

# MATERIAL SAFETY DATA SHEET



## BRIGADE® 100

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### 1. IDENTIFICATION

Product name : BRIGADE® 100

Other means of identification : Talstar® 100 EC Insecticide

#### Manufacturer or supplier's details

Company : FMC LATINOAMÉRICA S.A.

Address : AV. RODRIGO DE CHÁVEZ Y JUAN TANCA MARENGO  
CIUDAD COLÓN. TORRE EMPRESARIAL 2 PISO 3  
OFICINA 308. GUAYAQUIL - ECUADOR  
(593 04) 3901953

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

Emergency telephone : 1 703 / 741-5970 (CHEMTREC - International)

Medical Emergency Number : Desde Ecuador: 1800 593005 (Quito, La Sierra, Centro y Norte).  
Desde Bogotá: 288 60 12; Línea Nacional: 01 8000 916012  
Desde Venezuela: 0800 1005012  
Desde Perú: SAMU: 106;  
CISPROQUIM®: 080-050-847;  
FMC LATINOAMERICA S.A. SUCURSAL: 421-4811;

#### Recommended use of the chemical and restrictions on use

Recommended use : Insecticide

Restrictions on use : Use as recommended by the label.

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### 2. HAZARDS IDENTIFICATION

#### GHS Classification

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Acute toxicity (Dermal) : Category 4

Skin corrosion/irritation : Category 3

Serious eye damage/eye irritation : Category 1

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Skin sensitization	:	Category 1
Carcinogenicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 1
Specific target organ toxicity - single exposure	:	Category 3 (Respiratory system, Central nervous system)
Specific target organ toxicity - repeated exposure	:	Category 1
Aspiration hazard	:	Category 1
Short-term (acute) aquatic hazard	:	Category 1
Long-term (chronic) aquatic hazard	:	Category 1

### GHS label elements

Hazard pictograms	:	    
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Signal Word	:	DANGER
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Hazard Statements	:	H226 Flammable liquid and vapor. H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled. H304 May be fatal if swallowed and enters airways. H316 Causes mild skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H335 May cause respiratory irritation. H336 May cause drowsiness or dizziness. H351 Suspected of causing cancer. H370 Causes damage to organs. H372 Causes damage to organs through prolonged or repeated exposure. H410 Very toxic to aquatic life with long lasting effects.
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Precautionary Statements	:	<b>Prevention:</b> P203 Obtain, read and follow all safety instructions before use. P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P240 Ground and bond container and receiving equipment. P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
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P242 Use non-sparking tools.  
P243 Take action to prevent static discharges.  
P260 Do not breathe mist or vapors.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or with adequate ventilation.  
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 + P316 IF SWALLOWED: Get emergency medical help immediately.  
P303 + P361 + P353 + P317 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Get medical help.  
P304 + P340 + P317 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.  
P305 + P354 + P338 + P317 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical help.  
P308 + P316 IF exposed or concerned: Get emergency medical help immediately.  
P331 Do NOT induce vomiting.  
P333 + P317 If skin irritation or rash occurs: Get medical help.  
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 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.

### Disposal:

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

### Other hazards which do not result in classification

Hazard Statements required by Andean Technical Manual for the Registration and Control of Chemical Pesticides for Agricultural Use (Resolution no. 2075):  
Harmful if swallowed, in contact with skin or if inhaled.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

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Chemical name	CAS-No.	Concentration (% w/w)
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified	64742-95-6	>= 70 - < 90
Bifenthrin	82657-04-3	>= 10 - < 20
calcium bis(dodecylbenzenesulphonate), branched	70528-83-5	>= 1 - < 2,5

### 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.  
Consult a physician.  
Show this material safety data sheet to the doctor in attendance.  
Symptoms of poisoning may appear several hours later.  
Do not leave the victim unattended.
- If inhaled : Consult a physician after significant exposure.  
If unconscious, place in recovery position and seek medical advice.
- In case of skin contact : Wash off with soap and water.  
If symptoms persist, call a physician.  
Wash contaminated clothing before re-use.
- In case of eye contact : 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 : Never give anything by mouth to an unconscious person.  
Rinse mouth with water.  
Keep respiratory tract clear.  
Do NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
If symptoms persist, call a physician.  
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : Harmful if swallowed, in contact with skin or if inhaled.  
May be fatal if swallowed and enters airways.  
Causes mild skin irritation.  
May cause an allergic skin reaction.  
Causes serious eye damage.  
May cause respiratory irritation.  
May cause drowsiness or dizziness.  
Suspected of causing cancer.  
Causes damage to organs.  
Causes damage to organs through prolonged or repeated exposure.

