SAFETY DATA SHEET
according to the Globally Harmonized System

ALLECTUS® 0.7 GR

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	28.04.2025	50001327	Date of first issue: 25.11.2019

1. IDENTIFICATION

Product name : ALLECTUS® 0.7 GR

Other means of identification : BIFENTHRIN + IMIDACLOPRID (0.3 + 0.4) W/W% GR
ESCUDO® GR

Manufacturer or supplier's details

Company : FMC AGROQUÍMICA DE MÉXICO,

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6503, LOCAL A1-6, COL. CD. GRANJA,
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Emergency telephone : +506-40003869
911

Medical Emergency Number : Costa Rica - National Center of Poisoning - (506) 2223-1028; 800-INTOXICA
Dominican Republic: DOMINICAN REPUBLIC - Center for Drug Information and Poisoning - (809) 562-6601 Ext. 1801
El Salvador - Rosales National Hospital - (503) 2231-9262
Guatemala - Center of Toxicological Information and Assistance - (502) 2251-3560 / 2232-0735
Honduras - Hospital School - (504) 232-6105
Nicaragua - National Center of Toxicology - (505) 2289-4700 ext. 1294 cel. 8755-0983
Panama Center of Research and Information on Medications and Toxicology (507) 523-4948

Recommended use of the chemical and restrictions on use

Recommended use : Insecticide

Restrictions on use : Use as recommended by the label.

2. HAZARDS IDENTIFICATION

GHS Classification

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic : Category 1

hazard

GHS label elements

Hazard pictograms :

Signal Word : WARNING

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

Precautionary Statements :

Prevention:

P273 Avoid release to the environment.

Response:

P391 Collect spillage.

Disposal:

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

Other hazards which do not result in classification

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
calcium carbonate	471-34-1	>= 90 - <= 100
zinc oxide	1314-13-2	>= 0.25 - < 1
imidacloprid (ISO)	138261-41-3	>= 0.25 - < 1
Bifenthrin	82657-04-3	>= 0.25 - < 1

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.

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : Wash off with soap and water.
If symptoms persist, call a physician.

		Wash contaminated clothing before re-use.
In case of 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.
If swallowed	:	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.
Most important symptoms and effects, both acute and delayed	:	None known.
Protection of first-aiders	:	Avoid inhalation, ingestion and contact with skin and eyes.
Notes to physician	:	Treat symptomatically.

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.
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.
Specific extinguishing methods	:	Use a water spray to cool fully closed containers. Remove undamaged containers from fire area if it is safe to do 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.
Special protective equipment for fire-fighters	:	Firefighters should wear protective clothing and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emer-	:	If it can be safely done, stop the leak. Do not touch or walk through the spilled material.

gency procedures		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 materials 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.

7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.
Advice on safe handling	:	Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations. Avoid formation of respirable particles. For personal protection see section 8.
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. Electrical installations / working materials must comply with the technological safety standards.
Further information on storage stability	:	No decomposition if stored and applied as directed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of	Control parameters / Permissible	Basis

		exposure)	concentration	
zinc oxide	1314-13-2	TWA (Respirable particulate matter)	2 mg/m3	ACGIH
		STEL (Respirable particulate matter)	10 mg/m3	ACGIH

Personal protective equipment

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

Filter type : Particulates type

Hand protection
Material : Protective gloves

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

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

Skin and body protection : Dust impervious protective suit
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Protective measures : Plan first aid action before beginning work with this product.

Hygiene measures : 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : solid

Form : granules

Color : No data available

Odor : No data available

Odor Threshold : No data available

pH	:	6.84 (20.6 °C) Concentration: 10 g/l
Melting point/ range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	Not applicable
Evaporation rate	:	Not applicable
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	Not applicable
Relative vapor density	:	Not applicable
Relative density	:	No data available
Density	:	1.44 g/cm3
Bulk density	:	1,524.9 kg/m3
Solubility(ies)		
Water solubility	:	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
Surface tension	:	Not applicable

Molecular weight	:	Not applicable

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. Dust may form explosive mixture in air.
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.

