

Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Section 1: Identification

Product identifier : Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodi-

um Selenate Formulation

Other means of identifica-

tion

Converge (A010119)

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product Restrictions on use : Not applicable

Manufacturer or supplier's details

Company : MSD

Address : 50 Tuas West Drive

Singapore - Singapore 638408

Telephone : +1-908-740-4000

Emergency telephone number : 65 6697 2111 (24/7/365)

E-mail address : EHSDATASTEWARD@msd.com

Section 2: Hazard identification

Classification of the substance or mixture

Acute toxicity (Oral) : Category 4

Respiratory sensitisation : Category 1

Germ cell mutagenicity : Category 2

Carcinogenicity : Category 2

Reproductive toxicity : Category 2

Specific target organ toxicity - :

repeated exposure

Category 2 (Respiratory Tract, Thyroid, Heart, Blood)

Short-term (acute) aquatic

hazard

Category 1

Long-term (chronic) aquatic

hazard

Category 1



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

GHS Label elements, including precautionary statements

Hazard pictograms







Signal word : Danger

Hazard statements : H302 Harmful if swallowed.

H334 May cause allergy or asthma symptoms or breathing

difficulties if inhaled.

H341 Suspected of causing genetic defects.

H351 Suspected of causing cancer.

H361fd Suspected of damaging fertility. Suspected of damag-

ing the unborn child.

H373 May cause damage to organs (Respiratory Tract, Thyroid, Heart, Blood) through prolonged or repeated exposure. H410 Very 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.

P260 Do not breathe mist or vapours. 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 protec-

tion/ face protection/ hearing protection. P284 Wear respiratory protection.

F204 Wear respiratory protection

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON

CENTER/ doctor if you feel unwell. Rinse mouth.

P304 + P340 IF INHALED: Remove person to fresh air and

keep comfortable for breathing.

P308 + P313 IF exposed or concerned: Get medical advice/

attention.

P342 + P311 If experiencing respiratory symptoms: Call a

POISON CENTER/ doctor.

P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Other hazards which do not result in classification

None known.

Section 3: Composition/information on ingredients

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)	
levamisole hydrochloride	16595-80-5	>= 3 -< 10	
Cobalt disodium ethylenediaminetetraacetate	15137-09-4	>= 3 -< 10	
Benzyl alcohol	100-51-6	>= 1 -< 10	
Citric acid	77-92-9	>= 1 -< 10	
Sodium selenate	13410-01-0	>= 0.1 -< 0.25	
abamectin (combination of avermectin B1a and avermectin B1b) (ISO)	71751-41-2	>= 0.1 -< 0.25	

Section 4: First-aid measures

Description of necessary first-aid measures

General advice : In the case of accident or if you feel unwell, seek medical ad-

vice immediately.

When symptoms persist or in all cases of doubt seek medical

advice.

If inhaled : If inhaled, remove to fresh air.

If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

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. Flush eyes with water as a precaution.

In case of eye contact : Flush eyes with water as a precaution.

Get medical attention if irritation develops and persists.

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

Risks : Harmful if swallowed.

May cause allergy or asthma symptoms or breathing difficul-

ties if inhaled.

Suspected of causing genetic defects.

Suspected of causing cancer.

Suspected of damaging fertility. Suspected of damaging the

unborn child.



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version **Revision Date:** SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

May cause damage to organs through prolonged or repeated

exposure.

Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reac-

tive airways dysfunction syndrome).

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).

Indication of any immediate medical attention and special treatment needed

Treatment Treat symptomatically and supportively.

Section 5: Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Water spray

> Alcohol-resistant foam Carbon dioxide (CO2)

Dry chemical None known.

Unsuitable extinguishing

media

Special hazards arising from the substance or mixture

Exposure to combustion products may be a hazard to health.

