

# SAFETY DATA SHEET



**BULL®**

Version	Revision Date:	SDS Number:	Date of last issue: -
5.0	22.07.2025	50001284	Date of first issue: 12.07.2022

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## SECTION 1. IDENTIFICATION OF THE SUBSTANCE OR MIXTURE AND OF THE COMPANY OR UNDERTAKING

Chemical product identification : BULL®

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

Recommended use : Insecticide

Restrictions on use : Use as recommended by the label.

### Details of the supplier of the safety data sheet

Company name of supplier : FMC QUIMICA CHILE LTDA

Supplier's address : AVDA VITACURA 2670,  
PISO 15, LAS CONDES,  
VITACURA, SANTIAGO, CHILE  
+56 2 28204200

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

Emergency and toxicological information number in Chile : Chile: Spills: CITUC: +56 2 2247 3600 (24 hours) Fire: 132 (24 hours)  
+56-22-5814934 (CHEMTREC - Chile)  
1 703 / 741-5970 (CHEMTREC - International)

Medical Emergency Number : Chile: CITUC: +56 2 2635 3800 (24 hours)

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## SECTION 2. HAZARDS IDENTIFICATION

### Classification of the substance or mixture

Acute toxicity (Inhalation) : Category 4

Skin sensitization : Sub-category 1B

Specific target organ toxicity - repeated exposure : Category 2

Short-term (acute) aquatic hazard : Category 1

Long-term (chronic) aquatic hazard : Category 1


### Label elements

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Hazard pictograms : 

Signal Word : WARNING

Hazard Statements : H317 May cause an allergic skin reaction.  
H332 Harmful if inhaled.  
H373 May cause damage to organs through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**  
P260 Do not breathe mist or vapors.  
P271 Use only outdoors or in a well-ventilated area.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P273 Avoid release to the environment.  
P280 Wear protective gloves.  
**Response:**  
P302 + P352 IF ON SKIN: Wash with plenty of water.  
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P314 Get medical advice/ attention if you feel unwell.  
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P391 Collect spillage.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**  
None known.

## SECTION 3. COMPOSITION AND INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Systematic chemical name	Common Name	CAS-No.	Concentration or range (% w/w)	Classification
GAMMA-CYHALOTHRIN	Gamma-cyhalothrin	76703-62-3	>= 5 - < 10	Acute toxicity (Oral), Category 3 Acute toxicity (Inhalation), Category 1

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				Acute toxicity (Dermal), Category 4 Skin corrosion/irritation, Category 2 Serious eye damage/eye irritation, Category 2 Skin sensitization, Category 1 Specific target organ toxicity - repeated exposure (Nervous system), Category 1 Short-term (acute) aquatic hazard, Category 1 Long-term (chronic) aquatic hazard, Category 1
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	Aromatic hydrocarbons	64742-94-5	$\geq 1 - < 5$	Aspiration hazard, Category 1
1,2-benzisothiazol-3(2H)-one	1,2-Benzisothiazol-3(2H)-one	2634-33-5	$\geq 0,025 - < 0,05$	Acute toxicity (Oral), Category 4 Skin corrosion/irritation, Category 2 Serious eye damage/eye irritation, Category 1 Skin sensitization, Category 1 Short-term (acute) aquatic hazard, Category 1 Long-term (chronic) aquatic hazard, Category 2

## SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.  
Show this material safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- Inhalation : If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.

