

SAFETY DATA SHEET

SPOTLIGHT® PLUS HERBICIDE



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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : SPOTLIGHT® PLUS HERBICIDE

Recommended use of the chemical and restrictions on use

Recommended use : Herbicide

Restrictions on use : Use as recommended by the label.

Manufacturer or supplier's details

Company : FMC Australasia Pty Ltd

Address : Building B, Suite G.01, 12 Julius Avenue
North Ryde NSW 2113
Australia

Telephone : 1 800 066 355

Telefax : (02) 9923 6011

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

Emergency telephone number : For leak, fire, spill or accident emergencies, call:
1800 033 111 (Ixm)

Medical emergency:
1 800 033 111 (Transport and 24 h Medical information)

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Skin sensitisation : Category 1

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.

Precautionary statements : **Prevention:**
P261 Avoid breathing mist or vapours.

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P272 Contaminated work clothing should not be allowed out of the workplace.

P280 Wear protective gloves.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P362 + P364 Take off contaminated clothing and wash it before reuse.

Disposal:

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

Other hazards which do not result in classification

Very toxic to aquatic life with long lasting effects.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
carfentrazone-ethyl (ISO)	128639-02-1	< 10
Oxirane, methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]propyl] ether	134180-76-0	< 10
Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts	68953-96-8	>= 1 -< 3

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

If inhaled : Remove to fresh air.
If unconscious, place in recovery position and seek medical advice.
If experiencing any discomfort, immediately remove from exposure. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance.

In case of skin contact : If on clothes, remove clothes.
If on skin, rinse well with water.
Wash off with soap and plenty of water.
Get medical attention immediately if irritation develops and persists.

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| In case of eye contact | : Immediately flush eye(s) with plenty of water.
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 give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Do not induce vomiting without medical advice. |
| Most important symptoms and effects, both acute and delayed | : May cause an allergic skin reaction. |
| Notes to physician | : Treat symptomatically.
Immediate medical attention is required in case of ingestion. |
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SECTION 5. FIREFIGHTING MEASURES

- | | |
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| 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
Fluorine 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. |
| Special protective equipment for firefighters | : Wear self-contained breathing apparatus for firefighting if necessary. |
| Hazchem Code | : •3Z |
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SECTION 6. ACCIDENTAL RELEASE MEASURES

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

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

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Do not breathe vapours/dust.
Avoid exposure - obtain special instructions before use.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Hygiene measures : When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday.
Remove and wash contaminated clothing and gloves, including the inside, before re-use.

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

Further information on storage conditions : The product is stable under normal conditions of warehouse storage.
Store in closed, labelled containers. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor, without access of unauthorised persons or children. The room should only be used for storage of chemicals. Food, drink, feed and seed should not be present. A hand wash station should be available.

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Materials to avoid : Do not store near acids.

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

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
carfentrazone-ethyl (ISO)	128639-02-1	TWA (Inhalable particulate matter)	1 mg/m ³	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

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. Always have on hand a first-aid kit, together with proper instructions.
Wear suitable protective equipment.
When using do not eat, drink or smoke.

In the context of professional plant protection use as recommended, the end user must refer to the label and the instructions for use.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : yellow-orange

Odour : odourless

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Odour Threshold	: not determined
pH	: 4.86 Concentration: 1 % In a 1% aqueous dispersion
Melting point/freezing point	: not determined
Boiling point/boiling range	: not determined
Flash point	: 111 °C
Flammability (liquids)	: ignitable, Based on available information, the classification criteria for flammability hazard are not met.
Self-ignition	: 356 °C
Upper explosion limit / Upper flammability limit	: not determined
Lower explosion limit / Lower flammability limit	: not determined
Vapour pressure	: Not available for this mixture.
Relative vapour density	: not determined
Relative density	: 0.9308 (20 °C)
Solubility(ies) Water solubility	: dispersible
Partition coefficient: n-octanol/water	: Not available for this mixture.
Decomposition temperature	: not determined
Viscosity Viscosity, dynamic	: not determined
Viscosity, kinematic	: 23.44 mm ² /s (40 °C)
Explosive properties	: Not explosive
Oxidizing properties	: Non-oxidizing
Surface tension	: 30 mN/m, 25 °C

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29 mN/m, 40 °C

Particle size : Not applicable

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	: No decomposition if stored and applied as directed.
Conditions to avoid	: Heat, flames and sparks. Heating of the product will produce harmful and irritant vapours.
Incompatible materials	: Avoid strong acids, bases, and oxidizers
Hazardous decomposition products	: Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

