

SAFETY DATA SHEET



BIFLEX® TC TERMITICIDE

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	19.12.2023	50000482	Date of first issue: 19.12.2023

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

1.1 Product identifier

Product name BIFLEX® TC TERMITICIDE

Other means of identification

Product code 50000482

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

Use of the Sub- : Can be used as insecticide only.
stance/Mixture

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

1.3 Details of the supplier of the safety data sheet

1.3 Details of the supplier of the safety data sheet

Supplier Address FMC Chemicals (Pty) Ltd
Company Registration No.: 1988/001451/07
West End Office Park, Building C
Cnr. West Ave & Hall Street
Centurion
0014
South Africa

E-mail address: SDS-Info@fmc.com .

1.4 Emergency telephone number

For leak, fire, spill or accident emergencies, call:
South Africa: 080-001-4676 (CHEMTREC)

Medical emergency:
For any emergency or poisoning contact: Griffon Poison Infor-
mation Centre (24 hrs) - +27-(0)-82-446-8946

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3 H226: Flammable liquid and vapour.

Acute toxicity, Category 3 H301: Toxic if swallowed.

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Acute toxicity, Category 4	H332: Harmful if inhaled.
Skin sensitisation, Category 1	H317: May cause an allergic skin reaction.
Carcinogenicity, Category 2	H351: Suspected of causing cancer.
Specific target organ toxicity - single exposure, Category 3, Respiratory system	H335: May cause respiratory irritation.
Specific target organ toxicity - single exposure, Category 3, Central nervous system	H336: May cause drowsiness or dizziness.
Specific target organ toxicity - repeated exposure, Category 1	H372: Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard, Category 1	H304: May be fatal if swallowed and enters airways.
Short-term (acute) aquatic hazard, Category 1	H400: Very toxic to aquatic life.
Long-term (chronic) aquatic hazard, Category 1	H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Danger

Hazard statements :

- H226 Flammable liquid and vapour.
- H301 Toxic if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H317 May cause an allergic skin reaction.
- H332 Harmful if inhaled.
- H335 May cause respiratory irritation.
- H336 May cause drowsiness or dizziness.
- H351 Suspected of causing cancer.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

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.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/ protective clothing/ eye protec-

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tion/ face protection/ hearing protection.

Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.

P331 Do NOT induce vomiting.

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

P391 Collect spillage.

Hazardous components which must be listed on the label:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified

Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified

bifenthrin (ISO)

Additional Labelling

Restricted to professional users.

2.3 Other hazards

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

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified	64742-95-6 265-199-0 649-356-00-4	Flam. Liq. 3; H226 Muta. 1B; H340 Carc. 1B; H350 STOT SE 3; H336 (Central nervous system) STOT SE 3; H335 (Respiratory system) Asp. Tox. 1; H304 Aquatic Chronic 2; H411	>= 30 - < 50
Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified	64742-56-9 265-159-2 649-469-00-9	Carc. 1B; H350 Asp. Tox. 1; H304	>= 30 - < 50
bifenthrin (ISO)	82657-04-3 607-699-00-7	Acute Tox. 2; H300 Acute Tox. 3; H331 Acute Tox. 4; H312 Carc. 2; H351 STOT SE 1; H370	>= 20 - < 25

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		(Central nervous system) STOT RE 1; H372 (Nervous system) Aquatic Acute 1; H400 Aquatic Chronic 1; H410 <hr/> M-Factor (Acute aquatic toxicity): 10,000 M-Factor (Chronic aquatic toxicity): 100,000	
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For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of 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. |
| Protection of first-aiders | : Avoid inhalation, ingestion and contact with skin and eyes. |
| If inhaled | : Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice. |
| 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 | : 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 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. |

4.2 Most important symptoms and effects, both acute and delayed

- | | |
|-------|--|
| Risks | : Toxic if swallowed.
May be fatal if swallowed and enters airways. |
|-------|--|

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May cause an allergic skin reaction.
Harmful if inhaled.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Suspected of causing cancer.
Causes damage to organs through prolonged or repeated exposure.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Treat symptomatically.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

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

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

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.
May form explosive mixtures in air.

Hazardous combustion products : Carbon oxides
Hazardous combustion products
Thermal decomposition can lead to release of irritating gases and vapours.
Halogenated compounds

5.3 Advice for firefighters

Special protective equipment for firefighters : Firefighters should wear protective clothing and self-contained breathing apparatus.

Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.
Use a water spray to cool fully closed containers.

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
For safety reasons in case of fire, cans should be stored separately in closed containments.
Use a water spray to cool fully closed containers.

Standard procedure for chemical fires.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Ensure adequate ventilation.
Remove all sources of ignition.
Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
Evacuate personnel to safe areas.
Use personal protective equipment.
If it can be safely done, stop the leak.
Do not touch or walk through the spilled material.

6.2 Environmental precautions

Environmental precautions : Prevent product from entering drains.
Prevent further leakage or spillage if safe to do so.
If the product contaminates rivers and lakes or drains inform respective authorities.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Never return spills in original containers for re-use.
Pick up and transfer to properly labelled containers.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid formation of aerosol.
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.
Take precautionary measures against static discharges.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
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.

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Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from open flames, hot surfaces and sources of ignition.

Normal measures for preventive fire protection.

Hygiene measures : Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

General industrial hygiene practice. Do not inhale aerosol.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Prevent unauthorized access. No smoking. 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.

Advice on common storage : Do not store near acids.

Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified	Workers	Inhalation		2.7 mg/m ³
	Workers	Dermal		1 mg/kg
	Consumers	Oral		0.74 mg/kg

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

Substance name	Environmental Compartment	Value
Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified	Oral	9.33 mg/kg

8.2 Exposure controls

Personal protective equipment

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Eye/face protection	:	Eye wash bottle with pure water Tightly fitting safety goggles
Hand protection Material	:	Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber.
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concen- tration of the dangerous substance at the work place.
Respiratory protection	:	In the case of dust or aerosol formation use respirator with an approved filter.
Protective measures	:	Plan first aid action before beginning work with this product.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	liquid
Colour	:	brown
Odour	:	aromatic
Odour Threshold	:	No data available
pH	:	4.8
Melting point/range	:	No data available
Boiling point/boiling range	:	Decomposition: yes
Flash point	:	42 °C
Evaporation rate	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapour pressure	:	No data available
Relative vapour density	:	No data available
Relative density	:	0.952 - 0.955 (20 °C)
Density	:	No data available

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Solubility(ies)	
Water solubility	: dispersible
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: 5.5 mm ² /s (20 °C)
Explosive properties	: Not explosive
Oxidizing properties	: Non-oxidizing

9.2 Other information

Flammability (liquids)	: Sustains combustion
Molecular weight	: Not applicable
Self-ignition	: No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions	: No decomposition if stored and applied as directed.
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Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Conditions to avoid	: Heat, flames and sparks.
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Avoid extreme temperatures
Avoid formation of aerosol.

10.5 Incompatible materials

Materials to avoid	: Avoid strong acids, bases, and oxidizers
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10.6 Hazardous decomposition products

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Toxic if swallowed.
Harmful if inhaled.

Product:

Acute oral toxicity	:	LD50 (Rat): 275 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 1.9 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg

Components:**Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Acute oral toxicity	:	LD50 (Rat, female): 3,492 mg/kg Method: OECD Test Guideline 401 LD50 (Rat, male): 6,984 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 6.193 mg/l Exposure time: 4 h Test atmosphere: vapour Assessment: The substance or mixture has no acute inhalation toxicity Remarks: no mortality
Acute dermal toxicity	:	LD50 (Rabbit, male and female): > 3,160 mg/kg Assessment: The component/mixture is minimally toxic after single contact with skin.

Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — 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): > 5.53 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Based on data from similar materials
Acute dermal toxicity	:	LD50 (Rabbit, male and female): > 5,000 mg/kg Method: OECD Test Guideline 402

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Remarks: Based on data from similar materials

bifenthrin (ISO):

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

Not classified based on available information.

Product:

Result : slight irritation

Remarks : May cause skin irritation and/or dermatitis.

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Mild skin irritation

Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:

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

bifenthrin (ISO):

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

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Serious eye damage/eye irritation

Not classified based on available information.

Product:

Result : slight irritation

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

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Species : Rabbit
Result : No eye irritation

Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation
Remarks : Based on data from similar materials

bifenthrin (ISO):

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

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

Not classified based on available information.

Product:

Result : Probability or evidence of skin sensitisation in humans

Remarks : Causes sensitisation.

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Method : OECD Test Guideline 406
Result : Not a skin sensitizer.

Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:

Test Type : Buehler Test
Exposure routes : Skin contact

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Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.
Remarks	:	Based on data from similar materials

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

Germ cell mutagenicity

Not classified based on available information.

Product:

Germ cell mutagenicity- Assessment	:	Animal testing did not show any mutagenic effects.
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Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Genotoxicity in vitro	:	Test Type: in vitro DNA damage and/or repair study 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 Result: negative
Genotoxicity in vivo	:	Test Type: Bone marrow chromosome aberration Species: Rat (male and female) Application Route: Inhalation Result: negative

Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Metabolic activation: Metabolic activation Method: OECD Test Guideline 471 Result: positive Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse (male and female) Application Route: Intraperitoneal injection Method: OECD Test Guideline 474 Result: negative Remarks: Based on data from similar materials

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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

Carcinogenicity

Suspected of causing cancer.

Product:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:

Species	: Mouse, female
Application Route	: Dermal
Exposure time	: 78 weeks
Result	: negative
Remarks	: Based on data from similar materials

bifenthrin (ISO):

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

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

Reproductive toxicity

Not classified based on available information.

Product:

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

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Effects on fertility	: Test Type: Three-generation study Species: Rat Application Route: inhalation (vapour) Fertility: NOAEC Mating/Fertility: 7.5 mg/l Result: negative Remarks: Based on data from similar materials
Effects on foetal development	: Species: Mouse Application Route: inhalation (vapour) General Toxicity Maternal: LOAEC: 500 part per million Symptoms: Maternal effects

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

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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.

STOT - single exposure

May cause respiratory irritation.
May cause drowsiness or dizziness.

Product:

Assessment : May cause respiratory irritation., May cause drowsiness or dizziness.

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Assessment : May cause respiratory irritation., May cause drowsiness or dizziness.

bifenthrin (ISO):

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

STOT - repeated exposure

Causes damage to organs through prolonged or repeated exposure.

Product:

Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

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

bifenthrin (ISO):

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:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Species : Rat, male and female
NOAEC : 0.8 - 0.9 mg/l

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Application Route : Inhalation
Test atmosphere : vapour
Remarks : Based on data from similar materials

Species : Rat, male
NOAEL : 600 mg/kg
Application Route : Oral
Remarks : Based on data from similar materials

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

Aspiration toxicity

May be fatal if swallowed and enters airways.

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

May be fatal if swallowed and enters airways.

Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:

May be fatal if swallowed and enters airways.

bifenthrin (ISO):

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

Neurological effects

Components:

bifenthrin (ISO):

Remarks : No neurotoxicity observed in animal studies

Further information

Product:

Remarks : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Concentrations substantially above the TLV value may cause narcotic effects.
Solvents may degrease the skin.

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SECTION 12: Ecological information

12.1 Toxicity

Product:**Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

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

Components:**Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:**

Toxicity to fish	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 4.5 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
		LL50 (Pimephales promelas (fathead minnow)): 8.2 mg/l Exposure time: 96 h Test Type: semi-static test Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): 4.5 mg/l Exposure time: 48 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 (microalgae)): 3.1 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	:	EC50 (Tetrahymena pyriformis): 15.41 mg/l Exposure time: 40 h Test Type: Growth inhibition Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.
Toxicity to fish (Chronic toxicity)	:	NOELR: 2.6 mg/l Exposure time: 14 d Species: Pimephales promelas (fathead minnow) Method: OECD Test Guideline 204 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOELR: 2.6 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

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Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:

Toxicity to fish : LL50 (Pimephales promelas (fathead minnow)): > 100 mg/l
 Exposure time: 96 h
 Test Type: static test
 Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): > 10,000 mg/l
 Exposure time: 24 h
 Test Type: static test
 Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : NOELR (Pseudokirchneriella subcapitata (green algae)): 100 mg/l
 Exposure time: 72 h
 Test Type: static test
 Method: OECD Test Guideline 201

Toxicity to microorganisms : NOEL : > 1.93 mg/l
 Exposure time: 0.16 h

Toxicity to fish (Chronic toxicity) : NOELR: 1,000 mg/l
 Exposure time: 14 d
 Species: Oncorhynchus mykiss (rainbow trout)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : 10 mg/l
 Exposure time: 21 d
 Species: Daphnia magna (Water flea)
 Test Type: semi-static test
 Method: OECD Test Guideline 211

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

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		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)	:	10,000
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

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End point: Acute contact toxicity
Species: Apis mellifera (bees)
Method: OECD Test Guideline 214

12.2 Persistence and degradability

Components:

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified:

Biodegradability : Concentration: 49.2 mg/l
Result: Inherently biodegradable.
Biodegradation: 77.05 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

Distillates (petroleum), solvent-dewaxed light paraffinic; Baseoil — unspecified:

Biodegradability : Result: Inherently biodegradable.
Biodegradation: 31 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

bifenthrin (ISO):

Biodegradability : Result: Not readily biodegradable.

