Product Name:
CS-100-23235 Herbicide
PCP # 32575

CS-100-23235 Herbicide is considered a mechanical mixture of three individual products. Attached are the component product SDS which make up CS-100-23235 Herbicide.

PP-23235	PCP # 29262 SDS Date: 03/01/2018 Ref: 130000050602
GP MUP	PCP # 32117 SDS Date: 03/19/2018
Metsulfuron-methyl MUP	PCP # 26677 SDS Date: 03/01/2018 Ref: 130000118729

Please review the attached SDS, for a full and complete understanding of the hazards associated with each product before use.

Manufacturer/Distributor:
FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
USA

Telephone Numbers:
Product Information: 1-215-299-6000
Medical Emergency: 1-800-331-3148 (USA & Canada)
Preparation Date: 01/29/2019

Member of CropLife Canada

PP-23235 Herbicide

Version 1.0

Revision Date 03/01/2018 Ref. 130000050602

This SDS adheres to the standards and regulatory requirements of Canada and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	PP-23235 Herbicide
SDS Number	:	130000050602
Product Use	:	Herbicide
Manufacturer/Supplier	:	FMC Corporation 2929 Walnut Street Philadelphia, PA 19104 (215) 299-6000 (General Information) msdsinfo@fmc.com (E-Mail General Information)
Medical Emergency	:	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)

SECTION 2. HAZARDS IDENTIFICATION

Potential Health Effects

Information presented in Section 2 conforms to the requirements of the Hazardous Products Regulations (HPR) and WHMIS 2015. See Section 15 for applicable information conforming to the requirements of the Pest Management Regulatory Agency (PMRA).

Skin

Tribenuron methyl	:	May cause allergic skin reaction.
Thifensulfuron methyl	:	May cause skin irritation. May cause: Irritation with discomfort or pain, redness or rash, itching or swelling.
Trisodium phosphate dodecahydrate	:	Acute dermal irritation/corrosion
Sodium carbonate	:	May cause skin irritation. May cause: Discomfort, itching, redness, or swelling.

Eyes

Tribenuron methyl	:	May irritate eyes.
Thifensulfuron methyl	:	May cause eye irritation. May cause: Tearing, redness, or discomfort.
Metsulfuron methyl	:	May cause eye irritation. May cause:, Tearing, redness, or discomfort..
Trisodium phosphate dodecahydrate	:	Corrosive, may cause permanent eye injury if not promptly treated.
Sodium carbonate	:	Causes eye irritation. May cause: Tearing, pain, redness, swelling, ulceration, visual impairment, or blindness. May cause irreversible eye damage.

Inhalation

Thifensulfuron methyl	:	May cause: Respiratory irritation, Discomfort, Cough.
Trisodium phosphate dodecahydrate	:	Respiratory tract damage
Sodium carbonate	:	May cause respiratory tract irritation.

Target Organ

Sodium carbonate	:	Respiratory Tract

Carcinogenicity

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Tribenuron methyl	101200-48-0	23.1 %

Thifensulfuron methyl	79277-27-3	23.1 %
Metsulfuron methyl	74223-64-6	4.6 %
Trisodium phosphate dodecahydrate	10101-89-0	1 - 5 %
Sodium carbonate	497-19-8	5 - 10 %
Other Ingredients		34.2 - 43.2 %

SECTION 4. FIRST AID MEASURES

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

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

Inhalation : Remove person to fresh air. If signs/symptoms continue, get medical attention. Artificial respiration and/or oxygen may be necessary. Call a poison control center or doctor for treatment advice.
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 treatment advice.

Ingestion : Call a poison control center or doctor for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Do not give anything by mouth to an unconscious person.

General advice	:	Have the product container or label with you when calling a poison control center or doctor, or going for treatment. Information presented in Section 4 conforms to the requirements of the Hazardous Products Regulations (HPR) and WHMIS 2015. See Section 15 for applicable information conforming to the requirements of the Pest Management Regulatory Agency (PMRA).
Notes to physician	:	Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray, Dry chemical, Carbon dioxide (CO2)
Unsuitable extinguishing media	:	High volume water jet, (contamination risk)
Firefighting Instructions	:	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment. (on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel)	:	Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Use personal protective equipment.
Spill Cleanup	:	Sweep up and shovel into suitable containers for disposal.
Accidental Release Measures	:	Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel)	:	Wash hands 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 re-use.