11. TOXICOLOGICAL INFORMATION

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

Product:

Acute oral toxicity	:	LD50(Rat, female): > 5,000 mg/kg Method: OPPTS 870.1100 Assessment: The substance or mixture has no acute oral toxicity Remarks: no mortality
Acute inhalation toxicity	:	Assessment: Inhalation is not an expected route of exposure. Remarks: Particle size/low volatility exemption
Acute dermal toxicity	:	LD50(Rat, male and female): > 5,000 mg/kg Symptoms: irritating Assessment: The substance or mixture has no acute dermal toxicity Remarks: no mortality

Components:

calcium carbonate:

Acute oral toxicity	:	LD50 (Rat, female): > 2,000 mg/kg Method: OECD Test Guideline 420
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 3 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
Remarks: Highest attainable concentration.

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

zinc oxide:

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

imidacloprid (ISO):

Acute oral toxicity : LD50 (Rat, male and female): > 1,000 mg/kg
Symptoms: Tremors, piloerection, Breathing difficulties
Remarks: no mortality

LD50 (Rat, female): 300 - 2,000 mg/kg
Method: OECD Test Guideline 423
Symptoms: Fatality, Convulsions, piloerection
GLP: yes
Assessment: The component/mixture is moderately toxic after single ingestion.

LD50 (Rat, female): 300 - 2,000 mg/kg
Method: OECD Test Guideline 420
Symptoms: Fatality, Tremors, ataxia
GLP: yes
Assessment: The component/mixture is moderately toxic after single ingestion.

LD50 (Rat, female): ca. 2,567 mg/kg
Method: OECD Test Guideline 425
Symptoms: Fatality, Breathing difficulties
GLP: yes

Acute inhalation toxicity : LC50 (Rat, male and female): > 5.31 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: no mortality

LC50 (Rat, male and female): 5.17 mg/l
Exposure time: 4 h
Method: OECD Test Guideline 403
Symptoms: hypoactivity
GLP: yes
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: no mortality

LC50 (Rat, male and female): > 4.9 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Symptoms: Breathing difficulties, ataxia, Convulsions, Tremors
Assessment: The component/mixture is minimally toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 402
Symptoms: Irritation
GLP: yes
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: no mortality

LD50 (Rabbit): > 2,000 mg/kg

Bifenthrin:

Acute oral toxicity : LD50 (Rat, male and female): 50.2 - 58.8 mg/kg
Symptoms: Convulsions, Tremors

Acute inhalation toxicity : LC50 (Rat, female): 0.6 - 1.2 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Symptoms: Tremors, Convulsions

LC50 (Rat, male): 1.10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Symptoms: Tremors, Fatality

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Remarks: no mortality

Skin corrosion/irritation

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

Product:

Species : Rabbit
Assessment : Not classified as irritant
Method : OPPTS 870.2500
Remarks : May cause skin irritation in susceptible persons.

Components:

calcium carbonate:

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

zinc oxide:

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

imidacloprid (ISO):

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

Bifenthrin:

Species : Rabbit
Result : slight or no skin irritation.
GLP : yes

Species : Rabbit
Method : OECD Test Guideline 404
Result : slight or no skin irritation.
GLP : yes

Serious eye damage/eye irritation

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

Product:

Species : Rabbit
Assessment : Not classified as irritant
Method : OPPTS 870.2400
Remarks : Product dust may be irritating to eyes, skin and respiratory system.

Components:

calcium carbonate:

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

zinc oxide:

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

imidacloprid (ISO):

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

Bifenthrin:

Species	:	Rabbit
Method	:	OECD Test Guideline 405
Result	:	Slight or no eye irritation
GLP	:	yes

Respiratory or skin sensitization

Skin sensitization

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

Respiratory sensitization

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

Product:

Test Type	:	Skin sensitization
Routes of exposure	:	Dermal
Species	:	Guinea pig
Assessment	:	Did not cause sensitization on laboratory animals.
Method	:	OPPTS 870.2600

Components:

calcium carbonate:

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	Not a skin sensitizer.

zinc oxide:

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

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

imidacloprid (ISO):

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

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	Does not cause skin sensitization.
GLP	:	yes

Bifenthrin:

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

Germ cell mutagenicity

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

Components:

calcium carbonate:

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

zinc oxide:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay) Result: negative 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

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

imidacloprid (ISO):

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative
GLP: yes

Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Ames test
Metabolic activation: with and without metabolic activation
Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: Cytogenetic assay
Species: Chinese hamster
Result: negative
GLP: yes

Test Type: Micronucleus test
Species: Mouse

Method: OECD Test Guideline 474
Result: negative
GLP: yes

Test Type: dominant lethal test
Species: Mouse
Result: negative

Test Type: chromosome aberration assay
Species: Mouse
Result: negative

Bifenthrin:

Genotoxicity in vitro : Test Type: gene mutation test
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Result: negative

Test Type: reverse mutation assay
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Mouse lymphoma assay
Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo : Test Type: Sex-linked Recessive Lethal Test
Species: Drosophila melanogaster (vinegar fly)
Result: negative

Test Type: unscheduled DNA synthesis assay
Species: Rat
Method: OECD Test Guideline 486
Result: negative

Carcinogenicity

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

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 - Assess- : Animal testing did not show any carcinogenic effects.

ment

Bifenthrin:

Species	:	Rat, female
Application Route	:	Oral
Exposure time	:	2 Years
NOAEL	:	3 mg/kg bw/day
Result	:	negative

Species	:	Mouse, male
Application Route	:	Oral
Exposure time	:	18 month(s)
NOAEL	:	7.6 mg/kg bw/day
Result	:	positive
Symptoms	:	malignant tumors

Reproductive toxicity

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

Components:

calcium carbonate:

Effects on fertility	:	Test Type: reproductive and developmental toxicity study Species: Rat, male and female Application Route: Ingestion Method: OECD Test Guideline 422 Result: negative
Effects on fetal development	:	Test Type: Pre-natal Species: Rat Application Route: Oral Method: OECD Test Guideline 414 Result: negative

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 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

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

imidacloprid (ISO):

Effects on fertility : Method: OECD Test Guideline 416
Result: Animal testing did not show any effects on fertility.

Method: OECD Test Guideline 416
Result: No effects on fertility and early embryonic development were detected.

Effects on fetal development : Species: Rabbit
Application Route: Oral
Dose: 0, 8, 24, 72 mg/kg bw/day
General Toxicity Maternal: NOAEL: 8 mg/kg bw/day
Method: OECD Test Guideline 414
Result: No teratogenic effects.
GLP: yes

Species: Rat
Dose: 0, 10, 30, 100 mg/kg bw/day
General Toxicity Maternal: NOEL: 10 mg/kg bw/day
Embryo-fetal toxicity.: NOEL: 30 mg/kg bw/day
Method: OECD Test Guideline 414
GLP: yes

Test Type: Multi-generation study
Species: Rat
Application Route: Oral
Dose: 8, 20, 56 mg/kg bw/day
General Toxicity Maternal: NOEL: 20 mg/kg body weight
Developmental Toxicity: NOEL: 20 mg/kg body weight
Result: No teratogenic effects.
GLP: yes

Bifenthrin:

Effects on fertility : Test Type: Two-generation study
Species: Rat

Application Route: Oral
General Toxicity Parent: NOAEL: 3 mg/kg bw/day
General Toxicity F1: NOAEL: 5 mg/kg bw/day
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rabbit
Application Route: Oral
General Toxicity Maternal: NOAEL: 2.7 mg/kg bw/day
Teratogenicity: NOAEL: 2.7 mg/kg bw/day
Symptoms: Maternal effects.
Result: No teratogenic effects.

Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 1 mg/kg bw/day
Teratogenicity: NOAEL: 2 mg/kg bw/day
Result: No teratogenic effects.

Species: Rat
Application Route: Oral
General Toxicity Maternal: LOAEL: 7.2 mg/kg bw/day
Developmental Toxicity: LOAEL: 7.2 mg/kg bw/day
Embryo-fetal toxicity.: NOEL: 9.0 mg/kg bw/day
Method: OECD Test Guideline 426
Result: Animal testing did not show any effects on fertility., Some evidence of adverse effects on development, based on animal experiments.