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Swallowing or inhaling may result in sudden shortness of breath, coughing, nausea and or abdominal pain. Exposure to skin may result in mild symptoms include itching, hives or rash, and skin redness. More severe symptoms include sneezing, itchy watery eyes, and difficulty breathing. Contact with skin may cause tingling, itching, burning, or numbness at the site of contact. Inhalation may irritate the nose, throat, and lungs. Swallowing large quantities may result in throat irritation, nausea, abdominal pain, and vomiting. Exposure may result in neurotoxicity with symptoms including tremors, impaired gait, and excessive salivation. Tremors may disappear with continued 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.

### 5. FIRE-FIGHTING MEASURES

#### Flammable properties

Flash point : 40 °C  
Method: closed cup

Ignition temperature : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Suitable extinguishing media : Dry chemical, CO<sub>2</sub>, water spray or regular foam.

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

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Fire may produce irritating, corrosive and/or toxic gases.  
Carbon oxides  
Fluorinated compounds  
Chlorinated compounds  
Hydrogen chloride  
Hydrogen fluoride

Specific extinguishing methods : Remove undamaged containers from fire area if it is safe to do so.

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Use a water spray to cool fully closed containers.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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

### 6. ACCIDENTAL RELEASE MEASURES

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

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

Methods and materials for containment and cleaning up : Never return spills in original containers for re-use.  
Collect as much of the spill as possible with a suitable absorbent material.  
Pick up and transfer to properly labeled containers.  
Keep in suitable, closed containers for disposal.

### 7. HANDLING AND STORAGE

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 vapors).  
Keep away from open flames, hot surfaces and sources of ignition.

Advice on safe handling : Avoid formation of aerosol.  
Do not breathe vapors/dust.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
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.  
To avoid spills during handling keep bottle on a metal tray.

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

Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage : 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.

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
Solvent naphtha (petroleum), light arom.; Low boiling point naphtha -unspecified	64742-95-6	TWA	200 mg/m <sup>3</sup> (total hydrocarbon vapor)	ACGIH

#### Personal protective equipment

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

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  
Face-shield

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.

Hygiene measures : Avoid contact with skin, eyes and clothing.  
Provide adequate ventilation.

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Do not inhale aerosol.  
When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and at the end of workday.

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	suspension
Form	:	suspension
Color	:	light brown
Odor	:	aromatic
Odor Threshold	:	No data available
pH	:	No data available
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	40 °C
		Method: closed cup
Evaporation rate	:	No data available
Flammability (liquids)	:	Sustains combustion
Self-ignition	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Relative density	:	No data available
Density	:	0,913 g/cm3



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Bulk density	:	No data available
Solubility(ies)		
Water solubility	:	emulsifiable
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing
Molecular weight	:	Not applicable
Particle size	:	No data available

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### 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	:	Vapors may form explosive mixture with air. No decomposition if stored and applied as directed.
Conditions to avoid	:	Avoid extreme temperatures. Heat, flames and sparks.
Incompatible materials	:	Avoid strong acids, bases, and oxidizers.
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

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### 11. TOXICOLOGICAL INFORMATION

#### Acute toxicity

Harmful if swallowed, in contact with skin or if inhaled.

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### **Product:**

Acute oral toxicity	:	LD50(Rat): 520 mg/kg Assessment: The component/mixture is moderately toxic after single ingestion.  Assessment: The component/mixture is moderately toxic after single ingestion. Remarks: Resolution no. 2075
Acute inhalation toxicity	:	LC50(Rat): > 5,2 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The component/mixture is minimally toxic after short term inhalation.  Assessment: The component/mixture is moderately toxic after short term inhalation. Remarks: Resolution no. 2075
Acute dermal toxicity	:	LD50(Rabbit): > 2.000 mg/kg Assessment: The component/mixture is minimally toxic after single contact with skin.  Assessment: The component/mixture is moderately toxic after single contact with skin. Remarks: Resolution no. 2075

### **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: vapor 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.

#### **Bifenthrin:**

Acute oral toxicity	:	LD50 (Rat, male and female): 50,2 - 58,8 mg/kg Symptoms: Convulsions, Tremors
Acute inhalation toxicity	:	LC50 (Rat, female): 0,6 - 1,2 mg/l

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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

### **calcium bis(dodecylbenzenesulphonate), branched:**

Acute oral toxicity : Acute toxicity estimate: 3.333 mg/kg

Acute dermal toxicity : Acute toxicity estimate: 1.470 mg/kg

### **Skin corrosion/irritation**

Causes mild skin irritation.

