

**Levamisole / Oxfendazole Selenised Formulation**

Version	Revision Date:	SDS Number:	Date of last issue: 2024/07/06
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**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Levamisole / Oxfendazole Selenised Formulation

Other means of identification : Scanda Selenised (A007368)

**Manufacturer or supplier's details**

Company : MSD

Address : 126 E. Lincoln Avenue  
Rahway, New Jersey U.S.A. 07065

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

**2. HAZARDS IDENTIFICATION****GHS Classification**

Acute toxicity (Oral) : Category 4

Reproductive toxicity : Category 1B

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 2

**GHS label elements**

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 Harmful if swallowed.  
H360FD May damage fertility. May damage the unborn child.

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H400 Very toxic to aquatic life.  
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

:

**Prevention:**

P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P391 Collect spillage.

**Storage:**

P405 Store locked up.

**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)
levamisole hydrochloride	16595-80-5	$\geq 3$ -< 10
oxfendazole	53716-50-0	$\geq 2.5$ -< 10
Polyethylene glycol stearate	9004-99-3	< 10
Citric acid	77-92-9	< 10
Cobalt disodium ethylenediaminetetraacetate	15137-09-4	$\geq 0.25$ -< 1
Sodium selenate	13410-01-0	$\geq 0.025$ -< 0.25

**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.

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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	: Harmful if swallowed. May damage fertility. May damage the unborn child.
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
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**

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- 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.

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**7. HANDLING AND STORAGE**

- Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.
- Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.
- Advice on safe handling : Do not get on skin or clothing.  
Do not breathe the 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  
Keep container tightly closed.  
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 locked up.  
Keep tightly closed.  
Store in accordance with the particular national regulations.
- Materials to avoid : Do not store with the following product types:  
Strong oxidizing agents

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
levamisole hydrochloride	16595-80-5	TWA	20 µg/m <sup>3</sup> (OEB 3)	Internal
	Further information: Skin			
		Wipe limit	200 µg/100 cm <sup>2</sup>	Internal
oxfendazole	53716-50-0	TWA	40 µg/m <sup>3</sup> (OEB 3)	Internal
		Wipe limit	400 µg/100 cm <sup>2</sup>	Internal
Polyethylene glycol stearate	9004-99-3	NAB	10 mg/m <sup>3</sup>	ID OEL
	Further information: Not classified as carcinogenic to humans. Not enough data to classify these materials as carcinogenic to humans or animals			
		TWA (Inhalable particulate matter)	10 mg/m <sup>3</sup>	ACGIH
		TWA (Respirable particulate matter)	3 mg/m <sup>3</sup>	ACGIH
Sodium selenate	13410-01-0	NAB	0.05 mg/m <sup>3</sup> (selenium)	ID OEL
		TWA	20 µg/m <sup>3</sup> (OEB 3)	Internal
		Wipe limit	200 µg/100 cm <sup>2</sup>	Internal
		TWA	0.2 mg/m <sup>3</sup> (selenium)	ACGIH

**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

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

Hand protection

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Material	:	Chemical-resistant gloves
Remarks	:	Consider double gloving.
Eye protection	:	Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.
Skin and body protection	:	Work uniform or laboratory coat. 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.
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. 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.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	:	suspension
Colour	:	No data available
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

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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
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 characteristics 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**

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Information on likely routes of exposure : Inhalation  
Skin contact  
Ingestion  
Eye contact

**Acute toxicity**

Harmful if swallowed.

**Product:**

Acute oral toxicity : Acute toxicity estimate: 1,082 mg/kg  
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: > 5 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

**Components:****levamisole hydrochloride:**

Acute oral toxicity : LD50 (Rat): 180 mg/kg  
LD50 (Mouse): 223 mg/kg  
LD50 (Rabbit): 458 mg/kg  
Acute inhalation toxicity : Remarks: No data available  
Acute dermal toxicity : Remarks: No data available

**oxfendazole:**

Acute oral toxicity : LD50 (Rat): > 6,000 mg/kg  
LD50 (Dog): 1,600 mg/kg  
LD50 (sheep): 250 mg/kg

**Polyethylene glycol stearate:**

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

**Citric acid:**

Acute oral toxicity : LD50 (Mouse): 5,400 mg/kg  
Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity



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**Cobalt disodium ethylenediaminetetraacetate:**

Acute oral toxicity	: LD50 (Rat): > 2,000 mg/kg
Remarks: Based on data from similar materials	

**Sodium selenate:**

Acute oral toxicity	: LD50 (Rat): > 5 - 50 mg/kg
Remarks: Based on data from similar materials	
Acute inhalation toxicity	: LC50 (Rat): > 0.052 - 0.51 mg/l
Exposure time: 4 h	
Test atmosphere: dust/mist	
Method: OECD Test Guideline 403	

**Skin corrosion/irritation**

Not classified based on available information.