Specific hazards during fire-

fiahtina

Carbon oxides

Hazardous combustion prod: : ucts

Oxides of phosphorus Cobalt compounds Nitrogen oxides (NOx)

Metal oxides

Special protective actions for fire-fighters

Special protective equipment:

for firefighters

In the event of fire, wear self-contained breathing apparatus.

Use personal protective equipment.

Specific extinguishing meth-

ods

Use extinguishing measures that are appropriate to local cir-

cumstances 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

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment.

Follow safe handling advice (see section 7) and personal pro-

tective equipment recommendations (see section 8).

Environmental precautions

Environmental precautions Avoid release to the environment.



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Date of last issue: 04.12.2023 Version Revision Date: SDS Number: 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Prevent further leakage or spillage if safe to do so.

Prevent spreading over a wide area (e.g. by containment or oil

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. Methods for cleaning up

> 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 absor-

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 deter-

mine which regulations are applicable.

Sections 13 and 15 of this SDS provide information regarding

certain local or national requirements.

Section 7: Handling and storage

Precautions for safe handling

Technical measures See Engineering measures under EXPOSURE

CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation

Advice on safe handling Do not breathe mist or vapours.

Do not swallow.

Avoid contact with eyes.

Avoid prolonged or repeated contact with skin.

Wash skin thoroughly after handling.

Use only with adequate ventilation.

Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure as-

sessment

Keep container tightly closed.

Already sensitised individuals, and those susceptible

to asthma, allergies, chronic or recurrent respiratory disease. should consult their physician regarding working with respira-

tory irritants or sensitisers.

Do not eat, drink or smoke when using this product.

Take care to prevent spills, waste and minimize release to the

environment.

If exposure to chemical is likely during typical use, provide eye Hygiene measures

flushing systems and safety showers close to the working

When using do not eat, drink or smoke. Wash contaminated clothing before re-use.

The effective operation of a facility should include review of



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the

use of administrative controls.

Conditions for safe storage, including any incompatibilities

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

Section 8: Exposure controls/personal protection

Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis	
levamisole hydrochloride	16595-80-5	TWA	20 μg/m3 (OEB 3)	Internal	
	Further information: Skin				
		Wipe limit	200 μg/100 cm ²	Internal	
Sodium selenate	13410-01-0	PEL (long term)	0.2 mg/m3 (selenium)	SG OEL	
		TWA	20 μg/m3 (OEB 3)	Internal	
		Wipe limit	200 μg/100 cm ²	Internal	
		TWA	0.2 mg/m3 (selenium)	ACGIH	
abamectin (combination of avermectin B1a and avermec- tin B1b) (ISO)	71751-41-2	TWA	15 μg/m3 (OEB 3)	Internal	
		Wipe limit	150 μg/100 cm ²	Internal	

Appropriate engineering control measures

Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., dripless 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 con-

tainment devices).
Minimize open handling.

Individual protection measures, such as personal protective equipment (PPE)



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

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.

Skin protection : Work uniform or laboratory coat.

Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, dis-

posable 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 expo-

sure assessment demonstrates exposures outside the rec-

ommended guidelines, use respiratory protection. Combined particulates and organic vapour type

Filter type Hand protection

Material : Chemical-resistant gloves

Remarks : Consider double gloving.

Section 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

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower : No data available



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

flammability limit

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

Section 10: Stability and reactivity

Reactivity : Not classified as a reactivity hazard. Chemical stability : Stable under normal conditions.

Possibility of hazardous reac-

tions

Conditions to avoid : None known.
Incompatible materials : Oxidizing agents

Hazardous decomposition

products

No hazardous decomposition products are known.

Can react with strong oxidizing agents.