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

Product:

Acute oral toxicity	: LD50 (Rat): > 2,000 mg/kg
Acute inhalation toxicity	: LC50 (Rat): > 5.11 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	: LD50 (Rat): > 2,000 mg/kg

Components:

carfentrazone-ethyl (ISO):

Acute oral toxicity	: LD50 (Rat, female): 5,143 mg/kg Method: US EPA Test Guideline OPP 81-1 Symptoms: Tremors GLP: yes LD50 (Rat, female): > 5,000 mg/kg Method: OECD Test Guideline 425 GLP: yes Assessment: The substance or mixture has no acute oral toxicity Remarks: no mortality
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Acute inhalation toxicity : LC50 (Rat, male and female): > 5.09 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: EPA OPP 81 - 3
Symptoms: Tremors, chromodacryorrhea, nasal discharge
GLP: yes
Assessment: The substance or mixture has no acute inhalation toxicity
Remarks: no mortality

Acute dermal toxicity : LD50 (Rat, male and female): > 4,000 mg/kg
Method: US EPA Test Guideline OPP 81-2
GLP: yes
Assessment: The component/mixture is minimally toxic after single contact with skin.
Remarks: no mortality

Oxirane, methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]propyl] ether:

Acute oral toxicity : LD50 (Rat): 3,200 mg/kg

Acute inhalation toxicity : LC50 (Rat): 1.08 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): 1,550 mg/kg
LD50 (Rat): > 2,000 mg/kg

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Acute oral toxicity : LD0 (Rat, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 401
Remarks: no mortality

Acute dermal toxicity : LD50 (Rat, male and female): > 1,000 - 1,600 mg/kg
Method: OECD Test Guideline 402

Skin corrosion/irritation

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

Product:

Species : Rabbit
Result : No skin irritation

Components:

carfentrazone-ethyl (ISO):

Species : Rabbit
Assessment : Not classified as irritant

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Method	: US EPA Test Guideline OPP 81-5
Result	: slight irritation
GLP	: yes

Oxirane, methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]propyl] ether:

Result	: slight irritation
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Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Species	: Rabbit
Result	: Skin irritation

Serious eye damage/eye irritation

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

Product:

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

Components:

carfentrazone-ethyl (ISO):

Species	: Rabbit
Result	: slight irritation
Assessment	: Not classified as irritant
Method	: EPA OPP 81-4
GLP	: yes

Oxirane, methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]propyl] ether:

Species	: Rabbit
Result	: Moderate eye irritation

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Species	: Rabbit
Result	: Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation

May cause an allergic skin reaction.

Respiratory sensitisation

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

Product:

Species	: Guinea pig
Result	: May cause sensitisation by skin contact.

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Components:**carfentrazone-ethyl (ISO):**

Exposure routes	: Skin contact
Species	: Guinea pig
Method	: US EPA Test Guideline OPP 81-6
Result	: Does not cause skin sensitisation.
GLP	: yes

Test Type	: Local lymph node assay (LLNA)
Species	: Mouse
Method	: OECD Test Guideline 429
Result	: Does not cause skin sensitisation.
GLP	: yes

Oxirane, methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]propyl] ether:

Species	: Guinea pig
Result	: Not a skin sensitizer.

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

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

Chronic toxicity**Germ cell mutagenicity**

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

Product:

Germ cell mutagenicity - Assessment	: Weight of evidence does not support classification as a germ cell mutagen.
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Components:**carfentrazone-ethyl (ISO):**

Genotoxicity in vitro	: Test Type: reverse mutation assay Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative GLP: yes
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Test Type: Chromosome aberration test in vitro Test system: Chinese hamster ovary cells Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476 Result: negative GLP: yes
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Test Type: Ames test
 Metabolic activation: with and without metabolic activation
 Method: U.S. EPA 84-2
 Result: negative
 GLP: yes

Test Type: Ames test
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 471
 Result: negative
 GLP: yes

Test Type: Chromosome aberration test in vitro
 Test system: Chinese hamster ovary cells
 Metabolic activation: with and without metabolic activation
 Method: OECD Test Guideline 473
 Result: negative
 GLP: yes

Genotoxicity in vivo : Test Type: Micronucleus test
 Species: Mouse (male and female)
 Result: negative
 GLP: yes

Test Type: unscheduled DNA synthesis assay
 Species: Rat (male)
 Result: negative
 GLP: yes

Germ cell mutagenicity - Assessment : No genotoxic potential

Oxirane, methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]propyl] ether:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
 Test system: Chinese hamster ovary cells
 Method: OECD Test Guideline 473
 Result: negative

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

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Genotoxicity in vitro : Test Type: In vitro mammalian cell gene mutation test
 Result: negative
 Remarks: Based on data from similar materials

Test Type: reverse mutation assay
 Method: Mutagenicity (Salmonella typhimurium - reverse mu-

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tation assay)
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Application Route: Oral
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.

