

AUTHORITY STRIKE™ HERBICIDE

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|---------|----------------|-------------|---------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 03/06/2023 |
| 1.2 | 10/13/2023 | 50000403 | Date of first issue: 08/03/2021 |

SECTION 1. IDENTIFICATION**Product identifier****Product name** AUTHORITY STRIKE™ HERBICIDE**Other means of identification****Product code** 50000403**Product Registration Number** 34867**Recommended use of the chemical and restrictions on use****Recommended use** Can be used as herbicide only.**Restrictions on use** Use as recommended by the label.**Details of the supplier of the safety data sheet****Manufacturer**

FMC of Canada Ltd
6755 Mississauga Road, Suite 204
Mississauga, ON L5N 7Y2
Canada
Phone (AgHotline): 1-833-FMC-PPAC (1-833-362-7722),
Web: <https://ag.fmc.com/ca/en>
SDS-Info@fmc.com

Supplier Address

FMC of Canada Limited
6755 Mississauga Road, Suite 204
Mississauga, ON L5N 7Y2
Canada

Emergency telephone

For leak, fire, spill or accident emergencies, call:
1 800 / 424-9300 (CHEMTREC - U.S.A.)
1 703 / 741-5970 (CHEMTREC - International)
1 703 / 527-3887 (CHEMTREC - Alternate)

Medical emergency:
U.S.A. & Canada: +1 800 / 331-3148
All other countries: +1 651 / 632-6793 (Collect)

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with the Hazardous Products Regulations**

Flammable liquids : Category 4

Acute toxicity (Inhalation) : Category 3

Carcinogenicity : Category 2

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Reproductive toxicity : Category 2

Specific target organ toxicity : Category 2
- repeated exposure

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H227 Combustible liquid.
H331 Toxic if inhaled.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:
P304 + P340 + P311 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

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

None known.

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Components

| Chemical name | Common Name/Synonym | CAS-No. | Concentration (% w/w) |
|--|--|-------------|-----------------------|
| Sulfentrazone | Sulfentrazone | 122836-35-5 | 31.77 |
| carfentrazone-ethyl (ISO) | carfentrazone-ethyl (ISO) | 128639-02-1 | 3.53 |
| glycerol | glycerol | 56-81-5 | $\geq 5 - < 10$ * |
| Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified | Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified | 64742-94-5 | $\geq 1 - < 5$ * |
| 2-methylnaphthalene | 2-methylnaphthalene | 91-57-6 | $\geq 1 - < 5$ * |
| toluene | Toluene | 108-88-3 | $\geq 1 - < 5$ * |
| propane-1,2-diol | propane-1,2-diol | 57-55-6 | $\geq 1 - < 5$ * |

* Actual concentration or concentration range is withheld as a trade secret

SECTION 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 : Flush eyes with water as a precaution.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- If swallowed : Induce vomiting immediately and call a physician.
Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and : Toxic if inhaled.
Suspected of causing cancer.

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delayed Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Carbon dioxide (CO₂)

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 : Carbon oxides
Nitrogen oxides (NO_x)
Halogenated compounds
Sulfur oxides
Thermal decomposition can lead to release of irritating gases and vapors.
Chlorine compounds
Fluorine compounds

Further information : 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.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Never return spills in original containers for re-use.
Mark the contaminated area with signs and prevent access to unauthorized personnel.
Only qualified personnel equipped with suitable protective equipment may intervene.
For disposal considerations see section 13.

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.

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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.

SECTION 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.
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.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|--|------------|-------------------------------|--|-----------|
| glycerol | 56-81-5 | TWA (Mist) | 10 mg/m ³ | CA AB OEL |
| | | TWA (Mist) | 10 mg/m ³ | CA BC OEL |
| | | TWA (Respirable mist) | 3 mg/m ³ | CA BC OEL |
| | | TWAEV (Mist) | 10 mg/m ³ | CA QC OEL |
| Solvent naphtha (petroleum), heavy arom.; Kerosine — un- | 64742-94-5 | TWA | 200 mg/m ³ (total hydrocarbon) | CA AB OEL |