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|---|---|
| Skin contact  | : Wash off with soap and water.<br>If symptoms persist, call a physician.<br>Wash contaminated clothing before re-use.  |
| Eye contact   | : Flush eyes with water as a precaution.<br>Remove contact lenses.<br>Protect unharmed eye.<br>Keep eye wide open while rinsing.<br>If eye irritation persists, consult a specialist.   |
| Ingestion   | : Induce vomiting immediately and call a physician.<br>Keep respiratory tract clear.<br>Do not give milk or alcoholic beverages.<br>Never give anything by mouth to an unconscious person.<br>If symptoms persist, call a physician.<br>Take victim immediately to hospital.  |
| Most important symptoms and effects, both acute and delayed | : 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.<br>Gamma-cyhalothrin can cause feelings of burning, tingling or numbness in exposed areas (paraesthesia).<br>May cause an allergic skin reaction.<br>Harmful if inhaled.<br>May cause damage to organs through prolonged or repeated exposure. |
| Protection of first-aiders                                  | : Avoid inhalation, ingestion and contact with skin and eyes.   |
| Notes to physician  | : Treat symptomatically.  |

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## SECTION 5. FIRE-FIGHTING MEASURES

- |                                |  |
|--------------------------------|--|
| Suitable extinguishing media   | : Dry chemical, CO <sub>2</sub> , water spray or regular foam.<br>Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.  |
| Unsuitable extinguishing media | : Do not spread spilled material with high-pressure water streams.   |
| Hazardous combustion products  | : Fire may produce irritating, corrosive and/or toxic gases.<br>Nitrogen oxides (NO <sub>x</sub> )<br>Fluorinated compounds<br>Halogenated compounds<br>Carbon oxides<br>Hydrogen cyanide<br>Chlorinated compounds |
| Related specific hazards       | : Do not allow run-off from fire fighting to enter drains or water courses.  |
| 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.

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

## SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Ensure adequate ventilation. If it can be safely done, stop the leak. Do not touch or walk through the spilled material. Never return spills in original containers for re-use. Mark the contaminated area with signs and prevent access to unauthorized personnel. Only qualified personnel equipped with suitable protective equipment may intervene.
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 material 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.

## SECTION 7. HANDLING AND STORAGE

### Handling

Precautions for safe handling	: 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. 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.
Operational and technical measures	: Normal measures for preventive fire protection.

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Contact prevention : Avoid contact with skin, eyes and clothing.  
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.

## Conditions for safe storage, including any incompatibilities

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Electrical installations / working materials must comply with the technological safety standards.

Technical measures : The product is stable under normal conditions of warehouse storage.  
Protect from frost and extreme heat.  
The product should not be allowed to dry out.

Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. A warning sign reading "POISON" is recommended. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

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

## Specific end use(s)

Specific use(s) : Registered pesticide to be used in accordance with a label approved by country-specific regulatory authorities.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible maximum concentration	Basis
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	TWA	200 mg/m <sup>3</sup> (total hydrocarbon vapor)	ACGIH

### Personal protective equipment

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

Skin protection : Impervious clothing

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Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hand protection	
Material	: Protective gloves
Remarks	: The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Respiratory protection	: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
Protective measures	: Plan first aid action before beginning work with this product. Always have on hand a first-aid kit, together with proper instructions. Wear suitable protective equipment. When using do not eat, drink or smoke. In the context of professional plant protection use as recommended, the end user must refer to the label and the instructions for use.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

Physical state	: liquid
Color	: off-white
Odor	: aromatic
Odor Threshold	: not determined
pH	: 5,64 (23,6 °C) Concentration: 10 g/l 1 %
Melting point/freezing point	: < 0 °C
Boiling point/boiling range	: Decomposition
Flash point	: > 93 °C
Evaporation rate	: not determined
Upper explosion limit / Upper flammability limit	: not determined

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Lower explosion limit / Lower flammability limit	:	not determined
Vapor pressure	:	Not available for this mixture.
Vapor density	:	not determined
Relative density	:	not determined
Density	:	1,034 g/cm <sup>3</sup> (20 °C)
Solubility(ies) Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	Not available for this mixture.
Autoignition temperature	:	No data available
Decomposition temperature	:	Decomposes on heating.
Viscosity Viscosity, dynamic	:	Non-newtonian fluid: viscosity is dependent on shear rate.
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing
<b>Other information</b>		
Surface tension	:	41 mN/m, 25 °C 43 mN/m, 40 °C
Metal corrosion rate	:	Not corrosive to metals.
Molecular weight	:	Not applicable
Particle size	:	Not applicable
Self-ignition	:	> 400 °C

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	Gamma-cyhalothrin decomposes on heating. Direct local



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heating such as electric heating or by steam must be avoided.

