SAFETY DATA SHEET

HERO®, HALOX®, QUAKE®

Version	Revision Date:	SDS Number:	Date of last issue: -
4.0	06.05.2025	50000005	Date of first issue: 05.08.2021

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : HERO®, HALOX®, QUAKE®

Manufacturer or supplier's details

Company : FMC QUÍMICA DO BRASIL LTDA.

Address : AVENIDA DR. JOSÉ BONIFÁCIO COUTINHO NOGUEIRA 150 - 1º ANDAR - JARDIM MADALENA, CAMPINAS SP BRASIL
TELEFONE: (19) 2042.4500

Emergency telephone : Brazil: 0800 34 35 450 (24 hours)
+55-2139581449 (CHEMTREC)

Medical Emergency Number : 0800 7010 450

Recommended use of the chemical and restrictions on use

Recommended use : Insecticide

Restrictions on use : Use as recommended by the label.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification in accordance with ABNT NBR 14725 Standard

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 3

Acute toxicity (Dermal) : Category 5

Skin corrosion/irritation : Category 3

Carcinogenicity : Category 2

Specific target organ toxicity - single exposure : Category 1 (Central nervous system)

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Specific target organ toxicity - repeated exposure : Category 1 (Central nervous system)

Short-term (acute) aquatic hazard : Category 1

GHS label elements in accordance with ABNT NBR 14725 Standard

Hazard pictograms :

Signal Word : DANGER

Hazard Statements :
H226 Flammable liquid and vapor.
H302 Harmful if swallowed.
H313 May be harmful in contact with skin.
H316 Causes mild skin irritation.
H331 Toxic if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H370 Causes damage to organs (Central nervous system).
H372 Causes damage to organs (Central nervous system) through prolonged or repeated exposure.
H400 Very toxic to aquatic life.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
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.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P302 + P312 IF ON SKIN: Call a POISON CENTER/ doctor if you feel unwell.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.
P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.
P332 + P313 If skin irritation occurs: Get medical advice/ atten-

tion.
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

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
Zeta cypermethrin	52315-07-8	Acute Tox. (Oral), 3 Acute Tox. (Inhalation), 4 Acute Tox. (Dermal), 5 Skin Sens., 1 STOT SE, (Nervous system) , 2 STOT SE, (Respiratory system) , 3 STOT RE, (Nervous system) , 2 Aquatic Acute, 1 Aquatic Chronic, 1	>= 10 -< 20
Bifenthrin	82657-04-3	Acute Tox. (Oral), 3 Acute Tox. (Inhalation), 3 Acute Tox. (Dermal), 5 Skin Sens., 1 STOT RE, (Central nervous system) , 1 Aquatic Acute, 1 Aquatic Chronic, 1	>= 10 -< 20
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts (alternate CAS 26264-06-2)	68584-23-6	Acute Tox. (Dermal), 5 Skin corrosion/irritation, 2 Serious eye damage/eye irritation, 1 Aquatic Acute, 2	>= 5 -< 10

		Aquatic Chronic, 3	
2-ethylhexan-1-ol	104-76-7	Flam. Liq., 4 Acute Tox. (Oral), 5 Acute Tox. (Inhalation), 4 Skin corrosion/irritation, 2 Serious eye damage/eye irritation, 2A STOT SE, (Respiratory system) , 3 Aquatic Acute, 3	>= 1 -< 2,5
Fatty acids, tall-oil, ethoxylated	61791-00-2	Skin Sens., 1 Aquatic Acute, 3	>= 1 -< 2,5
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	Flam. Liq., 4 Carc., 2 STOT SE, (Central nervous system) , 3 Asp. Tox., 1 Aquatic Acute, 2 Aquatic Chronic, 2	>= 1 -< 2,5
naphthalene	91-20-3	Flam. Sol., 2 Acute Tox. (Oral), 4 Carc., 2 Aquatic Acute, 1 Aquatic Chronic, 1	>= 0,1 -< 0,25

SECTION 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 : Call a physician or poison control center immediately.
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 : 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	:	Clean mouth with water and drink afterwards plenty of water. Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.
Most important symptoms and effects, both acute and delayed	:	Harmful if swallowed. May be harmful in contact with skin. Causes mild skin irritation. Toxic if inhaled. May cause respiratory irritation. Suspected of causing cancer. Causes damage to organs. Causes 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.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical, CO2, 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. Halogenated compounds Carbon oxides Nitrogen oxides (NOx) Fluorinated compounds Chlorinated compounds Hydrogen chloride Hydrogen fluoride
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. 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 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. 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. Non-sparking tools should be used. 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

