



Product Name: **CF-09-439 Herbicide (PCP#34658)**

Specification ID# **50002650**

CF-09-439 Herbicide is considered a mechanical mixture of three (3) individual products.

Attached are the component product SDSs which make up **CF-09-439 Herbicide**:

Express® 50 SG MUP

PCP # **28176**

SDS Date: **10/28/2022**

Specification ID#: **50000038**

Carfentrazone 40 WG MUP

PCP # **34141**

SDS Date: **07/20/2021**

Specification ID#: **50002567**

Metsulfuron methyl MUP

PCP# **26677**

SDS Date: **10/31/2022**

Specification ID#: **50001045**

Please read the SDS in order to have a complete understanding of all the risks associated with each product before use.

Manufacturer/Distributor:

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

Telephone Numbers:

Product Information: 1-833-362-7722

Medical Emergency: 1-800-331-3148 (USA & Canada) Preparation

Date: 09/16/2022

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SECTION 1. IDENTIFICATION

Product identifier

Product name EXPRESS(R) 50 SG MUP

Other means of identification

Product code 50000038

Chemical nature Herbicide

Product Registration Number PCP# 28176

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

Skin sensitization : Category 1

Specific target organ toxicity : Category 2
- repeated exposure

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GHS label elements

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H317 May cause an allergic skin reaction.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements : **Prevention:**
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.
P314 Get medical advice/ attention if you feel unwell.
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

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Chemical nature : Herbicide

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
tribenuron-methyl (ISO)	tribenuron-methyl (ISO)	101200-48-0	50

SECTION 4. FIRST AID MEASURES

General advice : Remove victim from exposure and then have him lie down in the recovery position.
Show this safety data sheet to the doctor in attendance.
Do not leave the victim unattended.

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- Keep at rest.
Keep warm and in a quiet place.
- If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.
- In case of skin contact : If on clothes, remove clothes.
In case of skin contact
If on skin, rinse well with water.
Wash off immediately with soap and plenty of water.
If skin irritation persists, call a physician.
- 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 : Do NOT induce vomiting.
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 delayed : May cause an allergic skin reaction.
May cause damage to organs through prolonged or repeated exposure.
- Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Dry chemical, CO2, water spray or regular foam.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : Nitrogen oxides (NOx)
Sulfur oxides
Carbon oxides
- 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.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Avoid dust formation.
Avoid breathing dust.
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.
- Methods and materials for containment and cleaning up : Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Avoid dust formation.
Provide appropriate exhaust ventilation at places where dust is formed.
- Advice on safe handling : Avoid formation of respirable particles.
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.
Dispose of rinse water in accordance with local and national regulations.
Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
- 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 stability : No decomposition if stored and applied as directed.

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SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

- | | | |
|--------------------------|---|---|
| Respiratory protection | : | In case of dust 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 | : | Dust impervious protective suit
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. |
| Hygiene measures | : | When using do not eat or drink.
When using do not smoke.
Wash hands before breaks and at the end of workday. |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- | | | |
|---------------------------|---|--|
| Appearance | : | solid, granules |
| Color | : | light brown |
| Odor | : | mild |
| pH | : | 8.4 - 9.4 (20 °C)
Concentration: 10 g/l
In a 1% aqueous dispersion |
| Flash point | : | not determined |
| Flammability (solid, gas) | : | Not highly flammable |
| Relative vapor density | : | not determined |
| Bulk density | : | 640 kg/m ³ packed |

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Solubility(ies)	
Water solubility	: soluble
Decomposition temperature	: Not available for this mixture.
Viscosity	
Viscosity, dynamic	: not determined
Explosive properties	: Not explosive

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	: Dust may form explosive mixture in air. No decomposition if stored and applied as directed.
Conditions to avoid	: dust formation moisture Heat, flames and sparks.
Incompatible materials	: Strong acids and strong bases Strong oxidizing agents
Hazardous decomposition products	: Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity	: LD50 (Rat): > 5,000 mg/kg Method: Fixed Dose Method GLP: yes
Acute inhalation toxicity	: Acute toxicity estimate: > 10 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	: LD50 (Rat): > 5,000 mg/kg Method: OECD Test Guideline 402 GLP: yes

Skin corrosion/irritation

Not classified based on available information.