Possibility of hazardous reactions : No decomposition if stored and applied as directed.

Conditions to avoid : Heat, flames and sparks.  
Protect from frost, heat and sunlight.  
Heating of the product will produce harmful and irritant vapours.  
  
Avoid extreme temperatures.  
Avoid formation of aerosol.

Incompatible materials : Avoid strong acids, bases, and oxidizers.

Hazardous decomposition products : Stable under recommended storage conditions.

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## SECTION 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

Harmful if inhaled.

### Product:

Acute oral toxicity : LD50 Oral(Rat, female): 2.646 mg/kg  
LD50 Oral(Rat, male): 2.250 mg/kg

Acute inhalation toxicity : LC50(Rat, male and female): > 2,54 - 2,72 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Symptoms: incoordination  
GLP: yes

Acute dermal toxicity : LD50 Dermal(Rat, male and female): > 5.000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

### Components:

#### **GAMMA-CYHALOTHRIN:**

Acute oral toxicity : LD50 (Rat, female): ca. 55 mg/kg  
Method: OECD Test Guideline 401  
Symptoms: Tremors  
GLP: yes

LD50 (Rat, male): > 50 mg/kg  
Method: OECD Test Guideline 401  
Symptoms: Tremors  
GLP: yes

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Acute inhalation toxicity : LC50 (Rat, female): 0,0282 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Symptoms: Tremors  
GLP: yes

LC50 (Rat, male): 0,0402 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
Symptoms: Tremors  
GLP: yes

Acute dermal toxicity : LD50 (Rat, female): 1.650 mg/kg  
Method: OECD Test Guideline 402  
Symptoms: Tremors  
GLP: yes

LD50 (Rat, male): > 1.500 mg/kg  
Method: OECD Test Guideline 402  
Symptoms: Tremors  
GLP: yes

## **Solvent naphtha (petroleum), heavy arom.; Kerosine — 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): > 4,688 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

## **1,2-benzisothiazol-3(2H)-one:**

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg  
Method: OECD Test Guideline 402  
Assessment: The substance or mixture has no acute dermal toxicity

## **Skin corrosion/irritation**

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

### **Product:**

Species : Rabbit  
Assessment : Not classified as irritant

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Method : OECD Test Guideline 404  
Result : slight irritation

## **Components:**

### **GAMMA-CYHALOTHRIN:**

Species : Rabbit  
Assessment : Irritating to skin.

Method : OECD Test Guideline 404  
Result : irritating  
GLP : yes

### **Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Species : Rabbit  
Assessment : Repeated exposure may cause skin dryness or cracking.

Result : No skin irritation  
Remarks : Minimal effects that do not meet the threshold for classification.  
Based on data from similar materials

### **1,2-benzisothiazol-3(2H)-one:**

Species : Rabbit  
Exposure time : 72 h  
Method : OECD Test Guideline 404  
Result : No skin irritation

### **Serious eye damage or eye irritation**

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

## **Product:**

Species : Rabbit  
Assessment : Not classified as irritant  
Method : OECD Test Guideline 405  
Result : slight irritation

## **Components:**

### **GAMMA-CYHALOTHRIN:**

Species : Rabbit  
Assessment : Irritating to eyes.  
Method : OECD Test Guideline 405  
Result : Eye irritation

### **Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Species : Rabbit  
Assessment : No eye irritation  
Remarks : Minimal effects that do not meet the threshold for classification.