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

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2-ethylhexan-1-ol	104-76-7	TWA	5 ppm	ACGIH
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
naphthalene	91-20-3	TWA	10 ppm	ACGIH

Personal protective equipment

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

Hand protection
Material : Protective gloves

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

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

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

Protective measures : Plan first aid action before beginning work with this product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid

Color : brown, translucent

Odor : hydrocarbon-like

Odor Threshold	:	No data available
pH	:	5,1 (20,1 - 20,5 °C) Concentration: 10 g/l
Melting point/ range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	55,8 °C (951 hPa) Method: Pensky-Martens closed cup - PMCC
Evaporation rate	:	No data available
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	:	0,960 g/cm3 (20 °C)
Solubility(ies)		
Water solubility	:	soluble
Solubility in other solvents	:	soluble Solvent: hexane
		soluble Solvent: Methanol
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	:	4,23 mm2/s (20 °C) Method: OECD Test Guideline 114

Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing
Surface tension	:	41,21 mN/m, 10 g/l, 25,1 - 25,4 °C
Molecular weight	:	Not applicable
Metal corrosion rate	:	Not corrosive to metals.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	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. Avoid formation of aerosol.
Incompatible materials	:	Avoid strong acids, bases, and oxidizers.
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.
May be harmful in contact with skin.
Toxic if inhaled.

Product:

Acute oral toxicity	:	LD50 (Rat, female): 300 - 2.000 mg/kg Method: OECD Test Guideline 423 Symptoms: Tremors Assessment: The component/mixture is moderately toxic after single ingestion.
Acute inhalation toxicity	:	LC50 (Rat, male and female): 0,65 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Symptoms: Tremors, Breathing difficulties Assessment: The component/mixture is toxic after short term inhalation.

Acute dermal toxicity : LD50 Dermal (Rat, male and female): > 4.000 mg/kg
Method: OECD Test Guideline 402
Symptoms: Irritation
Assessment: The component/mixture is minimally toxic after single contact with skin.
Remarks: no mortality

Components:

Zeta cypermethrin:

Acute oral toxicity : LD50 (Rat, male): 187 - 326 mg/kg
Symptoms: Gastrointestinal tract damage, hypoactivity, apathy, piloerection, ataxia, Salivation

LD50 (Rat, male and female): 69,2 - 142,3 mg/kg
Method: FIFRA 81.01
GLP: yes

Acute inhalation toxicity : LC50 (Rat, female): 1,6 - 3,4 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: EPA OPP 81 - 3

LC50 (Rat, male and female): 1,26 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: EPA OPP 81 - 3
Target Organs: Nervous system
Symptoms: Fatality
GLP: yes

Acute dermal toxicity : LD50 (Rabbit): > 2.000 mg/kg

LD50 (Rabbit): > 2.460 mg/kg
Remarks: no mortality

Bifenthrin:

Acute oral toxicity : LD50 (Rat, female): 50 - 300 mg/kg
Method: OECD Test Guideline 423
Symptoms: Convulsions, ataxia
Assessment: The component/mixture is toxic after single ingestion.

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): > 4.000 mg/kg Method: OECD Test Guideline 402 Symptoms: Irritation GLP: yes Remarks: no mortality

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

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	:	LD50 (Rat, male and female): > 1,9 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit, male and female): > 4.000 mg/kg Remarks: Based on data from similar materials

2-ethylhexan-1-ol:

Acute oral toxicity	:	LD50 (Rat, male): 2.047 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): 4,3 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rat, male and female): > 3.000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

Fatty acids, tall-oil, ethoxylated:

Acute oral toxicity	:	LD50 (Rat, male and female): > 10.000 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	:	LC0 (Rat, male and female): > 0,28 mg/l Exposure time: 8 h Test atmosphere: vapor Symptoms: Eye irritation Assessment: The substance or mixture has no acute inhalation toxicity Remarks: no mortality

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, male and female): > 5,28 mg/l

Exposure time: 4 h
Test atmosphere: vapor
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): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

naphthalene:

Acute oral toxicity : LD50 (Mouse, female): 710 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC0 (Rat, male and female): > 0,4 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rat, male and female): > 16.000 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation

Causes mild skin irritation.