Section 11: Toxicological information

Information on likely routes of:

exposure

Inhalation Skin contact Ingestion Eye contact



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity : Acute toxicity estimate: 939.39 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

Acute dermal toxicity : Acute toxicity estimate: > 2,000 mg/kg

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

Cobalt disodium ethylenediaminetetraacetate:

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

Remarks: Based on data from similar materials

Benzyl alcohol:

Acute oral toxicity : LD50 (Rat): 1,620 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 4.178 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: OECD Test Guideline 403

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



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

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

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Acute oral toxicity : LD50 (Rat): 24 mg/kg

LD50 (Mouse): 10 mg/kg

LDLo (Monkey): 24 mg/kg

Symptoms: Dilatation of the pupil

Acute inhalation toxicity : LC50 (Rat): 0.023 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rat): 330 mg/kg

LD50 (Rabbit): 2,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Components:

levamisole hydrochloride:

Remarks : No data available

Cobalt disodium ethylenediaminetetraacetate:

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

Remarks : Based on data from similar materials

Benzyl alcohol:

Species : Rabbit

Method : OECD Test Guideline 404

Result : No skin irritation

Citric acid:

Species : Rabbit

Method : OECD Test Guideline 404



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Result : No skin irritation

Sodium selenate:

Species : reconstructed human epidermis (RhE)

Method : OECD Test Guideline 431

Species : reconstructed human epidermis (RhE)

Method : OECD Test Guideline 439

Result : Skin irritation

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Species : Rabbit

Result : No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Components:

levamisole hydrochloride:

Remarks : No data available

Cobalt disodium ethylenediaminetetraacetate:

Species : Rabbit

Result : No eye irritation

Remarks : Based on data from similar materials

Benzyl alcohol:

Species : Rabbit

Result : Irritation to eyes, reversing within 21 days

Method : OECD Test Guideline 405

Citric acid:

Species : Rabbit

Result : Irritation to eyes, reversing within 21 days

Method : OECD Test Guideline 405

Sodium selenate:

Species : Bovine cornea

Method : OECD Test Guideline 437

Result : No eye irritation



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

 Version
 Revision Date:
 SDS Number:
 Date of last issue: 04.12.2023

 2.0
 06.04.2024
 10813339-00005
 Date of first issue: 12.07.2022

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Species : Rabbit

Result : Mild eye irritation

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Components:

levamisole hydrochloride:

Remarks : No data available

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 sensiti-

sation rate in humans

Benzyl alcohol:

Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig

Method : OECD Test Guideline 406

Result : negative

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Test Type : Maximisation Test Exposure routes : Skin contact

Result : Not a skin sensitizer.

Germ cell mutagenicity

Suspected of causing genetic defects.

Components:

levamisole hydrochloride:

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

Result: negative



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: 2.0 06.04.2024

SDS Number: 10813339-00005 Date of last issue: 04.12.2023 Date of first issue: 12.07.2022

Test Type: Chromosome aberration test in vitro

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

Germ cell mutagenicity -

Assessment

Positive result(s) from in vivo mammalian somatic cell muta-

genicity tests.

Remarks: Based on data from similar materials

Benzyl alcohol:

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

Result: negative

Test Type: Mammalian erythrocyte micronucleus test (in vivo Genotoxicity in vivo

cytogenetic assay)

Species: Mouse



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Application Route: Intraperitoneal injection

Result: negative

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

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

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

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

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster lung cells

Result: negative

Test Type: Alkaline elution assay

Result: negative

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

cytogenetic test, chromosomal analysis)

Species: Mouse

Application Route: Intraperitoneal injection

Result: negative

Carcinogenicity

Suspected of causing cancer.



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

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

Cobalt disodium ethylenediaminetetraacetate:

Species : Rat

Application Route : inhalation (dust/mist/fume)

Exposure time : 105 weeks Result : positive

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 - Assess-

ment

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

Benzyl alcohol:

Species : Mouse
Application Route : Ingestion
Exposure time : 103 weeks

Method : OECD Test Guideline 451

Result : negative

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Species : Rat
Application Route : Oral
Exposure time : 105 weeks
Result : negative

Species: MouseApplication Route: OralExposure time: 93 weeksResult: negative



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Reproductive toxicity

Suspected of damaging fertility. Suspected of damaging 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 develop-

ment

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 - As-

sessment

Some evidence of adverse effects on development, based on

animal experiments.

