

SAFETY DATA SHEET



GALBEN M®

Version	Revision Date:	SDS Number:	Date of last issue: -
7.0	24.06.2025	50000176	Date of first issue: 31.08.2021

SECTION 1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE COMPANY OR UNDERTAKING

Chemical product identification : GALBEN M®

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

Recommended use : Fungicide

Restrictions on use : Use as recommended by the label.

Details of the supplier of the safety data sheet

Company name of supplier : FMC QUIMICA CHILE LTDA

Supplier's address : AVDA VITACURA 2670,
PISO 15, LAS CONDES,
VITACURA, SANTIAGO, CHILE
+56 2 28204200

E-mail address : SDS-Info@fmc.com

Emergency and toxicological information number in Chile : Chile: Spills: CITUC: +56 2 2247 3600 (24 hours) Fire: 132 (24 hours)
+56-22-5814934 (CHEMTREC - Chile)
1 703 / 741-5970 (CHEMTREC - International)

Medical Emergency Number : Chile: CITUC: +56 2 2635 3800 (24 hours)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

Skin sensitization : Category 1

Carcinogenicity : Category 2

Reproductive toxicity : Category 2

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Specific target organ toxicity - repeated exposure : Category 2 (Nervous system, Endocrine system)

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1

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Label elements

Hazard pictograms



Signal Word

: WARNING

Hazard Statements

: H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H361d Suspected of damaging the unborn child.
H373 May cause damage to organs (Nervous system, Endocrine system) 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 dust.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

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

Other hazards

None known.

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SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Systematic chemical name	Common Name	CAS-No.	Concentration or range (% w/w)	Classification
mancozeb (ISO)	Mancozeb	8018-01-7	$\geq 50 - < 70$	Skin sensitization, Category 1 Carcinogenicity, Category 2 Reproductive toxicity, Category 2 Specific target organ toxicity - repeated exposure (Nervous system, Endocrine system), Category 2 Short-term (acute) aquatic hazard, Category 1 Long-term (chronic) aquatic hazard, Category 1
benalaxyl (ISO)	Benalaxyl	71626-11-4	$\geq 5 - < 10$	Short-term (acute) aquatic hazard, Category 1 Long-term (chronic) aquatic hazard, Category 1
kaolin	Kaolin	1332-58-7	$\geq 5 - < 10$	Not Classified
Silicon dioxide	Silicon dioxide	112926-00-8	$\geq 1 - < 5$	Not Classified
Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt	Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt	102980-04-1	$\geq 1 - < 2,5$	Serious eye damage/eye irritation, Category 2 Long-term (chronic) aquatic hazard, Category 3

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this material safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

Inhalation : If unconscious, place in recovery position and seek medical

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- advice.
If symptoms persist, call a physician.
- Skin contact : Wash off with soap and water.
If symptoms persist, call a physician.
Wash contaminated clothing before re-use.
- Eye contact : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- Ingestion : Do not induce vomiting without medical advice.
Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : Exposure to skin may result in mild symptoms include itching, hives or rash, and skin redness. More severe symptoms include sneezing, itchy watery eyes, and difficulty breathing.
May cause an allergic skin reaction.
May cause respiratory irritation.
Suspected of causing cancer.
Suspected of damaging the unborn child.
May cause damage to organs through prolonged or repeated exposure.
- Protection of first-aiders : Avoid inhalation, ingestion and contact with skin and eyes.
- Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Dry chemical, CO₂, water spray or regular foam.
- Unsuitable extinguishing media : Do not spread spilled material with high-pressure water streams.
- Hazardous combustion products : Fire may produce irritating, corrosive and/or toxic gases.
Nitrogen oxides (NO_x)
Carbon oxides
Hydrogen cyanide
Hydrogen chloride
Sulfur oxides
- Related specific hazards : Do not allow run-off from fire fighting to enter drains or water courses.
- Specific extinguishing methods : Use a water spray to cool fully closed containers.
Remove undamaged containers from fire area if it is safe to do

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so.

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Recommendations for fire-fighters : Firefighters should wear protective clothing and self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : If it can be safely done, stop the leak.
Do not touch or walk through the spilled material.
Use personal protective equipment.
Evacuate personnel to safe areas.
Avoid dust formation.
Avoid breathing dust.
Ensure adequate ventilation.