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| specified | | | vapor) | |
| | | TWA | 200 mg/m ³ (total hydrocarbon vapor) | ACGIH |
| carfentrazone-ethyl (ISO) | 128639-02-1 | TWA (Inhalable particulate matter) | 1 mg/m ³ | ACGIH |
| 2-methylnaphthalene | 91-57-6 | TWA | 0.5 ppm | CA BC OEL |
| | | TWAEV | 0.5 ppm | CA QC OEL |
| toluene | 108-88-3 | TWA | 50 ppm 188 mg/m ³ | CA AB OEL |
| | | TWA | 20 ppm | CA BC OEL |
| | | TWAEV | 20 ppm | CA QC OEL |
| | | TWA | 20 ppm | ACGIH |
| propane-1,2-diol | 57-55-6 | TWA (Vapour and aerosols) | 50 ppm 155 mg/m ³ | CA ON OEL |
| | | TWA (aerosol) | 10 mg/m ³ | CA ON OEL |

Biological occupational exposure limits

| Components | CAS-No. | Control parameters | Biological specimen | Sampling time | Permissible concentration | Basis |
|------------|----------|--------------------|---------------------|--|---------------------------|-----------|
| toluene | 108-88-3 | Toluene | In blood | Prior to last shift of work-week | 0.02 mg/l | ACGIH BEI |
| | | Toluene | Urine | End of shift (As soon as possible after exposure ceases) | 0.03 mg/l | ACGIH BEI |
| | | o-Cresol | Urine | End of shift (As soon as possible after exposure ceases) | 0.3 mg/g creatinine | ACGIH BEI |

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

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.

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- 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 : Always have on hand a first-aid kit, together with proper instructions.
Ensure that eye flushing systems and safety showers are located close to the working place.
Plan first aid action before beginning work with this product.
Wear suitable protective equipment.
- 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.
-

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state : liquid
- Form : viscous liquid
- Color : off-white to white, yellow-orange
- Odor : solvent-like
- pH : 4.4
- Melting point/freezing point : 123 °C
- Initial boiling point and boiling range : No data available
- Flash point : > 91 °C
Method: closed cup
- Evaporation rate : No data available
- Self-ignition : No data available
- Upper explosion limit / Upper flammability limit : No data available

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Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

Density : 9.99 lb/gal

Bulk density : No data available

Solubility(ies)

 Water solubility : dispersible

 Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : No data available

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity

 Viscosity, dynamic : No data available

 Viscosity, kinematic : No data available

Explosive properties : No data available

Oxidizing properties : No data available

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.
Vapors may form explosive mixture with air.

Conditions to avoid : Heat, flames and sparks.

Incompatible materials : No data available

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Toxic if inhaled.

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Product:

Acute oral toxicity : LD50 (Rat): 5,000 mg/kg
Acute inhalation toxicity : LC50 (Rat): > 2.27 mg/l
Exposure time: 4 h
Test atmosphere: vapor
Acute dermal toxicity : LD50 (Rat): > 5,050 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Species : Rabbit
Result : slight irritation
Remarks : May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species : Rabbit
Result : slight irritation
Remarks : Vapors may cause irritation to the eyes, respiratory system and the skin.

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Assessment : Not a skin sensitizer.
Result : Does not cause skin sensitization.

Germ cell mutagenicity

Not classified based on available information.

Components:

Sulfentrazone:

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

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Test Type: Mouse lymphoma assay
 Test system: mouse lymphoma cells
 Metabolic activation: Metabolic activation
 Result: negative

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

Germ cell mutagenicity - Assessment : Animal testing did not show any mutagenic effects.

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

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

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

Germ cell mutagenicity - Assessment : No genotoxic potential.

glycerol:

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

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

Genotoxicity in vitro : Test Type: reverse mutation assay
 Method: OECD Test Guideline 471
 Result: negative
 Remarks: Based on data from similar materials

Genotoxicity in vivo : Test Type: Bone marrow chromosome aberration.
 Species: Rat
 Application Route: inhalation (vapor)
 Result: negative

2-methylnaphthalene:

Genotoxicity in vitro : Test Type: sister chromatid exchange assay
 Test system: Human lymphocytes
 Result: negative

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Test Type: Ames test
Result: negative

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects

toluene:

Genotoxicity in vitro : Test Type: Ames test
Result: negative

Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Test Type: Chromosome aberration test in vitro
Species: Rat
Result: negative

propane-1,2-diol:

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

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse
Result: negative

Carcinogenicity

Suspected of causing cancer.

Product:

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Components:**Sulfentrazone:**

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Oral
General Toxicity Parent: NOEL: 13.7 - 16.2 mg/kg bw/day
General Toxicity F1: NOEL: 13.7 - 16.2 mg/kg bw/day
Symptoms: Maternal effects.

