

SAFETY DATA SHEET

VYTEGRIS ZINC 700



Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

SECTION 1: Identification of the hazardous chemical and of the supplier

Product identifier
Product name : VYTEGRIS ZINC 700

Recommended use of the chemical and restrictions on use

Recommended use : A fertilizer with micronutrients for use in agriculture and horticulture

Restrictions on use : Use as recommended by the label.

Manufacturer or supplier's details

Principal Supplier : FMC Agro Ltd (UK)
Rectors Lane
Flintshire
Pentre
CH5 2DH
United Kingdom
SDS-Info@fmc.com

Local registrant : FMC Chemicals (Malaysia) Sdn Bhd
Level 16, 1 Sentral, Jalan Stesen Sentral 5, Kuala Lumpur Sentral
50470, Kuala Lumpur, Malaysia
Phone No: +60320929423
Fax No: +603-2092 9201

Emergency telephone : For leak, fire, spill or accident emergencies, call:
CHEMTREC (Asia-Pacific Regional Number): +65 3163 8374

Medical emergency:
All other countries: +1 651 / 632-6793 (Collect)
1 703 / 741-5970 (CHEMTREC - International)

SECTION 2: Hazards identification

Classification of the hazardous chemical

Serious eye damage/eye irritation : Category 2

Reproductive toxicity : Category 2

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Central nervous system, Reproductive organs)

SAFETY DATA SHEET

VYTEGRIS ZINC 700



Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

Hazardous to the aquatic environment - acute hazard : Category 1

Hazardous to the aquatic environment - chronic hazard : Category 1

Label elements

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H319 Causes serious eye irritation.
H361 Suspected of damaging fertility or the unborn child.
H373 May cause damage to organs (Central nervous system, Reproductive organs) through prolonged or repeated exposure if swallowed.
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 vapors.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear eye protection/ face protection.
P281 Use personal protective equipment as required.

Response:

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P391 Collect spillage.

Storage:

P405 Store locked up.

Disposal:

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

Other hazards which do not result in classification

None known.

SECTION 3: Composition and information of the ingredients of the hazardous chemical

SAFETY DATA SHEET

VYTEGRIS ZINC 700



Version 1.1 Revision Date: 24.01.2024 SDS Number: 50002849 Date of last issue: -
Date of first issue: 24.01.2024

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
zinc oxide	1314-13-2	>= 30 -< 60
ethanediol	107-21-1	>= 1 -< 3
1,2-benzisothiazol-3(2H)-one	2634-33-5	>= 0.0025 -< 0.025

SECTION 4: First aid measures

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.
- If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.
- In case of eye contact : 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 : Clean mouth with water and drink afterwards plenty of water.
Induce vomiting immediately and call a physician.
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 : Causes serious eye irritation.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure if swallowed.
- Notes to physician : Treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

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

Unsuitable extinguishing media : High volume water jet

VYTEGRIS ZINC 700

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

Physicochemical hazards arising from the chemical

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.
Ammonia
Carbon oxides

Special protective equipment and precautions for fire-fighters

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

Specific extinguishing methods : 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.

Hazchem Code : •3Z

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
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.
For disposal considerations see section 13.

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 materials for containment and 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.

SECTION 7: Handling and storage**Handling****Precautions for safe handling**

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : 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.

SAFETY DATA SHEET



VYTEGRIS ZINC 700

Version 1.1 Revision Date: 24.01.2024 SDS Number: 50002849 Date of last issue: -
Date of first issue: 24.01.2024

Dispose of rinse water in accordance with local and national regulations.

Storage

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.