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and material for containment and cleaning up : Never return spills in original containers for re-use. Pick up and transfer the spilled material to a properly labeled container without creating dust. For spills on concrete or other non-porous surfaces, the area can be cleaned using a small quantity of soap and water. Do not allow the cleaning solution to enter drains. Use an inert absorbent material to soak up the cleaning solution and transfer it to the properly labeled container. When the spill occurs on soil, the only effective way to decontaminate the area is to remove the top 5 to 7 centimeters of soil.

SECTION 7. HANDLING AND STORAGE

Handling

Precautions for safe handling : Avoid formation of respirable particles.
Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not

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be employed in any process in which this mixture is being used.

Operational and technical measures : Avoid dust formation.
Provide appropriate exhaust ventilation at places where dust is formed.

Contact prevention : Avoid contact with skin, eyes and clothing.
Do not breathe dust.
When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

Conditions for safe storage, including any incompatibilities

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability : No decomposition if stored and applied as directed.

Specific end use(s)

Specific use(s) : Registered pesticide to be used in accordance with a label approved by country-specific regulatory authorities.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible maximum concentration	Basis
mancozeb (ISO)	8018-01-7	LPP	0,9 mg/m ³ (Manganese)	CL OEL
kaolin	1332-58-7	LPP	13 mg/m ³	CL OEL
		LPP (respirable dust fraction)	4,5 mg/m ³	CL OEL
		TWA (Respirable particulate matter)	2 mg/m ³	ACGIH
Silicon dioxide	112926-00-8	LPP (respirable dust fraction)	0,16 mg/m ³	CL OEL
		LPP	5,3 mg/m ³	CL OEL

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Personal protective equipment

Eye/face protection	:	Eye wash bottle with pure water Tightly fitting safety goggles
Skin protection	:	Dust impervious protective suit Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hand protection	:	
Material	:	Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber.
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Respiratory protection	:	In the case of dust or aerosol formation use respirator with an approved filter.
Filter type	:	Particulates type
Protective measures	:	Plan first aid action before beginning work with this product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	:	solid
Form	:	solid
Color	:	light yellow, cream
Odor	:	characteristic
Odor Threshold	:	No data available
pH	:	7,35 (20 °C) Concentration: 1 %
Melting point/ range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	> 150 °C
Evaporation rate	:	Not applicable

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Flammability (solid, gas) : The product is not flammable.

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : Not applicable

Vapor density : Not applicable

Relative density : No data available

Density : 0,427 g/cm³
Tap density

Solubility(ies)
Water solubility : partly soluble

Partition coefficient: n-octanol/water : No data available

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity
Viscosity, dynamic : Not applicable

Viscosity, kinematic : Not applicable

Explosive properties : Not explosive

Oxidizing properties : Non-oxidizing

Other information

Surface tension : 40,6 mN/m, 22 °C

Metal corrosion rate : Not corrosive to metals.

Molecular weight : Not applicable

Self-ignition : No data available

SECTION 10. STABILITY AND REACTIVITY

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Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed.
Conditions to avoid	:	Avoid extreme temperatures. Avoid dust formation.
Incompatible materials	:	Avoid strong acids, bases, and oxidizers.
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Based on available data, the classification criteria are not met.

Product:

Acute oral toxicity	:	LD50(Rat, male and female): 4.700 mg/kg Symptoms: lethargy
Acute inhalation toxicity	:	LC50(Rat): > 5,148 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Symptoms: Breathing difficulties
Acute dermal toxicity	:	LD50(Rat): > 4.000 mg/kg

Components:

mancozeb (ISO):

Acute oral toxicity	:	LD50 (Rat, male and female): > 2.000 mg/kg Method: OECD Test Guideline 401 Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 1,766 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rat, male and female): > 2.000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

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benalaxyl (ISO):

- Acute oral toxicity : LD50 (Rat, male and female): 4.200 mg/kg
GLP: no
Assessment: The component/mixture is minimally toxic after single ingestion.
Remarks: mortality
- LD50 (Rat, female): > 2.000 mg/kg
Method: OECD Test Guideline 425
Symptoms: hypoactivity, Breathing difficulties, nasal discharge
GLP: yes
Assessment: The component/mixture is minimally toxic after single ingestion.
- Acute inhalation toxicity : LC50 (Rat): > 4,2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: yes
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Highest attainable concentration.
- Acute dermal toxicity : LD50 (Rat, male and female): > 5.000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

kaolin:

- Acute oral toxicity : LD50 (Rat): > 5.000 mg/kg
Method: OECD Test Guideline 401
- LD50: > 2.000 mg/kg
Method: OECD Test Guideline 420
Assessment: The substance or mixture has no acute oral toxicity
- Acute inhalation toxicity : LC50: 5,07 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 436
- Acute dermal toxicity : LD50 (Rat): > 5.000 mg/kg
- LD50: > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Silicon dioxide:

- Acute oral toxicity : LD50 (Rat, male and female): > 5.000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

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Acute inhalation toxicity : LC0 (Rat, male and female): > 0,14 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Remarks: Based on data from similar materials
no mortality

Acute dermal toxicity : LD50 (Rabbit): > 5.000 mg/kg
Remarks: Based on data from similar materials

Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt:

Acute oral toxicity : LD50 (Rat): > 2.000 mg/kg
Remarks: no mortality

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

Product:

Species : Rabbit
Result : No skin irritation

Components:

mancozeb (ISO):

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

benalaxyl (ISO):

Species : Rabbit
Assessment : Not classified as irritant
Result : slight or no skin irritation.

kaolin:

Method : OECD Test Guideline 404
Result : No skin irritation

Silicon dioxide:

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

Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt:

Species : Rabbit
Result : No skin irritation

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Serious eye damage or eye irritation

Based on available data, the classification criteria are not met.

Product:

Species	: Rabbit
Method	: OECD Test Guideline 405
Result	: No eye irritation
GLP	: yes

Remarks	: Product dust may be irritating to eyes, skin and respiratory system.
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Components:

mancozeb (ISO):

Assessment	: No eye irritation
Remarks	: Minimal effects that do not meet the threshold for classification.

benalaxyl (ISO):

Species	: Rabbit
Assessment	: Not classified as irritant
Method	: OECD Test Guideline 405
Result	: Slight or no eye irritation
GLP	: yes

kaolin:

Method	: OECD Test Guideline 405
Result	: No eye irritation

Silicon dioxide:

Species	: Rabbit
Method	: OECD Test Guideline 405
Result	: No eye irritation
Remarks	: Based on data from similar materials

Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt:

Species	: Rabbit
Method	: OECD Test Guideline 405
Result	: Moderate eye irritation

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Based on available data, the classification criteria are not met.

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Product:

Routes of exposure	: Dermal
Species	: Guinea pig
Assessment	: May cause sensitization by skin contact.
Result	: May cause sensitization by skin contact.

Test Type	: Buehler Test
Routes of exposure	: Dermal
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: Not a skin sensitizer.
GLP	: yes

Remarks	: Causes sensitization.
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Components:

mancozeb (ISO):

Test Type	: Maximization Test
Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: May cause sensitization by skin contact.

benalaxyl (ISO):

Routes of exposure	: Skin contact
Species	: Guinea pig
Method	: OECD Test Guideline 429
Result	: Not a skin sensitizer.
GLP	: yes

kaolin:

Method	: OECD Test Guideline 429
Result	: Does not cause skin sensitization.

Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt:

Test Type	: Maximization Test
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: Does not cause skin sensitization.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Product:

Genotoxicity in vitro	: Test Type: Ames test Metabolic activation: with and without metabolic activation Result: negative
Genotoxicity in vivo	: Test Type: Micronucleus test

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Species: Mouse
Result: negative

Components:

mancozeb (ISO):

Genotoxicity in vitro : Test Type: Micronucleus test
Test system: Human lymphocytes
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 487
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: mice
Method: OECD Test Guideline 474
Result: negative

benalaxyl (ISO):

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative

kaolin:

Genotoxicity in vitro : Test Type: Ames test
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Remarks: No data available

Silicon dioxide:

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

Genotoxicity in vivo : Species: Rat (male)
Application Route: Inhalation
Result: negative
Remarks: Based on data from similar materials

Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

Carcinogenicity

Suspected of causing cancer.

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Components:

mancozeb (ISO):

Species	: Rat, male and female
Exposure time	: 2 Years
LOAEL	: 750 ppm
Result	: positive

Carcinogenicity - Assessment	: Limited evidence of carcinogenicity in animal studies
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Silicon dioxide:

Species	: Rat
Application Route	: Oral
Exposure time	: 103 weeks
Method	: OECD Test Guideline 453
Result	: negative
Remarks	: Based on data from similar materials

Reproductive toxicity

Suspected of damaging the unborn child.