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Based on data from similar materials

## **1,2-benzisothiazol-3(2H)-one:**

Species	:	Bovine cornea
Method	:	OECD Test Guideline 437
Result	:	No eye irritation
Species	:	Rabbit
Method	:	EPA OPP 81-4
Result	:	Irreversible effects on the eye

## **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:**

Routes of exposure	:	Dermal
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	The product is a skin sensitizer, sub-category 1B.
Remarks	:	Based on data from a similar product.
Remarks	:	Causes sensitization.

### **Components:**

#### **GAMMA-CYHALOTHRIN:**

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

#### **Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Test Type	:	Maximization Test
Species	:	Guinea pig
Result	:	Not a skin sensitizer.
Remarks	:	Based on data from similar materials

#### **1,2-benzisothiazol-3(2H)-one:**

Test Type	:	Maximization Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	May cause sensitization by skin contact.
Species	:	Guinea pig
Method	:	FIFRA 81.06
Result	:	May cause sensitization by skin contact.

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## **Germ cell mutagenicity**

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

### **Product:**

Genotoxicity in vitro	:	Test Type: Ames test Metabolic activation: with and without metabolic activation Result: negative
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse Result: negative

### **Components:**

#### **GAMMA-CYHALOTHRIN:**

Genotoxicity in vitro	:	Test Type: Ames test Metabolic activation: with and without metabolic activation Result: negative  Method: OECD Test Guideline 476 Result: negative
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse Result: negative GLP: yes

#### **Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Genotoxicity in vitro	:	Test Type: reverse mutation assay Method: OECD Test Guideline 471 Result: negative Remarks: Based on data from similar materials
Genotoxicity in vivo	:	Test Type: Bone marrow chromosome aberration. Species: Rat Application Route: inhalation (vapor) Result: negative

#### **1,2-benzisothiazol-3(2H)-one:**

Genotoxicity in vitro	:	Test Type: gene mutation test Test system: mouse lymphoma cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative  Test Type: Ames test Method: OECD Test Guideline 471 Result: negative  Test Type: Chromosome aberration test in vitro
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Method: OECD Test Guideline 473  
Result: positive

Genotoxicity in vivo : Test Type: unscheduled DNA synthesis assay  
Species: Rat (male)  
Cell type: Liver cells  
Application Route: Ingestion  
Exposure time: 4 h  
Method: OECD Test Guideline 486  
Result: negative

Test Type: Micronucleus test  
Species: Mouse  
Application Route: Oral  
Method: OECD Test Guideline 474  
Result: negative

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

## **Carcinogenicity**

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

### **Components:**

#### **Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Species	: Rat, male and female
Application Route	: inhalation (vapor)
Exposure time	: 12 month(s)
NOAEC	: 1,8 mg/l
Result	: negative
Remarks	: Based on data from similar materials

Carcinogenicity - Assessment : Not classifiable as a human carcinogen.

## **Reproductive toxicity**

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

### **Components:**

#### **GAMMA-CYHALOTHRIN:**

Effects on fetal development : Species: Rat  
Dose: 1, 2.5, 5, 10 or 15 mg/kg bw/day  
Embryo-fetal toxicity.: NOEL: 2,5 mg/kg bw/day

#### **1,2-benzisothiazol-3(2H)-one:**

Effects on fertility : Species: Rat, male  
Application Route: Ingestion  
General Toxicity Parent: NOAEL: 18,5 mg/kg body weight  
General Toxicity F1: NOAEL: 48 mg/kg body weight  
Fertility: NOAEL: 112 mg/kg bw/day

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Symptoms: No effects on reproduction parameters.  
Method: OPPTS 870.3800  
Result: negative

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

## **Specific particular organ toxicity - single exposure**

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

## **Specific particular organ toxicity - repeated exposure**

May cause damage to organs through prolonged or repeated exposure.

### **Product:**

Assessment : May cause damage to organs through prolonged or repeated exposure.

