

SAFETY DATA SHEET



TALSTAR 10 EC

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	02.03.2023	50002485	Date of first issue: 02.03.2023

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : TALSTAR 10 EC

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 : 1 703 / 741-5970 (CHEMTREC - International)
1 703 / 527-3887 (CHEMTREC - Alternate)

Medical Emergency Number : All other countries: +1 651 / 632-6793 (Collect)

Recommended use of the chemical and restrictions on use

Recommended use : Can be used as insecticide only.

Restrictions on use : Use as recommended by the label.

2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 3

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Acute toxicity (Dermal) : Category 5

Serious eye damage/eye irritation : Category 1

Carcinogenicity : Category 2

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

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

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

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repeated exposure

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 : H226 Flammable liquid and vapor.
H302 + H332 Harmful if swallowed or if inhaled.
H304 May be fatal if swallowed and enters airways.
H313 May be harmful in contact with skin.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H370 Causes damage to organs (Central nervous system).
H372 Causes damage to organs (Central nervous system) through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**
P203 Obtain, read and follow all safety instructions before use.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
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 + P316 IF SWALLOWED: Get emergency medical help immediately.
P303 + P361 + P353 + P317 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

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Get medical help.
P304 + P340 + P317 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.
P305 + P354 + P338 + P317 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical help.
P308 + P316 IF exposed or concerned: Get emergency medical help immediately.
P331 Do NOT induce vomiting.
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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Bifenthrin	82657-04-3	>= 2.5 - < 10
Solvent naphtha (petroleum), light arom.	64742-95-6	>= 70 - < 90
4-Nonylphenol branched, ethoxylated	127087-87-0	>= 1 - < 2.5
Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts	68584-23-6	>= 1 - < 2.5
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 : Consult a physician after significant exposure.
If unconscious, place in recovery position and seek medical advice.

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

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- 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 : 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 or if inhaled.
May be fatal if swallowed and enters airways.
May be harmful in contact with skin.
Causes serious eye damage.
May cause respiratory irritation.
May cause drowsiness or dizziness.
Suspected of causing cancer.
Causes damage to organs.
Causes damage to organs through prolonged or repeated exposure.
- Notes to physician : Treat symptomatically.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Alcohol-resistant foam
Carbon dioxide (CO₂)
Dry chemical
- 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 : Thermal decomposition can lead to release of toxic and irritating vapors.
Carbon oxides
Fluorinated compounds
Chlorinated compounds
- 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.

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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 : Wear self-contained breathing apparatus for firefighting if necessary for fire-fighters

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.
- 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).

7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.
Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).
Keep away from open flames, hot surfaces and sources of ignition.
- Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapors/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Take precautionary measures against static discharges.
Provide sufficient air exchange and/or exhaust in work rooms.
Open drum carefully as content may be under pressure.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : No smoking.
Keep container tightly closed in a dry and well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.

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Observe label precautions.
Electrical installations / working materials must comply with the technological safety standards.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Solvent naphtha (petroleum), light arom.	64742-95-6	TWA	200 mg/m ³ (total hydrocarbon vapor)	ACGIH
2-methylpropan-1-ol	78-83-1	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.
Wear respiratory protection when its use is identified for certain contributing scenario.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Color : light brown

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Odor	: mild, aromatic
pH	: 5.28 (1% solution in water)
Melting point/range	: not determined
Boiling point/boiling range	: Decomposition: Decomposes below the boiling point.
Flash point	: 40 °C
Flammability (solid, gas)	: No data available
Density	: 0.913 - 0.916 g/cm ³
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 acids Strong bases Strong oxidizing agents
Hazardous decomposition products	: Stable under recommended storage conditions.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

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

Product:

Acute oral toxicity	: LD50(Rat, male and female): 531 mg/kg
Acute inhalation toxicity	: LC50(Rat, male and female): 4.94 mg/l Exposure time: 4 h Test atmosphere: dust/mist

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Acute dermal toxicity : LD50(Rabbit): > 2,000 mg/kg

Components:

Bifenthrin:

Acute oral toxicity : LD50 (Rat, male and female): 56.7 mg/kg

Acute inhalation toxicity : LC50 (Rat, female): 0.8 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

LC50 (Rat, male): 1.10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg

Solvent naphtha (petroleum), light arom.:

Acute oral toxicity : LD50 (Rat, female): 3,492 mg/kg
Method: OECD Test Guideline 401

LD50 (Rat, male): 6,984 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): > 6.193 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: no mortality

Acute dermal toxicity : LD50 (Rabbit, male and female): > 3,160 mg/kg
Assessment: The component/mixture is minimally toxic after single contact with skin.