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Product:

Species	:	Rabbit
Assessment	:	Not classified as irritant
Method	:	OECD Test Guideline 404
Result	:	No skin irritation
GLP	:	yes
Remarks	:	May cause skin irritation and/or dermatitis.

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Result	:	No eye irritation
Assessment	:	Not classified as irritant
Method	:	OECD Test Guideline 405
GLP	:	yes
Remarks	:	Product dust may be irritating to eyes, skin and respiratory system.

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified based on available information.

Product:

Species	:	Guinea pig
Assessment	:	The product is a skin sensitizer, sub-category 1B.
Method	:	Maximization Test
Result	:	The product is a skin sensitizer, sub-category 1B.

Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vitro	:	Remarks: The product contains no ingredients known to be mutagenic.
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Carcinogenicity

Not classified based on available information.

Product:

Remarks	:	The product contains no ingredients known to be carcinogenic.
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Reproductive toxicity

Not classified based on available information.

Product:

Effects on fertility : Remarks: The product contains no ingredients found to have adverse effects on reproduction.

STOT-single exposure

Not classified based on available information.

Product:

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

STOT-repeated exposure

May cause damage to organs through prolonged or repeated exposure.

Product:

Assessment : May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

tribenuron-methyl (ISO):

Species	: Rabbit
LOAEL	: 80 mg/kg
Target Organs	: Thyroid, Nervous system
Assessment	: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 2.
Remarks	: Increased mortality or reduced survival

Aspiration toxicity

Not classified based on available information.

Components:

tribenuron-methyl (ISO):

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

Further information

Product:

Remarks : No data available

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity**Product:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 120 mg/l
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia): > 120 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : EbC50 (Pseudokirchneriella subcapitata (green algae)): 0.0162 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

EC50 (Lemna gibba (duckweed)): 0.00652 mg/l
End point: Frond
Exposure time: 7 d
Method: US EPA Test Guideline OPP 122-2 & 123-2

Components:**tribenuron-methyl (ISO):**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 738 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Crustaceans): > 320 mg/l
Exposure time: 48 h

EC50 (Daphnia magna (Water flea)): > 894 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 0.0208 mg/l
Exposure time: 120 h

EC50 (Lemna gibba (duckweed)): 0.00424 mg/l
Exposure time: 14 d

Toxicity to fish (Chronic toxicity) : NOEC (Cyprinodon variegatus (sheepshead minnow)): 114 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

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		NOEC (Oncorhynchus mykiss (rainbow trout)): 560 mg/l Exposure time: 21 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 41 mg/l Exposure time: 21 d
Toxicity to soil dwelling organisms	:	NOEC (Eisenia fetida (earthworms)): 3.2 mg/kg Exposure time: 56 d
Toxicity to terrestrial organisms	:	LD50 (Colinus virginianus (Bobwhite quail)): > 2,250 mg/kg
		LD50 (Colinus virginianus (Bobwhite quail)): > 5,620 ppm Remarks: Dietary
		LD50 (Anas platyrhynchos (Mallard duck)): > 5,620 ppm Remarks: Dietary
		LD50 (Apis mellifera (bees)): > 98.4 µg/bee Exposure time: 48 h End point: Acute contact toxicity
		LD50 (Apis mellifera (bees)): > 9.1 µg/bee Exposure time: 48 h End point: Acute oral toxicity

Ecotoxicology Assessment

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

Persistence and degradability

Components:

tribenuron-methyl (ISO):

Biodegradability	:	Biodegradation: 29.4 % Exposure time: 28 d
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Bioaccumulative potential

Components:

tribenuron-methyl (ISO):

Bioaccumulation	:	Bioconcentration factor (BCF): < 1 Remarks: Does not bioaccumulate.
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Partition coefficient: n-octanol/water	:	log Pow: -0.38
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Mobility in soil

Product:

Distribution among environmental compartments : Remarks: Under normal conditions the active ingredient/s is/are of high to intermediate mobility in soil. There is a potential for leaching to groundwater.