### **Components:**

#### **GAMMA-CYHALOTHRIN:**

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

#### **1,2-benzisothiazol-3(2H)-one:**

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

## **Repeated dose toxicity**

### **Components:**

#### **GAMMA-CYHALOTHRIN:**

Species : Rat, male and female  
NOAEL : 50 ppm  
Application Route : Oral - feed  
Exposure time : 13 weeks

Species : Rat, male and female  
NOAEL : 4,19 - 4,49 mg/kg  
LOAEL : 8,81 - 10,24 mg/kg  
Application Route : Oral - feed  
Exposure time : 13 weeks  
Method : OECD Test Guideline 407  
Target Organs : Nervous system  
Symptoms : decrease in appetite

#### **Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Species : Rat, male and female  
NOAEC : 0,9 - 1,8 mg/l  
Application Route : inhalation (vapor)

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Exposure time : 12 Months

**1,2-benzisothiazol-3(2H)-one:**

Species	: Rat, male and female
NOAEL	: 15 mg/kg
Application Route	: Ingestion
Exposure time	: 28 d
Method	: OECD Test Guideline 407
Symptoms	: Irritation

Species	: Rat, male and female
NOAEL	: 69 mg/kg
Application Route	: Ingestion
Exposure time	: 90 d
Symptoms	: Irritation, Reduced body weight

**Inhalation hazard**

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

**Components:**

**GAMMA-CYHALOTHRIN:**

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

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

May be fatal if swallowed and enters airways.

**Experience with human exposure**

**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Skin contact	: Symptoms: Repeated exposure may cause skin dryness or cracking.
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**Further information**

**Product:**

Remarks	: On contact, the active ingredient can cause feelings of burning, tingling or numbness in exposed areas (paraesthesia), which is harmless at low exposure, but can be quite painful, especially in the eye. The effect may result from splash, aerosol or transfer from contaminated gloves. The effect is transient, lasting up to 24 hours, but may in exceptional cases last longer. It may be considered as a warning that overexposure has occurred and that work practice should be reviewed.
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Remarks	: No data available
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**Components:**

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**



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Remarks : Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

## SECTION 12. ECOLOGICAL INFORMATION

### Toxicity

#### Product:

Toxicity to fish	: LC50 (Leuciscus idus (Golden orfe)): 0,021 - 0,038 mg/l Exposure time: 96 h  LC50 (Oncorhynchus mykiss (rainbow trout)): 0,00919 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	: LC50 (Daphnia magna Straus (Water flea)): 0,00245 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	: EbC50 (Selenastrum capricornutum (green algae)): 137 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to soil dwelling organisms	: Method: OECD Test Guideline 216 Remarks: No significant adverse effect on Nitrogen mineralization.  Method: OECD Test Guideline 217 Remarks: No significant adverse effect on Carbon mineralization.  LC50: > 1.000 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms) Method: OECD Test Guideline 207
Toxicity to terrestrial organisms	: LD50: 0,03 µg/bee End point: Acute contact toxicity Species: Apis mellifera (bees) Method: OECD Test Guideline 214  LD50: 1,259 µg/bee Exposure time: 48 h End point: Acute oral toxicity Species: Apis mellifera (bees) Method: OECD Test Guideline 213

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LD50: > 2.000 mg/kg  
Species: *Colinus virginianus* (Bobwhite quail)  
Method: EPA OPP 71-1

## Ecotoxicology Assessment

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

## Components:

### **GAMMA-CYHALOTHRIN:**

Toxicity to fish : LC50 (*Oncorhynchus mykiss* (rainbow trout)): 0,07 µg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 0,1 µg/l  
Exposure time: 48 h  
Test Type: Static renewal test  
Method: OECD Test Guideline 202

(*Hyalella azteca* (Amphipod)): 0,000086 µg/l  
Exposure time: 96 h  
Test Type: flow-through test  
Method: OPPTS 850.1010

Toxicity to algae/aquatic plants : EC50 (algae): > 2,85 mg/l  
Exposure time: 72 h

NOEC (*Lemna gibba* (duckweed)): 0,5 µg/l  
Exposure time: 7 d  
Method: OECD Test Guideline 221