#### **Product:**

Species : Rabbit  
Assessment : Causes mild skin irritation.  
Result : Mild skin irritant

#### **Components:**

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

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

### **Bifenthrin:**

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

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

### **calcium bis(dodecylbenzenesulphonate), branched:**

Result : Skin irritation

### **Serious eye damage/eye irritation**

Causes serious eye damage.

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### **Product:**

Species	:	Rabbit
Assessment	:	Risk of serious damage to eyes.
Result	:	Irreversible effects on the eye

### **Components:**

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

Species	:	Rabbit
Result	:	No eye irritation

#### **Bifenthrin:**

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

#### **calcium bis(dodecylbenzenesulphonate), branched:**

Result	:	Irreversible effects on the eye
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### **Respiratory or skin sensitization**

#### **Skin sensitization**

May cause an allergic skin reaction.

#### **Respiratory sensitization**

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

### **Product:**

Species	:	Guinea pig
Assessment	:	May cause sensitization by skin contact.
Result	:	Causes sensitization.

Remarks	:	Causes sensitization.
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### **Components:**

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

Test Type	:	Maximization Test
Routes of exposure	:	Skin contact
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.

#### **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.

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GLP : yes

### Germ cell mutagenicity

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

### 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

#### **Bifenthrin:**

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

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

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

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

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

### Carcinogenicity

Suspected of causing cancer.

### Components:

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

Carcinogenicity - Assess- : Limited evidence of carcinogenicity in animal studies

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### **Bifenthrin:**

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

Species	: Mouse, male
Application Route	: Oral
Exposure time	: 18 month(s)
NOAEL	: 7,6 mg/kg bw/day
Result	: positive
Symptoms	: malignant tumors

### **Reproductive toxicity**

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

### **Components:**

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

Effects on fertility	: Test Type: Three-generation study Species: Rat Application Route: inhalation (vapor) Fertility: NOAEC Mating/Fertility: 7,5 mg/l Result: negative Remarks: Based on data from similar materials
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Effects on fetal development	: Species: Mouse Application Route: inhalation (vapor) General Toxicity Maternal: LOAEC: 500 part per million Symptoms: Maternal effects.
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### **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
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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.
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Test Type: Embryo-fetal development Species: Rat
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Application Route: Oral  
General Toxicity Maternal: NOAEL: 1 mg/kg bw/day  
Teratogenicity: NOAEL: 2 mg/kg bw/day  
Result: No teratogenic effects.

Species: Rat  
Application Route: Oral  
General Toxicity Maternal: LOAEL: 7,2 mg/kg bw/day  
Developmental Toxicity: LOAEL: 7,2 mg/kg bw/day  
Embryo-fetal toxicity.: NOEL: 9,0 mg/kg bw/day  
Method: OECD Test Guideline 426  
Result: Animal testing did not show any effects on fertility.,  
Some evidence of adverse effects on development, based on  
animal experiments.

### STOT-single exposure

May cause respiratory irritation.  
May cause drowsiness or dizziness.  
Causes damage to organs.

#### **Product:**

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

#### **Components:**

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

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

### 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:**

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

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### 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
Application Route	: Inhalation
Test atmosphere	: vapor
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:**

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.

#### Product:

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.

#### **Bifenthrin:**

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

### 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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### 12. ECOLOGICAL INFORMATION

#### Ecotoxicity

##### 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

#### **Ecotoxicology Assessment**

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

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### Bifenthrin:

Toxicity to fish	:	LC50 (Salmo gairdneri): 0,00015 mg/l Exposure time: 96 h Test Type: flow-through test  LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,00035 mg/l Exposure time: 96 h Test Type: flow-through test  LC50 (Oncorhynchus mykiss (rainbow trout)): 0,000256 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 GLP: yes  LC50 (Pimephales promelas (fathead minnow)): 0,000234 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia): 0,00011 mg/l Exposure time: 48 h  LC50 (Daphnia): 0,0016 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (algae): 0,822 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1.000
Toxicity to fish (Chronic toxicity)	:	NOEC: 0,00012 mg/l Exposure time: 21 d Species: Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0,0013 µg/l Exposure time: 21 d Species: Daphnia magna (Water flea)  NOEC: 0,00095 µg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	100.000
Toxicity to soil dwelling organisms	:	LD50: > 16 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms)  Method: OECD Test Guideline 216

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Remarks: No significant adverse effect on Nitrogen mineralization.