SECTION 8: Exposure controls and personal protection

Control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
zinc oxide	1314-13-2	TWA (Dust)	10 mg/m ³	MY PEL
		TWA (Fumes)	5 mg/m ³	MY PEL
		TWA (Respirable particulate matter)	2 mg/m ³	ACGIH
		STEL (Respirable particulate matter)	10 mg/m ³	ACGIH
ethanediol	107-21-1	CEIL (aerosol)	39.4 ppm 100 mg/m ³	MY PEL
		TWA (Vapor)	25 ppm	ACGIH
		STEL (Vapor)	50 ppm	ACGIH
		STEL (Inhalable fraction, Aerosol only)	10 mg/m ³	ACGIH

Individual protection measures, such as personal protective equipment

Eye/face protection : Eye wash bottle with pure water
Tightly fitting safety goggles

Skin protection : Impervious clothing
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,

SAFETY DATA SHEET

VYTEGRIS ZINC 700



Version 1.1	Revision Date: 24.01.2024	SDS Number: 50002849	Date of last issue: - Date of first issue: 24.01.2024
----------------	------------------------------	-------------------------	--

butyl rubber or nitrile rubber.

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Respiratory protection : No personal respiratory protective equipment normally required.

Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties

Physical state : liquid

Color : opaque

Odor : Barely perceptible

Odor Threshold : No data available

pH : 8.5 - 10.5
Concentration: 100 %

Melting point/freezing point : No data available

Initial boiling point and boiling range : No data available

Flash point : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : 1.71 - 1.75

Bulk density : No data available

Solubility(ies)
Water solubility : soluble

Solubility in other solvents : No data available

SAFETY DATA SHEET

VYTEGRIS ZINC 700



Version 1.1	Revision Date: 24.01.2024	SDS Number: 50002849	Date of last issue: - Date of first issue: 24.01.2024
----------------	------------------------------	-------------------------	--

Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Particle size	:	No data available

SECTION 10: Stability and reactivity

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	:	No data available
Incompatible materials	:	Not applicable

SECTION 11: Toxicological information

Information on likely routes of exposure : None known.

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity	:	Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	Assessment: The substance or mixture has no acute dermal toxicity

Components:

zinc oxide:

SAFETY DATA SHEET



VYTEGRIS ZINC 700

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

Acute oral toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 423

LD50 (Mouse, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 401
Target Organs: Liver, Heart, spleen, Stomach, Pancreas
Symptoms: Damage
Remarks: mortality

Acute inhalation toxicity : LC0 (Rat, male and female): > 1.79 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: EPA OPP 81 - 3
Remarks: no mortality

Acute dermal toxicity : LD50 Dermal (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402

ethanediol:

Acute inhalation toxicity : LC0 (Rat, male and female): > 2.5 mg/l
Exposure time: 6 h
Test atmosphere: dust/mist
Remarks: no mortality

Acute dermal toxicity : LD50 (Mouse, male and female): > 3,500 mg/kg

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

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

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

Not classified based on available information.

Product:

Result : Mild skin irritant

Remarks : May cause skin irritation and/or dermatitis.

Components:

zinc oxide:

Species : reconstructed human epidermis (RhE)
Method : OECD Test Guideline 431
Result : No skin irritation

ethanediol:

Species : Rabbit

SAFETY DATA SHEET



VYTEGRIS ZINC 700

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

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:

Result : Mild eye irritant

Remarks : Vapors may cause irritation to the eyes, respiratory system and the skin.

Components:

zinc oxide:

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

ethanediol:

Species	: Rabbit
Result	: No eye irritation

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

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

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

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Components:

zinc oxide:

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

VYTEGRIS ZINC 700

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

Test Type	: Maximization Test
Species	: Guinea pig
Method	: OECD Test Guideline 406
Result	: Substance is not considered to be potential skin sensitiser.

ethanediol:

Test Type	: Maximization Test
Species	: Guinea pig
Result	: Does not cause skin sensitization.

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

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

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

Germ cell mutagenicity

Not classified based on available information.