Product:

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

Remarks : May cause skin irritation and/or dermatitis.

Components:

Zeta cypermethrin:

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

Species : Rabbit
Assessment : Not classified as irritant
Result : slight irritation
GLP : yes

Bifenthrin:

Species : Rabbit
Method : OECD Test Guideline 404

Result : slight or no skin irritation.
GLP : yes

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Assessment : Irritating to skin.

2-ethylhexan-1-ol:

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

Fatty acids, tall-oil, ethoxylated:

Species : human skin
Method : OECD Test Guideline 431

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

Species : Rabbit
Result : No skin irritation

Assessment : Repeated exposure may cause skin dryness or cracking.

naphthalene:

Species : Rabbit
Result : No skin irritation

Serious eye damage/eye irritation

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

Product:

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

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

Components:

Zeta cypermethrin:

Species : Rabbit
Result : No eye irritation
Assessment : Not classified as irritant
Method : OECD Test Guideline 405

Bifenthrin:

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

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Assessment	:	Risk of serious damage to eyes.

2-ethylhexan-1-ol:

Species	:	Rabbit
Result	:	Irritation to eyes, reversing within 21 days
Method	:	OECD Test Guideline 405

Fatty acids, tall-oil, ethoxylated:

Species	:	Human
Method	:	OECD Guideline 492

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

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

naphthalene:

Species	:	Rabbit
Result	:	No eye irritation

Respiratory or skin sensitization

Skin sensitization

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

Respiratory sensitization

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

Product:

Test Type	:	Buehler Test
Routes of exposure	:	Dermal
Species	:	Guinea pig
Assessment	:	Did not cause sensitization on laboratory animals.
Method	:	OECD Test Guideline 406
Result	:	Not a skin sensitizer.

Components:

Zeta cypermethrin:

Test Type	:	Local lymph node assay (LLNA)
Routes of exposure	:	Dermal
Species	:	mice
Assessment	:	May cause sensitization by skin contact.
Method	:	OECD Test Guideline 429
Result	:	May cause sensitization by skin contact.

Bifenthrin:

Test Type	:	Maximization Test

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

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

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

Fatty acids, tall-oil, ethoxylated:

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	May cause sensitization by skin contact.

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

Test Type	:	Buehler Test
Species	:	Guinea pig
Result	:	Does not cause skin sensitization.
Remarks	:	Based on data from similar materials

naphthalene:

Test Type	:	Maximization Test
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitization.

Germ cell mutagenicity

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

Product:

Genotoxicity in vitro	:	Test Type: Ames test Method: OECD Test Guideline 471 Result: negative
Genotoxicity in vivo	:	Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) Species: Mouse Method: OECD Test Guideline 474 Result: negative

Components:

Zeta cypermethrin:

Genotoxicity in vitro	:	Test Type: Ames test Result: negative Test Type: unscheduled DNA synthesis assay

Test system: rat hepatocytes
Result: negative

Test Type: Chromosome aberration test in vitro
Metabolic activation: with and without metabolic activation
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: chromosome aberration assay
Species: Chinese hamster
Cell type: Bone marrow
Application Route: Oral
Result: negative

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

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

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

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: Micronucleus test
Species: Mouse (male and female)
Application Route: Intraperitoneal injection
Exposure time: 72 hrs
Method: Mutagenicity (micronucleus test)
Remarks: Based on data from similar materials

2-ethylhexan-1-ol:

Genotoxicity in vitro : Test Type: reverse mutation assay
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Fatty acids, tall-oil, ethoxylated:

Genotoxicity in vitro : Test Type: reverse mutation assay
Method: OECD Test Guideline 471
Result: negative

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

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

Genotoxicity in vivo : Test Type: sister chromatid exchange assay
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative
Remarks: Based on data from similar materials

naphthalene:

Genotoxicity in vitro : Test Type: reverse mutation assay
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Application Route: Intraperitoneal injection
Result: negative

Carcinogenicity

Suspected of causing cancer.

