SAFETY DATA SHEET

BESTOX 50 EC

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	2023/11/06	50001296	Date of first issue: 2018/04/06

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	BESTOX 50 EC
Other means of identification	:	Alpha-Cypermethrin 50 g/L EC

Recommended use of the chemical and restrictions on use

Recommended use	:	Insecticide
Restrictions on use	:	Use as recommended by the label.

Manufacturer or supplier's details

Company	:	FMC Corporation
Address	:	2929 WALNUT ST PHILADELPHIA PA 19104 USA
Telephone	:	(215) 299-6000
E-mail address	:	SDS-Info@fmc.com
Emergency telephone	:	For leak, fire, spill or accident emergencies, call: 001-803-017-9114 (CHEMTREC) 1 703 / 741-5970 (CHEMTREC - International) Medical emergency: 0800 140 1447

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral)	:	Category 4
Acute toxicity (Inhalation)	:	Category 2
Skin corrosion/irritation	:	Category 2
Serious eye damage/eye irritation	:	Category 1
Carcinogenicity	:	Category 2
Specific target organ toxicity - single exposure	:	Category 3 (Central nervous system)
Aspiration hazard	:	Category 1

Short-term (acute) aquatic hazard	:	Category 1
Long-term (chronic) aquatic hazard	:	Category 1

GHS label elements

Hazard pictograms :

Signal Word : Danger

Hazard Statements :
H302 Harmful if swallowed.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H330 Fatal if inhaled.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
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.
P284 Wear respiratory protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P302 + P352 IF ON SKIN: Wash with plenty of water.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P331 Do NOT induce vomiting.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before

reuse.
P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
α-cypermethrin (ISO)	67375-30-8	>= 2,5 -< 10
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	>= 70 -< 90
calcium dodecylbenzenesulphonate	26264-06-2	>= 1 -< 3
2-methylpropan-1-ol	78-83-1	>= 1 -< 3

4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this safety data sheet to the doctor in attendance.
Symptoms of poisoning may appear several hours later.
Do not leave the victim unattended.

If inhaled : Call a physician or poison control center immediately.
If unconscious, place in recovery position and seek medical advice.

In case of skin contact : If skin irritation persists, call a physician.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed	:	Clean mouth with water and drink afterwards plenty of water. Keep respiratory tract clear. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.
Most important symptoms and effects, both acute and delayed	:	Harmful if swallowed. May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye damage. Fatal if inhaled. May cause drowsiness or dizziness. Suspected of causing cancer.
Notes to physician	:	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical, CO2, water spray or regular foam.
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Fire may produce irritating, corrosive and/or toxic gases. Nitrogen oxides (NOx) Carbon oxides Chlorine compounds Sulfur oxides
Specific extinguishing methods	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas.
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 : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.
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.
Provide sufficient air exchange and/or exhaust in work rooms.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.

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.

Materials to avoid : Do not store near acids.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
2-methylpropan-1-ol	78-83-1	NAB	50 ppm 152 mg/m3	ID OEL
		TWA	50 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	:	Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber.
Remarks	:	The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	:	liquid
Form	:	liquid
Color	:	amber
Odor	:	aromatic
pH	:	4,06
Melting point/freezing point	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	63 °C
Flammability (solid, gas)	:	Not applicable
Self-ignition	:	No data available

Density	:	0,9224 g/cm3
Solubility(ies)		
Water solubility	:	emulsifiable
Partition coefficient: n-octanol/water	:	Not applicable
Viscosity		
Viscosity, kinematic	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	Non-oxidizing

10. STABILITY AND REACTIVITY

Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed. Vapors may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Strong oxidizing agents Strong acids and strong bases
Hazardous decomposition products	:	Carbon oxides Hydrogen cyanide (hydrocyanic acid) Hydrogen chloride gas

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if swallowed.
Fatal if inhaled.

Product:

Acute oral toxicity	:	LD50 (Rat, male and female): 956 mg/kg Method: US EPA Test Guideline OPP 81-1 Remarks: Based on data from similar materials
Acute inhalation toxicity	:	LC50 (Rat, male and female): 0,2 mg/l Exposure time: 4 h Test atmosphere: dust/mist Remarks: Based on data from similar materials

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2.000 mg/kg
Remarks: Based on data from similar materials

Components:

α-cypermethrin (ISO):

Acute oral toxicity : LD50 (Rat, male): 274 mg/kg

LD50 (Rat): 57 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 0,32 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: Highest attainable concentration.

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

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

calcium dodecylbenzenesulphonate:

Acute oral toxicity : LD50 (Rat, male and female): 1.300 mg/kg
Remarks: Based on data from similar materials

Acute inhalation toxicity : Remarks: Not classified

Acute dermal toxicity : LD50 (Rat, male and female): > 2000 milligram per kilogram
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: Based on data from similar materials

2-methylpropan-1-ol:

Acute oral toxicity : LD50 (Rat): 3.350 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 18,18 mg/l

Exposure time: 6 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit): 2.460 mg/kg

Skin corrosion/irritation

Causes skin irritation.