**Components:****levamisole hydrochloride:**

Remarks	: No data available
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**oxfendazole:**

Species	: Rabbit
Result	: No skin irritation

**Polyethylene glycol stearate:**

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

**Citric acid:**

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

**Cobalt disodium ethylenediaminetetraacetate:**

Species	: Rabbit
Method	: OECD Test Guideline 404
Result	: No skin irritation
Remarks	: Based on data from similar materials

**Sodium selenate:**

Species	: reconstructed human epidermis (RhE)
Method	: OECD Test Guideline 431

Species	: reconstructed human epidermis (RhE)
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|| Method : OECD Test Guideline 439

|| Result : Skin irritation

**Serious eye damage/eye irritation**

Not classified based on available information.

**Components:****levamisole hydrochloride:**

|| Remarks : No data available

**oxfendazole:**

|| Species : Rabbit  
|| Result : No eye irritation

**Polyethylene glycol stearate:**

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

**Citric acid:**

|| Species : Rabbit  
|| Result : Irritation to eyes, reversing within 21 days  
|| Method : OECD Test Guideline 405

**Cobalt disodium ethylenediaminetetraacetate:**

|| Species : Rabbit  
|| Result : No eye irritation  
|| Remarks : Based on data from similar materials

**Sodium selenate:**

|| Species : Bovine cornea  
|| Method : OECD Test Guideline 437  
  
|| Result : No eye irritation

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

Not classified based on available information.

**Respiratory sensitisation**

Not classified based on available information.

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**Components:****levamisole hydrochloride:**

Remarks	: No data available
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**Polyethylene glycol stearate:**

Test Type	: Open epicutaneous test
Exposure routes	: Skin contact
Species	: Guinea pig
Result	: negative

**Cobalt disodium ethylenediaminetetraacetate:**

Exposure routes	: inhalation (dust/mist/fume)
Species	: Humans
Result	: positive
Remarks	: Based on data from similar materials

Assessment	: Probability or evidence of low to moderate respiratory sensitisation rate in humans
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**Germ cell mutagenicity**

Not classified based on available information.

**Components:****levamisole hydrochloride:**

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

**oxfendazole:**

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo	: Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Mouse Application Route: Oral Result: positive

**Polyethylene glycol stearate:**

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

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Result: negative  Test Type: in vitro micronucleus test Result: positive  Test Type: Bacterial reverse mutation assay (AMES) Result: negative
Genotoxicity in vivo	: Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Rat Application Route: Ingestion Result: negative

**Cobalt disodium ethylenediaminetetraacetate:**

Genotoxicity in vitro	: Test Type: Bacterial reverse mutation assay (AMES) Method: OECD Test Guideline 471 Result: negative Remarks: Based on data from similar materials  Test Type: In vitro mammalian cell gene mutation test Method: OECD Test Guideline 476 Result: positive Remarks: Based on data from similar materials  Test Type: Chromosome aberration test in vitro Method: OECD Test Guideline 473 Result: positive Remarks: Based on data from similar materials
Genotoxicity in vivo	: Test Type: Micronucleus test Species: Mouse Application Route: Intraperitoneal injection Result: positive Remarks: Based on data from similar materials  Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis) Species: Mouse Application Route: Ingestion Result: positive Remarks: Based on data from similar materials  Test Type: Rodent dominant lethal test (germ cell) (in vivo) Species: Mouse Application Route: Ingestion Result: positive Remarks: Based on data from similar materials

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Germ cell mutagenicity - Assessment : Positive result(s) from in vivo mammalian somatic cell mutagenicity tests.  
Remarks: Based on data from similar materials

**Sodium selenate:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative  
Remarks: Based on data from similar materials

**Carcinogenicity**

Not classified based on available information.

**Components:****levamisole hydrochloride:**

Species : Mouse  
Application Route : Oral  
Exposure time : 2 Years  
NOAEL : 80 mg/kg body weight  
Remarks : No significant adverse effects were reported

Species : Rat  
Application Route : Oral  
Exposure time : 2 Years  
NOAEL : 40 mg/kg body weight  
Remarks : No significant adverse effects were reported

**oxfendazole:**

Species : Rat  
Application Route : Oral  
Exposure time : 1 Years  
Symptoms : No adverse effects  
Target Organs : Liver

Species : Rat  
Application Route : Oral  
Exposure time : 2 Years  
Symptoms : No adverse effects  
Target Organs : Liver

**Cobalt disodium ethylenediaminetetraacetate:**

Species : Rat  
Application Route : inhalation (dust/mist/fume)  
Exposure time : 105 weeks  
Result : positive

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Remarks : Based on data from similar materials

Species : Mouse  
Application Route : inhalation (dust/mist/fume)  
Exposure time : 105 weeks  
Result : positive  
Remarks : Based on data from similar materials

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies  
Remarks: Based on data from similar materials

**Reproductive toxicity**

May damage fertility. May damage the unborn child.

