AIRONE

Version	Revision Date:	SDS Number:	Date of last issue: 24.09.2024
1.1	15.10.2024	50002785	Date of first issue: 24.09.2024

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

1.1 Product identifier

Product name AIRONE

Other means of identification

Product code 50002785

Unique Formula Identifier (UFI) : CN21-R083-W00W-CMDJ

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

Use of the Substance/Mixture : Fungicide

Recommended restrictions on use : Use as recommended by the label.

1.3 Manufacturer or supplier's details

Supplier Address

FMC Chemicals Hellas MEPE
Syngrou Avenue 348
17674 Kallithea
Greece

Telephone: +30 211 1982768
Telefax: +30 211 1138614
E-mail address: SDS-Info@fmc.com .

1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:
Greece: 30-2111768478 (CHEMTREC)

Medical emergency:
Greece: 30 210 77 93 777

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Short-term (acute) aquatic hazard, Cate-	H400: Very toxic to aquatic life.

gory 1

Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements : H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

Prevention:

P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P280 Wear protective gloves, clothing and mask.

Response:

P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents and/or container in accordance with hazardous waste regulations.

Hazardous components which must be listed on the label:

dicopper chloride trihydroxide
copper dihydroxide
1,2-benzisothiazol-3(2H)-one

Additional Labelling

EUH401 To avoid risks to human health and the environment, comply with the instructions for use.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
dicopper chloride trihydroxide	1332-65-6 215-572-9 029-017-00-1	Acute Tox. 3; H301 Acute Tox. 4; H332 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10 Acute toxicity estimate Acute oral toxicity: 299 mg/kg Acute inhalation toxicity (dust/mist): 2,83 mg/l	> 10 - <= 25
copper dihydroxide	20427-59-2 243-815-9 029-021-00-3	Acute Tox. 4; H302 Acute Tox. 2; H330 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 10 Acute toxicity estimate	> 10 - <= 25

		Acute oral toxicity: 500 mg/kg Acute inhalation toxicity (dust/mist): 0,47 mg/l	
D-Glucopyranose, oligomers, decyl octyl glycosides	68515-73-1 500-220-1	Eye Dam. 1; H318	>= 1 - <= 2,5
1,2-benzisothiazol-3(2H)-one	2634-33-5 220-120-9 613-088-00-6	Acute Tox. 2; H330 Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Skin Sens. 1A; H317 Aquatic Acute 1; H400 Aquatic Chronic 1; H410 M-Factor (Acute aquatic toxicity): 1 M-Factor (Chronic aquatic toxicity): 1 specific concentration limit Skin Sens. 1A; H317 >= 0,036 % Acute toxicity estimate Acute oral toxicity: 450 mg/kg Acute inhalation toxicity (dust/mist): 0,21 mg/l	< 0,05

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Remove the person from the contaminated area.
Do not leave the victim unattended.
Symptoms of poisoning may appear several hours later.
Show this safety data sheet to the doctor in attendance.

If inhaled : Remove to fresh air.
If unconscious, place in recovery position and seek medical advice.

If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.

In case of skin contact : Remove contaminated clothing and shoes.
If on skin, rinse well with water.
Wash off immediately with soap and plenty of water.
Get medical attention immediately if irritation develops and persists.

In case of eye contact : Keep eye wide open while rinsing.

Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Get medical attention immediately.
Do not induce vomiting without medical advice.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Protein denaturation with mucosal lesions, hepatic, renal and CNS damage, hemolysis.
Vomiting with emission of green material, gastroesophageal burning, bloody diarrhea, abdominal colic, hemolytic jaundice, hepatic and renal failure, convulsions, collapse. Metal inhalation fever. Irritating to skin and eyes.

Risks : Harmful if swallowed.
May cause an allergic skin reaction.
Causes serious eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Therapy: gastrolusis with lacto-albumin solution, if high cupremia use chelators, penicillamine if oral route is feasible or intravenous CaEDTA and intramuscular BAL; other symptomatic therapy. Warnings: Consult a poison control center.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Dry chemical, CO2, water spray or regular foam.

Unsuitable extinguishing : Do not spread spilled material with high-pressure water

media streams.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Fire may produce irritating, corrosive and/or toxic gases.
Carbon oxides
Hydrogen chloride

5.3 Advice for firefighters

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : 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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
If it can be safely done, stop the leak.
Keep people away from and upwind of spill/leak.
Remove all sources of ignition.
Immediately evacuate personnel to safe areas.
Ensure adequate ventilation.
Never return spills in original containers for re-use.
Mark the contaminated area with signs and prevent access to unauthorized personnel.
Only qualified personnel equipped with suitable protective equipment may intervene.