12.3 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

12.4 Mobility in soil

Components:

bifenthrin (ISO):

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

Stability in soil :

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered

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to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Product:

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

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : The product should not be allowed to enter drains, water courses or the soil.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.
Dispose of as unused product.
Do not re-use empty containers.
Do not burn, or use a cutting torch on, the empty drum.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

14.1 UN number

UNRTDG	: UN 3351
IMDG	: UN 3351
IATA	: UN 3351

14.2 UN proper shipping name

UNRTDG	: PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE (Bifenthrin, Aromatic hydrocarbons, C10)
IMDG	: PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE (Bifenthrin, Aromatic hydrocarbons, C10)
IATA	: Pyrethroid pesticide, liquid, toxic, flammable

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(Bifenthrin, Aromatic hydrocarbons, C10)

14.3 Transport hazard class(es)

	Class	Subsidiary risks
UNRTDG	: 6.1	3
IMDG	: 6.1	3
IATA	: 6.1	3

14.4 Packing group

UNRTDG	
Packing group	: III
Labels	: 6.1 (3)
IMDG	
Packing group	: III
Labels	: 6.1 (3)
EmS Code	: F-E, S-D
IATA (Cargo)	
Packing instruction (cargo aircraft)	: 663
Packing instruction (LQ)	: Y642
Packing group	: III
Labels	: Toxic, Flammable Liquids
IATA (Passenger)	
Packing instruction (passenger aircraft)	: 655
Packing instruction (LQ)	: Y642
Packing group	: III
Labels	: Toxic, Flammable Liquids

14.5 Environmental hazards

UNRTDG	
Environmentally hazardous	: yes
IMDG	
Marine pollutant	: yes
IATA (Passenger)	
Environmentally hazardous	: yes
IATA (Cargo)	
Environmentally hazardous	: yes

14.6 Special precautions for user

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

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable for product as supplied.

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SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture****The components 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. 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	: On the inventory, or in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
NZIoC	: Not in compliance with the inventory
TECI	: Not in compliance with the inventory

15.2 Chemical safety assessment**SECTION 16: Other information****Full text of H-Statements**

H226	: Flammable liquid and vapour.
H300	: Fatal if swallowed.
H304	: May be fatal if swallowed and enters airways.
H312	: Harmful in contact with skin.
H331	: Toxic if inhaled.
H335	: May cause respiratory irritation.
H336	: May cause drowsiness or dizziness.
H340	: May cause genetic defects.
H350	: May cause cancer.
H351	: Suspected of causing cancer.
H370	: Causes damage to organs.
H372	: Causes damage to organs through prolonged or repeated exposure.

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H400 : Very toxic to aquatic life.
H410 : Very toxic to aquatic life with long lasting effects.
H411 : Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard
Asp. Tox. : Aspiration hazard
Carc. : Carcinogenicity
Flam. Liq. : Flammable liquids
Muta. : Germ cell mutagenicity
STOT RE : Specific target organ toxicity - repeated exposure
STOT SE : Specific target organ toxicity - single exposure

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

Further information

Other information :

Classification of the mixture:

Flam. Liq. 3 H226
Acute Tox. 3 H301

Classification procedure:

Based on product data or assessment
Based on product data or assessment

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Acute Tox. 4	H332	Based on product data or assessment	
Skin Sens. 1	H317	Based on product data or assessment	
Carc. 2	H351	Based on product data or assessment	
STOT SE 3	H335	Based on product data or assessment	
STOT SE 3	H336	Based on product data or assessment	
STOT RE 1	H372	Based on product data or assessment	
Asp. Tox. 1	H304	Calculation method	
Aquatic Acute 1	H400	Based on product data or assessment	
Aquatic Chronic 1	H410	Based on product data or assessment	

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