SAFETY DATA SHEET

BIFLEX ULTRA

Version	Revision Date:	SDS Number:	Date of last issue: 13.09.2023
1.1	08.04.2024	50001561	Date of first issue: 13.09.2023

Section 1: Identification

Product name	:	BIFLEX ULTRA
Other means of identification	:	BIFLEX® ULTRA-LO-ODOUR

Recommended use of the chemical and restrictions on use

Recommended use	:	Termiticide and insecticide
Restrictions on use	:	Use as recommended by the label.

Manufacturer or supplier's details

Company	:	FMC New Zealand Ltd
Address	:	Level 5, 3 Te Kehu Way, Mount Wellington 1060 Auckland New Zealand
Telephone	:	+640800658080
Telefax	:	(09)-271-2961
E-mail address	:	SDS-Info@fmc.com
Emergency telephone number	:	For leak, fire, spill or accident emergencies, call: 0800 734 607 (Ixom) Medical emergency: 0800 764 766 (NZ Poisons Information Centre) 0800 111174 (24 hour Medical Emergency) 0800 387668 (Transport Emergency)

Section 2: Hazard identification

GHS Classification

Flammable liquids	:	Category 4
Acute toxicity (Oral)	:	Category 4
Skin sensitisation	:	Category 1
Specific target organ toxicity - repeated exposure	:	Category 1 (Central nervous system)
Aspiration hazard	:	Category 1

Hazardous to the aquatic environment - acute hazard	:	Category 1
Hazardous to the aquatic environment - chronic hazard	:	Category 1
Hazardous to soil organisms		
Hazardous to terrestrial vertebrates		
Hazardous to terrestrial invertebrates		

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :

H227 Combustible liquid.
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H317 May cause an allergic skin reaction.
H372 Causes damage to organs (Central nervous system) through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.
H423 Harmful to the soil environment.
H433 Harmful to terrestrial vertebrates.
H443 Harmful to terrestrial invertebrates.

Precautionary statements :

Prevention:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P314 Get medical advice/ attention if you feel unwell.
P331 Do NOT induce vomiting.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before

reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391 Collect spillage.

Storage:

P403 Store in a well-ventilated place.
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/information on ingredients

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
bifenthrin (ISO)	82657-04-3	>= 10 -< 20
Distillates (petroleum), hydrotreated middle; Gasoil — unspecified	64742-46-7	>= 50 -< 70
Alcohols, C12-14. ethoxylated	68439-50-9	>= 10 -< 20
Benzenesulfonic acid, 4-C10-14-alkyl derivs., calcium salts	90194-26-6	>= 1 -< 2.5

Section 4: First-aid measures

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
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 : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
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. Keep respiratory tract clear. Do NOT induce vomiting. 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	:	Harmful if swallowed. May be fatal if swallowed and enters airways. May be harmful in contact with skin. May cause an allergic skin reaction. Causes damage to organs through prolonged or repeated exposure.
Notes to physician	:	Treat symptomatically.

Section 5: Fire-fighting measures

Suitable extinguishing media	:	Carbon dioxide (CO2) Dry chemical 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 vapours. Halogenated compounds Carbon oxides
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 firefighters	:	Firefighters should wear protective clothing and self-contained breathing apparatus.
Hazchem Code	:	3Z

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. 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	:	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

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Do not breathe vapours/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. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Hygiene measures	:	When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.
Conditions for safe storage	:	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/personal protection

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

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 Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Section 9: Physical and chemical properties

Physical state	:	liquid
Form	:	liquid
Colour	:	yellow-orange
Odour	:	aromatic, hydrocarbon-like
pH	:	not determined
Melting point/freezing point	:	not determined
Boiling point/boiling range	:	not determined
Flash point	:	> 60 °C
Self-ignition	:	not determined
Density	:	ca. 0.9 g/cm3
Solubility(ies)		
Water solubility	:	emulsifiable
Partition coefficient: n-octanol/water	:	Not applicable
Viscosity		
Viscosity, kinematic	:	not determined
Explosive properties	:	Not explosive
Oxidizing properties	:	The product is not oxidizing.