Components:

tribenuron-methyl (ISO):

Distribution among environmental compartments : Remarks: Under normal conditions the active ingredient/s is/are of high to intermediate mobility in soil. There is a potential for leaching to groundwater.

Other adverse effects

Product:

Additional ecological information : Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark.
Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	: UN 3077
Proper shipping name	: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Tribenuron-methyl)
Class	: 9
Subsidiary risk	: ENVIRONM.

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Packing group : III
Labels : 9 (ENVIRONM.)

IATA-DGR

UN/ID No. : UN 3077
Proper shipping name : Environmentally hazardous substance, solid, n.o.s.
(Tribenuron-methyl)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 956
Packing instruction (passenger aircraft) : 956
Environmentally hazardous : yes

IMDG-Code

UN number : UN 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Tribenuron-methyl)
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

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.

METHYL 2-[4-METHOXY-6-METHYL-1,3,5-TRIAZIN-2-YL(METHYL)CARBAMOYLSULFAMOYL]BENZOATE

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D-Glucopyranose, 4-O-.beta.-D-galactopyranosyl-, monohydrate

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.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

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 Recom-

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mendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Disclaimer

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CA / EN

Prepared by:

FMC Corporation

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End of Material Safety Data Sheet

SAFETY DATA SHEET
Carfentrazone 40 WG MUP

SDS # : FO004353-3-A
Revision date: 2021-07-20
Format: NA
Version 1



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Carfentrazone 40 WG MUP

Other means of identification

Product Code(s) FO004353-3-A

Legacy Product Code 50002567

Synonyms CARFENTRAZONE-ETHYL:
ethyl α ,2-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl]
-4-fluorobenzenepropanoate (CAS name);
ethyl (RS)-2-chloro-3-[2-chloro-5- (4-difluoromethyl-4,5-dihydro-3-methyl-5-
oxo-1H-1,2,4-triazol-1-yl) -4-fluorophenyl] propionate (IUPAC name)

Active Ingredient(s) Carfentrazone-ethyl

Chemical Family Triazolinones

PCP # 34141

Recommended use of the chemical and restrictions on use

Recommended Use: Herbicide

Restrictions on Use: Use as recommended by the label.

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

Emergency telephone number

Medical Emergencies :
1 800 / 331-3148 (U.S.A. & Canada)
1 651 / 632-6793 (All Other Countries - Collect)

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)

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation

Category 2

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Signal Word: Warning

Hazard Statements

H319 - Causes serious eye irritation



Precautionary Statements - Prevention

P264 - Wash hands thoroughly after handling

P273 - Avoid release to the environment

P280 - Wear protective gloves/protective clothing/eye protection/face protection

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P337 + P313 - If eye irritation persists: Get medical advice/ attention

Precautionary Statements - Disposal

P501 - Dispose of contents/container according to label directions

Hazards not otherwise classified (HNOC)

No hazards not otherwise classified were identified.

Other Information

Very toxic to aquatic life with long lasting effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family

Triazolinones.

Chemical name	CAS-No	Weight %
Carfentrazone-ethyl	128639-02-1	40
Crystalline silica, quartz	14808-60-7	<1
Naphthalene sulfonic acid-formaldehyde condensate, sodium salt	9084-06-4	15 - 20

Synonyms are provided in Section 1.

4. FIRST AID MEASURES

Eye Contact

Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for further treatment advice.