Components:

Zeta cypermethrin:

Species : Rat
Application Route : Oral
Exposure time : 24 month(s)
NOAEL : 7,5 mg/kg bw/day
Result : negative

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

2-ethylhexan-1-ol:

Species	:	Rat
Application Route	:	Oral
Exposure time	:	24 month(s)
Result	:	negative

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

Species	:	Mouse
Application Route	:	Dermal
Exposure time	:	104 weeks
Result	:	negative
Remarks	:	Based on data from similar materials

Carcinogenicity - Assessment	:	Limited evidence of carcinogenicity in animal studies

naphthalene:

Species	:	Rat
Application Route	:	Inhalation
Exposure time	:	2 Years
Result	:	positive

Carcinogenicity - Assessment	:	Limited evidence of carcinogenicity in animal studies

Reproductive toxicity

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

Components:

Zeta cypermethrin:

Effects on fertility	:	Test Type: Two-generation study Species: Rat Application Route: Oral General Toxicity F1: NOAEL: 22 mg/kg bw/day Method: OECD Test Guideline 416 Result: negative
Effects on fetal development	:	Test Type: Embryo-fetal development Species: Rat Application Route: Oral General Toxicity Maternal: NOAEL: 12,5 mg/kg bw/day

Developmental Toxicity: NOAEL: 35 mg/kg bw/day
Method: OECD Test Guideline 426
Result: negative
GLP: yes

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

Bifenthrin:

Effects on fertility : Test Type: Two-generation study
Species: Rat
Application Route: Oral
General Toxicity Parent: NOAEL: 3 mg/kg bw/day
General Toxicity F1: NOAEL: 5 mg/kg bw/day
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rabbit
Application Route: Oral
General Toxicity Maternal: NOAEL: 2,7 mg/kg bw/day
Teratogenicity: NOAEL: 2,7 mg/kg bw/day
Symptoms: Maternal effects.
Result: No teratogenic effects.

Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 1 mg/kg bw/day
Teratogenicity: NOAEL: 2 mg/kg bw/day
Result: No teratogenic effects.

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

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Effects on fertility : Test Type: one-generation reproductive toxicity
Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 415
Result: No effects on fertility and early embryonic development were detected.

2-ethylhexan-1-ol:

Effects on fetal development : Test Type: Embryo-fetal development
Species: Mouse
Application Route: Oral

Method: OECD Test Guideline 414
Result: negative

Fatty acids, tall-oil, ethoxylated:

Effects on fertility : Test Type: reproductive and developmental toxicity study
Species: Rat, male and female
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative

Effects on fetal development : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative

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

Effects on fertility : Test Type: Fertility
Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 415
Result: negative
Remarks: Based on data from similar materials

Effects on fetal development : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Oral
Method: OECD Test Guideline 414
Result: negative
Remarks: Based on data from similar materials

naphthalene:

Effects on fertility : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Inhalation
Result: negative

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
Method: OECD Test Guideline 414
Result: Embryotoxic effects and adverse effects on the off-spring were detected only at high maternally toxic doses

STOT-single exposure

May cause respiratory irritation.
Causes damage to organs (Central nervous system).

Product:

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

Target Organs : respiratory tract irritation
Assessment : May cause respiratory irritation.

Components:

Zeta cypermethrin:

Target Organs : Nervous system
Assessment : The substance or mixture is classified as specific target organ toxicant, single exposure, category 2.

Assessment : May cause respiratory irritation.

Bifenthrin:

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

2-ethylhexan-1-ol:

Assessment : May cause respiratory irritation.

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

Assessment : May cause drowsiness or dizziness.

STOT-repeated exposure

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

Product:

Target Organs : Central nervous system
Assessment : Causes damage to organs through prolonged or repeated exposure.

Components:

Zeta cypermethrin:

Target Organs : Nervous system
Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.