6.2 Environmental precautions

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.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Avoid formation of aerosol. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday. Remove and wash contaminated clothing and gloves, including the inside, before re-use.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	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. Electrical installations / working materials must comply with the technological safety standards.
Further information on storage conditions	:	Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading “POISON” is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.
Further information on storage stability	:	No decomposition if stored and applied as directed.

7.3 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

8.1 Control parameters

Contains no substances with occupational exposure limit values.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
dicopper chloride trihydroxide	Consumers	Oral	Acute systemic effects	0,082 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	0,041 mg/kg bw/day
D-Glucopyranose, oligomers, decyl octyl glycosides	Workers	Inhalation	Long-term systemic effects	420 mg/m3
	Workers	Dermal	Long-term systemic effects	595000 mg/kg bw/day
	Consumers	Inhalation	Long-term systemic effects	124 mg/m3
	Consumers	Dermal	Long-term systemic effects	357000 mg/kg bw/day
	Consumers	Oral	Long-term systemic effects	35,7 mg/kg bw/day
1,2-benzisothiazol-3(2H)-one	Workers	Inhalation	Long-term systemic effects	6,81 mg/m3
	Workers	Dermal	Long-term systemic effects	0,966 mg/kg
	Consumers	Inhalation	Long-term systemic effects	1,2 mg/m3
	Consumers	Dermal	Long-term systemic effects	0,345 mg/kg

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
copper dihydroxide	Fresh water	0,0078 mg/l
	Marine water	0,0052 mg/l
	Sewage treatment plant	0,23 mg/l
	Fresh water sediment	87 mg/kg
	Marine sediment	676 mg/kg
dicopper chloride trihydroxide	Fresh water	0,0078 mg/l
	Marine water	0,0052 mg/l
	Sewage treatment plant	0,23 mg/l
	Fresh water sediment	87 mg/kg dry weight (d.w.)
	Marine sediment	676 mg/kg dry weight (d.w.)
	Soil	65 mg/kg dry weight (d.w.)
D-Glucopyranose, oligomers, decyl octyl glycosides	Fresh water	0,176 mg/l
	Marine water	0,0176 mg/l

	Fresh water sediment	1,516 mg/kg dry weight (d.w.)
	Marine sediment	0,152 mg/kg dry weight (d.w.)
	Soil	0,654 mg/kg dry weight (d.w.)
	Intermittent use (freshwater)	0,27 mg/l
	Oral	111,11 mg/kg
1,2-benzisothiazol-3(2H)-one	Fresh water	0,00403 mg/l
	Marine water	0,000403 mg/l
	Sewage treatment plant	1,03 mg/l
	Fresh water sediment	0,0499 mg/l
	Marine sediment	0,00499 mg/l

8.2 Exposure controls

Personal protective equipment

Eye/face protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

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.

Skin and body protection : Wear TYVEK protective suit according to UNI EN ISO 27065/A1.

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Protective measures : Plan first aid action before beginning work with this product.
Always have on hand a first-aid kit, together with proper instructions.
Wear suitable protective equipment.
When using do not eat, drink or smoke.

In the context of professional plant protection use as recommended, the end user must refer to the label and the instructions for use.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : liquid
Form : liquid
Colour : light blue-green

Odour	:	No data available
Odour Threshold	:	No data available
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	No data available
Auto-ignition temperature	:	not auto-flammable
Decomposition temperature	:	No data available
pH	:	7,6 (20 °C) Concentration: 1 %
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Solubility(ies)		
Water solubility	:	dispersible
Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	No data available
Relative density	:	No data available
Density	:	1,11 g/cm3 (20 °C)
Relative vapour density	:	No data available
Particle characteristics		
Particle size	:	Not applicable

9.2 Other information

Explosives	:	Not explosive
Flammability (liquids)	:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if stored and applied as directed.