Effects on fetal development : Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
General Toxicity Maternal: NOEL: 25 mg/kg bw/day
Developmental Toxicity: NOEL: 10 mg/kg bw/day
Method: EPA OPP 83-3

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Test Type: Embryo-fetal development
Species: Rat
Application Route: Oral
General Toxicity Maternal: LOAEL: 50 mg/kg bw/day
Developmental Toxicity: LOAEL F1: 25 mg/kg bw/day
Symptoms: Skeletal malformations.
Target Organs: spleen
Method: EPA OPP 83-3

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 fetal development : Test Type: Embryo-fetal development
Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOEL: 100 mg/kg bw/day
Embryo-fetal toxicity.: NOEL: 600 mg/kg bw/day
Result: negative

Test Type: Embryo-fetal development
Species: Rabbit, female
Application Route: Oral
General Toxicity Maternal: NOEL: 150 mg/kg bw/day
Embryo-fetal toxicity.: NOEL: > 300 mg/kg bw/day
Result: negative

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

glycerol:

Effects on fertility : Test Type: Two-generation study
Species: Rat
Application Route: Oral
Result: negative

Effects on fetal development : Test Type: Two-generation study
Species: Rat
Application Route: Oral
Result: negative

toluene:

Effects on fetal development : Species: Rat
Application Route: Inhalation
Result: Teratogenic effects.
Remarks: Adverse developmental effects were observed

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.

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propane-1,2-diol:

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

Effects on fetal development : Test Type: Embryo-fetal development
Species: Mouse
Application Route: Oral
Method: OECD Test Guideline 414
Result: Animal testing did not show any effects on fertility.
Remarks: Based on data from similar materials

STOT-single exposure

Not classified based on available information.

Components:

Sulfentrazone:

Remarks : No significant adverse effects were reported

carfentrazone-ethyl (ISO):

Remarks : No significant adverse effects were reported

2-methylnaphthalene:

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

toluene:

Assessment : May cause drowsiness or dizziness.

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Product:

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

Repeated dose toxicity

Components:

Sulfentrazone:

Species : Rat, male
NOAEL : 19.9 mg/kg
LOAEL : 65.8 mg/kg
Application Route : Oral - feed

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Exposure time : 90-days
GLP : yes
Target Organs : hematopoietic system

Species : Mouse, male
NOAEL : 60 mg/kg
LOAEL : 108.4 mg/kg
Application Route : Oral - feed
Exposure time : 90-days
Target Organs : hematopoietic system

Species : Dog, male
NOAEL : 10 mg/kg
LOAEL : 28 mg/kg
Application Route : Oral - feed
Exposure time : 90-days
Target Organs : hematopoietic system, Liver

carfentrazone-ethyl (ISO):

Species : Mouse, male and female
NOAEL : 1000 ppm
LOAEL : 4000 ppm
Application Route : Oral
Exposure time : 90 days
Target Organs : Blood

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

glycerol:

Species : Rat
LOAEL : 1 mg/kg
Application Route : Inhalation
Exposure time : 14 d
Dose : 0, 1, 1.93, 3.91 mg/L
Symptoms : respiratory tract irritation, Fatality

Species : Rat
NOAEL : 0.165 mg/l
LOAEL : 0.662 mg/l
Application Route : Inhalation

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Exposure time : 13 w
Dose : 0, 0.033, 0.165, 0.662 mg/L
Symptoms : respiratory tract irritation

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

Species : Rat, male and female
NOAEC : 0.9 - 1.8 mg/l
Application Route : inhalation (vapor)
Exposure time : 12 months

2-methylnaphthalene:

Species : Mouse, female
LOAEL : 50.3 mg/kg
Application Route : Oral
Exposure time : 81 w
Dose : 0, 50.3, 107.6 mg/kg-d
Symptoms : pulmonary effects, immune system effects

Species : Mouse
Application Route : Dermal
Exposure time : 30 w
Number of exposures : 2/w
Dose : 119 mg/kg-application
Symptoms : pulmonary effects
Remarks : Based on data from similar materials

toluene:

Species : Rat
NOAEL : 625 mg/kg
Application Route : Oral
Symptoms : central nervous system effects

Species : Rat
NOAEL : 0.098 mg/l
Application Route : Inhalation
Test atmosphere : vapor

Species : Rat
LOAEL : 2.261 mg/l
Application Route : Inhalation
Test atmosphere : vapor

propane-1,2-diol:

Species : Rat, male and female
NOAEL : 1,700 mg/kg
Application Route : Oral
Exposure time : 2 Years

Species : Rat, male and female
NOAEL : 1,000 mg/kg
LOAEL : 160 mg/kg
Application Route : Inhalation

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Exposure time : 90 Days

Aspiration toxicity

Not classified based on available information.