Storage	:	Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in original container. Keep out of the reach of children.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls	:	Use only with adequate ventilation. Information presented in Section 8 conforms to the requirements of the Hazardous Products Regulations (HPR) and WHMIS 2015. See Section 15 for applicable information conforming to the requirements of the Pest Management Regulatory Agency (PMRA).
Personal protective equipment		
Eye protection	:	Wear safety glasses with side shields.
Skin and body protection	:	Applicators and other handlers must wear: Long sleeved shirt and long pants Chemical-resistant gloves, Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), all greater than or equal to 14 mils Shoes plus socks PPE required for early entry to treated areas that is permitted in accordance with Provincial and Territorial management programs, and that involves contact with anything that has been treated, such as plants, soil, or water, is: Coveralls Chemical-resistant gloves, Category A (such as butyl rubber, natural rubber, neoprene rubber, or nitrile rubber), all greater than or equal to 14 mils Shoes plus socks
Protective measures	:	All chemical protective clothing should be visually inspected prior to use. Clothing and gloves should be replaced in case of chemical or physical damage or if contaminated. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Exposure Guidelines

Exposure Limit Values

No data available

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	solid, granules
Color	:	light brown

pH	:	7.5
Bulk density	:	0.65 - 0.75 g/cm3

SECTION 10. STABILITY AND REACTIVITY

Stability	:	Stable at normal temperatures and storage conditions.
Conditions to avoid	:	None reasonably foreseeable.
Incompatibility	:	No materials to be especially mentioned.

SECTION 11. TOXICOLOGICAL INFORMATION

PP-23235 Herbicide

Inhalation 4 h Acute toxicity estimate	:	> 5.0 mg/l , Rat
Dermal Acute toxicity estimate	:	> 5,000 mg/kg , Rat
Oral Acute toxicity estimate	:	> 5,000 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit Minimal effects that do not meet the threshold for classification.
Eye irritation	:	No eye irritation, Rabbit Minimal effects that do not meet the threshold for classification.
Sensitisation	:	The product is a skin sensitiser, sub-category 1B., Guinea pig
Further information	:	Information given is based on data on the components and the toxicology of similar products.
Further information	:	Information presented in section 11 conforms to the requirements of the Hazardous Products Regulations (HPR) and WHMIS 2015. See Section 15 for applicable information conforming to the requirements of the Pest Management Regulatory Agency (PMRA).

Tribenuron methyl

Repeated dose toxicity	:	The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions. Oral - feed Mouse 90 d

Reduced body weight gain

Oral
Rat
28 d
Reduced body weight gain

Carcinogenicity : Not classifiable as a human carcinogen.
An increased incidence of tumours was observed in laboratory animals.
Target(s):
Mammary glands

Reproductive toxicity : No toxicity to reproduction

Thifensulfuron methyl

Repeated dose toxicity :

The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.

Oral - feed
multiple species

Reduced body weight gain

Carcinogenicity : Animal testing did not show any carcinogenic effects.

Reproductive toxicity : No toxicity to reproduction
Animal testing showed no reproductive toxicity.

Teratogenicity : Did not show teratogenic effects in animal experiments.
Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.

Metsulfuron methyl

Repeated dose toxicity :

The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions.

Oral
Rat

Reduced body weight gain, Organ weight changes, Liver

Dermal
Rabbit

Skin irritation

Carcinogenicity : Not classifiable as a human carcinogen.
Did not show carcinogenic effects in animal experiments.

Reproductive toxicity : No toxicity to reproduction
Animal testing did not show any effects on fertility.

Teratogenicity : Animal testing showed no developmental toxicity.

Sodium carbonate

Repeated dose toxicity : Inhalation
Rat

Respiratory tract irritation

Reproductive toxicity : Animal testing showed no reproductive toxicity.