M-Factor (Acute aquatic toxicity) : 10.000

Toxicity to fish (Chronic toxicity) : NOEC: 0,016 µg/l  
End point: mortality  
Exposure time: 7 d  
Species: *Pimephales promelas* (fathead minnow)  
Test Type: Early Life-Stage  
GLP: yes

LOEC: 0,04 µg/l  
End point: mortality  
Exposure time: 7 d  
Species: *Pimephales promelas* (fathead minnow)  
Test Type: Early Life-Stage  
GLP: yes

NOEC: 0,0379 µg/l  
End point: Hatching success  
Exposure time: 35 d  
Species: *Pimephales promelas* (fathead minnow)

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Test Type: flow-through test  
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 0,0019 µg/l  
End point: reproduction  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Test Type: flow-through test  
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : 10.000

Toxicity to soil dwelling organisms : LC50: > 1300 mg/kg dry weight (d.w.)  
Exposure time: 14 d  
Species: Eisenia fetida (earthworms)

Toxicity to terrestrial organisms : LD50: > 2.000 mg/kg  
Species: Colinus virginianus (Bobwhite quail)

LD50: 0,005 µg/bee  
Exposure time: 24 h  
End point: Acute contact toxicity  
Species: Apis mellifera (bees)

LD50: 4,2 µg/bee  
Exposure time: 24 h  
End point: Acute oral toxicity  
Species: Apis mellifera (bees)

## **Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 1,4 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EL50 ( Pseudokirchneriella subcapitata (green algae)): 1 - 3 mg/l  
Exposure time: 24 h  
Method: OECD Test Guideline 201

Toxicity to microorganisms : LL50 (Tetrahymena pyriformis): 677,9 mg/l  
Exposure time: 72 h  
Test Type: Growth inhibition

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EL50: 0,89 mg/l  
Exposure time: 21 d  
Species: Daphnia magna (Water flea)  
Method: OECD Test Guideline 211

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## **1,2-benzisothiazol-3(2H)-one:**

- Toxicity to fish : LC50 (Cyprinodon variegatus (sheepshead minnow)): 16,7 mg/l  
Exposure time: 96 h  
Test Type: static test  
  
LC50 (Oncorhynchus mykiss (rainbow trout)): 2,15 mg/l  
Exposure time: 96 h  
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 2,9 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : EC50 ( Pseudokirchneriella subcapitata (green algae)): 0,070 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
  
NOEC ( Pseudokirchneriella subcapitata (green algae)): 0,04 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201
- M-Factor (Acute aquatic toxicity) : 10
- Toxicity to microorganisms : EC50 (activated sludge): 24 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition  
Method: OECD Test Guideline 209  
  
EC50 (activated sludge): 12,8 mg/l  
Exposure time: 3 h  
Test Type: Respiration inhibition  
Method: OECD Test Guideline 209

## **Persistence and degradability**

### **Product:**

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

### **Components:**

#### **GAMMA-CYHALOTHRIN:**

- Biodegradability : Result: Not readily biodegradable.  
Biodegradation: 21 %  
Exposure time: 28 d

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**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Biodegradability : Result: Readily biodegradable.  
Biodegradation: 58,6 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F  
Remarks: Based on data from similar materials

**1,2-benzisothiazol-3(2H)-one:**

Biodegradability : Result: rapidly biodegradable  
Method: OECD Test Guideline 301C

**Bioaccumulative potential**

**Product:**

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

**Components:**

**GAMMA-CYHALOTHRIN:**

Bioaccumulation : Remarks: Can accumulate in aquatic organisms.

Partition coefficient: n-octanol/water : log Pow: 4,96 (19 °C)  
Method: OECD Test Guideline 107

log Pow: 5,65  
Method: OECD Test Guideline 117

**Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Bioaccumulation : Remarks: The product/substance has a potential to bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 3,72  
Method: QSAR

**1,2-benzisothiazol-3(2H)-one:**

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)  
Exposure time: 56 d  
Bioconcentration factor (BCF): 6,62  
Method: OECD Test Guideline 305  
Remarks: Substance is not persistent, bioaccumulative, and toxic (PBT).