Components:**zinc oxide:**

Genotoxicity in vitro	: Test Type: reverse mutation assay Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay) Result: negative
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Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: equivocal

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster fibroblasts
Method: OECD Test Guideline 473
Result: negative

Test Type: Chromosome aberration test in vitro
Test system: Human lymphocytes
Result: positive

Test Type: Micronucleus test
Test system: Human epithelioid cells
Method: OECD Test Guideline 487
Result: negative

Test Type: Micronucleus test
Test system: Human lymphocytes
Result: positive

VYTEGRIS ZINC 700

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

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

ethanediol:

Genotoxicity in vitro : Test Type: reverse mutation assay
Method: OPPTS 870.5100
Result: negative

Genotoxicity in vivo : Test Type: dominant lethal test
Species: Rat
Application Route: Oral
Result: negative

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

Not classified based on available information.

SAFETY DATA SHEET



VYTEGRIS ZINC 700

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

Components:

zinc oxide:

Species	: Mouse, male and female
Application Route	: Oral
Exposure time	: 1 year
Dose	: 4400, 22000 mg/l
NOAEL	: > 22,000 mg/l
Result	: negative
Remarks	: Based on data from similar materials

Carcinogenicity - Assessment	: Animal testing did not show any carcinogenic effects.
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ethanediol:

Species	: Mouse
Application Route	: Oral
Exposure time	: 24 month(s)
Result	: negative

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Components:

zinc oxide:

Effects on fertility	: Test Type: Two-generation study Species: Rat, male and female Application Route: Oral Dose: 7.5, 15, 30mg/kg bw/day Frequency of Treatment: 7 days/week General Toxicity Parent: LOAEL: 7.5 mg/kg body weight General Toxicity F1: LOAEL: 30 mg/kg body weight Method: OECD Test Guideline 416 Result: negative Remarks: Based on data from similar materials
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Test Type: one-generation reproductive toxicity Species: Rat, male Application Route: Oral Dose: 4,000 milligram per liter Frequency of Treatment: 32 daily General Toxicity Parent: LOAEL: 4,000 mg/l General Toxicity F1: LOAEL: 4,000 mg/l Symptoms: Reduced fertility Target Organs: male reproductive organs Result: positive Remarks: Based on data from similar materials
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Effects on fetal development	: Species: Rat Application Route: inhalation (dust/mist/fume) Dose: .0003, 0.002, 0.008 milligram per liter Duration of Single Treatment: 14 d General Toxicity Maternal: LOAEC: 0.008 mg/L
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SAFETY DATA SHEET

VYTEGRIS ZINC 700



Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

Developmental Toxicity: NOAEC: 0.008 mg/L
Embryo-fetal toxicity.: NOAEC Mating/Fertility: 0.008 mg/L
Method: OECD Test Guideline 414
Result: negative

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

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

Not classified based on available information.

STOT-repeated exposure

May cause damage to organs (Central nervous system, Reproductive organs) through prolonged or repeated exposure if swallowed.

Components:

zinc oxide:

Routes of exposure : Oral
Target Organs : Central nervous system, Reproductive organs
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

ethanediol:

Routes of exposure : Oral
Target Organs : Kidney
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

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:

zinc oxide:

Species : Rat, male and female

SAFETY DATA SHEET



VYTEGRIS ZINC 700

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

NOAEL : 31.52 mg/kg
LOAEL : 127.52 mg/kg
Application Route : Oral
Exposure time : 13 weeks
Dose : 0, 31.52, 127.52 mg/kg
Method : OECD Test Guideline 408
Target Organs : Pancreas
Symptoms : Necrosis
Remarks : Based on data from similar materials

Species : Mouse, male and female
NOEL : 3000 ppm
Application Route : Oral
Exposure time : 13 weeks
Dose : 0, 300, 3000, 30000 ppm
Method : OECD Test Guideline 408
Remarks : Based on data from similar materials

