SAFETY DATA SHEET

ELEVEST™ INSECTICIDE

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	15.04.2024	50000153	Date of first issue: 15.04.2024

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	ELEVEST™ INSECTICIDE
Other means of identification	:	VKM32 INSECT CONTROL PRESIPEL

Recommended use of the chemical and restrictions on use

Recommended use	:	Can be used as insecticide only.
Restrictions on use	:	Use as recommended by the label.

Manufacturer or supplier's details

Company	:	FMC Agro Singapore Pte Ltd
Address	:	10 Marina Boulevard #40-01, Marina Bay Financial Centre 018983 Singapore
Telephone	:	+65 3165 2600
E-mail address	:	SDS-Info@fmc.com
Emergency telephone	:	For leak, fire, spill or accident emergencies, call: +(65)-31581349 (CHEMTREC) 1 703 / 741-5970 (CHEMTREC - International) Medical emergency: + 1 651 632 6793 (Collect)

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral)	:	Category 4
Specific target organ toxicity - repeated exposure	:	Category 1 (Nervous system)
Short-term (acute) aquatic hazard	:	Category 1
Long-term (chronic) aquatic hazard	:	Category 1

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements : H410 Very toxic to aquatic life with long lasting effects.
H372 Causes damage to organs (Nervous system) through prolonged or repeated exposure.
H302 Harmful if swallowed.

Precautionary Statements :

Prevention:

P273 Avoid release to the environment.
P270 Do not eat, drink or smoke when using this product.
P264 Wash skin thoroughly after handling.
P260 Do not breathe mist or vapors.

Response:

P391 Collect spillage.
P314 Get medical advice/ attention if you feel unwell.
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.

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)
Bifenthrin	82657-04-3	>= 10 -< 20
Chlorantraniliprole	500008-45-7	>= 2.5 -< 10
glycerol	56-81-5	>= 1 -< 10
D-Glucopyranose, oligomeric, C9-11-alkyl glycosides	132778-08-6	>= 3 -< 10

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 : Move to fresh air.
Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical

advice.

In case of skin contact	:	Take off all contaminated clothing immediately. Wash contaminated clothing before re-use. Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.
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	:	Do not induce vomiting without medical advice. Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	:	The product contains a pyrethroid. If large amounts have been ingested, the stomach and intestines should be evacuated. Treatment is symptomatic and supportive. Digestible fats, oils, or alcohol may increase absorption and so should be avoided. Exposure may result in neurotoxicity with symptoms including tremors, impaired gait, and excessive salivation. Tremors may disappear with continued exposure. Harmful if swallowed. Causes damage to organs through prolonged or repeated exposure.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection and use the recommended protective clothing Avoid inhalation, ingestion and contact with skin and eyes. If potential for exposure exists refer to Section 8 for specific personal protective equipment.
Notes to physician	:	Treat symptomatically. It may be helpful to show this safety data sheet to physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Carbon dioxide (CO2) Water spray Foam
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Thermal decomposition can lead to release of irritating gases and vapors.

Chlorine compounds
Carbon oxides
Nitrogen oxides (NOx)
Bromine compounds

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.
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 emergency procedures	:	Evacuate personnel to safe areas. Do not touch or walk through the spilled material. If it can be safely done, stop the leak. 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.

7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Avoid formation of aerosol. Do not breathe vapors/dust. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.
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 exposure)	Control parameters / Permissible concentration	Basis
glycerol	56-81-5	PEL (long term) (Mist)	10 mg/m3	SG OEL

Personal protective equipment

Respiratory protection : In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

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.

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

Skin and body protection : Impervious clothing
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.
Always have on hand a first-aid kit, together with proper instructions.
Ensure that eye flushing systems and safety showers are located close to the working place.
Wear suitable protective equipment.
In the context of professional plant protection use as recommended, the end user must refer to the label and the instructions for use.

Hygiene measures : 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 : liquid

Color : white

Odor	:	neutral
Odor Threshold	:	not determined
pH	:	5.6 (20.8 °C) (1% solution in water)
Melting point/freezing point	:	not determined
Boiling point/boiling range	:	not determined
Flash point	:	> 100 °C
Evaporation rate	:	not determined
Flammability (liquids)	:	Not classified as a flammability hazard
Self-ignition	:	not determined
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Vapor pressure	:	Not available for this mixture.
Relative vapor density	:	not determined
Relative density	:	not determined
Density	:	1.11 g/cm3 (20 °C)
Bulk density	:	No data available
Solubility(ies)		
Water solubility	:	dispersible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	Not available for this mixture.
Autoignition temperature	:	No data available
Decomposition temperature	:	not determined
Viscosity		
Viscosity, dynamic	:	No data available