Components:

mancozeb (ISO):

Effects on fertility	: Test Type: Two-generation study Species: Rat Application Route: Oral Method: OECD Test Guideline 416 Result: negative
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Effects on fetal development	: Test Type: Pre-natal Species: Rat Application Route: Oral Duration of Single Treatment: 6 - 15 d Developmental Toxicity: LOAEL: 512 mg/kg bw/day Method: EPA OPP 83-3 Result: positive
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Reproductive toxicity - Assessment	: Clear evidence of adverse effects on development, based on animal experiments.
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benalaxyl (ISO):

Effects on fertility	: Remarks: No data available
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Reproductive toxicity - Assessment	: Animal testing showed no reproductive toxicity. Animal testing showed no developmental toxicity.
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kaolin:

Effects on fertility	: Remarks: No data available
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Effects on fetal development : Remarks: No data available

Silicon dioxide:

Effects on fertility : Species: Rat
General Toxicity Parent: NOAEL: 1,5 mg/kg bw/day
Fertility: NOAEL: > 6,9 mg/kg body weight

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 2 mg/kg bw/day
Embryo-fetal toxicity.: NOAEL: 2 mg/kg bw/day
Symptoms: Reduced fetal weight., Reduced number of viable fetuses.

Test Type: Embryo-fetal development
Species: Rabbit
Application Route: Oral
General Toxicity Maternal: NOAEL: 500 mg/kg bw/day
Embryo-fetal toxicity.: NOAEL: 500 mg/kg bw/day
Symptoms: Reduced fetal weight., fused or incompletely ossified sternebrae

Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt:

Effects on fertility : Remarks: No data available

Effects on fetal development : Remarks: No data available

Specific particular organ toxicity - single exposure

May cause respiratory irritation.

Product:

Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

Components:

kaolin:

Remarks : No significant adverse effects were reported

Specific particular organ toxicity - repeated exposure

May cause damage to organs (Nervous system, Endocrine system) through prolonged or repeated exposure.

Components:

mancozeb (ISO):

Target Organs : Nervous system, Endocrine system
Assessment : The substance or mixture is classified as specific target organ

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toxicant, repeated exposure, category 2.

kaolin:

Assessment : The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

mancozeb (ISO):

Species : Rat, male and female
LOAEL : 750 ppm
Application Route : Oral - feed
Exposure time : 2 years
Method : OECD Test Guideline 453

benalaxyl (ISO):

Remarks : No data available

kaolin:

Remarks : No data available

Silicon dioxide:

Species : Rat, male and female
NOAEL : 2.500 mg/kg
Application Route : Oral
Exposure time : 13 weeks
Method : OECD Test Guideline 408
Remarks : Based on data from similar materials

Species : Rat, male and female
NOAEL : 1,3 - 10 mg/l
LOAEL : 5,9 mg/l
Application Route : Inhalation
Exposure time : 13 weeks
Method : OECD Test Guideline 413
Remarks : Based on data from similar materials

Inhalation hazard

Based on available data, the classification criteria are not met.

Further information

Product:

Remarks : No data available

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SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Product:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,81 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
GLP: yes
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia): 0,26 mg/l
Exposure time: 48 h

EC50 (Daphnia similis (Water flea)): 0,82 mg/l
Exposure time: 48 h
- Toxicity to algae/aquatic plants : EC50 (Scenedesmus subspicatus): 10,6 mg/l
Exposure time: 72 h

EC50 (Selenastrum capricornutum (green algae)): 0,115 mg/l
Exposure time: 96 h

NOEC (Scenedesmus subspicatus): 2 mg/l
Exposure time: 72 h
- Toxicity to fish (Chronic toxicity) : NOEC: 0,12 mg/l
Exposure time: 21 d
Species: Oncorhynchus mykiss (rainbow trout)
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,033 mg/l
Exposure time: 23 d
Species: Daphnia magna (Water flea)
- Toxicity to soil dwelling organisms : EC50: 2.435,83 mg/kg
Exposure time: 14 d
Species: Eisenia fetida (earthworms)

Remarks: No significant adverse effect on Nitrogen mineralization.