Toxicity to terrestrial organisms : LD50: 1.800 mg/kg  
Species: *Colinus virginianus* (Bobwhite quail)

LD50: > 2.150 mg/kg  
Species: *Anas platyrhynchos* (Mallard duck)

LD50: 0,1 - 0,35 µg/bee  
Exposure time: 24 h  
End point: Acute oral toxicity  
Species: *Apis mellifera* (bees)  
Method: OECD Test Guideline 213

LD50: 0,1 - 0,3 µg/bee  
Exposure time: 24 h  
End point: Acute contact toxicity  
Species: *Apis mellifera* (bees)  
Method: OECD Test Guideline 214

### **calcium bis(dodecylbenzenesulphonate), branched:**

Toxicity to fish : LC50 (Fish): > 1 - 10 mg/l  
Exposure time: 96 h  
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): > 1 - 10 mg/l  
Exposure time: 48 h  
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 (algae): > 1 - 10 mg/l  
Exposure time: 72 h  
Remarks: Based on data from similar materials

### **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

#### **Bifenthrin:**

Biodegradability : Result: Not readily biodegradable.

Stability in water : Degradation half life (DT50): 2,2 d  
Hydrolysis: at 60 °C

Degradation half life (DT50): 15,6 d

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Hydrolysis: at 40 °C

### **calcium bis(dodecylbenzenesulphonate), branched:**

Biodegradability : Result: Readily biodegradable.

### **Bioaccumulative potential**

#### **Product:**

Bioaccumulation : Remarks: No data available

#### **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

### **calcium bis(dodecylbenzenesulphonate), branched:**

Bioaccumulation : Bioconcentration factor (BCF): 1  
Remarks: Bioaccumulation is unlikely.

### **Mobility in soil**

#### **Components:**

##### **Bifenthrin:**

Distribution among environmental compartments : Koc: 236610 ml/g, log Koc: 5,37  
Remarks: immobile

Stability in soil :

### **Other adverse effects**

#### **Product:**

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

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## 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 chemi-

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cal or used container.  
Send to a licensed waste management company.

Contaminated packaging : It is prohibited to reuse, bury, burn, or sell containers. Rinsable containers: Triple rinse containers of less than 20 liters and pressure rinse containers of 20 liters or more. Triple rinsing: Add water up to ¼ of the container's capacity, close and shake for 30 seconds. Pour the rinse water into the mixing tank, considering this volume of water within the recommended volume for mixing preparation. Perform this procedure three times. Pressure rinsing: Activate the pressure rinsing device for 30 seconds, considering the volume of water used as part of the recommended volume for mixing preparation. In both procedures, punctured the container on its base without damaging the label. In all cases, take the empty containers to collection points indicated by the local empty containers program.

### 14. TRANSPORT INFORMATION

#### International Regulations

##### UNRTDG

UN number : UN 1993  
Proper shipping name : FLAMMABLE LIQUID, N.O.S.  
(Solvent naphtha (petroleum), Bifenthrin)

Class : 3  
Packing group : III  
Labels : 3  
Environmentally hazardous : yes

##### IATA-DGR

UN/ID No. : UN 1993  
Proper shipping name : Flammable liquid, n.o.s.  
(Solvent naphtha (petroleum), Bifenthrin)

Class : 3  
Packing group : III  
Labels : Flammable Liquids  
Packing instruction (cargo aircraft) : 366  
Packing instruction (passenger aircraft) : 355

##### IMDG-Code

UN number : UN 1993  
Proper shipping name : FLAMMABLE LIQUID, N.O.S.  
(Solvent naphtha (petroleum), Bifenthrin)

Class : 3  
Packing group : III  
Labels : 3

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EmS Code : F-E, S-E  
Marine pollutant : yes

### Transport in bulk according to IMO instruments

Not applicable for product as supplied.

### Special precautions for user

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

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## 15. REGULATORY INFORMATION

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

Organic Law on Integral Prevention of Social and Economic Phenomenon of Drugs and of Regulation and Use Control of Listed Substances subject to Monitoring : 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.  Bifenthrin
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

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## 16. OTHER INFORMATION

Revision Date : 10.09.2024

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Date format : dd.mm.yyyy

### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

ACGIH / TWA : 8-hour, time-weighted average

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

### Disclaimer

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