Viscosity, kinematic	:	158.8 mm2/s (21.6 °C) 151.2 mm2/s (42 °C)
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing
Particle size	:	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.
Conditions to avoid	:	Avoid extreme temperatures. Protect from frost, heat and sunlight. Heat, flames and sparks.
Incompatible materials	:	Avoid strong acids, bases, and oxidizers.
Hazardous decomposition products	:	Stable under recommended storage conditions.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : Skin contact
Inhalation

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity	:	LD50 (Rat, female): 1,098 mg/kg Method: OECD Test Guideline 425
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 2.14 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 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

Components:

Bifenthrin:

Acute oral toxicity	:	LD50 (Rat, male and female): 56.7 mg/kg Symptoms: Convulsions, Tremors, ataxia LD50 (Mouse, female): 42.5 mg/kg Method: OPPTS 870.1100
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

Chlorantraniliprole:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg Method: OECD Test Guideline 425 GLP: yes Remarks: Information source: Internal study report
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 5.1 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 GLP: yes Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Information source: Internal study report
Acute dermal toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 402 GLP: yes Remarks: Information source: Internal study report

glycerol:

Acute oral toxicity	:	LD50 (Rat, female): 11,500 mg/kg
Acute inhalation toxicity	:	LC0 (Rat, male): 11 mg/l Exposure time: 1 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Guinea pig, male and female): 56,750 mg/kg

D-Glucopyranose, oligomeric, C9-11-alkyl glycosides:

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

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit
Method : OECD Test Guideline 404
Result : slight irritation

Components:

Bifenthrin:

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

Chlorantraniliprole:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation
GLP : yes
Remarks : Information source: Internal study report

glycerol:

Species : Rabbit
Result : No skin irritation

D-Glucopyranose, oligomeric, C9-11-alkyl glycosides:

Species : Rabbit
Result : slight irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

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

Components:

Bifenthrin:

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

Chlorantraniliprole:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405
GLP	:	yes
Remarks	:	Information source: Internal study report

glycerol:

Species	:	Rabbit
Result	:	No eye irritation

D-Glucopyranose, oligomeric, C9-11-alkyl glycosides:

Result	:	Irreversible effects on the eye
Method	:	in vitro eye irritation test

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

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

Components:

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

Chlorantraniliprole:

Test Type	:	Maximization Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitization.
GLP	:	yes
Remarks	:	Information source: Internal study report

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

Germ cell mutagenicity

Not classified based on available information.

Product:

Germ cell mutagenicity - Assessment	:	Contains no ingredient listed as a mutagen

Components:

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

Chlorantraniliprole:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Metabolic activation: with and without metabolic activation Result: negative Test Type: In vitro mammalian cell gene mutation test Test system: Chinese hamster ovary cells Method: OECD Test Guideline 476 Result: negative
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse Method: OECD Test Guideline 474 Result: negative
Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

glycerol:

Genotoxicity in vitro	:	Test Type: reverse mutation assay

Result: negative

Carcinogenicity

Not classified based on available information.

Components:

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

Chlorantraniliprole:

Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	2 Years
NOAEL	:	805 - 1,076 mg/kg bw/day
Method	:	OECD Test Guideline 453
Result	:	negative

Species	:	Mouse, male and female
Application Route	:	Oral
Exposure time	:	18 month(s)
NOAEL	:	158 - 1,155 mg/kg bw/day
Method	:	OECD Test Guideline 453
Result	:	negative

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

glycerol:

Species	:	Rat
Application Route	:	Oral
Exposure time	:	2 years Years
Result	:	negative

Reproductive toxicity

Not classified based on available information.

Product:

Reproductive toxicity - Assessment	:	Contains no ingredient listed as toxic to reproduction

Components:

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.

Chlorantraniliprole:

Effects on fertility	:	Test Type: Two-generation study Species: Rat, male and female Application Route: Oral General Toxicity Parent: NOAEL: 20,000 ppm General Toxicity F1: NOAEL: 20,000 ppm Method: OECD Test Guideline 416 Result: negative
Effects on fetal development	:	Test Type: Pre-natal Species: Rat Application Route: Oral Duration of Single Treatment: 6 - 20 Days General Toxicity Maternal: NOEL: 1,000 mg/kg bw/day Developmental Toxicity: NOEL: 1,000 mg/kg bw/day Method: OECD Test Guideline 414 Result: negative
Reproductive toxicity - Assessment	:	Weight of evidence does not support classification for reproductive toxicity

glycerol:

Effects on fertility	:	Test Type: Two-generation study Species: Rat Application Route: Oral Result: negative
Effects on fetal development	:	Test Type: Two-generation study Species: Rat Application Route: Oral Result: negative

STOT-single exposure

Not classified based on available information.

