

## Albendazole Sulfoxide (1.9%) Formulation

Version 2.10      Revision Date: 30.09.2023      SDS Number: 3903428-00015      Date of last issue: 04.04.2023  
Date of first issue: 10.12.2018

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### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Albendazole Sulfoxide (1.9%) Formulation

#### Manufacturer or supplier's details

Company : MSD

Address : Briahnager - Off Pune Nagar Road  
Wagholi - Pune - India 412 207

Telephone : +1-908-740-4000

Emergency telephone number : +1-908-423-6000

E-mail address : EHSDATASTEWARD@msd.com

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

Recommended use : Veterinary product

Restrictions on use : Not applicable

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### 2. HAZARDS IDENTIFICATION

#### Manufacture, Storage and Import of Hazardous Chemicals Rules 1989

##### Classification

Not classified as hazardous according to criteria laid down in Part I of Schedule-1.



##### GHS Classification

Skin sensitisation : Category 1

Short-term (acute) aquatic hazard : Category 2

Long-term (chronic) aquatic hazard : Category 2

##### GHS label elements

Hazard pictograms :  

Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.  
H411 Toxic to aquatic life with long lasting effects.

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Version 2.10      Revision Date: 30.09.2023      SDS Number: 3903428-00015      Date of last issue: 04.04.2023  
Date of first issue: 10.12.2018

Precautionary statements : **Prevention:**  
P261 Avoid breathing mist or vapours.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves.

**Response:**  
P302 + P352 IF ON SKIN: Wash with plenty of water.  
P333 + P317 If skin irritation or rash occurs: Get medical help.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P391 Collect spillage.

**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards which do not result in classification

None known.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	CAS-No.	Concentration (% w/w)
Albendazole Sulfoxide	54029-12-8	>= 1 - < 2.5

## 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 : 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.

Most important symptoms and effects, both acute and delayed : May cause an allergic skin reaction.

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Albendazole Sulfoxide (1.9%) Formulation

Version 2.10      Revision Date: 30.09.2023      SDS Number: 3903428-00015      Date of last issue: 04.04.2023  
Date of first issue: 10.12.2018

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).  
Notes to physician : Treat symptomatically and supportively.

### 5. FIREFIGHTING 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>)  
Sulphur oxides  
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 firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.

### 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.  
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.  
Methods and materials for containment and 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.

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Albendazole Sulfoxide (1.9%) Formulation

Version 2.10      Revision Date: 30.09.2023      SDS Number: 3903428-00015      Date of last issue: 04.04.2023  
Date of first issue: 10.12.2018

### 7. HANDLING AND STORAGE

- 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.
- Conditions for safe storage : Keep in properly labelled containers.  
Store in accordance with the particular national regulations.
- Materials to avoid : Do not store with the following product types:  
Strong oxidizing agents

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Albendazole Sulfoxide	54029-12-8	TWA	40 µg/m <sup>3</sup> (OEB 3)	Internal
Further information: DSEN				
		Wipe limit	100 µg/100 cm <sup>2</sup>	Internal

- 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.  
Laboratory operations do not require special containment.

#### 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 vapour type
- Hand protection : Chemical-resistant gloves
- Material
- 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

## Albendazole Sulfoxide (1.9%) Formulation

Version 2.10      Revision Date: 30.09.2023      SDS Number: 3903428-00015      Date of last issue: 04.04.2023  
Date of first issue: 10.12.2018

---

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.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : suspension

Colour : white

Odour : No data available

Odour Threshold : No data available

pH : No data available

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 : No data available

Density : No data available

## Albendazole Sulfoxide (1.9%) Formulation

Version 2.10      Revision Date: 30.09.2023      SDS Number: 3903428-00015      Date of last issue: 04.04.2023  
Date of first issue: 10.12.2018

---

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 : No data available

Explosive properties : Not explosive

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

Molecular weight : No data available

Particle size : Not applicable

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### 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Can react with strong oxidizing agents.

Conditions to avoid : None known.

Incompatible materials : Oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.