Remarks: No significant adverse effect on Carbon mineralization.
- Toxicity to terrestrial organisms : LD50: > 100
Exposure time: 24 h
Species: Apis mellifera (bees)

LD50: > 5.000 mg/kg
Species: Birds

Ecotoxicology Assessment

- Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

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Components:

mancozeb (ISO):

- Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): 1 mg/l
Exposure time: 48 h
- LC50 (Cyprinus carpio (Carp)): 2,57 mg/l
Exposure time: 96 h
- LC50 (Oncorhynchus mykiss (rainbow trout)): 0,074 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia): 0,01 mg/l
Exposure time: 24 h
- EC50 (Daphnia magna (Water flea)): 0,073 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC10 (Raphidocelis subcapitata (freshwater green alga)): 0,0035 mg/l
Exposure time: 120 h
- EC50 (Raphidocelis subcapitata (freshwater green alga)): 0,008 mg/l
Exposure time: 120 h
- M-Factor (Acute aquatic toxicity) : 10
- Toxicity to fish (Chronic toxicity) : EC10: 0,0013 mg/l
Exposure time: 215 d
Species: Pimephales promelas (fathead minnow)
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,0073 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
- M-Factor (Chronic aquatic toxicity) : 10
- Toxicity to terrestrial organisms : 0,1868 mg/kg
Exposure time: 24 h
Species: Apis mellifera (bees)
- 0,1652 mg/kg
Exposure time: 48 h
Species: Apis mellifera (bees)
- 0,1406 mg/kg
Exposure time: 72 h
Species: Apis mellifera (bees)

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benalaxyl (ISO):

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): 5,94 mg/l Exposure time: 96 h LC50 (Cyprinus carpio (Carp)): 6 mg/l Exposure time: 96 h LC50 (Salmo trutta (brown trout)): 3,75 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,59 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Selenastrum capricornutum (green algae)): 2,4 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,49 mg/l Exposure time: 21 d Species: Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,03 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	1
Toxicity to soil dwelling organisms	:	Remarks: No significant adverse effect on Nitrogen mineralization. No significant adverse effect on Carbon mineralization.

kaolin:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 1.000 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Raphidocelis subcapitata (freshwater green alga)): > 100 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to microorganisms	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates (Chronic)	:	Remarks: No data available

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ic toxicity)

Silicon dioxide:

Toxicity to fish	:	LC50 (Brachydanio rerio (zebrafish)): > 10.000 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 10.000 mg/l Exposure time: 24 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	NOELR (Desmodesmus subspicatus (green algae)): 10.000 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials

Ecotoxicology Assessment

Acute aquatic toxicity	:	This product has no known ecotoxicological effects.
Chronic aquatic toxicity	:	This product has no known ecotoxicological effects.

Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 10 - 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: No data available
Toxicity to microorganisms	:	Remarks: No data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: No data available

Persistence and degradability

Product:

Biodegradability	:	Result: Not biodegradable
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Components:

mancozeb (ISO):

Biodegradability	:	Result: Not readily biodegradable. Biodegradation: 5 - 6 % Exposure time: 36 d Method: OECD Test Guideline 301B
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benalaxyl (ISO):

Biodegradability : Remarks: Primary degradation half-lives are usually several months in aerobic soil and water.

Not readily biodegradable.

kaolin:

Biodegradability : Remarks: The methods for determining biodegradability are not applicable to inorganic substances.

Silicon dioxide:

Biodegradability : Result: Not biodegradable
Remarks: Based on data from similar materials

Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 20 - 70 %
Exposure time: 28 d
Method: OECD Test Guideline 302B

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: The product may be accumulated in organisms.

Components:

mancozeb (ISO):

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

benalaxyl (ISO):

Bioaccumulation : Remarks: The product may be accumulated in organisms.

Partition coefficient: n-octanol/water : log Pow: 3,54 (20 °C)

kaolin:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : Remarks: Not applicable

Silicon dioxide:

Bioaccumulation : Bioconcentration factor (BCF): 3,16
Remarks: Based on data from similar materials

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Benzenesulfonic acid, hydroxy-, polymer with formaldehyde, phenol and urea, sodium salt:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Mobility in soil

Product:

Distribution among environmental compartments : Remarks: Highly mobile in soils

Components:

mancozeb (ISO):

Distribution among environmental compartments : Medium: Soil
Remarks: Moderately mobile in soils

benalaxyl (ISO):

Distribution among environmental compartments : Medium: Soil
Remarks: immobile

kaolin:

Distribution among environmental compartments : Remarks: Low mobility in soil.