4-Nonylphenol branched, ethoxylated:

Acute oral toxicity : LD50 (Rat): 4,000 mg/kg

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

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Acute dermal toxicity : LD50 (Rabbit, male and female): > 4,000 mg/kg
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

Not classified based on available information.

Product:

Species : Rabbit
Method : Draize Test
Result : No skin irritation

Components:

Bifenthrin:

Species : Rabbit
Method : EPA OPP 81-5
Result : No skin irritation

Solvent naphtha (petroleum), light arom.:

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

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

Assessment : Irritating to skin.

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

Remarks : May cause irreversible eye damage.

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Components:

Bifenthrin:

Species	:	Rabbit
Method	:	EPA OPP 81-4
Result	:	No eye irritation

Solvent naphtha (petroleum), light arom.:

Species	:	Rabbit
Result	:	No eye irritation

4-Nonylphenol branched, ethoxylated:

Remarks	:	No data available
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Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

Assessment	:	Risk of serious damage to eyes.
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2-methylpropan-1-ol:

Species	:	Rabbit
Result	:	Irreversible effects on the eye

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Method	:	US EPA Test Guideline OPP 81-6
Result	:	Not a skin sensitizer.

Components:

Bifenthrin:

Test Type	:	Magnussen-Kligman test
Method	:	OECD Test Guideline 406
Result	:	May cause sensitization by skin contact.

Solvent naphtha (petroleum), light arom.:

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

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

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Test Type	: Buehler Test
Species	: Guinea pig
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 based on available information.

Components:**Bifenthrin:**

Genotoxicity in vitro	: Test Type: gene mutation test Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative
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	Test Type: reverse mutation assay Metabolic activation: with and without metabolic activation Result: negative
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	Test Type: Mouse lymphoma assay Metabolic activation: with and without metabolic activation Result: negative
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Genotoxicity in vivo	: Test Type: Sex-linked Recessive Lethal Test Species: Drosophila melanogaster (vinegar fly) Result: negative
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	Test Type: unscheduled DNA synthesis assay Species: Rat Method: OECD Test Guideline 486 Result: negative
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Solvent naphtha (petroleum), light arom.:

Genotoxicity in vitro	: Test Type: in vitro DNA damage and/or repair study Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Result: negative
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	Test Type: reverse mutation assay Metabolic activation: with and without metabolic activation Result: negative
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Genotoxicity in vivo	: Test Type: Bone marrow chromosome aberration. Species: Rat (male and female) Application Route: Inhalation Result: negative
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Benzenesulfonic acid, C10-16-alkyl derivs., calcium salts:

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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-methylpropan-1-ol:

Genotoxicity in vitro : Result: negative

Genotoxicity in vivo : Result: negative

Carcinogenicity

Suspected of causing cancer.

Components:

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

Solvent naphtha (petroleum), light arom.:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Reproductive toxicity

Not classified based on available information.

Components:

Bifenthrin:

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

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Effects on fetal development : Test Type: Embryo-fetal development
Species: Rabbit
Application Route: Oral
General Toxicity Maternal: NOAEL: 2.7 mg/kg bw/day
Teratogenicity: NOAEL: 2.7 mg/kg bw/day
Symptoms: Maternal effects.
Result: No teratogenic effects.

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.

Solvent naphtha (petroleum), light arom.:

Effects on fertility : Test Type: Three-generation study
Species: Rat
Application Route: inhalation (vapor)
Fertility: NOAEC Mating/Fertility: 7.5 mg/l
Result: negative
Remarks: Based on data from similar materials

Effects on fetal development : Species: Mouse
Application Route: inhalation (vapor)
General Toxicity Maternal: LOAEC: 500 part per million
Symptoms: Maternal effects.

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-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:

Bifenthrin:

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

Solvent naphtha (petroleum), light arom.:

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

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dizziness.

2-methylpropan-1-ol:

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

STOT-repeated exposure

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

Components:

Bifenthrin:

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

Solvent naphtha (petroleum), light arom.:

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

Repeated dose toxicity

Components:

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

Solvent naphtha (petroleum), light arom.:

Species : Rat, male and female
NOAEC : 0.8 - 0.9 mg/l
Application Route : Inhalation
Test atmosphere : vapor
Remarks : Based on data from similar materials

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

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

Species : Rat, male and female

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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-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:

Bifenthrin:

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

Solvent naphtha (petroleum), light arom.:

May be fatal if swallowed and enters airways.