10.4 Conditions to avoid

Conditions to avoid : No data available

10.5 Incompatible materials

Materials to avoid : Avoid strong acids, bases, and oxidizers

10.6 Hazardous decomposition products

No hazardous decomposition products are known.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity	:	LD50 (Rat): > 5.000 mg/kg Assessment: The component/mixture is moderately toxic after single ingestion.
Acute inhalation toxicity	:	LC50 (Rat): > 3,994 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit): > 2.000 mg/kg

Components:

dicopper chloride trihydroxide:

Acute oral toxicity	:	Acute toxicity estimate: 299 mg/kg Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008 LD50 (Rat, male): 1.083 mg/kg Method: OECD Test Guideline 401 LD50 (Rat, female): 950 mg/kg Method: US EPA Test Guideline OPP 81-1
Acute inhalation toxicity	:	Acute toxicity estimate: 2,83 mg/l Test atmosphere: dust/mist Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008 LC50 (Rat, male): 2,83 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Symptoms: Fatality LC50 (Rat, female): > 2,77 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Symptoms: Fatality

Acute dermal toxicity : LD50 (Rabbit, female): > 2.000 mg/kg
Method: US EPA Test Guideline OPP 81-2
Symptoms: Fatality

LD0 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402
Remarks: no mortality

copper dihydroxide:

Acute oral toxicity : Acute toxicity estimate: 500 mg/kg
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

LD50 (Rat, male and female): 489 mg/kg

LD50 (Rat, male): 552 mg/kg

LD50 (Rat, female): 451 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: 0,47 mg/l
Test atmosphere: dust/mist
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008

LC50 (Rat, male and female): 0,451 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402

D-Glucopyranose, oligomers, decyl octyl glycosides:

Acute oral toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 423

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402

1,2-benzisothiazol-3(2H)-one:

Acute oral toxicity : LD50 (Rat, male and female): 490 mg/kg
Method: OECD Test Guideline 401

Acute toxicity estimate: 450 mg/kg
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008
Remarks: Based on EU Harmonised classification - Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation)

Acute inhalation toxicity : Acute toxicity estimate: 0,21 mg/l

Test atmosphere: dust/mist
Method: Acute toxicity estimate according to Regulation (EC) No. 1272/2008
Remarks: Based on EU Harmonised classification - Annex VI of Regulation (EC) No 1272/2008 (CLP Regulation)

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

Skin corrosion/irritation

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

Product:

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

Components:

dicopper chloride trihydroxide:

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

copper dihydroxide:

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

D-Glucopyranose, oligomers, decyl octyl glycosides:

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

1,2-benzisothiazol-3(2H)-one:

Species : Rabbit
Exposure time : 72 h
Method : OECD Test Guideline 404
Result : No skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Assessment : Irritating to eyes.

Components:

dicopper chloride trihydroxide:

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

copper dihydroxide:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Irreversible effects on the eye

D-Glucopyranose, oligomers, decyl octyl glycosides:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Irreversible effects on the eye
Remarks	:	Based on data from similar materials

1,2-benzisothiazol-3(2H)-one:

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

Species	:	Rabbit
Method	:	EPA OPP 81-4
Result	:	Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

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

Product:

Assessment	:	May cause sensitisation by skin contact.

Components:

dicopper chloride trihydroxide:

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

copper dihydroxide:

Test Type	:	Maximisation Test
Exposure routes	:	Skin contact

Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.

D-Glucopyranose, oligomers, decyl octyl glycosides:

Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.
Remarks	:	Based on data from similar materials

1,2-benzisothiazol-3(2H)-one:

Test Type	:	Maximisation Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	May cause sensitisation by skin contact.

Species	:	Guinea pig
Method	:	FIFRA 81.06
Result	:	May cause sensitisation by skin contact.

Germ cell mutagenicity

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

Components:

dicopper chloride trihydroxide:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Method: OECD Test Guideline 471 Result: negative
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse (male and female) Application Route: Oral Method: Mutagenicity (micronucleus test) Result: negative Test Type: DNA binding study Species: Rat (male) Application Route: Oral Result: negative
Germ cell mutagenicity- Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

copper dihydroxide:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Test system: Salmonella typhimurium Method: OECD Test Guideline 471 Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Application Route: Oral
Method: Regulation (EC) No. 440/2008, Annex, B.12
Result: negative

Test Type: unscheduled DNA synthesis assay
Species: Rat (male)
Application Route: Oral
Method: OECD Test Guideline 486
Result: negative

D-Glucopyranose, oligomers, decyl octyl glycosides:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: negative
Remarks: Based on data from similar materials

Test Type: gene mutation test
Method: OECD Test Guideline 476
Result: negative

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

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male)
Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474
Result: negative

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

1,2-benzisothiazol-3(2H)-one:

Genotoxicity in vitro : Test Type: gene mutation test
Test system: mouse lymphoma cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Test Type: Ames test
Method: OECD Test Guideline 471
Result: negative

Test Type: Chromosome aberration test in vitro
Method: OECD Test Guideline 473
Result: positive

Genotoxicity in vivo : Test Type: unscheduled DNA synthesis assay

Species: Rat (male)
Cell type: Liver cells
Application Route: Ingestion
Exposure time: 4 h
Method: OECD Test Guideline 486
Result: negative

Test Type: Micronucleus test
Species: Mouse
Application Route: Oral
Method: OECD Test Guideline 474
Result: negative

Germ cell mutagenicity- Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

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

Reproductive toxicity

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

Components:

dicopper chloride trihydroxide:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Dose: 0, 100, 500, 1000, 1500 parts per million
General Toxicity - Parent: LOAEL: 1.500
General Toxicity F1: LOAEL: 1.500
General Toxicity F2: LOAEL: 1.500
Method: OECD Test Guideline 416
Result: negative

Effects on foetal development : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Oral
Dose: 0, 100, 500, 1000, 1500 parts per million
Duration of Single Treatment: 70 d
General Toxicity Maternal: LOAEL: 1.500 part per million
Embryo-foetal toxicity: LOAEL: 1.500 part per million
Method: OECD Test Guideline 416
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

D-Glucopyranose, oligomers, decyl octyl glycosides:

Effects on fertility : Test Type: one-generation reproductive toxicity
Species: Rat, male and female
Application Route: Oral
Dose: 0, 100, 300, 1000 mg/kg bw

General Toxicity - Parent: NOAEL: 1.000 mg/kg bw/day
Method: OECD Test Guideline 421
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development : Species: Rat, females
Application Route: Oral
Dose: 0, 100, 300, 1000 mg/kg bw
General Toxicity Maternal: NOAEL: 1.000 mg/kg bw/day
Developmental Toxicity: NOAEL: 1.000 mg/kg bw/day
Method: OECD Test Guideline 414
Result: negative
Remarks: Based on data from similar materials

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

1,2-benzisothiazol-3(2H)-one:

Effects on fertility : Species: Rat, male
Application Route: Ingestion
General Toxicity - Parent: NOAEL: 18,5 mg/kg body weight
General Toxicity F1: NOAEL: 48 mg/kg body weight
Fertility: NOAEL: 112 mg/kg bw/day
Symptoms: No effects on reproduction parameters
Method: OPPTS 870.3800
Result: negative

Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

STOT - single exposure

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

Components:

dicopper chloride trihydroxide:

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

STOT - repeated exposure

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

Components:

D-Glucopyranose, oligomers, decyl octyl glycosides:

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

1,2-benzisothiazol-3(2H)-one:

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

Repeated dose toxicity

Components:

dicopper chloride trihydroxide:

Species	:	Rat, male and female
NOAEL	:	1000 ppm
LOAEL	:	2000 ppm
Application Route	:	Oral - feed
Exposure time	:	92 d
Dose	:	0,500,1000,2000,4000,8000 ppm

Species	:	Rat, male and female
NOAEL	:	>= 2 mg/m3
Application Route	:	Inhalation
Test atmosphere	:	dust/mist
Exposure time	:	28 d
Dose	:	0.2,0.4,0.8,2 mg/m3
Method	:	OECD Test Guideline 412

D-Glucopyranose, oligomers, decyl octyl glycosides:

Species	:	Rat, male and female
NOAEL	:	1000 mg/kg bw/day
Application Route	:	Oral
Exposure time	:	90d
Dose	:	0, 250, 500, 1000 mg/kg bw
Remarks	:	Based on data from similar materials

1,2-benzisothiazol-3(2H)-one:

Species	:	Rat, male and female
NOAEL	:	15 mg/kg
Application Route	:	Ingestion
Exposure time	:	28 d
Method	:	OECD Test Guideline 407
Symptoms	:	Irritation

Species	:	Rat, male and female
NOAEL	:	69 mg/kg
Application Route	:	Ingestion
Exposure time	:	90 d
Symptoms	:	Irritation, Reduced body weight

Aspiration toxicity

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

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 12,2 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 101.0 µg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EyC50 (Desmodesmus subspicatus (green algae)): 0,038 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

ErC50 (Desmodesmus subspicatus (green algae)): 0,158 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC: 0,4 mg/l
Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC50: 0,385 mg/l
Species: Daphnia magna (Water flea)