Cobalt disodium ethylenediaminetetraacetate:

Effects on fertility : Test Type: Fertility/early embryonic development

Species: Rat

Application Route: Ingestion

Result: positive

Remarks: Based on data from similar materials

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



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

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

Benzyl alcohol:

Effects on fertility : Test Type: Fertility/early embryonic development

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

Citric acid:

Effects on foetal develop-

ment

Test Type: One-generation reproduction toxicity study

Species: Rat

Application Route: Ingestion

Result: negative

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

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Effects on fertility : Test Type: Fertility

Species: Rat, male Application Route: Oral Result: Effects on fertility



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Test Type: Two-generation reproduction toxicity study

Species: Rat

Application Route: Oral

Early Embryonic Development: NOAEL: 0.12 mg/kg body

weight

Result: Fetotoxicity

Effects on foetal develop-

ment

Test Type: Embryo-foetal development

Species: Mouse

Application Route: Oral

General Toxicity Maternal: NOAEL: 0.05 mg/kg body weight Developmental Toxicity: NOAEL: 0.2 mg/kg body weight

Result: Cleft palate

Remarks: Adverse developmental effects were observed

Test Type: Embryo-foetal development

Species: Rabbit

Application Route: Oral

Developmental Toxicity: LOAEL: 2 mg/kg body weight Result: Cleft palate, Teratogenic effects, Reduced embryonic

survival

Remarks: Adverse developmental effects were observed

Test Type: Development

Species: Rat

Application Route: Oral

Developmental Toxicity: LOAEL: 1.6 mg/kg body weight

Result: Teratogenic effects

Reproductive toxicity - As-

sessment

Some evidence of adverse effects on sexual function and fertility, based on animal experiments., Some evidence of

adverse effects on development, based on animal experi-

ments.

STOT - single exposure

Not classified based on available information.

Components:

Citric acid:

Assessment : May cause respiratory irritation.

STOT - repeated exposure

May cause damage to organs (Respiratory Tract, Thyroid, Heart, Blood) through prolonged or repeated exposure.



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Components:

levamisole hydrochloride:

Target Organs : Blood, 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 con-

centrations 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 con-

centrations 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 con-

centrations of 10 mg/kg bw or less.

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Exposure routes : Ingestion

Target Organs : Central nervous system

Assessment : Causes damage to organs through prolonged or repeated

exposure.

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
Target Organs : Blood



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

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

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

: OECD Test Guideline 413 Method

Remarks Based on data from similar materials

Species Mouse LOAEL < 0.01 mg/l

Application Route : inhalation (dust/mist/fume)

: 13 Weeks Exposure time

Method : OECD Test Guideline 413

Remarks Based on data from similar materials

Benzyl alcohol:

Species : Rat NOAEL 1.072 mg/l

Application Route : inhalation (dust/mist/fume)

Exposure time : 28 Days

Method : OECD Test Guideline 412

Citric acid:

Species : Rat

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

Sodium selenate:

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

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Species : Rat

NOAEL : 1.5 mg/kg

Application Route : Oral

Exposure time : 24 Months

Target Organs : Central nervous system

Symptoms : Tremors, ataxia

Species : Mouse

NOAEL : 4.0 mg/kg

Application Route : Oral

Exposure time : 24 Months

Target Organs : Central nervous system

Symptoms : Tremors, ataxia

Species : Dog NOAEL : 0.25

NOAEL : 0.25 mg/kg LOAEL : 0.5 mg/kg Application Route : Oral Exposure time : 53 Weeks

Target Organs : Central nervous system
Symptoms : Tremors, weight loss
Remarks : mortality observed

Species : Monkey
NOAEL : 1.0 mg/kg
Application Route : Oral
Exposure time : 14 Weeks

Target Organs : Central nervous system

Aspiration toxicity

Not classified based on available information.