Bifenthrin:

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:

Zeta cypermethrin:

Species : Dog
NOAEL : 5 mg/kg
LOAEL : 15 mg/kg

Application Route	:	Oral
Exposure time	:	1 yr
Dose	:	1, 5, 15 mg/kg/d
Symptoms	:	Gastrointestinal disturbance, Neurological disorders

Species	:	Dog
NOAEL	:	6 mg/kg bw/day
LOAEL	:	18 mg/kg bw/day
Application Route	:	Oral
Exposure time	:	90 d
Target Organs	:	Nervous system

Species	:	Rat
NOAEL	:	16.7 mg/kg bw/day
LOAEL	:	33.7 mg/kg bw/day
Application Route	:	Oral
Exposure time	:	90 d
Target Organs	:	Nervous system

Species	:	Dog
NOAEL	:	6 mg/kg
LOAEL	:	18 mg/kg
Application Route	:	Oral
Exposure time	:	1 yr
Dose	:	3, 6, 18, 33 mg/kg/d
Method	:	EPA OPP 83-1
Symptoms	:	Tremors

Species	:	Rat
NOAEL	:	4,5 mg/kg
Application Route	:	Oral
Exposure time	:	2 yr
Dose	:	0.6, 4.5, 30, 45 mg/kg/d
Target Organs	:	Liver

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

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Species	:	Rat, male and female
NOAEL	:	500 mg/kg
Application Route	:	Oral
Method	:	OECD Test Guideline 407
Remarks	:	Based on data from similar materials

Species	:	Rat, male and female
NOAEL	:	50 mg/m3
Application Route	:	Inhalation
Method	:	OECD Test Guideline 412
Remarks	:	Based on data from similar materials

Species	:	Rat, male and female
NOAEL	:	> 1.000 mg/kg
Application Route	:	Dermal
Method	:	OECD Test Guideline 410
Remarks	:	Based on data from similar materials

2-ethylhexan-1-ol:

Species	:	Rat
	:	250 mg/kg
Application Route	:	Oral
Exposure time	:	13 Weeks
Method	:	OECD Test Guideline 408

Fatty acids, tall-oil, ethoxylated:

Species	:	Rat, male and female
NOAEL	:	1.000 mg/kg
Application Route	:	Oral - gavage
Method	:	OECD Test Guideline 422

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

Species	:	Rat, male and female
NOAEL	:	750 mg/kg
Application Route	:	Oral - gavage
Exposure time	:	90 day
Remarks	:	Based on data from similar materials

Species	:	Rat, male and female
NOAEL	:	1 mg/l
LOAEL	:	0,5 mg/l
Application Route	:	inhalation (vapor)
Exposure time	:	90 day
Symptoms	:	Alpha-2u-globulin nephropathy

naphthalene:

Species	:	Rat
NOAEL	:	300 mg/kg
Application Route	:	Skin contact
Exposure time	:	13 semanas
Method	:	OECD Test Guideline 411

Aspiration toxicity

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

Components:

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

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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Experience with human exposure

Components:

Zeta cypermethrin:

General Information	:	Symptoms: May cause paraesthesia

Further information

Product:

Remarks	:	Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Product:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 0,00718 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0,00076 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (algae)): 120,94 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 NOEC (Pseudokirchneriella subcapitata (algae)): 10 mg/l Exposure time: 72 h EC0 (Pseudokirchneriella subcapitata (algae)): 32 mg/l Exposure time: 72 h
Toxicity to soil dwelling organisms	:	Method: OECD Test Guideline 217 Remarks: No significant adverse effect on Carbon mineralization. Method: OECD Test Guideline 216

Remarks: No significant adverse effect on Nitrogen mineralization.

LC50 (Eisenia fetida (earthworms)): > 1.000 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 207

Toxicity to terrestrial organisms : LD50 (Apis mellifera (bees)): 0.07
Exposure time: 48 d
Remarks: Contact

LD50 (Coturnix japonica (Japanese quail)): > 2.000 mg/kg
Method: US EPA Test Guideline OPPTS 850.2100

Components:

Zeta cypermethrin:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0,69 µg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0,141 µg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (algae): > 1 mg/l
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : NOEC (Fish): 0,015 µg/l
Exposure time: 21 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Crustaceans): 0,01 µg/l
Exposure time: 21 d

Toxicity to soil dwelling organisms : LC50 (worms): > 100 mg/kg
Exposure time: 14 d

Toxicity to terrestrial organisms : LD50 (Colinus virginianus (Bobwhite quail)): > 2.025 mg/kg

NOEC (Colinus virginianus (Bobwhite quail)): 150 mg/kg
End point: Reproduction Test

LD50 (Apis mellifera (bees)): 0,059 µg/bee

LC50 (Apis mellifera (bees)): 0,033 µg/bee

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

Bifenthrin:

Toxicity to fish : LC50 (Salmo gairdneri): 0,00015 mg/l

Exposure time: 96 h
Test Type: flow-through test

LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,00035 mg/l
Exposure time: 96 h
Test Type: flow-through test

LC50 (Oncorhynchus mykiss (rainbow trout)): 0,000256 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

LC50 (Pimephales promelas (fathead minnow)): 0,000234 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia): 0,00011 mg/l Exposure time: 48 h LC50 (Daphnia): 0,0016 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (algae): 0,822 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1.000
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 0,00012 mg/l Exposure time: 21 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0,0013 µg/l Exposure time: 21 d NOEC (Daphnia magna (Water flea)): 0,00095 µg/l Exposure time: 21 d
M-Factor (Chronic aquatic toxicity)	:	100.000
Toxicity to soil dwelling organisms	:	LD50 (Eisenia fetida (earthworms)): > 16 mg/kg Exposure time: 14 d Method: OECD Test Guideline 216 Remarks: No significant adverse effect on Nitrogen mineralization.
Toxicity to terrestrial organisms	:	LD50 (Colinus virginianus (Bobwhite quail)): 1.800 mg/kg

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

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

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

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Toxicity to fish : LL50 (Marine species): 10.000 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

LL50 (Pimephales promelas (fathead minnow)): 1.000 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)): > 1.000 mg/l
Exposure time: 48 h
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (green algae)): > 1.000 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to microorganisms : NOEC (activated sludge): 10.000 mg/l
Method: OECD Test Guideline 209
GLP: yes

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

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

2-ethylhexan-1-ol:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 17,1 - 28,2 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 39 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC10 (Desmodesmus subspicatus (green algae)): 3,2 mg/l
Exposure time: 72 h

EC50 (Desmodesmus subspicatus (green algae)): 11,5 mg/l
Exposure time: 72 h

Toxicity to microorganisms : EC50 (Anabaena flos-aquae (cyanobacterium)): 16,6 mg/l

Exposure time: 72 h

Fatty acids, tall-oil, ethoxylated:

Toxicity to fish	:	LL50 (Danio rerio (zebra fish)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): 12,41 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EL50 (Pseudokirchneriella subcapitata (green algae)): 39,7 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to microorganisms	:	EC10 (activated sludge): > 1.000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209

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 Remarks: water accommodated fractions (WAF)
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 Remarks: water accommodated fractions (WAF)
Toxicity to algae/aquatic plants	:	EL50 (Pseudokirchneriella subcapitata (green algae)): > 1 - 3 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: water accommodated fractions (WAF)
Toxicity to microorganisms	:	LL50 (Tetrahymena pyriformis): 677,9 mg/l Exposure time: 72 h Test Type: Growth inhibition

naphthalene:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 1,6 mg/l Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 2,16 mg/l Exposure time: 48 h Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EC50 (Skeletonema costatum (marine diatom)): 0,4 - 0,5 mg/l Exposure time: 72 h

M-Factor (Acute aquatic toxicity)	:	1
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus kisutch (coho salmon)): 0,37 mg/l Exposure time: 40 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia pulex (Water flea)): 0,59 mg/l Exposure time: 125 d
M-Factor (Chronic aquatic toxicity)	:	1
Toxicity to microorganisms	:	IC50 (Bacteria): 29 mg/l Exposure time: 24 h

Persistence and degradability

Components:

Zeta cypermethrin:

Biodegradability	:	Result: Not readily biodegradable.

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 Hydrolysis: at 40 °C

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Biodegradability	:	Result: Not readily biodegradable.

2-ethylhexan-1-ol:

Biodegradability	:	Result: Readily biodegradable.

Fatty acids, tall-oil, ethoxylated:

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 90 % Exposure time: 28 d Method: OECD Test Guideline 301B

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

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

naphthalene:

Biodegradability : Result: Inherently biodegradable.
Biodegradation: 67 %
Exposure time: 12 d

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Remarks: No data available

Components:

Zeta cypermethrin:

Bioaccumulation : Remarks: Accumulation in aquatic organisms is expected.

