022

---

### IATA (Passenger)

Environmentally hazardous : yes

### IATA (Cargo)

Environmentally hazardous : yes

### 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.

---

## 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.

---

## 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

EUH440	: Accumulates in the environment and living organisms including in humans
EUH441	: Strongly accumulates in the environment and living organisms including in humans
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.

**Albendazole / Closantel Sodium Formulation**

Version 8.0      Revision Date: 14.04.2025      SDS Number: 10843088-00016      Date of last issue: 06.07.2024  
Date of first issue: 26.08.2022

---

**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
PBT	: Persistent, bioaccumulative and toxic
Repr.	: Reproductive toxicity
Skin Sens.	: Skin sensitisation
STOT RE	: Specific target organ toxicity - repeated exposure
STOT SE	: Specific target organ toxicity - single exposure
vPvB	: Very persistent and very bioaccumulative

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

**Classification procedure:**

Calculation method
Calculation method

## SAFETY DATA SHEET



## Albendazole / Closantel Sodium Formulation

Version Revision Date: SDS Number: Date of last issue: 06.07.2024  
8.0 14.04.2025 10843088-00016 Date of first issue: 26.08.2022

Aquatic Chronic 1 H410 Calculation method

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.

ZA / EN