Metal corrosion rate	:	Not corrosive to metals

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	:	Heat, flames and sparks.
Incompatible materials	:	Strong oxidizing agents Strong acids Strong bases
Hazardous decomposition products	:	Stable under recommended storage conditions.

Section 11: Toxicological information

Acute toxicity

Harmful if swallowed.

Product:

Acute oral toxicity	:	LD50 (Rat, male and female): 531 mg/kg
Acute inhalation toxicity	:	Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg

Components:

bifenthrin (ISO):

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

Distillates (petroleum), hydrotreated middle; Gasoil — unspecified:

Acute oral toxicity : LD50 (Rat, male and female): > 5,000 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute inhalation toxicity : LC50 (Rat, male and female): 4.6 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

Alcohols, C12-14. ethoxylated:

Acute oral toxicity : LD50 (Rat, female): > 2,000 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat): > 1.6 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit, male and female): > 3,000 mg/kg
Method: OECD Test Guideline 402

Benzenesulfonic acid, 4-C10-14-alkyl derivs., calcium salts:

Acute oral toxicity : LD50 (Rat, male and female): 1,080 - 1,630 mg/kg
Method: OECD Test Guideline 401
Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
Remarks: Based on data from similar materials

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit
Result : No skin irritation

Components:

bifenthrin (ISO):

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

Distillates (petroleum), hydrotreated middle; Gasoil — unspecified:

Species	:	Rabbit
Result	:	Skin irritation
Remarks	:	Based on data from similar materials

Alcohols, C12-14. ethoxylated:

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

Benzenesulfonic acid, 4-C10-14-alkyl derivs., calcium salts:

Species	:	reconstructed human epidermis (RhE)
Method	:	OECD Test Guideline 439
Result	:	Skin irritation
Remarks	:	Based on data from similar materials

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Remarks	:	Not classified as irritant

Components:

bifenthrin (ISO):

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

Distillates (petroleum), hydrotreated middle; Gasoil — unspecified:

Species	:	Rabbit
Result	:	No eye irritation
Remarks	:	Based on data from similar materials

Alcohols, C12-14. ethoxylated:

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

Benzenesulfonic acid, 4-C10-14-alkyl derivs., calcium salts:

Species	:	Bovine cornea

Result	:	Irreversible effects on the eye
Method	:	OECD Test Guideline 437
Remarks	:	Based on data from similar materials

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Species	:	Guinea pig
Result	:	May cause sensitisation by skin contact.
Remarks	:	Causes sensitisation.

Components:

bifenthrin (ISO):

Test Type	:	Maximisation Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	May cause sensitisation by skin contact.
GLP	:	yes

Distillates (petroleum), hydrotreated middle; Gasoil — unspecified:

Test Type	:	Buehler Test
Exposure routes	:	Skin contact
Species	:	Guinea pig
Result	:	Does not cause skin sensitisation.
Remarks	:	Based on data from similar materials

Alcohols, C12-14. ethoxylated:

Exposure routes	:	Skin contact
Species	:	Guinea pig
Method	:	Directive 67/548/EEC, Annex V, B.6.
Result	:	Does not cause skin sensitisation.
Exposure routes	:	Skin contact
Species	:	Humans
Result	:	Does not cause skin sensitisation.

Benzenesulfonic acid, 4-C10-14-alkyl derivs., calcium salts:

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

Chronic toxicity

Germ cell mutagenicity

Not classified based on available information.

Components:

bifenthrin (ISO):

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

Distillates (petroleum), hydrotreated middle; Gasoil — unspecified:

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

Genotoxicity in vivo : Test Type: Bone marrow chromosome aberration
Species: Rat (male and female)
Application Route: Intraperitoneal injection
Result: negative

Alcohols, C12-14. ethoxylated:

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

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo : Application Route: Intraperitoneal injection
Method: OECD Test Guideline 474

Result: negative

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

Benzenesulfonic acid, 4-C10-14-alkyl derivs., calcium salts:

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

Genotoxicity in vivo : Test Type: Bone marrow chromosome aberration
Species: Mouse
Application Route: Oral
Method: OECD Test Guideline 475
Result: negative
Remarks: Based on data from similar materials

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

Carcinogenicity

Not classified based on available information.