Partition coefficient: n-octanol/water : log Pow: 0,7 (20 °C)  
pH: 7

log Pow: 0,99 (20 °C)  
pH: 5

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## Mobility in soil

### Product:

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

### Components:

#### **GAMMA-CYHALOTHRIN:**

Distribution among environmental compartments : Remarks: immobile

#### **Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:**

Distribution among environmental compartments : Remarks: Expected to partition to sediment and wastewater solids. Moderately volatile.

#### **1,2-benzisothiazol-3(2H)-one:**

Distribution among environmental compartments : Koc: 9,33 ml/g, log Koc: 0,97  
Method: OECD Test Guideline 121  
Remarks: Highly mobile in soils

## 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.

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

### Components:

#### **GAMMA-CYHALOTHRIN:**

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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## SECTION 13. DISPOSAL CONSIDERATIONS

### **Waste treatment methods**

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

Contaminated packaging, : It is prohibited to reuse, bury, burn, or sell containers. Rins-

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and contaminated material

ble containers: Triple rinse containers of less than 20 liters and pressure rinse containers of 20 liters or more. Triple rinsing: Add water up to  $\frac{1}{4}$  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.

## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### UNRTDG

UN number	: UN 3082
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Gamma-cyhalothrin)

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. (Gamma-cyhalothrin)

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. (Gamma-cyhalothrin)

Class	: 9
Packing group	: III
Labels	: 9
EmS Code	: F-A, S-F
Marine pollutant	: yes

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## Transport in bulk according to IMO instruments

Not applicable for product as supplied.

## Domestic regulation

### NCh382

UN number	: UN 3082
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Gamma-cyhalothrin)

Class	: 9
Packing group	: III
Labels	: 9
Environmentally hazardous	: 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

### National Regulations

Chile. Decree 190. Carcinogenic Substances, Hazardous Waste Management.	: Not applicable
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Decree 1358 - Establishment of rules governing the control measures of precursors and essential chemicals.	: sodium hydroxide methanol
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Resolution 408/16 Exempt, Approving List of Health Hazardous Substances	: Included in list of Article 3, item a)
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### Other regulations

Decree 43/2015, Approving Regulation on Storage of Hazardous Substances  
NCh 2245:2021 Safety data sheet for chemical products - Content and order of sections  
NCh 2190:2019 Land transport of dangerous goods - Hazard identification marks  
NCh 382:2021 Dangerous Goods – Classification  
Decree 57 of 2019, Regulation on Classification, Labeling, and Notification of Hazardous Chemicals and Mixtures  
D.S. 148/03 Sanitary Regulation on hazardous wastes handling  
D.S. 298/94 Regulation on transport of hazardous cargo on streets and roads  
D.S. 594/99 Regulation on sanitary and environmental basic conditions at work places  
Exempt Resolution 15 of 2023 approving the List of Hazardous Substances Subject to Import Process

## 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



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DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.

GAMMA-CYHALOTHRIN

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

KECI : Not in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : Not in compliance with the inventory

NZIoC : Not in compliance with the inventory

TECI : Not in compliance with the inventory

The receiver should verify the possible existence of legal regulations applicable to chemical.

## SECTION 16. OTHER INFORMATION

Revision Date : 22.07.2025

Date format : dd.mm.yyyy

### Full text of H-Statements

#### Abbreviations and acronyms

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Asp. Tox.	: Aspiration hazard
Serious eye damage/eye irritation	: Serious eye damage/eye irritation
Skin corrosion/irritation	: Skin corrosion/irritation
Skin Sens.	: Skin sensitization
STOT RE	: Specific target organ toxicity - repeated exposure
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

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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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