STOT-single exposure

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

Components:

Bifenthrin:

Target Organs : Central nervous system
Assessment : Causes damage to organs.

STOT-repeated exposure

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

Components:

Bifenthrin:

Target Organs : Central nervous system
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Repeated dose toxicity

Components:

calcium carbonate:

Species	:	Rat, male and female
NOAEL	:	1,000 mg/kg
Application Route	:	Ingestion
Exposure time	:	48 d
Method	:	OECD Test Guideline 422

zinc oxide:

Species	:	Rat, male and female
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

imidacloprid (ISO):

Species	:	Dog
NOEL	:	1200 ppm
Application Route	:	Oral - feed
Exposure time	:	90 d

Method	:	OECD Test Guideline 409
GLP	:	yes
Species	:	Dog
LOAEL	:	49 mg/kg
Application Route	:	Oral - feed
Exposure time	:	28 d
Dose	:	0, 7.3, 31, 49 mg/kg bw/day
Method	:	OECD Test Guideline 409
Symptoms	:	Tremors, ataxia, Vomiting
Species	:	Dog, male and female
NOEL	:	72 mg/kg bw/day
Application Route	:	Oral - feed
Exposure time	:	52 w
Dose	:	0, 6.1, 15, 41, 72 mg/kg bw/day
GLP	:	yes

Bifenthrin:

Species	:	Rat, male and female
NOEL	:	100 ppm
Application Route	:	Oral - feed
Exposure time	:	90 d
Remarks	:	No toxicologically significant effects were found.
Species	:	Dog, male and female
NOEL	:	2.5 mg/kg bw/day
Application Route	:	Oral - feed
Exposure time	:	13 w
Symptoms	:	Tremors

Aspiration toxicity

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

Components:

imidacloprid (ISO):

The substance does not have properties associated with aspiration hazard potential.

Bifenthrin:

The substance does not have properties associated with aspiration hazard potential.

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

Components:

imidacloprid (ISO):

Remarks : No data available

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

calcium carbonate:

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)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC10 (Desmodesmus subspicatus (green algae)): > 14 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201

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

Toxicity to soil dwelling organisms : LC50: > 1,000 mg/kg
Exposure time: 14 d
Species: Eisenia fetida (earthworms)
Method: OECD Test Guideline 207

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 plants : IC50 (Pseudokirchneriella subcapitata (algae)): 0.044 mg/l
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 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 fish (Chronic toxicity)	:	NOEC: 0.440 mg/l Exposure time: 72 d Species: Oncorhynchus mykiss (rainbow trout) Test Type: flow-through test Remarks: Based on data from similar materials NOEC: 0.026 mg/l Exposure time: 30 d Species: Jordanella floridae (flagfish) Method: OECD Test Guideline 210 Remarks: Based on data from similar materials NOEC: 0.530 mg/l Exposure time: 1,095 d Species: Salvelinus fontinalis (Brook trout) Test Type: flow-through test Remarks: Based on data from similar materials NOEC: 0.056 mg/l Exposure time: 116 d Species: Salmo trutta (brown trout) Method: OECD Test Guideline 210 Remarks: Based on data from similar materials NOEC: 0.025 mg/l Exposure time: 27 d Species: Fish Test Type: semi-static test Remarks: Based on data from similar materials NOEC: 0.078 mg/l Exposure time: 248 d Species: Pimephales promelas (fathead minnow) Test Type: flow-through test Remarks: Based on data from similar materials NOEC: 0.050 mg/l Exposure time: 155 d Species: Fish Test Type: flow-through test Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chron-	:	LOEC: 0.125 mg/l Exposure time: 21 d

ic toxicity)		Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211
M-Factor (Chronic aquatic toxicity)	:	10
Toxicity to soil dwelling organisms	:	NOEC: 750 mg/kg Exposure time: 21 d Species: Eisenia fetida (earthworms)

imidacloprid (ISO):