Skin Contact

Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for further treatment advice.

Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
Ingestion	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	May cause eye irritation.
Indication of immediate medical attention and special treatment needed, if necessary	<p>Immediate medical attention is required in cases of ingestion. It may be helpful to show this safety data sheet to physician.</p> <p>Notes to physician: A specific antidote for exposure to this material is not known. Gastric lavage and/or the administration of activated charcoal can be considered. After decontamination, treatment should be directed at the control of symptoms and the clinical condition.</p>

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Small Fire	Dry chemical. Carbon dioxide (CO ₂).
Large Fire	Water spray. Foam.
Unsuitable extinguishing media	Avoid heavy hose streams.
Specific Hazards Arising from the Chemical	None known
Hazardous Combustion Products	The essential breakdown products are volatile, toxic, irritant and inflammable compounds such as nitrogen oxides, hydrogen fluoride, hydrogen chloride, sulphur dioxide, carbon monoxide, carbon dioxide and various fluorinated and chlorinated organic compounds.
Explosion data	
Sensitivity to Mechanical Impact	No information available.
Sensitivity to Static Discharge	No information available.
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate upwind.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
Other	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
Environmental Precautions	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains. Keep out of waterways. Do not release to the environment.
Methods for Containment	Nearby surface water drains should be covered. Minor spills on the floor or other impervious surface should immediately be swept up or preferably vacuumed up using equipment with high efficiency final filter. Transfer to suitable containers. Clean area with detergent and water. Do not let wash liquid enter drains or waterways. Absorb wash liquid with an inert absorbent such as universal binder, Fuller's earth, bentonite or other absorbent clay and collect in suitable containers. The used containers should be properly closed and labelled.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Handling Handle in accordance with good industrial hygiene and safety practice. Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Wash thoroughly after handling. Remove contaminated clothing and shoes.

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. A warning sign reading "POISON" is recommended. 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.

Packaging material Must only be kept in original packaging.

Incompatible products None known

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Carfentrazone-ethyl (128639-02-1)	TWA: 1 mg/m ³	-	-	-
Crystalline silica, quartz (14808-60-7)	TWA: 0.025 mg/m ³	TWA: 50 µg/m ³	IDLH: 50 mg/m ³ TWA: 0.05 mg/m ³	Mexico: TWA 0.025 mg/m ³
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Crystalline silica, quartz (14808-60-7)	TWA: 0.025 mg/m ³	TWA: 0.1 mg/m ³	TWA: 0.10 mg/m ³ respirable	TWA: 0.025 mg/m ³

Appropriate engineering controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Individual protection measures, such as personal protective equipment

Eye/Face Protection For dust, splash, mist or spray exposure, wear chemical protective goggles. Maintain eye wash fountain and quick-drench facilities in work area.

Skin and Body Protection Wear suitable protective clothing. Protective shoes or boots.

Hand Protection Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the outside of gloves with soap and water before reuse. Check regularly for leaks.

Respiratory Protection The product does not automatically present an airborne exposure concern during normal handling. In the event of an accidental discharge of the material which produces a heavy vapour or mist, workers should put on officially approved respiratory protection equipment with a universal filter type including particle filter.

Hygiene measures Clean water should be available for washing in case of eye or skin contamination. Remove and wash contaminated clothing before re-use. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Launder work clothing separately from regular household laundry.