Product:

Species : Rabbit
Method : US EPA Test Guideline OPP 81-5
Result : Skin irritation
Remarks : Based on data from similar materials

Remarks : Extremely corrosive and destructive to tissue.

Components:

α-cypermethrin (ISO):

Species : Rabbit
Result : No skin irritation

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

Species : Rabbit
Result : No skin irritation

Assessment : Repeated exposure may cause skin dryness or cracking.

calcium dodecylbenzenesulphonate:

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

2-methylpropan-1-ol:

Species : Rabbit
Result : Skin irritation

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Species : Rabbit
Result : Irreversible effects on the eye
Method : US EPA Test Guideline OPP 81-4
Remarks : Based on data from similar materials

Remarks : May cause irreversible eye damage.

Components:

α-cypermethrin (ISO):

Species	:	Rabbit
Result	:	slight irritation

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

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

calcium dodecylbenzenesulphonate:

Species	:	Rabbit
Result	:	Irreversible effects on the eye
Method	:	OECD Test Guideline 405
Remarks	:	Based on data from similar materials

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

2-methylpropan-1-ol:

Species	:	Rabbit
Result	:	Irreversible effects on the eye

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:

Routes of exposure	:	Skin contact
Species	:	Guinea pig
Result	:	Did not cause sensitization on laboratory animals.
Remarks	:	Based on data from similar materials

Components:

α-cypermethrin (ISO):

Test Type	:	Magnussen-Kligman test
Species	:	Guinea pig
Result	:	Not a skin sensitizer.

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

calcium dodecylbenzenesulphonate:

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

2-methylpropan-1-ol:

Routes of exposure	:	Skin contact
Result	:	Not a skin sensitizer.

Germ cell mutagenicity

Not classified due to lack of data.

Components:

α-cypermethrin (ISO):

Genotoxicity in vitro	:	Test Type: gene mutation test Result: negative
Genotoxicity in vivo	:	Test Type: Micronucleus test Result: negative Test Type: chromosome aberration assay 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

calcium dodecylbenzenesulphonate:

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: chromosome aberration assay Species: Rat (male and female) Application Route: Oral Exposure time: 90 d Result: negative Remarks: Based on data from similar materials
Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

2-methylpropan-1-ol:

Genotoxicity in vitro	:	Result: negative
Genotoxicity in vivo	:	Result: negative

Carcinogenicity

Suspected of causing cancer.

Components:

α-cypermethrin (ISO):

Species	:	Mouse
Application Route	:	Oral
Exposure time	:	78 weeks
NOAEL	:	3 mg/kg bw/day
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

calcium dodecylbenzenesulphonate:

Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	720 d
NOAEL	:	250 mg/kg body weight
Result	:	negative
Remarks	:	Based on data from similar materials
Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen

Reproductive toxicity

Not classified due to lack of data.

Components:

α-cypermethrin (ISO):

Reproductive toxicity - Assessment	:	Animal testing showed no reproductive toxicity.

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

calcium dodecylbenzenesulphonate:

Effects on fertility : Test Type: Fertility/early embryonic development
Species: Rat, male and female
Application Route: Ingestion
General Toxicity Parent: NOAEL: 400 mg/kg body weight
Method: OECD Test Guideline 422
Result: negative

Effects on fetal development : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Ingestion
General Toxicity Maternal: NOAEL: 300 mg/kg body weight
Developmental Toxicity: NOAEL: 600 mg/kg body weight
Method: OECD Test Guideline 422
Result: negative

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

2-methylpropan-1-ol:

Effects on fertility : Species: Rat
Application Route: Inhalation
Fertility: NOAEC Mating/Fertility: 7,5 mg/l

STOT-single exposure

May cause drowsiness or dizziness.

Components:

α-cypermethrin (ISO):

Assessment : May cause respiratory irritation.

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

Assessment : May cause drowsiness or dizziness.

2-methylpropan-1-ol:

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

STOT-repeated exposure

Not classified due to lack of data.

Components:

α-cypermethrin (ISO):

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

Repeated dose toxicity

Components:

α-cypermethrin (ISO):

Species	:	Dog
NOAEL	:	3.5 mg/kg bw/day
Application Route	:	Oral - feed
Exposure time	:	13 weeks
Target Organs	:	Central nervous system

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

calcium dodecylbenzenesulphonate:

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

Species	:	Rat, male
LOAEL	:	286 mg/kg
Application Route	:	Skin contact
Exposure time	:	15 Days
Remarks	:	Based on data from similar materials

Species	:	Rat, male and female
NOAEL	:	100 mg/kg bw/day
LOAEL	:	200 mg/kg bw/day
Application Route	:	Oral - gavage
Exposure time	:	28 - 54 days
Method	:	OECD Test Guideline 422
Remarks	:	Based on data from similar materials

2-methylpropan-1-ol:

Species	:	Rat
	:	1450 mg/kg
Application Route	:	Oral
Species	:	Rat
	:	7,5 mg/l
Application Route	:	Inhalation

Aspiration toxicity

May be fatal if swallowed and enters airways.

