SAFETY DATA SHEET
according to the Hazardous Products Regulations

FOCUS® Herbicide

Version	Revision Date:	SDS Number:	Date of last issue: -
1.0	11/03/2025	50002649	Date of first issue: 11/03/2025

SECTION 1. IDENTIFICATION

Product identifier

Product name FOCUS® Herbicide

Other means of identification

Product code 50002649

Product Registration Number 32292

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.

Manufacturer or supplier's details

Manufacturer

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

Acute toxicity (Inhalation) : Category 4

Carcinogenicity : Category 2

Reproductive toxicity : Category 2

Specific target organ toxicity - repeated exposure : Category 1 (Bladder, Heart, Liver, Kidney, Nervous system)

GHS label elements

Hazard pictograms :

Signal Word : DANGER

Hazard Statements : H372 Causes damage to organs (Bladder, Heart, Liver, Kidney, Nervous system) through prolonged or repeated exposure.
H361 Suspected of damaging fertility or the unborn child.
H351 Suspected of causing cancer.
H332 Harmful if inhaled.

Precautionary Statements :

Prevention:

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P271 Use only outdoors or in a well-ventilated area.
P270 Do not eat, drink or smoke when using this product.
P264 Wash skin thoroughly after handling.
P260 Do not breathe mist or vapors.
P202 Do not handle until all safety precautions have been read and understood.
P201 Obtain special instructions before use.

Response:

P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

Storage:

P405 Store locked up.

Disposal:

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

Other hazards

Very toxic to aquatic life with long lasting effects.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Pyroxasulfone	Pyroxasulfone	447399-55-5	36.9
carfentrazone-ethyl (ISO)	Carfentrazone-ethyl	128639-02-1	4.43
Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	Aromatic hydrocarbons	64742-94-5	>= 5 - < 10 *
propane-1,2-diol	Propylene glycol	57-55-6	>= 1 - < 5 *
Alkylated Naphthalene Sulfonate Sodium Salt	Alkylated Naphthalene Sulfonate Sodium Salt	68425-94-5	>= 1 - < 5 *

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

SECTION 4. FIRST AID MEASURES

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

If inhaled : Move to fresh air.
If unconscious, place in recovery position and seek medical advice.
Consult a physician after significant exposure.
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 : Get medical attention if irritation develops and persists.
Wash off immediately with plenty of water for at least 15 minutes.
Wash off immediately with soap and plenty of water.
Wash contaminated clothing before reuse.
Take off all contaminated clothing immediately.

In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Do not induce vomiting without medical advice.
Never give anything by mouth to an unconscious person.
Do not give milk or alcoholic beverages.

Keep respiratory tract clear.
If symptoms persist, call a physician.

Most important symptoms and effects, both acute and delayed : Causes damage to organs through prolonged or repeated exposure.
Suspected of damaging fertility or the unborn child.
Suspected of causing cancer.
Harmful if inhaled.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing
Avoid inhalation, ingestion and contact with skin and eyes.
If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Dry chemical, CO2, water spray or regular foam.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media : High volume water jet
Do not spread spilled material with high-pressure water streams.

Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products : Carbon oxides
Hydrogen fluoride
Fluorinated compounds
Nitrogen oxides (NOx)
Sulfur oxides
Sulphuric acid
Hydrogen cyanide
Fire may produce irritating, corrosive and/or toxic gases.
Fluorine compounds
Hydrogen chloride
Chlorinated compounds

Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Special protective equipment for fire-fighters : Firefighters should wear protective clothing and self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	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 unauthorized personnel.
Environmental precautions	:	If the product contaminates rivers and lakes or drains inform respective authorities. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.
Methods and materials for containment and cleaning up	:	Keep in suitable, closed containers for disposal. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	Dispose of rinse water in accordance with local and national regulations. Provide sufficient air exchange and/or exhaust in work rooms. Smoking, eating and drinking should be prohibited in the application area. For personal protection see section 8. Avoid contact with skin and eyes. Avoid exposure - obtain special instructions before use. Do not breathe vapors/dust. Avoid formation of aerosol.
Conditions for safe storage	:	Electrical installations / working materials must comply with the technological safety standards. Observe label precautions. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep container tightly closed in a dry and well-ventilated place.
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

Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified	64742-94-5	TWA	200 mg/m3 (total hydrocarbon vapor)	CA AB OEL
		TWAEV	200 mg/m3	CA QC OEL
		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
propane-1,2-diol	57-55-6	TWA (Vapour and aerosols)	50 ppm 155 mg/m3	CA ON OEL
		TWA (aerosol)	10 mg/m3	CA ON OEL
carfentrazone-ethyl (ISO)	128639-02-1	TWA (Inhalable particulate matter)	1 mg/m3	ACGIH

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.

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

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

Protective measures : Plan first aid action before beginning work with this product.
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.
Wear suitable protective equipment.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : liquid

Form : suspension

Color	:	off-white
Odor	:	No data available
Odor Threshold	:	No data available
pH	:	5.83 (21.7 °C)
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	> 100 °C
Evaporation rate	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Density	:	1.21 g/cm3 (21.6 °C)
Bulk density	:	No data available
Solubility(ies)		
Water solubility	:	No data available
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	:	4220 mm2/s (20.5 °C)

		No data available
		4405 mm2/s (40.5 °C)
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.
Conditions to avoid	:	Avoid formation of aerosol. Protect from frost, heat and sunlight.
Incompatible materials	:	Avoid strong acids, bases, and oxidizers.
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Harmful if inhaled.

Product:

Acute oral toxicity	:	LD50 Oral (Rat): > 5,000 mg/kg GLP: yes
Acute inhalation toxicity	:	LC50 (Rat): > 2.18 mg/l Exposure time: 4 h Test atmosphere: dust/mist GLP: yes
Acute dermal toxicity	:	LD50 Dermal (Rat): > 5,000 mg/kg GLP: yes

Components:

Pyroxasulfone:

Acute oral toxicity	:	LD50 (Rat): > 2,000 mg/kg Remarks: no mortality

Acute inhalation toxicity	:	LC50 (Rat): > 6.56 mg/l Exposure time: 4 h Test atmosphere: dust/mist Remarks: no mortality
Acute dermal toxicity	:	LD50 (Rat): > 2,000 mg/kg Remarks: no mortality

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
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

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

Acute oral toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 401 Remarks: Based on data from similar materials
Acute inhalation toxicity	:	LC50 (Rat): > 4.688 mg/l Exposure time: 4 h Test atmosphere: vapor Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Method: OECD Test Guideline 402

Assessment: The substance or mixture has no acute dermal toxicity

propane-1,2-diol:

Acute oral toxicity	:	LD50 (Rat, male and female): 22,000 mg/kg
Acute inhalation toxicity	:	LC0 (Rabbit): 31.7 mg/l Exposure time: 2 h Test atmosphere: vapor Remarks: no mortality
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

Alkylated Naphthalene Sulfonate Sodium Salt:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg

Skin corrosion/irritation

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

Product:

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

Components:

Pyroxasulfone:

Species	:	Rabbit
Result	:	No skin irritation

carfentrazone-ethyl (ISO):

Species	:	Rabbit
Assessment	:	Not classified as irritant
Method	:	US EPA Test Guideline OPP 81-5
Result	:	slight irritation
GLP	:	yes

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

Species	:	Rabbit
Assessment	:	Repeated exposure may cause skin dryness or cracking.
Result	:	No skin irritation
Remarks	:	Minimal effects that do not meet the threshold for classification. Based on data from similar materials

propane-1,2-diol:

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

Alkylated Naphthalene Sulfonate Sodium Salt:

Remarks	:	No data available

Serious eye damage/eye irritation

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

Product:

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

Components:

Pyroxasulfone:

Species	:	Rabbit
Result	:	slight irritation

carfentrazone-ethyl (ISO):

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

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

Species	:	Rabbit
Assessment	:	No eye irritation
Remarks	:	Minimal effects that do not meet the threshold for classification. Based on data from similar materials

propane-1,2-diol:

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

Alkylated Naphthalene Sulfonate Sodium Salt:

Result	:	Eye irritation

Respiratory or skin sensitization

Skin sensitization

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

Respiratory sensitization

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

Product:

Assessment	:	Not a skin sensitizer.
Result	:	Substance is not considered to be potential skin sensitiser.
GLP	:	yes

Components:

Pyroxasulfone:

Test Type	:	Local lymph node assay (LLNA)
Species	:	Mouse
Result	:	Does not cause skin sensitization.

carfentrazone-ethyl (ISO):

Routes of exposure	:	Skin contact
Species	:	Guinea pig
Method	:	US EPA Test Guideline OPP 81-6
Result	:	Does not cause skin sensitization.
GLP	:	yes

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

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

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

propane-1,2-diol:

Test Type	:	Maximization Test
Species	:	Guinea pig
Result	:	negative

Germ cell mutagenicity

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

Components:

Pyroxasulfone:

Genotoxicity in vitro	:	Test Type: Ames test Result: negative Test Type: In vitro mammalian cell gene mutation test Result: negative Test Type: Chromosome aberration test in vitro Result: negative
Genotoxicity in vivo	:	Test Type: Micronucleus test Species: Mouse Result: negative
Germ cell mutagenicity - Assessment	:	Weight of evidence does not support classification as a germ cell mutagen.

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 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 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.

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

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.

Components:

Pyroxasulfone:

Species : Rat, male
Exposure time : 2 Years
: 2.2 mg/kg bw/day
Result : positive
Target Organs : Bladder

Carcinogenicity - Assessment : Limited evidence of carcinogenicity in animal studies

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.

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

Species	:	Rat, male and female
Application Route	:	inhalation (vapor)
Exposure time	:	12 month(s)
NOAEC	:	1.8 mg/l
Result	:	negative
Remarks	:	Based on data from similar materials

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.

propane-1,2-diol:

Species	:	Rat
Application Route	:	Oral
Exposure time	:	2 Years
Result	:	negative

Reproductive toxicity

Suspected of damaging fertility or the unborn child.

Components:

Pyroxasulfone:

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.

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

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

Components:

carfentrazone-ethyl (ISO):

Remarks : No significant adverse effects were reported

STOT-repeated exposure

Causes damage to organs (Nervous system, Kidney, Liver, Heart, Bladder) through prolonged or repeated exposure.

Components:

Pyroxasulfone:

Target Organs : Nervous system, Kidney, Liver, Cardio-vascular system, Bladder

Assessment : The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

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
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

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

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
Exposure time	:	90 Days

Aspiration toxicity

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

Components:

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.

Experience with human exposure

Components:

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

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

Neurological effects

Components:

carfentrazone-ethyl (ISO):

No neurotoxicity observed in animal studies.

Further information

Product:

Remarks	:	No data available

Components:

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

Remarks	:	Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. Prolonged and/or repeated skin contact with low viscosity materials may defat the skin resulting in possible irritation and dermatitis. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Pyroxasulfone:

Toxicity to fish	:	LL50 (Oncorhynchus mykiss (rainbow trout)): > 202 mg/l Exposure time: 96 h LL50 (Lepomis macrochirus (Bluegill sunfish)): > 208 mg/l Exposure time: 96 h LL50 (Cyprinodon variegatus (sheepshead minnow)): > 3.3 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EL50 (Daphnia magna (Water flea)): > 4.4 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (green algae): 0.000743 mg/l Exposure time: 72 h EC50 (Lemna gibba (duckweed)): 0.00043 mg/l Exposure time: 7 d
Toxicity to fish (Chronic toxicity)	:	NOEC (Pimephales promelas (fathead minnow)): 2 mg/l Exposure time: 28 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 1.9 mg/l Exposure time: 21 d
Toxicity to soil dwelling organisms	:	LC50 (Eisenia fetida (earthworms)): > 997 mg/kg Exposure time: 14 d
Toxicity to terrestrial organisms	:	LD50 (Apis mellifera (bees)): > 100 µg/bee Exposure time: 48 d Remarks: Contact LOEC (Anas platyrhynchos (Mallard duck)): 60 mg/kg End point: Reproduction Test