**Components:****levamisole hydrochloride:**

Effects on fertility : Test Type: Three-generation reproduction toxicity study  
Species: Rat  
Application Route: Oral  
Result: No significant adverse effects were reported

Effects on foetal development : Test Type: Embryo-foetal development  
Species: Rat  
Application Route: Oral  
Developmental Toxicity: NOAEL: 20 mg/kg body weight  
Result: Fetotoxicity

Test Type: Embryo-foetal development  
Species: Rabbit  
Application Route: Oral  
Developmental Toxicity: LOAEL: 40 mg/kg body weight  
Result: Fetotoxicity

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

**oxfendazole:**

Effects on fertility : Test Type: Fertility/early embryonic development  
Species: Rat, male  
Application Route: Oral  
Fertility: NOAEL: 17 mg/kg body weight  
Target Organs: Testes  
Result: Effects on fertility

Test Type: Two-generation reproduction toxicity study  
Species: Rat  
Application Route: Oral  
Fertility: NOAEL: 0.9 mg/kg body weight  
Target Organs: Liver

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		Result: No effects on fertility
		Test Type: Fertility Species: Mouse Application Route: Oral Duration of Single Treatment: 1 Months Fertility: NOAEL: 750 mg/kg body weight Target Organs: Testes Result: Effects on fertility
Effects on foetal develop- ment	:	Test Type: Embryo-foetal development Species: Rat Application Route: Oral Developmental Toxicity: NOAEL: 10 mg/kg body weight Result: positive, Fetal effects
		Test Type: Embryo-foetal development Species: Rat Developmental Toxicity: NOAEL: 10 mg/kg body weight Result: positive, Embryo-foetal toxicity
		Test Type: Embryo-foetal development Species: Mouse Application Route: Oral Developmental Toxicity: NOAEL: 108 mg/kg body weight Result: positive, Embryo-foetal toxicity, foetal abnormalities
		Test Type: Embryo-foetal development Species: Rabbit Application Route: Oral Developmental Toxicity: NOAEL: 0.625 mg/kg body weight
Reproductive toxicity - As- sessment	:	Clear evidence of adverse effects on sexual function and fertil- ity, based on animal experiments., Clear evidence of adverse effects on development, based on animal experiments.
<b>Citric acid:</b>		
Effects on foetal develop- ment	:	Test Type: One-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: negative
<b>Cobalt disodium ethylenediaminetetraacetate:</b>		
Effects on fertility	:	Test Type: Fertility/early embryonic development Species: Rat Application Route: Ingestion Result: positive Remarks: Based on data from similar materials

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	Test Type: Fertility/early embryonic development Species: Mouse Application Route: Ingestion Result: positive Remarks: Based on data from similar materials
	Test Type: Fertility/early embryonic development Species: Mouse Application Route: inhalation (dust/mist/fume) Result: positive Remarks: Based on data from similar materials
	Test Type: Fertility/early embryonic development Species: Rat Application Route: inhalation (dust/mist/fume) Result: positive Remarks: Based on data from similar materials
Effects on foetal develop- ment	: Test Type: Embryo-foetal development Species: Rat Application Route: Ingestion Method: OECD Test Guideline 414 Result: negative Remarks: Based on data from similar materials
Reproductive toxicity - As- sessment	: Some evidence of adverse effects on sexual function and fertility, based on animal experiments. Remarks: Based on data from similar materials

**Sodium selenate:**

Effects on fertility	: Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Ingestion Result: negative Remarks: Based on data from similar materials
Effects on foetal develop- ment	: Test Type: Embryo-foetal development Species: Mouse Application Route: Ingestion Result: negative Remarks: Based on data from similar materials

**STOT - single exposure**

Not classified based on available information.

**Components:****Citric acid:**

Assessment	: May cause respiratory irritation.
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**STOT - repeated exposure**

Not classified based on available information.