Components:

Sulfentrazone:

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

carfentrazone-ethyl (ISO):

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

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

May be fatal if swallowed and enters airways.

toluene:

May be fatal if swallowed and enters airways.

Experience with human exposure

Components:

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

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

2-methylnaphthalene:

Skin contact : Target Organs: Skin
Symptoms: Irritation

Neurological effects

Components:

Sulfentrazone:

Neurotoxicity observed in animals studies

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

Components:**Sulfentrazone:**

- | | | |
|--|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): > 120 mg/l Exposure time: 96 h Test Type: flow-through test Method: EPA OPP 72-1 |
| | | LC50 (Lepomis macrochirus (Bluegill sunfish)): 93.8 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)): 60.4 mg/l Exposure time: 48 h Test Type: flow-through test |
| | | NOEC (Daphnia magna (Water flea)): 14.1 mg/l Exposure time: 48 h Test Type: flow-through test |
| Toxicity to algae/aquatic plants | : | EC50 (algae): 32.8 mg/l Exposure time: 72 h |
| | | EC50 (Pseudokirchneriella subcapitata (green algae)): 0.031 mg/l Exposure time: 120 h |
| | | EC50 (Lemna gibba (duckweed)): 0.0288 mg/l Exposure time: 14 d |
| | | EC50 (Navicula pelliculosa (Diatom)): 0.042 mg/l Exposure time: 120 h |
| Toxicity to fish (Chronic toxicity) | : | NOEC (Fish): 5.9 mg/l Exposure time: 21 d |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC (Crustaceans): 0.51 mg/l Exposure time: 21 d |
| Toxicity to terrestrial organisms | : | LD50 (Anas platyrhynchos (Mallard duck)): > 5,620 ppm End point: Acute oral toxicity |
| | | NOEL (Anas platyrhynchos (Mallard duck)): 3,160 ppm End point: Acute oral toxicity |
| | | LD50 (Colinus virginianus (Bobwhite quail)): > 5,620 ppm End point: Acute oral toxicity |

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NOEL (Colinus virginianus (Bobwhite quail)): 5,620 ppm
End point: Acute oral toxicity

NOEL (Colinus virginianus (Bobwhite quail)): > 100 ppm
End point: Reproduction Test

NOEL (Anas platyrhynchos (Mallard duck)): > 100 ppm
End point: Reproduction Test

LD50 (Apis mellifera (bees)): > 25 µg/bee
End point: Acute oral toxicity

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

Ecotoxicology Assessment

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

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

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 (Anabaena flos-aquae (cyanobacterium)): 0.012 mg/l
Exposure time: 72 h

NOEC (algae): 0.001 mg/l
Exposure time: 96 h

EC50 (Lemna gibba (gibbous duckweed)): 0.0057 mg/l
Exposure time: 14 d

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

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 22 µg/l
Exposure time: 89 d

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- Test Type: Early Life-Stage
Method: OECD Test Guideline 210
GLP: yes
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia): 35 mg/l
End point: reproduction
Exposure time: 21 d
Method: US EPA Test Guideline OPPTS 850.1300
Remarks: Information given is based on data obtained from similar product.
- 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
LD50 (Apis mellifera (bees)): > 200 µg/bee
End point: Acute contact toxicity
- glycerol:**
- Toxicity to fish : LC50 (Fish): 885 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 1,955 mg/l
Exposure time: 48 h
- Toxicity to algae/aquatic plants : EC50 (Scenedesmus capricornutum (fresh water algae)): 2,900 mg/l
Exposure time: 192 h
- Toxicity to microorganisms : EC10 (Pseudomonas putida): 10,000 mg/l

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Exposure time: 16 h

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

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

Toxicity to daphnia and other : EL50 (Daphnia magna (Water flea)): 1.4 mg/l
aquatic invertebrates : Exposure time: 48 h
Method: OECD Test Guideline 202

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

Toxicity to daphnia and other : EL50 (Daphnia magna (Water flea)): 0.89 mg/l
aquatic invertebrates (Chron- : Exposure time: 21 d
ic toxicity) : Method: OECD Test Guideline 211

Toxicity to microorganisms : LL50 (Tetrahymena pyriformis): 677.9 mg/l
Exposure time: 72 h
Test Type: Growth inhibition

2-methylnaphthalene:

Toxicity to fish : LC50 (Fish): 2 mg/l
Exposure time: 96 h
Test Type: static test

Toxicity to daphnia and other : EC50 (Daphnia): 1.49 mg/l
aquatic invertebrates : End point: Immobilization
Test Type: static test

toluene:

Toxicity to fish : LC50 (Fish): 5.5 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50: 3.78 mg/l
aquatic invertebrates : Exposure time: 48 h

Toxicity to algae/aquatic : NOEC (Skeletonema costatum (marine diatom)): 10 mg/l
plants : Exposure time: 72 h

Toxicity to fish (Chronic tox- : NOEC (Oncorhynchus kisutch (coho salmon)): 1.4 mg/l
icity) :

Toxicity to daphnia and other : NOEC (Ceriodaphnia sp.): 0.74 mg/l
aquatic invertebrates (Chron- : Exposure time: 7 d
ic toxicity) :

Toxicity to microorganisms : EC50 (Bacteria): 134 mg/l
Exposure time: 3 h

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propane-1,2-diol:

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : (Mysidopsis bahia (opossum shrimp)): 18,800 mg/l
Exposure time: 96 h
- Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 34,100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 201
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC: 13,020 mg/l
Exposure time: 7 d
- Toxicity to microorganisms : EC50 (Pseudomonas putida): > 20,000 mg/l
Exposure time: 18 h

Persistence and degradability

Components:

Sulfentrazone:

- Biodegradability : Result: Not readily biodegradable.
- Stability in water : Degradation half life (DT50): 2.22 - 9.56 h
- Photodegradation : Remarks: Decomposes rapidly in contact with light.

carfentrazone-ethyl (ISO):

- Biodegradability : Result: Not readily biodegradable.

glycerol:

- Biodegradability : Result: Readily biodegradable.
Biodegradation: 94 %
Exposure time: 24 h

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

- Biodegradability : Result: Readily biodegradable.
Biodegradation: 58.6 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
Remarks: Based on data from similar materials

toluene:

- Biodegradability : Result: Readily biodegradable.

propane-1,2-diol:

- Biodegradability : Result: Readily biodegradable.
Biodegradation: 23.6 %

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Exposure time: 64 d
Method: OECD Test Guideline 306

Bioaccumulative potential

Components:

Sulfentrazone:

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
GLP: yes
Remarks: Low potential for bioaccumulation

Partition coefficient: n-octanol/water : Pow: 9.8
pH: 7

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)

glycerol:

Partition coefficient: n-octanol/water : log Pow: -1.75 (25 °C)
pH: 7.4

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

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

Partition coefficient: n-octanol/water : log Pow: 3.72
Method: QSAR

2-methylnaphthalene:

Partition coefficient: n-octanol/water : log Pow: 3.86

toluene:

Bioaccumulation : Bioconcentration factor (BCF): 90

Partition coefficient: n-octanol/water : log Pow: 2.73 (20 °C)

propane-1,2-diol:

Partition coefficient: n-octanol/water : log Pow: -1.07

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Mobility in soil

Components:

Sulfentrazone:

Mobility : Medium: Water
Remarks: Predicted distribution to environmental compartments

Distribution among environmental compartments : Koc: 43 ml/g, log Koc: 1.63
Remarks: Highly mobile in soils

Stability in soil : Remarks: Very persistent in soil.

carfentrazone-ethyl (ISO):

Distribution among environmental compartments : Remarks: The substance/mixture and its soil metabolites have a potential for being mobile, but were not detected in a field leaching study.

Koc: 866, log Koc: 2.93

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

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

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 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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

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UNRTDG

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Sulfentrazone)
Class : 9
Packing group : III
Labels : 9

IATA-DGR

UN/ID No. : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (Sulfentrazone)
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. (Sulfentrazone)
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes

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

Not applicable for product as supplied.

Domestic regulation

TDG

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Sulfentrazone)
Class : 9
Packing group : III
Labels : 9
ERG Code : 171
Marine pollutant : yes(Sulfentrazone)

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

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NPRI Components : toluene
naphthalene
ethylbenzene

The ingredients 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

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

2',4'-DICHLORO-5'-(4-DIFLUOROMETHYL-4,5-DIHYDRO-3-METHYL-5-OXO-1H-1,2,4-TRIAZOL-1-YL)METHANESULFONANILIDE

Smectite-group minerals

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

Canadian lists

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)

CA AB OEL : Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)

CA BC OEL : Canada. British Columbia OEL

CA ON OEL : Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.

CA QC OEL : Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

ACGIH / TWA : 8-hour, time-weighted average

CA AB OEL / TWA : 8-hour Occupational exposure limit

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CA BC OEL / TWA : 8-hour time weighted average
CA ON OEL / TWA : Time-Weighted Average Limit (TWA)
CA QC OEL / TWA EV : Time-weighted average exposure value

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 Organization 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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