General information If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Granules
Physical State	Solid
Color	Off-white to beige
Odor	Latex
Odor threshold	No information available
pH	8.63
Melting point/freezing point	No information available
Boiling Point/Range	No information available
Flash point	Not applicable
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Relative density	Pour density: 44.7 lbs/ft ³ (0.716 g/mL) Tap density: 45.9 lbs/ft ³ (0.735 g/mL)
Specific gravity	No information available
Water solubility	Emulsifies in water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Explosive properties	Not explosive
Oxidizing properties	Non-oxidizing
Molecular weight	No information available
Bulk density	Pour density: 44.7 lbs/ft ³ (0.716 g/mL) Tap density: 45.9 lbs/ft ³ (0.735 g/mL)

10. STABILITY AND REACTIVITY

Reactivity	None under normal use conditions
Chemical Stability	Stable under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Heating of the product will produce harmful and irritant vapors.
Incompatible materials	None known.
Hazardous Decomposition Products	See Section 5 for more information.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral	> 5000 mg/kg (female rat)
LD50 Dermal	> 5000 mg/kg (rat) (male/female)
LC50 Inhalation (dust)	> 5.18 mg/L 4 hr (rat) (male/female)
Serious eye damage/eye irritation	Moderately irritating (rabbit).
Skin corrosion/irritation	Slightly irritating (rabbit).

Sensitization Non-sensitizing (mice-LLNA).

Chemical name	LD50 Oral	LD50 Dermal	LC50 Inhalation (vapor)
Carfentrazone-ethyl (128639-02-1)	= 5143 mg/kg (rat)	> 4000 mg/kg (rat)	> 5 mg/L 4h (rat)
Naphthalene sulfonic acid-formaldehyde condensate, sodium salt (9084-06-4)	= 3800 mg/kg (Rat)		

Information on toxicological effects

Symptoms May cause eye irritation.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic toxicity Long-term exposure caused neurotoxicity (body tremors, decreased motor activity), decreased body weight and increased liver and spleen weight

Mutagenicity Carfentrazone-ethyl : Not genotoxic in laboratory studies.

Carcinogenicity Carfentrazone-ethyl No evidence of carcinogenicity from animal studies.

Neurological effects Carfentrazone-ethyl Not neurotoxic.

Reproductive toxicity Carfentrazone-ethyl . No toxicity to reproduction in animal studies.

Developmental toxicity Carfentrazone-ethyl . Not teratogenic in animal studies.

STOT - single exposure Not classified.

STOT - repeated exposure Not classified.

Neurological effects Carfentrazone-ethyl Not neurotoxic.

Aspiration hazard The product does not present an aspiration pneumonia hazard.

Chemical name	ACGIH	IARC	NTP	OSHA
Crystalline silica, quartz 14808-60-7	A2	Group 1	Known	X

Legend:

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
NTP (National Toxicology Program)
Known - Known Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Carfentrazone-ethyl (128639-02-1)				
Active Ingredient(s)	Duration	Species	Value	Units
	72 h EC50	Algae	0.012	mg/L
	96 h LC50	Rainbow trout	1.6	mg/L
	48 h LC50	Daphnia	>9.8	mg/L
	96 h NOEC	Algae	1.0	µg/L
	21 d NOEC	Fish	0.0187	mg/L
	21 d NOEC	Crustacea	0.22	mg/L
	LC50	Eisenia fetida	> 820	mg/kg
	LD50 Oral	Bee	> 200	µg/bee
	LD50 contact	Bee	> 200	µg/bee
	LD50 acute oral	Northern bobwhite	>2250	mg/kg
	LD50 Oral	Bobwhite quail	>2000	mg/kg

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Carfentrazone-ethyl	EC50 = 12 µg/l	96 h LC50 = 1,6 mg/L&0,0187	48 h EC50 > 9,8 mg/L&0,22

128639-02-1	14d EC50 = 0,0057 mg/L		
Sodium Benzoate 532-32-1		96 h LC50: 420 - 558 mg/L (Pimephales promelas) flow-through 96 h LC50: > 100 mg/L (Pimephales promelas) static	48 h EC50: < 650 mg/L (Daphnia magna)
Bis(2-ethylhexyl) sodium sulfosuccinate 577-11-7		96 h LC50: 20 - 40 mg/L (Oncorhynchus mykiss) semi-static 96 h LC50: < 24 mg/L (Oncorhynchus mykiss) static 96 h LC50: = 37 mg/L (Lepomis macrochirus) static	48 h EC50: = 36 mg/L (Daphnia magna)

Persistence and degradability Carfentrazone-ethyl . Non-persistent. Readily hydrolyzed. Not readily biodegradable.