**Components:****levamisole hydrochloride:**

Target Organs	:	Blood, Testis
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

**oxfendazole:**

Exposure routes	:	Oral
Target Organs	:	Liver, Testis
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

**Cobalt disodium ethylenediaminetetraacetate:**

Exposure routes	:	inhalation (dust/mist/fume)
Target Organs	:	Respiratory Tract
Assessment	:	Shown to produce significant health effects in animals at concentrations of 0.02 mg/l/6h/d or less.
Remarks	:	Based on data from similar materials

Exposure routes	:	Ingestion
Target Organs	:	Thyroid, Heart, Blood
Assessment	:	Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.
Remarks	:	Based on data from similar materials

**Sodium selenate:**

Exposure routes	:	Ingestion
Assessment	:	Shown to produce significant health effects in animals at concentrations of 10 mg/kg bw or less.

**Repeated dose toxicity****Components:****levamisole hydrochloride:**

Species	:	Rat
NOAEL	:	2.5 mg/kg
Application Route	:	Oral
Exposure time	:	18 Months
Target Organs	:	Testis

Species	:	Dog
LOAEL	:	20 mg/kg
Application Route	:	Oral
Exposure time	:	18 Months

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Target Organs : Blood

Species : Dog  
LOAEL : 40 mg/kg  
Application Route : Oral  
Exposure time : 3 Months

**oxfendazole:**

Species : Rat  
NOAEL : 11 mg/kg  
Application Route : Oral  
Exposure time : 2 Weeks  
Target Organs : Blood, Liver, Testis

Species : Rat  
NOAEL : 3.8 mg/kg  
Application Route : Oral  
Exposure time : 3 Months  
Target Organs : Liver, Testis

Species : Mouse  
NOAEL : 750 mg/kg  
Application Route : Oral  
Exposure time : 1 Months  
Target Organs : Liver

Species : Mouse  
NOAEL : 37.5 mg/kg  
Application Route : Oral  
Exposure time : 3 Months  
Target Organs : Liver

Species : Dog  
NOAEL : 6 mg/kg  
Application Route : Oral  
Exposure time : 1 Months  
Remarks : No significant adverse effects were reported

Species : Dog  
NOAEL : 11 mg/kg  
Application Route : Oral  
Exposure time : 2 Weeks  
Target Organs : Lymph nodes, thymus gland

Species : Dog  
NOAEL : 13.5 mg/kg  
Application Route : Oral  
Exposure time : 12 Months  
Target Organs : Liver

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**Citric acid:**

Species	: Rat
NOAEL	: 4,000 mg/kg
LOAEL	: 8,000 mg/kg
Application Route	: Ingestion
Exposure time	: 10 Days

**Cobalt disodium ethylenediaminetetraacetate:**

Species	: Rat
LOAEL	: > 10 mg/kg
Application Route	: Ingestion
Exposure time	: 90 Days
Remarks	: Based on data from similar materials

Species	: Rat
LOAEL	: < 0.01 mg/l
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 13 Weeks
Method	: OECD Test Guideline 413
Remarks	: Based on data from similar materials

Species	: Mouse
LOAEL	: < 0.01 mg/l
Application Route	: inhalation (dust/mist/fume)
Exposure time	: 13 Weeks
Method	: OECD Test Guideline 413
Remarks	: Based on data from similar materials

**Sodium selenate:**

Species	: Rat
NOAEL	: 0.4 mg/kg
Application Route	: Ingestion
Exposure time	: 13 Weeks

**Aspiration toxicity**

Not classified based on available information.

**Experience with human exposure****Components:****levamisole hydrochloride:**

Ingestion	: Symptoms: Nausea, Vomiting, Headache, Dizziness, hypotension
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**Cobalt disodium ethylenediaminetetraacetate:**

Inhalation	: Target Organs: Respiratory system Remarks: Based on data from similar materials
Ingestion	: Target Organs: Blood

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Remarks: Based on data from similar materials  
Target Organs: Heart  
Target Organs: Thyroid

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Components:

##### **levamisole hydrochloride:**

Toxicity to fish	:	LC50 ( <i>Oryzias latipes</i> (Japanese medaka)): 37.3 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 ( <i>Daphnia magna</i> (Water flea)): 64 mg/l Exposure time: 48 h Method: OECD Test Guideline 202

##### **oxfendazole:**

Toxicity to fish	:	LC50 ( <i>Lepomis macrochirus</i> (Bluegill sunfish)): > 2.7 mg/l Exposure time: 96 h  LC50 ( <i>Oncorhynchus mykiss</i> (rainbow trout)): > 2.5 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 ( <i>Daphnia magna</i> (Water flea)): 0.059 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 ( <i>Pseudokirchneriella subcapitata</i> (green algae)): > 4 mg/l Exposure time: 72 h Method: OECD Test Guideline 201  NOEC ( <i>Pseudokirchneriella subcapitata</i> (green algae)): > 4 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	:	10
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC ( <i>Daphnia magna</i> (Water flea)): 0.023 mg/l Exposure time: 21 d Method: OECD Test Guideline 211
M-Factor (Chronic aquatic toxicity)	:	1