Carcinogenicity

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

Product:

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

Components:

carfentrazone-ethyl (ISO):

Species : Rat, female
Application Route : Ingestion
Exposure time : 2 Years
NOAEL : 3 mg/kg bw/day
LOAEL : 12 mg/kg bw/day
Method : U.S. EPA 83-5
Result : no increase in tumors observed
Target Organs : Liver
GLP : yes

Species : Mouse, female
Application Route : Ingestion
Exposure time : 80 weeks
NOAEL : 10 mg/kg bw/day
LOAEL : 110 mg/kg bw/day
Method : U.S. EPA 83-5
Result : no increase in tumors observed
Target Organs : Liver
GLP : yes

Carcinogenicity - Assessment : Animal testing did not show any carcinogenic effects.

Reproductive toxicity

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

Product:

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

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Components:**carfentrazone-ethyl (ISO):**

- Effects on fertility : Test Type: Multi-generation study
Species: Rat, male and female
Application Route: Ingestion
Fertility: NOEL: 4,000 ppm
Result: negative
- Effects on foetal development : Test Type: Embryo-foetal development
Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOEL: 100 mg/kg bw/day
Embryo-foetal toxicity: NOEL: 600 mg/kg bw/day
Result: negative
- Test Type: Embryo-foetal development
Species: Rabbit, female
Application Route: Oral
General Toxicity Maternal: NOEL: 150 mg/kg bw/day
Embryo-foetal toxicity: NOEL: > 300 mg/kg bw/day
Result: negative
- Reproductive toxicity - Assessment : Animal testing showed no reproductive toxicity.

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

- Effects on fertility : Test Type: Three-generation study
Species: Rat, male and female
Application Route: Oral
Dose: 14, 70, 350 mg/kg bw d
General Toxicity - Parent: NOAEL: 350 mg/kg body weight
General Toxicity F1: NOAEL: 350 mg/kg bw/day
General Toxicity F2: NOAEL: 350 mg/kg bw/day
Result: negative
Remarks: Based on data from similar materials
- Effects on foetal development : Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Oral
Dose: 0.2, 2.0, 300 and 600 mg/kg
Duration of Single Treatment: 20 d
General Toxicity Maternal: LOAEL: 600 mg/kg body weight
Teratogenicity: LOAEL: 600 mg/kg bw/day
Result: negative
Remarks: Based on data from similar materials
- Reproductive toxicity - Assessment : Weight of evidence does not support classification for reproductive toxicity

STOT - single exposure

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

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Product:

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

Components:

carfentrazone-ethyl (ISO):

Remarks : No significant adverse effects were reported

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

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

STOT - repeated exposure

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

Product:

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

Components:

carfentrazone-ethyl (ISO):

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

Repeated dose toxicity

Components:

carfentrazone-ethyl (ISO):

Species : Mouse, male
NOAEL : 143 mg/kg
LOAEL : 571 mg/kg
Application Route : Oral
Exposure time : 90 days
Method : EPA 82-1
GLP : yes
Target Organs : Blood, Liver

Species : Dog, male and female
NOEL : 150 mg/kg
LOAEL : 500 mg/kg
Application Route : Oral
Exposure time : 90 days
Target Organs : Blood

Species : Dog, male and female
NOEL : 50 mg/kg
NOAEL : 150 mg/kg
LOAEL : 500 mg/kg

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Application Route : Oral
Exposure time : 12 months
GLP : yes
Target Organs : Blood

Species : Rat, male
NOAEL : 58 mg/kg
Exposure time : 90 d
Method : EPA 82-1
GLP : yes

Oxirane, methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]propyl] ether:

Species : Rat
NOAEL : 200 mg/kg
Application Route : Oral
Exposure time : 28 d
Method : OECD Test Guideline 407

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Species : Rat, male and female
NOAEL : 40 mg/kg bw/day
LOAEL : 115 mg/kg bw/day
Application Route : Oral - feed
Exposure time : 6 months
Dose : 40, 115, 340, 1030 mg/kg bw d
Remarks : Based on data from similar materials