Components:

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.

Further information

Product:

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

12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

α-cypermethrin (ISO):

Toxicity to fish	:	LC50 (Fish): 0,0028 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Crustaceans): 0,0003 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (algae): 0,1 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1.000
Toxicity to fish (Chronic toxicity)	:	NOEC (Fish): 0,00003 mg/l Exposure time: 21 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Crustaceans): 0,00003 mg/l Exposure time: 21 d

M-Factor (Chronic aquatic toxicity)	:	1.000
Toxicity to soil dwelling organisms	:	LC50 (Eisenia fetida (earthworms)): > 100 mg/kg
Toxicity to terrestrial organisms	:	LD50 (Apis mellifera (bees)): 0,059 µg/bee Remarks: Oral LD50 (Apis mellifera (bees)): 0,033 µg/bee Remarks: Contact

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

calcium dodecylbenzenesulphonate:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): 10 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: Based on data from similar materials LC50 (Pimephales promelas (fathead minnow)): 4,6 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)): 3,5 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	NOEC (Pseudokirchneriella subcapitata (green algae)): 7,9 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials

EC50 (Pseudokirchneriella subcapitata (green algae)): 65,4 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1,65 mg/l
Exposure time: 21 d
Remarks: Based on data from similar materials

NOEC (Daphnia magna (Water flea)): 1,18 mg/l
Exposure time: 21 d
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (activated sludge): 500 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Toxicity to soil dwelling organisms : LC50 (Eisenia fetida (earthworms)): 1.000 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 207

Toxicity to terrestrial organisms : LD50 (Colinus virginianus (Bobwhite quail)): 1.356 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 223

2-methylpropan-1-ol:

Toxicity to fish : LC50 : 1.430 mg/l
Exposure time: 4 d

Toxicity to daphnia and other aquatic invertebrates : EC50: 1.100 mg/l
Exposure time: 48 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 20 mg/l
Exposure time: 21 d

Toxicity to microorganisms : EC50 (Anabaena flos-aquae (cyanobacterium)): 593 - 1.799 mg/l
Exposure time: 72 h

IC50 (Natural microorganism): 1.000 mg/l
Exposure time: 16 h

Persistence and degradability

Components:

α-cypermethrin (ISO):

Biodegradability : Result: Not readily biodegradable.

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

calcium dodecylbenzenesulphonate:

Biodegradability : Result: Readily biodegradable.
Method: OECD Test Guideline 301E

2-methylpropan-1-ol:

Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential

Components:

α-cypermethrin (ISO):

Partition coefficient: n-octanol/water : log Pow: 5,5 (20 °C)

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

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

calcium dodecylbenzenesulphonate:

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 70,79
Method: QSAR

Partition coefficient: n-octanol/water : log Pow: 4,77 (25 °C)

2-methylpropan-1-ol:

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log Pow <= 4).

Partition coefficient: n-octanol/water : Pow: 10 (25 °C)

Mobility in soil

No data available

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.

13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 3352
Proper shipping name	:	PYRETHROID PESTICIDE, LIQUID, TOXIC (Alpha-cypermethrin)
Class	:	6.1
Packing group	:	II
Labels	:	6.1
Environmentally hazardous	:	yes

IATA-DGR

UN/ID No.	:	UN 3352
Proper shipping name	:	Pyrethroid pesticide, liquid, toxic (Alpha-cypermethrin)
Class	:	6.1
Packing group	:	II
Labels	:	Toxic
Packing instruction (cargo aircraft)	:	662
Packing instruction (passenger aircraft)	:	654
Environmentally hazardous	:	yes

IMDG-Code

UN number	:	UN 3352
Proper shipping name	:	PYRETHROID PESTICIDE, LIQUID, TOXIC (Alpha-cypermethrin)
Class	:	6.1
Packing group	:	II
Labels	:	6.1
EmS Code	:	F-A, S-A
Marine pollutant	:	yes

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

Not applicable for product as supplied.

Special precautions for user

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

15. REGULATORY INFORMATION

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

Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

Regulation of the Minister of Health No. 472 of 1996 on the Safeguarding of Substances Hazardous to Health

Hazardous substances that must be registered	:	Not applicable

Government Regulation No. 74 of 2001 on the Management of Hazardous and Toxic Substances

Hazardous substances approved for use	:	Not applicable
Prohibited substances	:	Not applicable
Restricted substances	:	Not applicable

Regulation of the Ministry of Trade No. 7 of 2022 on Distribution and Control of Hazardous Materials

Type of hazardous materials subject to distribution and control, Annex I	:	Not applicable
Type of hazardous materials subject to distribution and control, Annex II	:	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. α-cypermethrin (ISO)
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	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	On the inventory, or in compliance with the inventory

16. OTHER INFORMATION

Revision Date	:	2023/11/06
Date format	:	yyyy/mm/dd

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ID OEL	:	Indonesia. Occupational Exposure Limits
ACGIH / TWA	:	8-hour, time-weighted average
ID OEL / NAB	:	Long term exposure limit

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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