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

Components:

dicopper chloride trihydroxide:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0,0384 mg/l

Exposure time: 96 h
Test Type: flow-through test
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,0338 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

LC50 (Ceriodaphnia dubia (water flea)): 0,014 mg/l
Exposure time: 48 h
Test Type: semi-static test

Toxicity to algae/aquatic plants : NOEC (Phaeodactylum tricornutum): 0,0057 mg/l
Exposure time: 72 h
Method: ISO 10253

NOEC (Raphidocelis subcapitata (freshwater green alga)): 0,0157 mg/l
Exposure time: 72 h
Test Type: static test

EC50 (Chlamydomonas reinhardtii (green algae)): 0,047 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (algae)): 0,0194 mg/l
Exposure time: 72 h
Test Type: static test

NOEC (Skeletonema costatum (Diatom)): 0,00754 mg/l
Exposure time: 72 h
Test Type: static test

NOEC (Chlamydomonas reinhardtii (green algae)): 0,022 mg/l
Exposure time: 10 d
Test Type: flow-through test

NOEC (Lemna minor (duckweed)): 0,030 mg/l
Exposure time: 7 d
Test Type: static test

M-Factor (Acute aquatic toxicity) : 10

Toxicity to microorganisms : EC50 (Bacteria): 0,025 mg/l
Exposure time: 100 d

NOEC (Tetrahymena pyriformis): 3,563 mg/l
Exposure time: 48 h
Test Type: Growth inhibition

NOEC (activated sludge): 0,26 - 0,29 mg/l
Exposure time: 30 d

Test Type: Respiration inhibition

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to soil dwelling organisms : NOEC: 25 mg/kg
Exposure time: 6 Weeks
Species: worms

Toxicity to terrestrial organisms : LD50: 1.400 mg/kg
Exposure time: 14 d
Species: Colinus virginianus (Bobwhite quail)

copper dihydroxide:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 0,0384 mg/l
Exposure time: 96 h
Test Type: flow-through test
Remarks: Based on data from similar materials

M-Factor (Acute aquatic toxicity) : 10

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to terrestrial organisms : LD50: 1.400 mg/kg
Exposure time: 14 d
Species: Colinus virginianus (Bobwhite quail)

D-Glucopyranose, oligomers, decyl octyl glycosides:

Toxicity to fish : LC0 (Danio rerio (zebra fish)): 59,3 mg/l
Exposure time: 96 h
Test Type: semi-static test

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

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 21 mg/l
Exposure time: 72 h
Test Type: static test

Toxicity to microorganisms : EC50 (Pseudomonas putida): > 560 mg/l
Exposure time: 6 h
Test Type: Growth inhibition

Toxicity to fish (Chronic toxicity) : NOEC: 1,8 mg/l
Exposure time: 28 d
Species: Danio rerio (zebra fish)
Method: OECD Test Guideline 204
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	LOEC: 2 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Test Type: semi-static test Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to soil dwelling organisms	:	LC0: >= 654 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 207 Remarks: Based on data from similar materials

1,2-benzisothiazol-3(2H)-one:

Toxicity to fish	:	LC50 (Cyprinodon variegatus (sheepshead minnow)): 16,7 mg/l Exposure time: 96 h Test Type: static test LC50 (Oncorhynchus mykiss (rainbow trout)): 2,15 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 2,9 mg/l Exposure time: 48 h Test Type: static test Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 0,070 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (green algae)): 0,04 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50 (activated sludge): 24 mg/l Exposure time: 3 h Test Type: Respiration inhibition Method: OECD Test Guideline 209 EC50 (activated sludge): 12,8 mg/l Exposure time: 3 h Test Type: Respiration inhibition Method: OECD Test Guideline 209
M-Factor (Chronic aquatic	:	1

toxicity)

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data is available on the product itself.

Components:

dicopper chloride trihydroxide:

Biodegradability : Remarks: Not readily biodegradable.

D-Glucopyranose, oligomers, decyl octyl glycosides:

Biodegradability : Inoculum: activated sludge, non-adapted
Result: Readily biodegradable.
Method: OECD Test Guideline 301E

1,2-benzisothiazol-3(2H)-one:

Biodegradability : Result: rapidly biodegradable
Method: OECD Test Guideline 301C

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data is available on the product itself.

Components:

dicopper chloride trihydroxide:

Bioaccumulation : Remarks: Not applicable due to the insolubility of the salt.