Toxicity to fish	:	LC50 (Lepomis macrochirus (Bluegill sunfish)): > 105 mg/l Exposure time: 96 h Test Type: static test Method: EPA OPP 72-1 GLP: yes LC50 (Salmo gairdneri): 158 - 281 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 GLP: yes LC50 (Oncorhynchus mykiss (rainbow trout)): > 83 mg/l Exposure time: 96 h Test Type: static test Method: EPA OPP 72-1 GLP: yes LC50 (Cyprinodon variegatus (sheepshead minnow)): 161 mg/l Exposure time: 96 h Test Type: static test GLP: yes LC50 (Leuciscus idus (Golden orfe)): 178 - 316 mg/l Exposure time: 96 h Test Type: static test GLP: yes
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 85 mg/l Exposure time: 48 h Method: US EPA Test Guideline OPP 72-2 GLP: yes EC50 (Americamysis bahia (mysid shrimp)): 0.0341 mg/l Exposure time: 96 h Test Type: flow-through test Method: US EPA Test Guideline OPP 72-3 GLP: yes LC50 (Hyalella azteca (Amphipod)): 0.526 mg/l

Exposure time: 96 h
Method: US EPA Test Guideline OPP 72-2
GLP: yes

NOEC (Crassostrea virginica (atlantic oyster)): 23.3 mg/l
Exposure time: 96 h
Method: US EPA Test Guideline OPP 72-3
GLP: yes

Toxicity to algae/aquatic plants : EbC50 (Scenedesmus subspicatus): > 10 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

NOEC (Scenedesmus capricornutum (fresh water algae)): > 119 mg/l
Exposure time: 5 d
Method: US EPA Test Guideline OPP 122-2 & 123-2

M-Factor (Acute aquatic toxicity) : 10

Toxicity to microorganisms : IC50 (activated sludge): > 10000
GLP:

Toxicity to fish (Chronic toxicity) : NOEC: 28.5 mg/l
Exposure time: 21 d
Species: Salmo gairdneri
Method: OECD Test Guideline 204
GLP: yes

NOEC: 9.8 mg/l
End point: Growth
Exposure time: 98 d
Species: Oncorhynchus mykiss (rainbow trout)
Test Type: Early Life-Stage
Method: US EPA Test Guideline OPP 72-4
GLP: yes

NOEC: 9.02 mg/l
End point: Hatching success
Species: Oncorhynchus mykiss (rainbow trout)
Test Type: flow-through test
Method: OECD Test Guideline 210
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 1.8 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test Type: semi-static test
Method: US EPA Test Guideline OPP 72-4
GLP: yes

EC10: 0.00209 mg/l
Exposure time: 28 d
Species: Chironomus riparius (harlequin fly)

NOEC: 0.67 µg/l
End point: Growth
Exposure time: 10 d
Species: Chironomus tentans
Test Type: Static renewal test
GLP: yes

NOEC: 0.064 mg/l
End point: Swimming behavior
Exposure time: 28 d
Species: Gammarus pulex
Test Type: static test
Method: OECD 219
GLP: yes

M-Factor (Chronic aquatic toxicity) : 100

Toxicity to soil dwelling organisms : LC50: 10.7 mg/kg dry weight (d.w.)
Exposure time: 14 d
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : LD50: 31 mg/kg
Species: Coturnix japonica (Japanese quail)

LD50: 2,225 ppm
Exposure time: 5 d
Species: Coturnix japonica (Japanese quail)

LD50: 0.0037 µg/bee
Exposure time: 48 h
End point: Acute oral toxicity
Species: Apis mellifera (bees)

LD50: 0.0081 µg/bee
Exposure time: 48 h
Species: Apis mellifera (bees)

Ecotoxicology Assessment

Other organisms relevant to the environment : Harmful to bees.