Bioaccumulation Carfentrazone-ethyl . The substance does not have a potential for bioconcentration.

Mobility Carfentrazone-ethyl . Not relevant.

13. DISPOSAL CONSIDERATIONS

Waste disposal methods Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.

Contaminated containers and packages Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

14. TRANSPORT INFORMATION

DOT This material is not a hazardous material as defined by U.S. Department of Transportation 49 CFR Parts 100 through 185, unless shipped in bulk packaging. The classification below pertains to the shipment in bulk packaging [(>119 gal, liquid) or (882 lb, solid)].

TDG Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.

UN/ID no	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (carfentrazone-ethyl)
Hazard class	9
Packing Group	III
Marine Pollutant	Yes.
Description	UN3077, Environmentally hazardous substance, solid, n.o.s. (Carfentrazone-ethyl), 9, III, Marine Pollutant

ICAO/IATA

UN/ID no	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (carfentrazone-ethyl)
Hazard class	9
Packing Group	III
Description	UN3077, Environmentally hazardous substance, solid, n.o.s. (Carfentrazone-ethyl), 9, III, Marine Pollutant

IMDG/IMO

UN/ID no	UN3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (carfentrazone-ethyl)
Hazard class	9
Packing Group	III
EmS No.	F-A, S-F
Environmental Hazards	Marine Pollutant
Description	UN3077, Environmentally hazardous substance, solid, n.o.s. (Carfentrazone-ethyl), 9, III, Marine Pollutant

15. REGULATORY INFORMATION

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

FIFRA Information

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Warning

Causes moderate eye irritation. DO NOT get in eyes.

Avoid breathing dust. Avoid contact with eyes, skin or clothing.

Wash thoroughly with soap and water after handling.

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Crystalline silica, quartz 14808-60-7	X	X	X

International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINC S (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Carfentrazone-ethyl 128639-02-1					X			
Crystalline silica, quartz	X	X	X	X	X	X	X	X

14808-60-7								
Naphthalene sulfonic acid-formaldehyde condensate, sodium salt 9084-06-4	X	X		X	X	X	X	X

CANADA

This Safety Data Sheet is for a pesticide product registered by the Pest Management Regulatory Agency (PMRA), and is therefore also subject to certain requirements under Canadian pesticide laws, including the Pest Control Products Act (PCPA). These requirements differ from the classification criteria and hazard information required by the Hazardous Product Regulations (HPR) and WHMIS 2015 for safety data sheets, and for workplace labels of non-pesticide chemicals. The following information is determined by PMRA.

The approved pest control product label (the label), under the Pest Control Products Act, needs to be followed at all times and in cases where there are any discrepancies between the approved label and an SDS for that product it is the label information that prevails.

16. OTHER INFORMATION

NFPA	Health Hazards 1	Flammability 1	Instability 0	Special Hazards -
HMIS	Health Hazards 1	Flammability 1	Physical hazard 0	Personal Protection X

NFPA/HMIS Ratings Legend Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

Revision date: 2021-07-20
Reason for revision: Initial Release

Disclaimer

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Prepared By:

FMC Corporation

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End of Safety Data Sheet

SAFETY DATA SHEET



Metsulfuron-Methyl MUP Herbicide

Version	Revision Date:	SDS Number:	Date of last issue: -
1.1	10/31/2022	50001045	Date of first issue: 03/01/2018

SECTION 1. IDENTIFICATION

Product identifier

Product name Metsulfuron-Methyl MUP Herbicide

Other means of identification

Product code 50001045

Chemical nature Mixture

Product Registration Number PCP #26677

Recommended use of the chemical and restrictions on use

Recommended use Can be used for production of herbicides 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

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

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Metsulfuron-Methyl MUP Herbicide

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Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture

Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
metsulfuron-methyl (ISO)	metsulfuron-methyl (ISO)	74223-64-6	60

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 : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : Take off all contaminated clothing immediately.
Wash contaminated clothing before re-use.
Wash off immediately with soap and plenty of water.
Get medical attention if irritation develops and persists.