Aspiration toxicity

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

Product:

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

Components:

carfentrazone-ethyl (ISO):

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

Neurological effects

Components:

carfentrazone-ethyl (ISO):

No neurotoxicity observed in animal studies

Further information

Product:

Remarks : No data available

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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Product:**

Toxicity to algae/aquatic plants : ErC50 (algae): 0.45 mg/l

NOEC (algae): 0.1 mg/l

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

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

Components:**carfentrazone-ethyl (ISO):**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2.55 mg/l
Exposure time: 96 h
Test Type: semi-static test
Method: OECD Test Guideline 203

LC50 (Menidia beryllina (Silverside)): 1.14 mg/l
Exposure time: 96 h
Test Type: flow-through test

LC50 (Oncorhynchus mykiss (rainbow trout)): 1.6 mg/l
Exposure time: 96 h
Test Type: flow-through test
Method: EPA OPP 72-1

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 9.8 mg/l
End point: Immobilization
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: No toxicity at the limit of solubility

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): 0.0133 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

NOEC (Selenastrum capricornutum (green algae)): 0.00933 mg/l
End point: Growth rate
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

EbC50 (Selenastrum capricornutum (green algae)): 16 µg/l

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Exposure time: 120 h

EC50 (Navicula pelliculosa (Diatom)): 12 µg/l

Exposure time: 72 h

Test Type: static test

EC50 (Skeletonema costatum (Diatom)): 15 µg/l

Exposure time: 72 h

GLP: yes

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 22 µg/l
Exposure time: 89 d
Test Type: Early Life-Stage
Method: OECD Test Guideline 210
GLP: yes

NOEC (Oncorhynchus mykiss (rainbow trout)): 0.118 mg/l

Exposure time: 102 d

Test Type: flow-through test

Method: US EPA Test Guideline OPP 72-4

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.309 mg/l
End point: Growth
Exposure time: 21 d
Method: OECD Test Guideline 202

Toxicity to microorganisms : NOEC (activated sludge): 1,000 mg/l
Test Type: Respiration inhibition
Method: OECD Test Guideline 209

Toxicity to soil dwelling organisms : NOEC (Eisenia fetida (earthworms)): 820 mg/kg

Method: OECD Test Guideline 216

Remarks: No significant adverse effect on nitrogen mineralization.

Method: OECD Test Guideline 217

Remarks: No significant adverse effect on carbon mineralization.

Toxicity to terrestrial organisms : LD50 (Anas platyrhynchos (Mallard duck)): > 5,620 ppm
End point: Acute oral toxicity
Remarks: Dietary

LD50 (Colinus virginianus (Bobwhite quail)): 2,250 mg/kg

End point: Acute oral toxicity

NOEL (Colinus virginianus (Bobwhite quail)): 1000 ppm

End point: Reproduction Test

LD50 (Apis mellifera (bees)): > 200 µg/bee

End point: Acute oral toxicity

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LD50 (Apis mellifera (bees)): > 200 µg/bee
End point: Acute contact toxicity

Ecotoxicology Assessment

Toxicity Data on Soil : Harmful to the soil environment.

Oxirane, methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]propyl] ether:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 2.1 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 1.1 mg/l
aquatic invertebrates Exposure time: 48 h

Toxicity to algae/aquatic : EC50 (Scenedesmus subspicatus): 28.2 mg/l
plants Exposure time: 72 h

EC50 (Scenedesmus subspicatus): 152.2 mg/l
Exposure time: 72 h

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 31.6 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 62 mg/l
aquatic invertebrates Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapitata (green algae)): 29 mg/l
plants Exposure time: 96 h
Remarks: Based on data from similar materials

NOEC (Pseudokirchneriella subcapitata (green algae)): 0.5 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to fish (Chronic tox- : NOEC (Oncorhynchus mykiss (rainbow trout)): 0.23 mg/l
icity) Exposure time: 72 d
Test Type: flow-through test
Remarks: Based on data from similar materials

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 1.18 mg/l
aquatic invertebrates (Chron- Exposure time: 21 d
ic toxicity) Test Type: flow-through test
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (activated sludge): 550 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

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- Toxicity to soil dwelling organisms : NOEC (*Eisenia fetida* (earthworms)): 250 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 207
Remarks: Based on data from similar materials
- LC50 (*Eisenia fetida* (earthworms)): > 1,000 mg/kg
Exposure time: 14 d
Method: OECD Test Guideline 207
Remarks: Based on data from similar materials
- Plant toxicity : EC50: 167 mg/kg
Exposure time: 21 d
Species: *Sorghum bicolor* (sorghum)
- 80 mg/kg
Exposure time: 14 d
Species: *Avena sativa* (oats)
- Toxicity to terrestrial organisms : EC10 (*Hypoaspis aculeifer*): 82 mg/kg
Exposure time: 21 d
Remarks: Information given is based on data obtained from similar substances.