Species : Rat, male
LOAEL : 0.0045 mg/l
Application Route : inhalation (dust/mist/fume)
Exposure time : 3 months
Dose : 0.0003, 0.0015, 0.004mg/l
Method : OECD Test Guideline 413
Target Organs : Lungs
Remarks : mortality

Species : Rat, male and female
LOAEL : 75 mg/kg bw/day
Application Route : Dermal
Exposure time : 28d
Dose : 0, 75, 180, 360 mg/kg bw/day
Method : OECD Test Guideline 410

ethanediol:

Species : Rat
NOAEL : 150 mg/kg
Application Route : Oral
Exposure time : 12 months

Species : Dog
NOAEL : > 2,200 - < 4,400 mg/kg
Application Route : Dermal
Exposure time : 4 weeks
Method : OECD Test Guideline 410

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

SAFETY DATA SHEET



VYTEGRIS ZINC 700

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

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

Aspiration toxicity

Not classified based on available information.

Experience with human exposure

Components:

zinc oxide:

Inhalation	:	Symptoms: Fatigue, Sweating, bitter taste, chills, dry mouth, flu-like symptoms
Ingestion	:	Symptoms: Gastrointestinal discomfort

Further information

Product:

Remarks	:	No data available
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SECTION 12: Ecological information

Ecotoxicity

Components:

zinc oxide:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 1.55 mg/l Exposure time: 96 h Test Type: static test
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): 0.76 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 LC50: 0.37 mg/l Exposure time: 96 h Test Type: static test EC50: 0.14 mg/l Exposure time: 24 h Test Type: static test EC50: 0.072 mg/l Exposure time: 96 h Test Type: static test
Toxicity to algae/aquatic	:	IC50 (Pseudokirchneriella subcapitata (algae)): 0.044 mg/l

SAFETY DATA SHEET

VYTEGRIS ZINC 700



Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

plants

Exposure time: 72 h
Method: OECD Test Guideline 201

NOEC (*Pseudokirchneriella subcapitata* (algae)): 0.024 mg/l
Exposure time: 3 d
Method: OECD Test Guideline 201

IC50 (*Skeletonema costatum* (marine diatom)): 1.23 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

IC50: 3.28 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201

NOEC (*Dunaliella tertiolecta* (marine algae)): 0.01 mg/l
Exposure time: 4 d
Test Type: static test

EC50 (*Dunaliella tertiolecta* (marine algae)): 0.65 mg/l
Exposure time: 4 d
Test Type: static test

(*Chlorella vulgaris* (Fresh water algae)): 1.16 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

EC50 (*Anabaena flos-aquae* (cyanobacterium)): 0.3 mg/l
Exposure time: 96 h
Test Type: static test

EC50: 0.69 mg/l
Exposure time: 3 d
Test Type: static test

EC50 (*Phaeodactylum tricornutum*): 1.12 mg/l
Exposure time: 24 h
Test Type: static test

M-Factor (Acute aquatic toxicity) : 1

Toxicity to fish (Chronic toxicity) : NOEC (*Oncorhynchus mykiss* (rainbow trout)): 0.440 mg/l
Exposure time: 72 d
Test Type: flow-through test
Remarks: Based on data from similar materials

NOEC (*Jordanella floridae* (flagfish)): 0.026 mg/l
Exposure time: 30 d
Method: OECD Test Guideline 210
Remarks: Based on data from similar materials

NOEC (*Salvelinus fontinalis* (Brook trout)): 0.530 mg/l
Exposure time: 1,095 d
Test Type: flow-through test

VYTEGRIS ZINC 700

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

Remarks: Based on data from similar materials

NOEC (Salmo trutta (brown trout)): 0.056 mg/l
 Exposure time: 116 d
 Method: OECD Test Guideline 210
 Remarks: Based on data from similar materials

NOEC (Fish): 0.025 mg/l
 Exposure time: 27 d
 Test Type: semi-static test
 Remarks: Based on data from similar materials