Teratogenicity : Animal testing showed no developmental toxicity.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Tribenuron methyl

96 h LC50 : Oncorhynchus mykiss (rainbow trout) 738 mg/l

120 h EC50 : Pseudokirchneriella subcapitata (microalgae) 0.11 mg/l

14 d EC50 : Lemna gibba (duckweed) 0.00425 mg/l

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

Thifensulfuron methyl

96 h LC50 : Oncorhynchus mykiss (rainbow trout) > 100 mg/l

14 d EC50 : Lemna minor (duckweed) 0.0013 mg/l

48 h EC50 : Daphnia magna (Water flea) 470 mg/l

28 d : NOEC Americamysis bahia (mysid shrimp) 7.93 mg/l

Metsulfuron methyl

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) > 150 mg/l
72 h EC50	:	Anabaena flos-aquae (cyanobacteria) 0.066 mg/l
14 d EC50	:	Lemna minor (common duckweed) 0.00036 mg/l
48 h EC50	:	Daphnia magna (Water flea) > 120 mg/l

Trisodium phosphate dodecahydrate

96 h EC50	:	Gambusia affinis (Mosquito fish) 151 mg/l
96 h EC50	:	Daphnia magna (Water flea) 126 mg/l

Sodium carbonate

96 h LC50	:	Lepomis macrochirus (Bluegill sunfish) 300 mg/l
48 h LC50	:	Ceriodaphnia dubia (water flea) 200 - 227 mg/l
4 d	:	EC50 Daphnia magna (Water flea) 228 - 297 mg/l

Environmental Fate

Sodium carbonate

Biodegradability	:	The methods for determining biodegradability are not applicable to inorganic substances.
Bioaccumulation	:	Does not bioaccumulate.
Additional ecological information	:	Environmental Hazards: 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.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal : Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulations.

SECTION 14. TRANSPORT INFORMATION

IATA_C UN number : 3077

	Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (Thifensulfuron-methyl, Tribenuron methyl)
	Class	:	9
	Packing group	:	III
	Labelling No.	:	9MI
IMDG	UN number	:	3077
	Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Thifensulfuron-methyl, Tribenuron methyl)
	Class	:	9
	Packing group	:	III
	Labelling No.	:	9
	Marine pollutant	:	yes (Thifensulfuron-methyl, Tribenuron methyl)

Not regulated as a hazardous material by DOT.
Not regulated as a hazardous material by IATA.
Optional classification as per IATA Special Provision A97.
Not regulated as a hazardous material by TDG.

SECTION 15. REGULATORY INFORMATION

Other regulations : 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.

May cause skin irritation. Avoid breathing spray mist. Avoid contact with skin, eyes and clothing. May be harmful if swallowed, in contact with skin or if inhaled. Causes eye and skin irritation.

PCP Registration # : 29262

SECTION 16. OTHER INFORMATION

MSDS preparation date : 03/01/2018

Contact person : FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
(215) 299-6000 (General Information)
msdsinfo@fmc.com (E-Mail General Information)

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Significant change from previous version is denoted with a double bar.

Material Safety Data Sheet

Issue Date: 03/19/2018
Print Date: 03/19/2018

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name: **GP MUP**

Recommended use of the chemical and restrictions on use
Identified uses: End use herbicide product

COMPANY IDENTIFICATION:

FMC Corporation
2929 Walnut Street
Philadelphia, PA 19104
(215) 299-6000 (General Information)
msdsinfo@fmc.com (General Information)

Medical Emergency:
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

Emergency Overview

Appearance

Physical state	Granules.
Color	Tan
Odor	Mild

Hazard Summary	**WARNING!!** May cause allergic skin reaction. May cause eye irritation. Isolate area. Toxic fumes may be released in fire situations. Slipping hazard. Highly toxic to fish and/or other aquatic organisms.

Potential Health Effects

Eyes: May cause eye irritation.
May cause slight corneal injury.

Skin: Brief contact may cause slight skin irritation with local redness.
Prolonged skin contact is unlikely to result in absorption of harmful amounts.
For the active ingredient(s):
Has caused allergic skin reactions when tested in guinea pigs.

Inhalation: No adverse effects are anticipated from single exposure to dust.
Excessive exposure may cause irritation to upper respiratory tract (nose and throat).

Ingestion: Very low toxicity if swallowed.
Harmful effects not anticipated from swallowing small amounts.

Chronic Exposure: For the active ingredient(s):
In animals, effects have been reported on the following organs:
Liver.

3. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a mixture.