Product:

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

Components:

Bifenthrin:

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

Chlorantraniliprole:

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

STOT-repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Components:

Bifenthrin:

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

Chlorantraniliprole:

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

Repeated dose toxicity

Components:

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

Chlorantraniliprole:

Species	:	Rat, male and female
NOEL	:	1188 - 1526 mg/kg
Application Route	:	Oral
Exposure time	:	90 Days
Method	:	OECD Test Guideline 408

glycerol:

Species	:	Rat
LOAEL	:	1 mg/kg
Application Route	:	Inhalation
Exposure time	:	14 d
Dose	:	0, 1, 1.93, 3.91 mg/L
Symptoms	:	respiratory tract irritation, Fatality

Species	:	Rat
NOAEL	:	0.165 mg/l
LOAEL	:	0.662 mg/l
Application Route	:	Inhalation
Exposure time	:	13 w
Dose	:	0, 0.033, 0.165, 0.662 mg/L
Symptoms	:	respiratory tract irritation

Aspiration toxicity

Not classified based on available information.

Components:

Bifenthrin:

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

Chlorantraniliprole:

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

Further information

Product:

Remarks	:	On contact, the active ingredient can cause feelings of burning, tingling or numbness in exposed areas (paraesthesia), which is harmless at low exposure, but can be quite painful, especially in the eye. The effect may result from splash, aerosol or transfer from contaminated gloves. The effect is transient, lasting up to 24 hours, but may in exceptional cases last

longer. It may be considered as a warning that overexposure has occurred and that work practice should be reviewed.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to soil dwelling organisms : NOEC (Eisenia andrei (red worm)): 1,000 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 207

LC50 (Eisenia andrei (red worm)): > 1,000 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 207

Toxicity to terrestrial organisms : LD50 (Colinus virginianus (Bobwhite quail)): > 2,250 mg/kg
Method: OECD Test Guideline 223

LD50 (Apis mellifera (bees)): 0.49 µg/bee
Exposure time: 48 h
End point: Acute contact toxicity
Method: OECD Test Guideline 214

LD50 (Apis mellifera (bees)): 6.66 µg/bee
Exposure time: 48 h
End point: Acute oral toxicity
Method: OECD Test Guideline 213

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

Components:

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 (Oncorhynchus mykiss (rainbow trout)): 0.00012 mg/l Exposure time: 21 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.0013 µg/l Exposure time: 21 d NOEC (Daphnia magna (Water flea)): 0.00095 µg/l Exposure time: 21 d
M-Factor (Chronic aquatic toxicity)	:	100,000
Toxicity to soil dwelling organisms	:	LD50 (Eisenia fetida (earthworms)): > 16 mg/kg Exposure time: 14 d
Toxicity to terrestrial organisms	:	LD50 (Colinus virginianus (Bobwhite quail)): 1,800 mg/kg LD50 (Anas platyrhynchos (Mallard duck)): > 2,150 mg/kg LD50 (Apis mellifera (bees)): 0.1 - 0.35 µg/bee Exposure time: 24 h End point: Acute oral toxicity Method: OECD Test Guideline 213 LD50 (Apis mellifera (bees)): 0.1 - 0.3 µg/bee Exposure time: 24 h End point: Acute contact toxicity Method: OECD Test Guideline 214

Chlorantraniliprole:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 13.8 mg/l Exposure time: 96 h Test Type: static test Method: OECD Test Guideline 203 Remarks: Information source: Internal study report

LC50 (Lepomis macrochirus (Bluegill sunfish)): > 15.1 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: yes
Remarks: Information source: Internal study report

LC50 (Cyprinodon sp. (minnow)): > 12 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : LC50 (Hyalella azteca (Amphipod)): 0.26 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
GLP: yes

LC50 (Ceriodaphnia dubia (water flea)): 0.0067 - 0.011 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 2 mg/l
Exposure time: 120 h

NOEC (Lemna gibba (duckweed)): 2 mg/l
Exposure time: 14 d

ErC50 (Selenastrum capricornutum (green algae)): > 2 mg/l
Exposure time: 72 h

M-Factor (Acute aquatic toxicity) : 10

Toxicity to fish (Chronic toxicity) : NOEC (Cyprinodon variegatus (sheepshead minnow)): 1.28 mg/l
Exposure time: 36 d