Experience with human exposure

Components:

levamisole hydrochloride:

Ingestion : Symptoms: Nausea, Vomiting, Headache, Dizziness, hypo-

tension

Cobalt disodium ethylenediaminetetraacetate:

Inhalation : Target Organs: Respiratory system

Remarks: Based on data from similar materials

Ingestion : Target Organs: Blood

Remarks: Based on data from similar materials

Target Organs: Heart Target Organs: Thyroid

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Ingestion : Symptoms: May cause, Tremors, Diarrhoea, central nervous

system effects, Salivation, tearing



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Section 12: Ecological information

Toxicity

Components:

levamisole hydrochloride:

Toxicity to fish LC50 (Oryzias latipes (Japanese medaka)): 37.3 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 64 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Cobalt disodium ethylenediaminetetraacetate:

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 100 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Remarks: Based on data from similar materials

Toxicity to algae/aguatic

plants

ErC50 (Raphidocelis subcapitata (freshwater green alga)): >

100 ma/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Based on data from similar materials

Toxicity to fish (Chronic tox-

icity)

EC10 (Danio rerio (zebra fish)): > 1 mg/l

Exposure time: 34 d

Remarks: Based on data from similar materials

Toxicity to daphnia and other: aquatic invertebrates (Chron-

ic toxicity)

EC10 (Hyalella azteca (Amphipod)): > 0.01 - 0.1 mg/l

Exposure time: 28 d

Method: OECD Test Guideline 211

Remarks: Based on data from similar materials

M-Factor (Chronic aquatic

toxicity)

: 1

Benzyl alcohol:

Toxicity to fish LC50 (Pimephales promelas (fathead minnow)): 460 mg/l

Exposure time: 96 h

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 230 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Toxicity to algae/aquatic

plants

EC50 (Pseudokirchneriella subcapitata (green algae)): 770

mg/l

Exposure time: 72 h



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 310

mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): 51 mg/l

Exposure time: 21 d

Method: OECD Test Guideline 211

Citric acid:

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

Exposure time: 96 h

Toxicity to daphnia and other:

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 1,535 mg/l

Exposure time: 24 h

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:

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): > 1 - 10 mg/l

Exposure time: 48 h

Remarks: Based on data from similar materials

Toxicity to algae/aquatic

plants

ErC50 (Chlamydomonas reinhardtii (green algae)): 245 µg/l

Exposure time: 96 h

NOEC (Chlamydomonas reinhardtii (green algae)): 197 µg/l

Exposure time: 96 h

M-Factor (Acute aquatic tox- :

icity)

: 1

Toxicity to fish (Chronic tox-

icity)

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 (Chron-

ic 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



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

II

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 3.2 μg/l

Exposure time: 96 h

LC50 (Lepomis macrochirus (Bluegill sunfish)): 9.6 µg/l

Exposure time: 96 h

LC50 (Ictalurus punctatus (channel catfish)): 24 µg/l

Exposure time: 96 h

LC50 (Cyprinus carpio (Carp)): 42 μg/l

Exposure time: 96 h

LC50 (Cyprinodon variegatus (sheepshead minnow)): 15 µg/l

Exposure time: 96 h

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Americamysis): 0.022 µg/l

Exposure time: 96 h

EC50 (Daphnia magna (Water flea)): 0.34 μg/l

Exposure time: 48 h

Toxicity to algae/aquatic

plants

EC50 (Pseudokirchneriella subcapitata (green algae)): 100

mg/l

Exposure time: 72 h

M-Factor (Acute aquatic tox-

icity)

10,000

Toxicity to fish (Chronic tox-

icity)

NOEC (Pimephales promelas (fathead minnow)): 0.52 µg/l

Exposure time: 32 d

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOEC (Daphnia magna (Water flea)): 0.03 μg/l

Exposure time: 21 d

NOEC (Mysidopsis bahia (opossum shrimp)): 0.0035 µg/l

Exposure time: 28 d

M-Factor (Chronic aquatic

toxicity)

10,000

Toxicity to microorganisms : EC50: > 1,000 mg/l

Exposure time: 3 h

Test Type: Respiration inhibition

Persistence and degradability

Components:

Benzyl alcohol:

Biodegradability : Result: Readily biodegradable.