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

LC50 (Lepomis macrochirus (Bluegill sunfish)): 2 mg/l
Exposure time: 96 h
Test Type: flow-through test

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
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 : NOEC (Daphnia magna (Water flea)): 0.309 mg/l

aquatic invertebrates (Chronic toxicity)		End point: Growth Exposure time: 21 d Method: OECD Test Guideline 202 NOEC (Daphnia magna (Water flea)): 0.316 mg/l End point: Growth Exposure time: 21 d Method: OECD Test Guideline 202 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 LC50 (Colinus virginianus (Bobwhite quail)): > 5,620 ppm End point: Acute oral toxicity Remarks: Dietary LD50 (Colinus virginianus (Bobwhite quail)): > 2,000 mg/kg End point: Acute oral toxicity Method: EPA OPP 71-1 LD50 (Colinus virginianus (Bobwhite quail)): > 2,250 mg/kg End point: Acute oral toxicity Method: EPA OPP 71-1 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

Ecotoxicology Assessment

Toxicity Data on Soil : Harmful to the soil environment.

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

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

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

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

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

Alkylated Naphthalene Sulfonate Sodium Salt:

Toxicity to fish : LC50 (Zebra fish): > 10 - 100 mg/l
Exposure time: 96 h

Method: OECD Test Guideline 203
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

EC10 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): > 10 - 100 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211
Remarks: Based on data from similar materials

Persistence and degradability

Components:

Pyroxasulfone:

Biodegradability : Result: Not readily biodegradable.

carfentrazone-ethyl (ISO):

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 3.9 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Stability in water : Degradation half life: 3.6 h pH: 9

Degradation half life: 8.6 d pH: 7

Photodegradation :

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

propane-1,2-diol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 23.6 %
Exposure time: 64 d
Method: OECD Test Guideline 306

Alkylated Naphthalene Sulfonate Sodium Salt:

Biodegradability : Result: Not readily biodegradable.
Remarks: Based on data from similar materials

Bioaccumulative potential

Components:

Pyroxasulfone:

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: 2.39 (25 °C)

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)

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

propane-1,2-diol:

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

Mobility in soil

Components:

Pyroxasulfone:

Distribution among environmental compartments : Adsorption/Soil
Koc: 57 - 114 ml/g, log Koc: > 1.75
Remarks: Highly mobile in soils

Stability in soil :

carfentrazone-ethyl (ISO):

Distribution among environmental compartments : Koc: 866, log Koc: 2.93
Remarks: Mobile in soils

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

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

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

Contaminated packaging : Do not re-use empty containers.
Dispose of as unused product.
Empty remaining contents.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
(Pyroxasulfone, 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.

(Pyroxasulfone, 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. (Pyroxasulfone, Carfentrazone-ethyl)
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
Not regulated as a dangerous good

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

Canadian PBT Chemicals	:	This product contains the following components on the DSL that are classified as Persistent, Bioaccumulative and/or Toxic (PBT) under CEPA: octamethylcyclotetrasiloxane [D4]
NPRI Components	:	Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified 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 chemical substance(s) exempt from CEPA DSL Inventory requirements. It is regulated as a pesticide subject to Pest Control Products Act (PCPA) require-

ments. Read the PCPA label, authorized under the Pest Control Products Act, prior to using or handling this pest control product.

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

Canadian lists

No substances are subject to a Significant New Activity Notification.

PMRA/PCPA Information

This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. The following is the hazard information required on the pest control product label:, Read the label, authorized under the Pest Control Products Act, prior to using or handling the pest control product

CAUTION

Avoid breathing dust or spray mist., Avoid contact with skin, eyes and clothing., Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet., Remove and wash contaminated clothing before reuse., Very toxic to aquatic life with long lasting effects.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: 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
CA ON OEL / TWA	:	Time-Weighted Average Limit (TWA)
CA QC OEL / TWAEV	:	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 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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Prepared by:

FMC Corporation

End of Safety Data Sheet