Bifenthrin:

Toxicity to fish : LC50 (Salmo gairdneri): 0.00015 mg/l
Exposure time: 96 h
Test Type: flow-through test

LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.00035 mg/l

		Exposure time: 96 h Test Type: flow-through test LC50 (Oncorhynchus mykiss (rainbow trout)): 0.000256 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 GLP: yes LC50 (Pimephales promelas (fathead minnow)): 0.000234 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia): 0.00011 mg/l Exposure time: 48 h LC50 (Daphnia): 0.0016 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (algae): 0.822 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1,000
Toxicity to fish (Chronic toxicity)	:	NOEC: 0.00012 mg/l Exposure time: 21 d Species: Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.0013 µg/l Exposure time: 21 d Species: Daphnia magna (Water flea) NOEC: 0.00095 µg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	100,000
Toxicity to soil dwelling organisms	:	LD50: > 16 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 216 Remarks: No significant adverse effect on Nitrogen mineralization.
Toxicity to terrestrial organisms	:	LD50: 1,800 mg/kg Species: Colinus virginianus (Bobwhite quail)

LD50: > 2,150 mg/kg
Species: Anas platyrhynchos (Mallard duck)

LD50: 0.1 - 0.35 µg/bee
Exposure time: 24 h
End point: Acute oral toxicity
Species: Apis mellifera (bees)
Method: OECD Test Guideline 213

LD50: 0.1 - 0.3 µg/bee
Exposure time: 24 h
End point: Acute contact toxicity
Species: Apis mellifera (bees)
Method: OECD Test Guideline 214

Persistence and degradability

Components:

calcium carbonate:

Biodegradability : Biodegradation: 90 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

zinc oxide:

Biodegradability : Remarks: The methods for determining the biological degradability are not applicable to inorganic substances.

imidacloprid (ISO):

Biodegradability : Result: Not readily biodegradable.

Bifenthrin:

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life (DT50): 2.2 d
Hydrolysis: at 60 °C

Degradation half life (DT50): 15.6 d
Hydrolysis: at 40 °C

Bioaccumulative potential

Components:

zinc oxide:

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

imidacloprid (ISO):

Bioaccumulation : Remarks: Low potential for bioaccumulation

Partition coefficient: n-octanol/water : log Pow: 0.33 (20 °C)
Method: OECD Test Guideline 107

Bifenthrin:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 1,709
Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is possible.
See section 9 for octanol-water partition coefficient.

Partition coefficient: n-octanol/water : log Pow: 6.6

Mobility in soil

Components:

imidacloprid (ISO):

Distribution among environmental compartments : Koc: 109 - 411
Remarks: Mobile in soils

Bifenthrin:

Distribution among environmental compartments : Koc: 236610 ml/g, log Koc: 5.37
Remarks: immobile

Stability in soil :

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.

13. DISPOSAL CONSIDERATIONS

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 : It is prohibited to reuse, bury, burn, or sell containers. Rinsa-

ble 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 recommended 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.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

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

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

Special precautions for user

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

15. REGULATORY INFORMATION

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

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

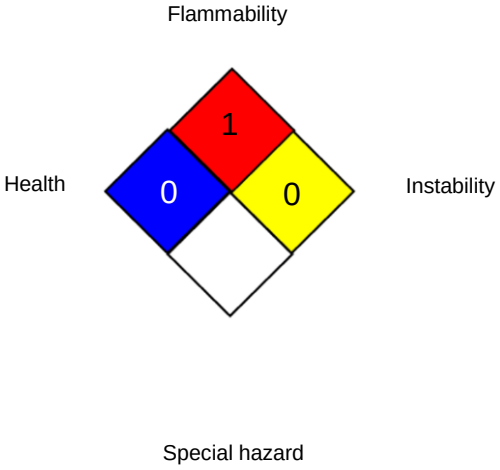
TCSI	:	Not in compliance with the inventory
TSCA	:	Product contains substance(s) not listed on TSCA inventory.
AIIC	:	Not in compliance with the inventory
DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL. imidacloprid (ISO) Bifenthrin
ENCS	:	Not in compliance 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

16. OTHER INFORMATION

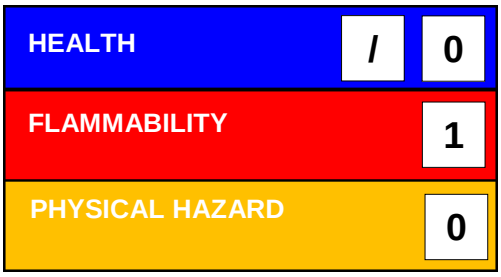
Revision Date	:	28.04.2025
Date format	:	dd.mm.yyyy

Further information

NFPA:



HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit

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

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

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