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### 11. TOXICOLOGICAL INFORMATION

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: > 5,000 mg/kg  
Method: Calculation method

#### **Components:**

##### **Albendazole Sulfoxide:**

Acute oral toxicity : LD50 (Mouse): 1,500 mg/kg  
LD50 (Rat): 2,400 mg/kg

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# SAFETY DATA SHEET

according to the Globally Harmonized System



## Albendazole Sulfoxide (1.9%) Formulation

Version 2.10      Revision Date: 30.09.2023      SDS Number: 3903428-00015      Date of last issue: 04.04.2023  
Date of first issue: 10.12.2018

---

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

### Skin corrosion/irritation

Not classified based on available information.

#### Components:

##### Albendazole Sulfoxide:

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

### 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  
Result : positive

Test Type : Maximisation Test  
Exposure routes : Dermal  
Result : Sensitiser

### Germ cell mutagenicity

Not classified based on available information.

#### Components:

##### Albendazole Sulfoxide:

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

Test Type: Chromosomal aberration

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Albendazole Sulfoxide (1.9%) Formulation

Version 2.10      Revision Date: 30.09.2023      SDS Number: 3903428-00015      Date of last issue: 04.04.2023  
Date of first issue: 10.12.2018

---

Test system: Chinese hamster ovary cells  
Result: negative

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

### Carcinogenicity

Not classified based on available information.

### Components:

#### 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:

#### 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  
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



# SAFETY DATA SHEET

according to the Globally Harmonized System



## Albendazole Sulfoxide (1.9%) Formulation

Version 2.10      Revision Date: 30.09.2023      SDS Number: 3903428-00015      Date of last issue: 04.04.2023  
Date of first issue: 10.12.2018

---

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.

### 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.

#### 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

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Albendazole Sulfoxide (1.9%) Formulation

Version 2.10      Revision Date: 30.09.2023      SDS Number: 3903428-00015      Date of last issue: 04.04.2023  
Date of first issue: 10.12.2018

---

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 : >= 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

### 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

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Albendazole Sulfoxide (1.9%) Formulation

Version 2.10      Revision Date: 30.09.2023      SDS Number: 3903428-00015      Date of last issue: 04.04.2023  
Date of first issue: 10.12.2018

### 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

##### Components:

##### **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

#### **Persistence and degradability**

No data available

#### **Bioaccumulative potential**

##### Components:

##### **Albendazole Sulfoxide:**

- Partition coefficient: n-octanol/water : log Pow: 1.27  
pH: 7

#### **Mobility in soil**

No data available

#### **Other adverse effects**

No data available

### 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.

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Albendazole Sulfoxide (1.9%) Formulation

Version 2.10      Revision Date: 30.09.2023      SDS Number: 3903428-00015      Date of last issue: 04.04.2023  
Date of first issue: 10.12.2018

### 14. TRANSPORT INFORMATION

#### International Regulations

##### UNRTDG

UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Albendazole Sulfoxide)  
Class : 9  
Packing group : III  
Labels : 9  
Environmentally hazardous : yes

##### IATA-DGR

UN/ID No. : UN 3082  
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
(Albendazole Sulfoxide)  
Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo aircraft) : 964  
Packing instruction (passenger aircraft) : 964  
Environmentally hazardous : yes

##### IMDG-Code

UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Albendazole Sulfoxide)  
Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes

#### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

#### 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.

### 15. REGULATORY INFORMATION

#### 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

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Albendazole Sulfoxide (1.9%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04.04.2023
2.10	30.09.2023	3903428-00015	Date of first issue: 10.12.2018

DSL : not determined

IECSC : not determined

### 16. OTHER INFORMATION

Revision Date : 30.09.2023

#### 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/>

Date format : dd.mm.yyyy

#### Full text of other abbreviations

AIIIC - 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 Standardisation; 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 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; 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, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECL - 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

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

# SAFETY DATA SHEET

according to the Globally Harmonized System



## Albendazole Sulfoxide (1.9%) Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 04.04.2023
2.10	30.09.2023	3903428-00015	Date of first issue: 10.12.2018

---

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.

IN / EN