Component	CASRN	Weight percent
Substituted Quinoline Derivative	Trade Secret	Trade secret
Pyroxsulam	422556-08-9	21.5%
Kaolin	1332-58-7	4.2%
Balance	Not available	Trade secret

4. FIRST AID MEASURES

Description of first aid measures
General advice: First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air. If person is not breathing, call an emergency responder or ambulance, then give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask etc). Call a poison control center or doctor for treatment advice.

Skin contact: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Suitable emergency safety shower facility should be available in work area.

Eye contact: Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eyes. Call a poison control center or doctor for treatment advice. Suitable emergency eye wash facility should be available in work area.

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 the poison control center or doctor. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed: Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Have the Safety Data Sheet, and if available, the product container or label with you when calling a poison control center or doctor, or going for treatment.

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers.

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture
Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Hydrogen chloride. Dense smoke. Carbon monoxide. Carbon dioxide.

Unusual Fire and Explosion Hazards: No data available

Advice for firefighters
Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Consider feasibility of a controlled burn to minimize environment damage. Foam fire extinguishing system is preferred because uncontrolled water can spread possible contamination. Soak thoroughly with water to cool and prevent re-ignition. Cool surroundings with water to localize fire zone. Contain fire water run-off if possible. Fire water run-off, if not contained, may cause environmental damage. Review the "Accidental Release Measures" and the "Ecological Information" sections of this (M)SDS.

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Refer to section 7, Handling, for additional precautionary measures. Spilled material may cause a slipping hazard. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Spills or discharge to natural waterways is likely to kill aquatic organisms.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Small spills: Sweep up. Collect in suitable and properly labeled containers. Large spills: Contact FMC Corporation for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

7. HANDLING AND STORAGE

Precautions for safe handling: Keep out of reach of children. Avoid prolonged or repeated contact with skin. Avoid contact with eyes, skin, and clothing. Do not swallow. Avoid breathing dust or mist. Wash thoroughly after handling. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: Store in a dry place. Store in original container. Do not store near food, foodstuffs, drugs or potable water supplies.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value/Notation
Pyroxsulam		TWA	5 mg/m3
		TWA	Skin Sensitizer
Kaolin	ACGIH	TWA Respirable fraction	2 mg/m3
	CA AB OEL	TWA Respirable	2 mg/m3
	CA BC OEL	TWA Respirable	2 mg/m3
	CA QC OEL	TWAEV respirable dust	5 mg/m3

Consult local authorities for recommended exposure limits.

RECOMMENDATIONS IN THIS SECTION ARE FOR MANUFACTURING, COMMERCIAL BLENDING AND PACKAGING WORKERS. APPLICATORS AND HANDLERS SHOULD SEE THE PRODUCT LABEL FOR PROPER PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING.

Exposure controls

Engineering controls: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyvinyl chloride ("PVC" or "vinyl"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions no respiratory protection should be needed; however, if discomfort is experienced, use an approved air-purifying respirator.

The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Granules.
Color	Tan
Odor	Mild
Odor Threshold	No data available
pH	4.13 *pH Electrode*
Melting point/range	No data available
Freezing point	Not applicable
Boiling point (760 mmHg)	Not applicable
Flash point	**closed cup** Not applicable
Evaporation Rate (Butyl Acetate = 1)	Not applicable
Flammability (solid, gas)	No data available
Lower explosion limit	Not applicable
Upper explosion limit	Not applicable
Vapor Pressure	Not applicable
Relative Vapor Density (air = 1)	Not applicable
Relative Density (water = 1)	No data available

Water solubility	No data available
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	Not applicable
Decomposition temperature	No data available
Dynamic Viscosity	Not applicable
Kinematic Viscosity	No data available
Explosive properties	No
Oxidizing properties	No significant increase (>5C) in temperature.
Bulk density	0.591 g/ml *Loose Volumetric* 0.6538 g/ml *Tapped Volumetric*
Molecular weight	No data available

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No dangerous reaction known under conditions of normal use.

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose.

Incompatible materials: Avoid contact with: Strong oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Hydrogen chloride. Nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Acute toxicity

Acute oral toxicity

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

As product: Single dose oral LD50 has not been determined. Based on information for component(s): Estimated.
LD50, Rat, > 5,000 mg/kg

Acute dermal toxicity
As product: The dermal LD50 has not been determined. Based on information for component(s): Estimated.
LD50, Rat, > 5,000 mg/kg

Acute inhalation toxicity
No adverse effects are anticipated from single exposure to dust. Excessive exposure may cause irritation to upper respiratory tract (nose and throat).
As product: The LC50 has not been determined.