Persistence and degradability**Product:**

- Biodegradability : Result: Not readily biodegradable.
Remarks: Estimation based on data obtained on active ingredient.
Product contains minor amounts of not readily biodegradable components, which may not be degradable in waste water treatment plants.

Components:**carfentrazone-ethyl (ISO):**

- Biodegradability : Result: Not readily biodegradable.

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

- Biodegradability : Inoculum: activated sludge, non-adapted
Result: Not readily biodegradable.
Biodegradation: 2.9 %
Exposure time: 28 d
Method: OECD Test Guideline 301E
- Result: Inherently biodegradable.
Biodegradation: > 35 - 45 %
Exposure time: 10 d

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Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not bioaccumulate.
Estimation based on data obtained on active ingredient.

Components:

carfentrazone-ethyl (ISO):

Bioaccumulation : Species: Oncorhynchus mykiss (rainbow trout)
Bioconcentration factor (BCF): 176
Exposure time: 28 d
Method: OECD Test Guideline 305E
Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 3.7 (20 °C)

Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts:

Bioaccumulation : Bioconcentration factor (BCF): 3.16
Method: QSAR

Partition coefficient: n-octanol/water : log Pow: 4.595 (20 °C)

Mobility in soil

Product:

Distribution among environmental compartments : Remarks: Under normal conditions the substance/mixture is mobile in soil.
Estimation based on data obtained on active ingredient.

Components:

carfentrazone-ethyl (ISO):

Distribution among environmental compartments : Remarks: Mobile in soils

Other adverse effects

Product:

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

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : The product should not be allowed to enter drains, water

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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.
Do not re-use empty containers.
Packaging that is not properly emptied must be disposed of as the unused product.
Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Carfentrazone-ethyl)
Class : 9
Packing group : III
Labels : 9
Environmentally hazardous : yes

IATA-DGR

UN/ID No. : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(Carfentrazone-ethyl)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964
Environmentally hazardous : yes

IMDG-Code

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Carfentrazone-ethyl)
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes
Remarks : Environmentally hazardous substances/Marine Pollutants in single or combination packaging containing a net quantity per single or inner packaging of 5 kg or less for solids, or having a net quantity per single or inner packaging of 5 L or less for liquids may be transported as non-dangerous goods as pro-

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vided in special provision A197 of the IATA and section 2.10.2.7 of IMDG code.

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

Not applicable for product as supplied.

National Regulations

ADG

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Carfentrazone-ethyl)
Class	:	9
Packing group	:	III
Labels	:	9
Hazchem Code	:	•3Z
Environmentally hazardous	:	yes
Remarks	:	Environmentally hazardous substances meeting the descriptions of UN 3077 or UN 3082 are not subject to the ADG Code when transported by road or rail in packagings that do not incorporate a receptacle exceeding 500 kg / liters, or IBCs

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

Therapeutic Goods (Poisons Standard) Instrument : No poison schedule number allocated

APVMA Code: 61716

Prohibition/Licensing Requirements : There is no applicable prohibition, authorisation and restricted use requirements, including for carcinogens referred to in Schedule 10 of the model WHS Act and Regulations.

The components of this product are reported in the following inventories:

TCSI	:	Not in compliance with the inventory
TSCA	:	Product contains substance(s) not listed on TSCA inventory.
AIIC	:	Not in compliance with the inventory

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DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL. acetic acid Polymeric surfactant Aromatic hydrocarbons, C9; Alkylbenzenes; C9-aromatics Oxirane, methyl-, polymer with oxirane, mono[3-[1,3,3,3-tetramethyl-1-[(trimethylsilyl)oxy]disiloxanyl]propyl] ether 2-ethylhexyl oleate
ENCS	:	Not in compliance with the inventory
ISHL	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
NZIoC	:	Not in compliance with the inventory
TECI	:	Not in compliance with the inventory

SECTION 16: ANY OTHER RELEVANT 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 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;

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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; TECL - 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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