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 : 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.

Most important symptoms and effects, both acute and delayed : None known.

Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray, fog, or regular foam.

Unsuitable extinguishing media : High volume water jet

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- | | |
|--|---|
| Specific hazards during fire fighting | : Do not allow run-off from fire fighting to enter drains or water courses. |
| Hazardous combustion products | : Nitrogen oxides (NOx)
Sulfur oxides
Carbon oxides
Hydrogen cyanide |
| 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. |
| 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 | : Avoid dust formation.
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. |
| Methods and materials for containment and cleaning up | : Keep in suitable, closed containers for disposal. |

SECTION 7. HANDLING AND STORAGE

- | | |
|---|---|
| Advice on protection against fire and explosion | : Provide appropriate exhaust ventilation at places where dust is formed. |
| Advice on safe handling | : 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. |
| 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 | : No decomposition if stored and applied as directed. |

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age stability

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
sucrose	57-50-1	TWA	10 mg/m3	CA AB OEL
		TWA (Total dust)	10 mg/m3	CA BC OEL
		TWA (respirable dust fraction)	3 mg/m3	CA BC OEL
		TWAEV	10 mg/m3	CA QC OEL
		TWA	10 mg/m3	ACGIH

Personal protective equipment

- Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.
- Filter type : Particulates type
- 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 : Dust impervious protective suit
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.
- Hygiene measures : Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : granular

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Color	:	light brown
Odor	:	odorless
Odor Threshold	:	No data available
pH	:	5.0
Melting point/freezing point	:	No data available
Initial boiling point and boiling range	:	No data available
Flash point	:	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
Relative density	:	1.47 (25 °C)
Solubility(ies) Water solubility	:	dispersible
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.
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Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed. Dust may form explosive mixture in air.
Conditions to avoid	:	No data available
Incompatible materials	:	No data available

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Product:

Acute oral toxicity	:	LD50 Oral (Rat): > 5,000 mg/kg
Acute inhalation toxicity	:	LC50: > 5.3 mg/l Exposure time: 4 h Test atmosphere: dust/mist Remarks: Active ingredient
Acute dermal toxicity	:	LD50 Dermal (Rat): > 5,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Result	:	No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Result	:	Slight or no eye irritation

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Species	:	Guinea pig
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Result : Not a skin sensitizer.

Germ cell mutagenicity

Not classified based on available information.

Components:**metsulfuron-methyl (ISO):**

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

Test Type: Chromosome aberration test in vitro
Metabolic activation: Metabolic activation
Result: positive

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse
Result: negative

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

Carcinogenicity

Not classified based on available information.

Components:**metsulfuron-methyl (ISO):**

Species : Rat, male and female
Exposure time : 104 weeks
NOAEL : 500 ppm
Result : negative

Species : Mouse, male and female
Exposure time : 18 month(s)
NOAEL : 5,000 ppm
Result : negative

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

Reproductive toxicity

Not classified based on available information.

Components:**metsulfuron-methyl (ISO):**

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

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Effects on fetal development : Test Type: Embryo-fetal development
Species: Rabbit, female
Application Route: Ingestion
Symptoms: Maternal effects.
Result: negative

Test Type: Embryo-fetal development
Species: Rat, female
Application Route: Ingestion
Symptoms: Maternal effects.
Result: negative

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

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Repeated dose toxicity

Components:

metsulfuron-methyl (ISO):

Species	: Rat, male and female
NOEL	: 1000 ppm
Application Route	: Oral - feed
Exposure time	: 90 days
Symptoms	: Reduced body weight

Aspiration toxicity

Not classified based on available information.