Skin corrosion/irritation
Brief contact may cause slight skin irritation with local redness.

Serious eye damage/eye irritation
May cause moderate eye irritation.
Corneal injury is unlikely.

Sensitization
For the active ingredient(s):
Has caused allergic skin reactions when tested in guinea pigs.
Did not demonstrate the potential for contact allergy in mice.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Specific Target Organ Systemic Toxicity (Repeated Exposure)
For the active ingredient(s):
In animals, effects have been reported on the following organs:
Liver.

Carcinogenicity
For the active ingredient(s): Pyroxsulam. For similar active ingredient(s). Did not cause cancer in laboratory animals.

Teratogenicity
For the active ingredient(s): Pyroxsulam. For similar active ingredient(s). Did not cause birth defects or any other fetal effects in laboratory animals.

Reproductive toxicity
For the active ingredient(s): In animal studies, did not interfere with reproduction.

Mutagenicity
For the active ingredient(s): In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Aspiration Hazard
Based on physical properties, not likely to be an aspiration hazard.

COMPONENTS INFLUENCING TOXICOLOGY:

Substituted Quinoline Derivative

Acute inhalation toxicity
No adverse effects are anticipated from single exposure to dust. Based on the available data, respiratory irritation was not observed.

LC50, Rat, male and female, 4 Hour, dust/mist, > 6.11 mg/l No deaths occurred at this concentration.

Pyroxsulam

Acute inhalation toxicity
LC50, Rat, 4 Hour, Aerosol, > 5.12 mg/l No deaths occurred at this concentration.

Kaolin

Acute inhalation toxicity
As product: The LC50 has not been determined.

Balance

Acute inhalation toxicity
The LC50 has not been determined.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

Toxicity

Acute toxicity to algae/aquatic plants
Material is very highly toxic to aquatic organisms on an acute basis (LC50/EC50 <0.1 mg/L in the most sensitive species).

ErC50, Pseudokirchneriella subcapitata (green algae), 72 Hour, 5.3 mg/l, OECD Test Guideline 201

ErC50, Lemna gibba, 7 d, 0.0015 mg/l

NOEC, Lemna gibba, 7 d, 0.0026 mg/l

Persistence and degradability

Substituted Quinoline Derivative

Biodegradability: No relevant data found.

Pyroxsulam

Biodegradability: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
10-day Window: Fail
Biodegradation: 20 - 30 %
Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent

Kaolin

Biodegradability: Biodegradation is not applicable.

Balance

Biodegradability: No relevant data found.

Bioaccumulative potential

Substituted Quinoline Derivative

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 2.12 Estimated.

Pyroxsulam

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): -1.01 Measured

Balance

Bioaccumulation: No relevant data found.

Mobility in soil

Substituted Quinoline Derivative

Potential for mobility in soil is medium (Koc between 150 and 500).
Partition coefficient(Koc): 206 Estimated.

Pyroxsulam

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient(Koc): <= 42 Estimated.

Balance

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: If wastes and/or containers cannot be disposed of according to the product label directions, disposal of this material must be in accordance with your local or area regulatory authorities. This information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. If the material as supplied becomes a waste, follow all applicable regional, national and local laws.

14. TRANSPORT INFORMATION

TDG

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(PYROXSULAM)
UN number	UN 3077
Class	9
Packing group	III
Marine pollutant	PYROXSULAM

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.(PYROXSULAM)
UN number	UN 3077
Class	9
Packing group	III
Marine pollutant	PYROXSULAM
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.(PYROXSULAM)
UN number	UN 3077
Class	9
Packing group	III

Further information:
NOT REGULATED PER TDG EXEMPTION 1.45.1 FOR ROAD OR RAIL

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Hazardous Products Act Information: CPR Compliance
This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Hazardous Products Act Information: WHMIS Classification
This product is exempt under WHMIS.

National Fire Code of Canada
Not applicable

Canadian Domestic Substances List (DSL) (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) requirements.