Partition coefficient: n-octanol/water : log Pow: 5 - 6 (24 °C)

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

Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Partition coefficient: n-octanol/water : log Pow: 22,1

2-ethylhexan-1-ol:

Partition coefficient: n-octanol/water : log Pow: 2,9 (25 °C)

Fatty acids, tall-oil, ethoxylated:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 49,14
Method: QSAR

Partition coefficient: n-octanol/water : log Pow: 5,94 (25 °C)

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

Partition coefficient: n-octanol/water : log Pow: 1,99 - 18,02
Method: QSAR

naphthalene:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 168

Partition coefficient: n-octanol/water : log Pow: 3,7

Mobility in soil

Components:

Zeta cypermethrin:

Distribution among environmental compartments : Remarks: immobile

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.

Components:

Zeta cypermethrin:

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

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

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

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

Washable packaging: Triple wash packs of less than 20 liters and pressure wash packs of 20 liters or more. Triple Wash (Manual Wash): Completely empty the contents of the package into the sprayer tank, keeping it in an upright position for 30 seconds; Add clean water to the package up to ¼ of its

volume; Cover the package well and shake it for 30 seconds; Pour the wash water into the spray tank; Do this operation three times; Make the plastic or metal packaging unusable by perforating the bottom.

Pressure wash: Fit the empty package in the appropriate place of the funnel installed on the sprayer; Activate the mechanism to release the water jet; Direct the water jet to all the inside walls of the package, for 30 seconds; Wash water must be transferred to the sprayer tank; Make the plastic or metal packaging unusable by perforating the bottom. In both procedures, puncture the container at its base without damaging the label. Within a period of up to one year from the date of purchase, the user must return the empty packaging, with lid, to the establishment where the product was purchased or to the place indicated on the invoice, issued at the time of purchase.Activate the mechanism to release the water jet. Direct the water jet to all the inside walls of the package, for 30 seconds. Wash water must be transferred to the sprayer tank. Make the plastic or metal packaging unusable by perforating the bottom.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 3351
Proper shipping name	:	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, WITH PFG = OR > THAN 23° C (Zeta-Cypermethrin, Bifenthrin, Solvent naphtha (petroleum), heavy aromatic)
Class	:	6.1
Subsidiary risk	:	3
Packing group	:	III
Labels	:	6.1 (3)
Environmentally hazardous	:	yes

IATA-DGR

UN/ID No.	:	UN 3351
Proper shipping name	:	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, WITH PFG = OR > THAN 23° C (Zeta-Cypermethrin, Bifenthrin, Solvent naphtha (petroleum), heavy aromatic)
Class	:	6.1
Subsidiary risk	:	3
Packing group	:	III
Labels	:	Toxic, Flammable Liquids
Packing instruction (cargo aircraft)	:	663
Packing instruction (passenger aircraft)	:	655

IMDG-Code

UN number	:	UN 3351
Proper shipping name	:	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, WITH PFG = OR > THAN 23° C (Zeta-Cypermethrin, Bifenthrin, Solvent naphtha (petroleum), heavy aromatic)

Class	:	6.1
Subsidiary risk	:	3
Packing group	:	III
Labels	:	6.1 (3)
EmS Code	:	F-E, S-D
Marine pollutant	:	yes

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

Not applicable for product as supplied.

Domestic regulation

ANTT

UN number	:	UN 3351
Proper shipping name	:	PYRETHROID PESTICIDE, LIQUID, TOXIC, FLAMMABLE, WITH PFG = OR > THAN 23° C (Zeta-Cypermethrin, Bifenthrin, Solvent naphtha (petroleum), heavy aromatic)
Class	:	6.1
Subsidiary risk	:	3
Packing group	:	III
Labels	:	6.1 (3)
Hazard Identification Number	:	63

Special precautions for user

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

SECTION 15. REGULATORY INFORMATION

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

Law No. 14,785 of December 27, 2023. Decree 4,074 of January 4, 2002 and its regulatory standards. ANTT Resolution No. 5,998/22 of November 3, 2022. This MSDS was prepared in accordance with the criteria of ABNT NBR 14725. The user is recommended to pay attention to local regulations.
National List of Carcinogenic Agents for Humans - (LINACH)

Group 2B: Possibly carcinogenic to humans
naphthalene 91-20-3

Brazil. List of chemicals controlled by the Federal Police : 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.

Zeta cypermethrin
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

SECTION 16. OTHER INFORMATION

Revision Date	:	06.05.2025
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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