Neurological effects

Components:

metsulfuron-methyl (ISO):

No neurotoxicity observed in animal studies.

Further information

Product:

Remarks : No data available

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SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****metsulfuron-methyl (ISO):**

- | | | |
|--|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): > 113 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

LC50 (Poecilia reticulata (guppy)): > 100 mg/l
Exposure time: 96 h |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): > 120 mg/l
Exposure time: 48 h |
| Toxicity to algae/aquatic plants | : | NOEC (Lemna minor (duckweed)): 0.16 µg/l
Exposure time: 14 d

ErC50 (Anabaena flos-aquae (cyanobacterium)): 0.1134 mg/l
Exposure time: 72 h

IC50 (Selenastrum capricornutum (green algae)): 0.045 mg/l
Exposure time: 72 h

ErC50 (Myriophyllum spicatum): 0.23 µg/l

ErC50 (Lemna gibba (gibbous duckweed)): 0.57 µg/l |
| Toxicity to fish (Chronic toxicity) | : | NOEC (Oncorhynchus mykiss (rainbow trout)): 68 mg/l
Exposure time: 21 d |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | NOEC (Daphnia magna (Water flea)): 0.5 mg/l
Exposure time: 21 d |
| Toxicity to soil dwelling organisms | : | NOEC (Eisenia fetida (earthworms)): 6 mg/kg
Exposure time: 56 d |
| Toxicity to terrestrial organisms | : | LD50 (Apis mellifera (bees)): > 100 µg/bee
End point: Acute contact toxicity

LD50 (Apis mellifera (bees)): > 91.72 µg/bee
End point: Acute oral toxicity

LD50 (Anas platyrhynchos (Mallard duck)): > 2,510 mg/kg |

Persistence and degradability**Components:****metsulfuron-methyl (ISO):**

- | | | |
|------------------|---|------------------------------------|
| Biodegradability | : | Result: Not readily biodegradable. |
|------------------|---|------------------------------------|

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Remarks: Primary degradation half-lives vary with circumstances, from a few weeks to a few months in aerobic soil and water.

Bioaccumulative potential

Product:

Bioaccumulation : Remarks: This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).
This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).

Components:

metsulfuron-methyl (ISO):

Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): < 1
Exposure time: 28 d
Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: -1.7 (25 °C)
pH: 7

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : Environmental hazards
Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

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.

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Send to a licensed waste management company.

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

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number : UN 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Metsulfuron-methyl)
Class : 9
Subsidiary risk : ENVIRONM.
Packing group : III
Labels : 9 (ENVIRONM.)

IATA-DGR

UN/ID No. : UN 3077
Proper shipping name : Environmentally hazardous substance, solid, n.o.s.
(Metsulfuron-methyl)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 956
Packing instruction (passenger aircraft) : 956
Environmentally hazardous : yes

IMDG-Code

UN number : UN 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Metsulfuron-methyl)
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 3077
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(Metsulfuron-methyl)
Class : 9
Packing group : III

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Labels	:	9
ERG Code	:	171
Marine pollutant	:	yes (Metsulfuron-methyl)

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

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

TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	Product contains substance(s) not listed on TSCA inventory.
AIIC	:	Not in compliance with the inventory
DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL. METHYL 2-[[[(4-METHOXY-6-METHYL-1,3,5-TRIAZIN-2-YL)CARBAMOYL]SULFAMOYL]BENZOATE
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	:	On the inventory, or 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.

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 BC OEL	:	Canada. British Columbia OEL
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for air-

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	borne contaminants
ACGIH / TWA	: 8-hour, time-weighted average
CA AB OEL / TWA	: 8-hour Occupational exposure limit
CA BC OEL / TWA	: 8-hour time weighted average
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

Disclaimer

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End of Material Safety Data Sheet