Pest Control Products Act Registration Number: 32117

16. OTHER INFORMATION

Hazard Rating System
NFPA

Health	Fire	Reactivity
1	0	0

Revision
Identification Number: 101300824 / A215 / Issue Date: 02/05/2016 / Version: 2.0
DAS Code: GF-3361
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

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 airborne contaminants
TWA	8-hour time weighted average
TWAEV	Time-weighted average exposure value

Information Source and References
The information in this Safety Data Sheet is based entirely on information from FMC Corporation.

This SDS is prepared by the Global Regulatory Chemical Compliance team in the Global Regulatory Affairs Group from information supplied by internal references within our company.

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Material Safety Data Sheet

Metsulfuron Methyl MUP Herbicide

Version 1.0

Revision Date 03/01/2018 Ref. 130000118729

This SDS adheres to the standards and regulatory requirements of Canada and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Metsulfuron Methyl MUP Herbicide
Tradename/Synonym	:	DPX-T6376 60XP MUP B11495142 METSULFURON METHYL (Methyl 2-[[[[(4-methoxy-6-methyl-1,3,-triazin-2-yl)amino]carbonyl]amino]sulfonyl]benzoate) B10838190 Metsulfuron Methyl 60DF
SDS Number	:	130000118729
Product Use	:	Manufacturing Use Product (MUP)
Manufacturer	:	FMC Corporation 2929 Walnut Street Philadelphia, PA 19104 (215) 299-6000 (General Information) msdsinfo@fmc.com (E-Mail General Information)
Medical Emergency	:	1 800 / 331-3148 (ProPharma Group - U.S.A. & Canada) 1 651 / 632-6793 (ProPharma Group - 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)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

CAUTION!

Causes moderate eye irritation. Avoid contact with skin, eyes and clothing. Avoid breathing dust. Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Potential Health Effects

This section includes potential acute adverse effects which could occur if this material is not used according to the label.

Skin

Modified Aromatic Sulfonate Salt	:	Causes skin irritation. May cause:, Pain, burning sensation, itching, redness, swelling, or rash..
Phosphate Salt	:	Causes skin irritation. May cause:, Pain, burning sensation, itching, redness, swelling, or rash..
Eyes	:	May cause: Irritation with discomfort, pain, redness, or visual impairment.

Carcinogenicity

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Concentration
Metsulfuron methyl	74223-64-6	60 %
Modified Aromatic Sulfonate Salt		1 - 5 %
Phosphate Salt		1 - 5 %
Other Ingredients		30 - 38 %

*Hazardous Materials Information Review Act (HMIRA) Trade Secret – see Section 15 (Regulatory) for further information.

SECTION 4. FIRST AID MEASURES

Skin contact	:	Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Eye contact	:	Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
Inhalation	:	No specific intervention is indicated as the compound is not likely to be hazardous. Consult a physician if necessary.
Ingestion	:	No specific intervention is indicated as the compound is not likely to be hazardous. Consult a physician if necessary.
General advice	:	Have the product container or label with you when calling a poison control center or doctor, or going for treatment. See Section 1 for emergency phone numbers. See Label for Additional Precautions and Directions for Use.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Flammable Properties Flash point	:	Not applicable
Suitable extinguishing media	:	Water spray, Dry chemical, Foam, Carbon dioxide (CO2)
Unsuitable extinguishing media	:	High volume water jet, (contamination risk)
Firefighting Instructions	:	In the event of fire, wear self-contained breathing apparatus. Wear full protective equipment. (on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel)	:	Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus.
Spill Cleanup	:	Sweep up and shovel into suitable containers for disposal. If spill area is on ground near valuable plants or trees, remove 5 cm of top soil after initial clean-up.
Accidental Release Measures	:	Prevent material from entering sewers, waterways, or low areas. Never return spills in original containers for re-use. Dispose of in accordance with local regulations.

SECTION 7. HANDLING AND STORAGE

Handling (Personnel)	:	Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.
Storage	:	Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in original container. Store in a cool, dry place. Keep out of the reach of children.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Skin and body protection	:	Wear protective clothing such as gloves, apron, boots, or coveralls, as appropriate.
Protective measures	:	Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Exposure Guidelines

Exposure Limit Values

No data available

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	solid, granular
Color	:	light brown
Odor	:	odourless
pH	:	5.0

Specific gravity	:	1.47 at 25 °C (77 °F)
Bulk density	:	Tapped
Water solubility	:	dispersible

SECTION 10. STABILITY AND REACTIVITY

Stability	:	Stable at normal temperatures and storage conditions.
Conditions to avoid	:	None reasonably foreseeable.
Incompatibility	:	No materials to be especially mentioned.