Components:

bifenthrin (ISO):

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

Alcohols, C12-14. ethoxylated:

Species	:	Rat, male and female
Exposure time	:	24 month(s)
Result	:	negative

Reproductive toxicity

Not classified based on available information.

Components:

bifenthrin (ISO):

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 foetal development : Test Type: Embryo-foetal 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-foetal 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-foetal 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.

Distillates (petroleum), hydrotreated middle; Gasoil — unspecified:

Effects on fertility : Test Type: Two-generation study
Species: Rat
Application Route: Oral
General Toxicity F1: NOAEL: 1,000 mg/kg body weight
Result: negative

Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat
Application Route: Dermal
General Toxicity Maternal: LOAEL: 50 mg/kg body weight
Developmental Toxicity: NOAEL: 50 mg/kg body weight
Remarks: Developmental effects are a consequence of maternal toxicity.
Based on data from similar materials

Alcohols, C12-14. ethoxylated:

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

Benzenesulfonic acid, 4-C10-14-alkyl derivs., calcium salts:

Effects on fertility : Test Type: Two-generation study
General Toxicity - Parent: NOAEL: > 350 mg/kg body weight
General Toxicity F1: NOAEL: > 350 mg/kg body weight

Method: OECD Test Guideline 416
Result: negative
Remarks: Based on data from similar materials

Effects on foetal development : Test Type: reproductive and developmental toxicity study
Species: Rat
Developmental Toxicity: NOAEL: > 350 mg/kg body weight
Result: negative
Remarks: Based on data from similar materials

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

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 (ISO):

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

STOT - repeated exposure

Causes damage to organs (Nervous system) through prolonged or repeated exposure.

Components:

bifenthrin (ISO):

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

Alcohols, C12-14. ethoxylated:

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

Benzenesulfonic acid, 4-C10-14-alkyl derivs., calcium salts:

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

Repeated dose toxicity

Components:

bifenthrin (ISO):

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

Distillates (petroleum), hydrotreated middle; Gasoil — unspecified:

Species	:	Rat
NOAEL	:	>= 1.71 mg/l
Application Route	:	inhalation (dust/mist/fume)
Exposure time	:	13 weeks
Remarks	:	Based on data from similar materials

Alcohols, C12-14. ethoxylated:

Species	:	Rat, male and female
NOAEL	:	110 mg/kg
Application Route	:	Oral
Exposure time	:	2160 h

Benzenesulfonic acid, 4-C10-14-alkyl derivs., calcium salts:

Species	:	Rat, male and female
NOAEL	:	85 mg/kg
LOAEL	:	145 mg/kg
Application Route	:	Oral
Exposure time	:	9 months
Target Organs	:	Kidney, Liver
Remarks	:	Based on data from similar materials

Aspiration toxicity

May be fatal if swallowed and enters airways.

Components:

bifenthrin (ISO):

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

Distillates (petroleum), hydrotreated middle; Gasoil — unspecified:

May be fatal if swallowed and enters airways.

Further information

Product:

Remarks	:	Solvents may degrease the skin.

Section 12: Ecological information

Ecotoxicity

Components:

bifenthrin (ISO):

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 (water flea)): 0.00011 mg/l Exposure time: 48 h LC50 (Daphnia (water flea)): 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

Distillates (petroleum), hydrotreated middle; Gasoil — unspecified:

Toxicity to fish	:	LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l Exposure time: 24 h Test Type: semi-static test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 24 h Test Type: static test Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	EL50 (Pseudokirchneriella subcapitata (green algae)): 10 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to microorganisms	:	EL50 (Tetrahymena pyriformis): > 1,000 mg/l Exposure time: 40 h Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.