Other adverse effects

Product:

Results of PBT and vPvB assessment : Product contains substances which are very persistent and very bioaccumulative (vPvB).

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging, and contaminated material : It is prohibited to reuse, bury, burn, or sell containers. Rinsable containers: Triple rinse containers of less than 20 liters and pressure rinse containers of 20 liters or more. Triple rinsing: Add water up to ¼ of the container's capacity, close and shake for 30 seconds. Pour the rinse water into the mixing tank, considering this volume of water within the recommend-

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ed volume for mixing preparation. Perform this procedure three times. Pressure rinsing: Activate the pressure rinsing device for 30 seconds, considering the volume of water used as part of the recommended volume for mixing preparation. In both procedures, punctured the container on its base without damaging the label. In all cases, take the empty containers to collection points indicated by the local empty containers program.

Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	: UN 3077
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Mancozeb, Benalaxyl)
Class	: 9
Subsidiary risk	: ENVIRONM.
Packing group	: III
Labels	: 9 (ENVIRONM.)
Environmentally hazardous	: yes

IATA-DGR

UN/ID No.	: UN 3077
Proper shipping name	: Environmentally hazardous substance, solid, n.o.s. (Mancozeb, Benalaxyl)
Class	: 9
Packing group	: III
Labels	: Miscellaneous
Packing instruction (cargo aircraft)	: 956
Packing instruction (passenger aircraft)	: 956
Environmentally hazardous	: yes

IMDG-Code

UN number	: UN 3077
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Mancozeb, Benalaxyl)
Class	: 9
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
Marine pollutant	: yes

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Transport in bulk according to IMO instruments

Not applicable for product as supplied.

Domestic regulation

NCh382

UN number	: UN 3077
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Mancozeb, Benalaxyl)

Class	: 9
Packing group	: III
Labels	: 9
Environmentally hazardous	: yes

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.

SECTION 15. REGULATORY INFORMATION

National Regulations

Chile. Decree 190. Carcinogenic Substances, Hazardous Waste Management.	: Not applicable
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Decree 1358 - Establishment of rules governing the control measures of precursors and essential chemicals.	: sodium sulphate
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Resolution 408/16 Exempt, Approving List of Health Hazardous Substances	: Included in list of Article 3, item a)
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Other regulations

Decree 43/2015, Approving Regulation on Storage of Hazardous Substances
NCh 2245:2021 Safety data sheet for chemical products - Content and order of sections
NCh 2190:2019 Land transport of dangerous goods - Hazard identification marks
NCh 382:2021 Dangerous Goods – Classification
Decree 57 of 2019, Regulation on Classification, Labeling, and Notification of Hazardous Chemicals and Mixtures
D.S. 148/03 Sanitary Regulation on hazardous wastes handling
D.S. 298/94 Regulation on transport of hazardous cargo on streets and roads
D.S. 594/99 Regulation on sanitary and environmental basic conditions at work places
Exempt Resolution 15 of 2023 approving the List of Hazardous Substances Subject to Import Process

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

TCSI	: Not in compliance with the inventory
TSCA	: Product contains substance(s) not listed on TSCA inventory.
AIIC	: Not in compliance with the inventory

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DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.

mancozeb (ISO)
benalaxyl (ISO)
phenol

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

KECI : Not in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : Not in compliance with the inventory

NZIoC : Not in compliance with the inventory

TECI : Not in compliance with the inventory

The receiver should verify the possible existence of legal regulations applicable to chemical.

SECTION 16. OTHER INFORMATION

Revision Date : 24.06.2025

Date format : dd.mm.yyyy

Full text of H-Statements

Abbreviations and acronyms

Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Carc.	: Carcinogenicity
Repr.	: Reproductive toxicity
Serious eye damage/eye irritation	: Serious eye damage/eye irritation
Skin Sens.	: Skin sensitization
STOT RE	: Specific target organ toxicity - repeated exposure
ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
CL OEL	: Chile. Regulation on basic sanitary and environmental conditions in the workplace
ACGIH / TWA	: 8-hour, time-weighted average
CL OEL / LPP	: Time Weighted Limit Value

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;

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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

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