NOEC (Pimephales promelas (fathead minnow)): 0.078 mg/l
 Exposure time: 248 d
 Test Type: flow-through test
 Remarks: Based on data from similar materials

NOEC (Fish): 0.050 mg/l
 Exposure time: 155 d
 Test Type: flow-through test
 Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : LOEC (Daphnia magna (Water flea)): 0.125 mg/l
 Exposure time: 21 d
 Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 10

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
 Exposure time: 3 h
 Method: OECD Test Guideline 209

EC50 (Tetrahymena pyriformis): 7.1 mg/l
 Exposure time: 24 h
 Test Type: Growth inhibition

Toxicity to soil dwelling organisms : NOEC (Eisenia fetida (earthworms)): 750 mg/kg
 Exposure time: 21 d

ethanediol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): > 72,860 mg/l
 Exposure time: 96 h

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 : IC50 (Pseudokirchneriella subcapitata (green algae)): 10,940 mg/l
 Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : (Menidia peninsulae (tidewater silverside)): 1,500 mg/l
 Exposure time: 28 d

VYTEGRIS ZINC 700

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : (Daphnia magna (Water flea)): 33,911 mg/l
Exposure time: 21 d

Toxicity to microorganisms : (activated sludge): > 1,995 mg/l
Exposure time: 30 min
Method: ISO 8192

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) : 10

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

Persistence and degradability**Components:****ethanediol:**

Biodegradability : Result: Readily biodegradable.
Biodegradation: 90 - 100 %

SAFETY DATA SHEET

VYTEGRIS ZINC 700



Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

Exposure time: 10 d
Method: OECD Test Guideline 301A

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

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

Bioaccumulative potential

Components:

zinc oxide:

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)
Bioconcentration factor (BCF): 2,060
Exposure time: 14 d

ethanediol:

Partition coefficient: n-octanol/water : log Pow: -1.36

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

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 6.62
Exposure time: 56 d
Method: OECD Test Guideline 305
Remarks: This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Partition coefficient: n-octanol/water : log Pow: 0.7 (20 °C)
pH: 7

log Pow: 0.99 (20 °C)
pH: 5

Mobility in soil

Components:

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

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.

SAFETY DATA SHEET

VYTEGRIS ZINC 700



Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

SECTION 13: Disposal information

Disposal 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 : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.

SECTION 14: Transport information

International Regulations

UNRTDG

- UN number : UN 3082
- Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Zinc oxide, 1,2-Benzisothiazol-3(2H)-one)
- Class : 9
- Packing group : III
- Labels : 9

IATA-DGR

- UN/ID No. : UN 3082
- Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(Zinc oxide, 1,2-Benzisothiazol-3(2H)-one)
- Class : 9
- Packing group : III
- Labels : Miscellaneous
- Packing instruction (cargo aircraft) : 964
- Packing instruction (passenger aircraft) : 964
- Environmentally hazardous : yes

IMDG-Code

- UN number : UN 3082
- Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Zinc oxide, 1,2-Benzisothiazol-3(2H)-one)
- Class : 9
- Packing group : III
- Labels : 9
- EmS Code : F-A, S-F
- Marine pollutant : yes

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

Not applicable for product as supplied.

- Hazchem Code : •3Z

SAFETY DATA SHEET



VYTEGRIS ZINC 700

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

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

Safety, health, and environmental regulations specific for the hazardous chemical

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013.

Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000.

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

SECTION 16: Other information

Revision Date	: 24.01.2024
Date format	: dd.mm.yyyy

Full text of other abbreviations

ACGIH	: USA. ACGIH Threshold Limit Values (TLV)
MY PEL	: Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000.

SAFETY DATA SHEET



VYTEGRIS ZINC 700

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	24.01.2024	50002849	Date of first issue: 24.01.2024

ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
MY PEL / TWA	:	Eight-hour time-weighted average airborne concentration
MY PEL / CEIL	:	Ceiling limit airborne concentration

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition 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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