Alcohols, C12-14. ethoxylated:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 1.1 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.7 mg/l Exposure time: 48 h Test Type: static test Method: Directive 67/548/EEC, Annex V, C.2.
Toxicity to algae/aquatic plants	:	ErC50 (Desmodesmus subspicatus (green algae)): 0.87 mg/l Exposure time: 72 h Test Type: static test

M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	EC10 (Pimephales promelas (fathead minnow)): 0.96 mg/l Exposure time: 30 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	EC10 (Daphnia magna (Water flea)): 0.53 mg/l Exposure time: 21 d
M-Factor (Chronic aquatic toxicity)	:	1
Toxicity to microorganisms	:	EC50 (Pseudomonas putida): 1,000 g/l Exposure time: 3 h
Toxicity to soil dwelling organisms	:	NOEC (Eisenia fetida (earthworms)): 220 mg/kg Method: OECD Test Guideline 222
Plant toxicity	:	NOEC: >= 100 mg/l Exposure time: 456 h

Benzenesulfonic acid, 4-C10-14-alkyl derivs., calcium salts:

Toxicity to fish	:	LC50 : 1.7 - 7.7 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): 5.7 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: water accommodated fractions (WAF) Based on data from similar materials
Toxicity to algae/aquatic plants	:	NOELR (Pseudokirchneriella subcapitata (green algae)): 10 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: water accommodated fractions (WAF) Based on data from similar materials EL50 (Pseudokirchneriella subcapitata (algae)): > 100 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: water accommodated fractions (WAF) Based on data from similar materials
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0.23 mg/l Exposure time: 72 d Test Type: flow-through test
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 1.18 mg/l Exposure time: 21 d Test Type: flow-through test

Toxicity to microorganisms : EC50 (activated sludge): 162 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

Persistence and degradability

Components:

bifenthrin (ISO):

Biodegradability : Result: Not readily biodegradable.

Distillates (petroleum), hydrotreated middle; Gasoil — unspecified:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 60 %
Exposure time: 28 d

Alcohols, C12-14. ethoxylated:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 78 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Benzenesulfonic acid, 4-C10-14-alkyl derivs., calcium salts:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

Bioaccumulative potential

Components:

bifenthrin (ISO):

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

Distillates (petroleum), hydrotreated middle; Gasoil — unspecified:

Partition coefficient: n-octanol/water : log Pow: > 4

Alcohols, C12-14. ethoxylated:

Bioaccumulation : Bioconcentration factor (BCF): < 800
Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 5.12 - 5.32 (25 °C)

Benzenesulfonic acid, 4-C10-14-alkyl derivs., calcium salts:

Partition coefficient: n-octanol/water : log Pow: 4.3 - 5.8 (25 °C)
pH: 7
Method: OECD Test Guideline 117

Mobility in soil

Components:

bifenthrin (ISO):

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

Alcohols, C12-14. ethoxylated:

Distribution among environmental compartments : Koc: > 4656 ml/g, log Koc: > 3.7
Remarks: Low mobility 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.

Section 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.
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.
(Bifenthrin)
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)
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)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes
Remarks	:	Environmentally hazardous substances/Marine Pollutants in single or combination packaging containing a net quantity per single or inner packaging of 5 kg or less for solids, or having a net quantity per single or inner packaging of 5 L or less for liquids may be transported as non-dangerous goods as provided in special provision A197 of the IATA and section 2.10.2.7 of IMDG code.

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

Not applicable for product as supplied.

National Regulations

NZS 5433

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Bifenthrin)
Class	:	9
Packing group	:	III
Labels	:	9
Hazchem Code	:	3Z
Marine pollutant	:	yes

Special precautions for user

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

Section 15: Regulatory information

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

HSNO Approval Number

HSR000277
ACVM-Exempt from registration

The components 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. 2-METHYLBIPHENYL-3-YLMETHYL (Z)-(1RS,3RS)-3-(2-CHLORO-3,3,3-TRIFLUOROPROP-1-ENYL)-2,2-DIMETHYLCYCLOPROPANECARBOXYLATE Fatty acid di-ester
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	:	On the inventory, or in compliance with the inventory

Section 16: Other information

Revision Date	:	08.04.2024
Date format	:	dd.mm.yyyy

Full text of other abbreviations

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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