SECTION 11. TOXICOLOGICAL INFORMATION

Metsulfuron Methyl MUP Herbicide

Dermal LD50	:	> 5,000 mg/kg , Rat
Oral LD50	:	> 5,000 mg/kg , Rat
Skin irritation	:	No skin irritation, Rabbit
Eye irritation	:	slight irritation, Rabbit
Sensitisation	:	Animal test did not cause sensitization by skin contact., Guinea pig
Further information	:	This product has no known adverse effect on human health.

Metsulfuron methyl

Inhalation 4 h LC50	:	> 5.3 mg/l , Rat
Repeated dose toxicity	:	The following effects occurred at levels of exposure that significantly exceed those expected under labeled usage conditions. Oral Rat Reduced body weight gain, Organ weight changes, Liver Dermal Rabbit Skin irritation

Carcinogenicity	:	Not classifiable as a human carcinogen. Did not show carcinogenic effects in animal experiments.
Reproductive toxicity	:	No toxicity to reproduction Animal testing did not show any effects on fertility.
Teratogenicity	:	Animal testing showed no developmental toxicity.

Phosphate Salt

Inhalation	:	Rat An LC50/inhalation/4h/rat could not be determined because no mortality of rats was observed at the maximum achievable concentration. Information given is based on data obtained from similar substances.
Repeated dose toxicity	:	Ingestion Dog 90 d No toxicological effects warranting significant target organ toxicity classification were seen below the recommended guidance values for classification., Information given is based on data obtained from similar substances.
Reproductive toxicity	:	No toxicity to reproduction Animal testing showed no reproductive toxicity. Information given is based on data obtained from similar substances.
Teratogenicity	:	Animal testing showed no developmental toxicity. Information given is based on data obtained from similar substances.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Metsulfuron methyl

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) > 150 mg/l
72 h EC50	:	Anabaena flos-aquae (cyanobacteria) 0.066 mg/l
14 d EC50	:	Lemna minor (common duckweed) 0.00036 mg/l
48 h EC50	:	Daphnia magna (Water flea) > 120 mg/l

Phosphate Salt

96 h LC50	:	Oncorhynchus mykiss (rainbow trout) > 100 mg/l OECD Test Guideline 203 Information given is based on data obtained from similar substances.
72 h ErC50	:	Desmodesmus subspicatus (green algae) > 100 mg/l OECD Test Guideline 201 Information given is based on data obtained from similar substances.
72 h NOEC	:	Desmodesmus subspicatus (green algae) > 100 mg/l OECD Test Guideline 201 Information given is based on data obtained from similar substances.
48 h EC50	:	Daphnia magna (Water flea) > 100 mg/l OECD Test Guideline 202 Information given is based on data obtained from similar substances.

Environmental Fate

DuPont™ Metsulfuron Methyl MUP Herbicide

Bioaccumulation	:	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).
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.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal	:	Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.
Container disposal:	:	Refer to the product label for instructions. Do not transport if this container is damaged or leaking.

In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.

SECTION 14. TRANSPORT INFORMATION

IATA_C	UN number	:	3077
	Proper shipping name	:	Environmentally hazardous substance, solid, n.o.s. (Metsulfuron methyl)
	Class	:	9
	Packing group	:	III
	Labelling No.	:	9MI
IMDG	UN number	:	3077
	Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Metsulfuron methyl)
	Class	:	9
	Packing group	:	III
	Labelling No.	:	9
	Marine pollutant	:	yes (Metsulfuron methyl)

Not regulated as a hazardous material by DOT.
Not regulated as a hazardous material by TDG.

SECTION 15. REGULATORY INFORMATION

PCP Registration #	:	26677
Remarks	:	Regulated under the Pest Control Products Act - WHMIS exempt.

SECTION 16. OTHER INFORMATION

MSDS preparation date : 03/01/2018

Metsulfuron Methyl MUP Herbicide

Version 1.0

Revision Date 03/01/2018 Ref. 130000118729

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