NOEC (Oncorhynchus mykiss (rainbow trout)): 0.110 mg/l
Exposure time: 28 d
Method: OECD Test Guideline 210
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.00447 mg/l
Exposure time: 21 d
Method: US EPA Test Guideline OPPTS 850.1300
GLP: yes

M-Factor (Chronic aquatic toxicity) : 10

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

Toxicity to terrestrial organisms	:	LD50 (Apis mellifera (bees)): > 4.0 µg/bee Exposure time: 72 h End point: Acute contact toxicity Remarks: Active substance dissolved in acetone LD50 (Apis mellifera (bees)): > 0.005 µg/bee Exposure time: 48 h End point: Acute contact toxicity Remarks: Active substance dissolved in water LD50 (Apis mellifera (bees)): > 104.1 µg/bee Exposure time: 48 h End point: Acute oral toxicity Remarks: Active substance dissolved in acetone LD50 (Apis mellifera (bees)): > 0.0274 µg/bee Exposure time: 48 h End point: Acute oral toxicity Remarks: Active substance dissolved in water LD50 (Poephila guttata (zebra finch)): > 2,250 mg/kg

glycerol:

Toxicity to fish	:	LC50 (Fish): 885 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1,955 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Scenedesmus capricornutum (fresh water algae)): 2,900 mg/l Exposure time: 192 h
Toxicity to microorganisms	:	EC10 (Pseudomonas putida): 10,000 mg/l Exposure time: 16 h

D-Glucopyranose, oligomeric, C9-11-alkyl glycosides:

Toxicity to fish	:	LC50 (Brachydanio rerio (zebrafish)): 2.95 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Crustaceans): 26.2 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Skeletonema costatum (Diatom)): 9.05 mg/l Exposure time: 72 h Method: ISO 10253
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): > 560 mg/l

Persistence and degradability

Product:

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

Product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

Components:

Bifenthrin:

Biodegradability : Result: Not readily biodegradable.

Chlorantraniliprole:

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life (DT50): 10 d (25 °C) pH: 9

Degradation half life (DT50): 0.3 d (50 °C) pH: 9

Degradation half life (DT50): > 31 d pH: 5

glycerol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 94 %
Exposure time: 24 h

D-Glucopyranose, oligomeric, C9-11-alkyl glycosides:

Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential

Product:

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

Components:

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

Chlorantraniliprole:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 14
Method: OECD Test Guideline 305
GLP: yes
Remarks: Bioaccumulation is unlikely.

Partition coefficient: n- : log Pow: 2.77 (20 °C)

octanol/water		pH: 4 log Pow: 2.86 (20 °C) pH: 7 log Pow: 2.80 (20 °C) pH: 9

glycerol:

Partition coefficient: n-octanol/water	:	log Pow: -1.75 (25 °C) pH: 7.4

D-Glucopyranose, oligomeric, C9-11-alkyl glycosides:

Partition coefficient: n-octanol/water	:	log Pow: 3.7 Method: OECD Test Guideline 117

Mobility in soil

Product:

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

Components:

Bifenthrin:

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

Chlorantraniliprole:

Distribution among environmental compartments	:	Koc: 362 ml/g, log Koc: 2.55 Remarks: Mobile in soils
Stability in soil	:	Remarks: Very persistent 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	:	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.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bifenthrin, Chlorantraniliprole)
Class	:	9
Packing group	:	III
Labels	:	9
Environmentally hazardous	:	yes

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (Bifenthrin, Chlorantraniliprole)
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. (Bifenthrin, Chlorantraniliprole)
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.

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

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

Environmental Protection and Management Act and Environmental Protection and Management (Hazardous Substances) Regulations	:	Not applicable
Fire Safety (Petroleum and Flammable Materials) Regulations	:	Not applicable

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

TCSI	:	On the inventory, or 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. 500008-45-7 2-METHYLBIPHENYL-3-YLMETHYL (Z)-(1RS,3RS)-3-(2-CHLORO-3,3,3-TRIFLUOROPROP-1-ENYL)-2,2-DIMETHYLCYCLOPROPANECARBOXYLATE
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	:	15.04.2024
Date format	:	dd.mm.yyyy

Full text of other abbreviations

SG OEL	:	Singapore. Workplace Safety and Health (General Provisions) Regulations - First Schedule Permissible Exposure Limits of Toxic Substances.
SG OEL / PEL (long term)	:	Permissible Exposure Level (PEL) Long Term

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - 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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