D-Glucopyranose, oligomers, decyl octyl glycosides:

Partition coefficient: n-octanol/water : log Pow: 1,72 (40 °C)
pH: 6,5
Remarks: Based on data from similar materials

1,2-benzisothiazol-3(2H)-one:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Exposure time: 56 d
Bioconcentration factor (BCF): 6,62
Method: OECD Test Guideline 305
Remarks: Substance is not persistent, bioaccumulative, and toxic (PBT).

Partition coefficient: n-octanol/water : log Pow: 0,7 (20 °C)
pH: 7

log Pow: 0,99 (20 °C)

pH: 5

12.4 Mobility in soil

Product:

Distribution among environmental compartments : Remarks: No data is available on the product itself.

Components:

dicopper chloride trihydroxide:

Distribution among environmental compartments : Remarks: Low mobility in soil

1,2-benzisothiazol-3(2H)-one:

Distribution among environmental compartments : Koc: 9,33 ml/g, log Koc: 0,97
Method: OECD Test Guideline 121
Remarks: Highly mobile in soils

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

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

13.1 Waste treatment methods

Product : 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 : Empty remaining contents.
Do not re-use empty containers.
Packaging that is not properly emptied must be disposed of as the unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number or ID number

ADN : UN 3082

ADR : UN 3082

RID : UN 3082

IMDG : UN 3082

IATA : UN 3082

14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Copper hydroxide, dicopper chloride trihydroxide)

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Copper hydroxide, dicopper chloride trihydroxide)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Copper hydroxide, dicopper chloride trihydroxide)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Copper hydroxide, dicopper chloride trihydroxide)

IATA : Environmentally hazardous substance, liquid, n.o.s.
(Copper hydroxide, dicopper chloride trihydroxide)

14.3 Transport hazard class(es)

	Class	Subsidiary risks
ADN	9	
ADR	9	
RID	9	
IMDG	9	
IATA	9	

14.4 Packing group

ADN

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9

ADR

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9
Tunnel restriction code	:	(-)

RID

Packing group	:	III
Classification Code	:	M6
Hazard Identification Number	:	90
Labels	:	9

IMDG

Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F

IATA (Cargo)

Packing instruction (cargo aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

IATA (Passenger)

Packing instruction (passenger aircraft)	:	964
Packing instruction (LQ)	:	Y964
Packing group	:	III
Labels	:	Miscellaneous

14.5 Environmental hazards

ADN

Environmentally hazardous	:	yes

ADR

Environmentally hazardous	:	yes

RID

Environmentally hazardous	:	yes

IMDG

Marine pollutant	:	yes

IATA (Passenger)

Environmentally hazardous	:	yes

IATA (Cargo)

Environmentally hazardous	:	yes

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)	:	Conditions of restriction for the following entries should be considered: Number on list 75, 3 If you intend to use this product as tattoo ink, please contact your vendor.
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	Not applicable
Regulation (EC) on substances that deplete the ozone layer	:	Not applicable
Regulation (EU) 2019/1021 on persistent organic pollutants (recast)	:	Not applicable
Regulation (EU) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals	:	Not applicable
REACH - List of substances subject to authorisation (Annex XIV)	:	Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.	E1	ENVIRONMENTAL HAZARDS

Other regulations:

Take note of Directive 94/33/EC on the protection of young people at work or stricter national regulations, where applicable.

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

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory
AIIC	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

15.2 Chemical safety assessment

A chemical safety assessment is not required for this product (mixture).

SECTION 16: Other information

Full text of H-Statements

H301	:	Toxic if swallowed.
H302	:	Harmful if swallowed.
H315	:	Causes skin irritation.
H317	:	May cause an allergic skin reaction.
H318	:	Causes serious eye damage.
H330	:	Fatal if inhaled.
H332	:	Harmful if inhaled.
H400	:	Very toxic to aquatic life.
H410	:	Very toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	:	Acute toxicity
Aquatic Acute	:	Short-term (acute) aquatic hazard
Aquatic Chronic	:	Long-term (chronic) aquatic hazard
Eye Dam.	:	Serious eye damage
Skin Irrit.	:	Skin irritation
Skin Sens.	:	Skin sensitisation

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Test-

ing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:		**Classification procedure:**
Aquatic Acute 1	H400	Based on product data or assessment
Aquatic Chronic 1	H410	Based on product data or assessment

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