##### **Polyethylene glycol stearate:**

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Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): > 10,000 mg/l  
Exposure time: 96 h  
Method: DIN 38412

Toxicity to microorganisms : EC10 (Bacteria): > 10,000 mg/l  
Exposure time: 16 h

## Citric acid:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 100 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1,535 mg/l  
aquatic invertebrates Exposure time: 24 h

## Cobalt disodium ethylenediaminetetraacetate:

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 100 mg/l  
aquatic invertebrates Exposure time: 48 h  
Method: OECD Test Guideline 202  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic : ErC50 (Raphidocelis subcapitata (freshwater green alga)): >  
plants 100 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
Remarks: Based on data from similar materials

Toxicity to fish (Chronic tox- : EC10 (Danio rerio (zebra fish)): > 1 mg/l  
icity) Exposure time: 34 d  
Remarks: Based on data from similar materials

Toxicity to daphnia and other : EC10 (Hyalella azteca (Amphipod)): > 0.01 - 0.1 mg/l  
aquatic invertebrates (Chron- Exposure time: 28 d  
ic toxicity) Method: OECD Test Guideline 211  
Remarks: Based on data from similar materials

M-Factor (Chronic aquatic : 1  
toxicity)

## Sodium selenate:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 1 - 10 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l  
aquatic invertebrates Exposure time: 48 h  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic : ErC50 (Chlamydomonas reinhardtii (green algae)): 245 µg/l  
plants Exposure time: 96 h

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NOEC (Chlamydomonas reinhardtii (green algae)): 197 µg/l  
Exposure time: 96 h

M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC (Lepomis macrochirus (Bluegill sunfish)): > 0.01 - 0.1 mg/l Exposure time: 258 d Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: > 0.1 - 1 mg/l Exposure time: 28 d Remarks: Based on data from similar materials
M-Factor (Chronic aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC10 (activated sludge): 590 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

**Persistence and degradability****Components:****oxfendazole:**

Stability in water : Hydrolysis: < 5 % (4 d)

**Polyethylene glycol stearate:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: > 70 %  
Exposure time: 10 d  
Method: OECD Test Guideline 302B

**Citric acid:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 97 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B

**Bioaccumulative potential****Components:****oxfendazole:**

Partition coefficient: n-octanol/water : log Pow: 1.95

**Citric acid:**

Partition coefficient: n-octanol/water : log Pow: -1.72

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**||** octanol/water**Cobalt disodium ethylenediaminetetraacetate:**

<b>  </b> Partition coefficient: n-	: log Pow: -3.86
octanol/water	Remarks: Calculation

**Mobility in soil****Components:****oxfendazole:**

<b>  </b> Distribution among environ-	: log Koc: 3.2
mental compartments	

**Other adverse effects**

No data available

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**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.

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**14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

UN number	: UN 3082
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (oxfendazole, Cobalt disodium ethylenediaminetetraacetate)
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. (oxfendazole, Cobalt disodium ethylenediaminetetraacetate)
Class	: 9
Packing group	: III
Labels	: Miscellaneous
Packing instruction (cargo aircraft)	: 964
Packing instruction (passenger aircraft)	: 964

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Environmentally hazardous : yes

**IMDG-Code**

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

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

Not applicable for product as supplied.

**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**

**Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.**

**Regulation of the Minister of Health No. 472 of 1996 on the Safeguarding of Substances Hazardous to Health**

Hazardous substances that must be registered : Not applicable

**Government Regulation No. 74 of 2001 on the Management of Hazardous and Toxic Substances**

Hazardous substances approved for use	: Not applicable
Prohibited substances	: Not applicable
Restricted substances	: Not applicable

**Regulation of the Ministry of Trade No. 7 of 2022 on Distribution and Control of Hazardous Materials**

Type of hazardous materials subject to distribution and control, Annex I : Not applicable

Type of hazardous materials subject to distribution and control, Annex II : Not applicable

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

AICS : not determined



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DSL : not determined

IECSC : not determined

**16. OTHER INFORMATION**

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**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/>

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

Date format : yyyy/mm/dd

**Full text of other abbreviations**ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
ID OEL : Indonesia. Occupational Exposure LimitsACGIH / TWA : 8-hour, time-weighted average  
ID OEL / NAB : Long term exposure limit

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

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perature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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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