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Biodegradation: 92 - 96 %

Exposure time: 14 d

Citric acid:

Biodegradability : Result: Readily biodegradable.

Biodegradation: 97 % Exposure time: 28 d

Method: OECD Test Guideline 301B

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Stability in water : Hydrolysis: 50 %(< 12 h)

Bioaccumulative potential

Components:

Cobalt disodium ethylenediaminetetraacetate:

Partition coefficient: n- : log Pow: -3.86

octanol/water Remarks: Calculation

Benzyl alcohol:

Partition coefficient: n- : log Pow: 1.05

octanol/water

Citric acid:

Partition coefficient: n- : log Pow: -1.72

octanol/water

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Bioaccumulation : Bioconcentration factor (BCF): 52

Partition coefficient: n- : log Pow: 4

octanol/water

Mobility in soil

Components:

abamectin (combination of avermectin B1a and avermectin B1b) (ISO):

Distribution among environ: log Koc: > 3.6

mental compartments

Other adverse effects

No data available

Section 13: Disposal considerations

Disposal methods

Waste from residues : Do not dispose of waste into sewer.



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version **Revision Date:** SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste han-

dling site for recycling or disposal.

If not otherwise specified: Dispose of as unused product.

Section 14: Transport information

International Regulations

UNRTDG

UN number UN 3082

UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(abamectin (combination of avermectin B1a and avermectin

B1b) (ISO), Cobalt disodium ethylenediaminetetraacetate)

Transport hazard class(es) Packing group Ш Labels 9

Environmental hazards yes

IATA-DGR

UN 3082 UN/ID No.

UN proper shipping name Environmentally hazardous substance, liquid, n.o.s.

> (abamectin (combination of avermectin B1a and avermectin B1b) (ISO), Cobalt disodium ethylenediaminetetraacetate)

Transport hazard class(es)

Packing group

Ш

Labels

Miscellaneous

Packing instruction (cargo

aircraft)

964

Packing instruction (passen-

964

ger aircraft)

Environmentally hazardous yes

IMDG-Code

UN number UN 3082

Proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(abamectin (combination of avermectin B1a and avermectin B1b) (ISO), Cobalt disodium ethylenediaminetetraacetate)

Transport hazard class(es) 9 Ш Packing group Labels 9 **EmS Code** F-A, S-F Marine pollutant ves

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



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

Section 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.

Environmental Protection and Management Act and

Environmental Protection and Management (Hazard-

ous Substances) Regulations

Fire Safety (Petroleum and Flammable Materials)

Regulations

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

AICS not determined

DSL not determined

IECSC not determined

Section 16: Other information

06.04.2024 **Revision Date**

Further information

Sources of key data used to compile the Safety Data

Sheet

Internal technical data, data from raw material SDSs, OECD

Not applicable

Not applicable

eChem Portal search results and European Chemicals Agen-

cy, 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 dd.mm.yyyy

Full text of other abbreviations

ACGIH USA. ACGIH Threshold Limit Values (TLV)

SG OEL Singapore. Workplace Safety and Health (General Provisions)

Regulations - First Schedule Permissible Exposure Limits of

Toxic Substances.

ACGIH / TWA 8-hour, time-weighted average

Permissible Exposure Level (PEL) Long Term SG OEL / PEL (long term)

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 -



Abamectin / Levamisole Hydrochloride / Cobalt EDTA / Sodium Selenate Formulation

Version Revision Date: SDS Number: Date of last issue: 04.12.2023 2.0 06.04.2024 10813339-00005 Date of first issue: 12.07.2022

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; 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.

SG / EN