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:

Bifenthrin:

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Toxicity to fish	:	LC50 (Salmo gairdneri): 0.15 µg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 0.11 µg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (algae): 0.822 mg/l Exposure time: 72 h
M-Factor (Acute aquatic toxicity)	:	1,000
Toxicity to fish (Chronic toxicity)	:	NOEC: 0.00012 mg/l Exposure time: 21 d Species: Oncorhynchus mykiss (rainbow trout)
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC: 0.0013 µg/l Exposure time: 21 d Species: Daphnia magna (Water flea) NOEC: 0.00095 µg/l Exposure time: 21 d Species: Daphnia magna (Water flea)
M-Factor (Chronic aquatic toxicity)	:	100,000
Toxicity to soil dwelling organisms	:	LD50: > 16 mg/kg Exposure time: 14 d Species: Eisenia fetida (earthworms)
Toxicity to terrestrial organisms	:	LD50: 1,800 mg/kg Species: Colinus virginianus (Bobwhite quail) LD50: 0.044 - 0.11 µg/bee End point: Acute contact toxicity Species: Apis mellifera (bees) LD50: 0.1 µg/bee End point: Acute oral toxicity Species: Apis mellifera (bees) LD50: > 2,150 mg/kg Species: Anas platyrhynchos (Mallard duck)

Solvent naphtha (petroleum), light arom.:

Toxicity to fish	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 4.5 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 Remarks: Based on data from similar materials LL50 (Pimephales promelas (fathead minnow)): 8.2 mg/l Exposure time: 96 h
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Test Type: semi-static test
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EL50 (Daphnia magna (Water flea)): 4.5 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (microalgae)): 3.1 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (Tetrahymena pyriformis): 15.41 mg/l
Exposure time: 40 h
Test Type: Growth inhibition
Remarks: The value is given based on a SAR/AAR approach using OECD Toolbox, DEREK, VEGA QSAR models (CAESAR models), etc.

Toxicity to fish (Chronic toxicity) : NOELR: 2.6 mg/l
Exposure time: 14 d
Species: Pimephales promelas (fathead minnow)
Method: OECD Test Guideline 204
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOELR: 2.6 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Method: OECD Test Guideline 211

4-Nonylphenol branched, ethoxylated:**Ecotoxicology Assessment**

Acute aquatic toxicity : Harmful to aquatic life.

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

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 : EL50 (Pseudokirchneriella subcapitata (green algae)): >

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plants 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

Ecotoxicology Assessment

Acute aquatic toxicity : Toxic to aquatic life.

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

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 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

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

Persistence and degradability

Components:

Bifenthrin:

Biodegradability : Result: Not readily biodegradable.

Solvent naphtha (petroleum), light arom.:

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

4-Nonylphenol branched, ethoxylated:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: < 60 %
Exposure time: 28 d

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

Biodegradability : Result: Not readily biodegradable.

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2-methylpropan-1-ol:

Biodegradability : Result: Readily biodegradable.

Bioaccumulative potential**Components:****Bifenthrin:**

Bioaccumulation : Species: *Lepomis macrochirus* (Bluegill sunfish)
Bioconcentration factor (BCF): 1,709
Remarks: Due to the distribution coefficient n-octanol/water, accumulation in organisms is possible.
See section 9 for octanol-water partition coefficient.

Partition coefficient: n-octanol/water : log Pow: 6

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

Partition coefficient: n-octanol/water : log Pow: 22.1

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**Components:****Bifenthrin:**

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

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 chemi-

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cal 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 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(Isobutyl Alcohol, Bifenthrin)
Class : 3
Packing group : III
Labels : 3

IATA-DGR

UN/ID No. : UN 1993
Proper shipping name : Flammable liquid, n.o.s.
(Isobutyl Alcohol, Bifenthrin)
Class : 3
Packing group : III
Labels : Flammable Liquids
Packing instruction (cargo aircraft) : 366
Packing instruction (passenger aircraft) : 355

IMDG-Code

UN number : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(Isobutyl Alcohol, Bifenthrin)
Class : 3
Packing group : III
Labels : 3
EmS Code : F-E, S-E
Marine pollutant : yes

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

Special precautions for user

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

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15. REGULATORY INFORMATION

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

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. 2-METHYLBIPHENYL-3-YLMETHYL (Z)-(1RS,3RS)-3-(2-CHLORO-3,3,3-TRIFLUOROPROP-1-ENYL)-2,2-DIMETHYLCYCLOPROPANECARBOXYLATE
ENCS	: Not in compliance with the inventory
ISHL	: Not in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: Not in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
NZIoC	: Not in compliance with the inventory
TECI	: Not in compliance with the inventory

16. OTHER INFORMATION

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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 Sys-

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tem; 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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