



SAFETY DATA SHEET

DREXEL UP-FRONT™ HERBICIDE

Section 1: Material Identification

Product Name: Drexel UP-Front™ Herbicide

EPA Reg No.: 19713-677

CAS NO: Fomesafen 72178-02-0
Metolachlor 51218-45-2

Formula: Fomesafen C₁₅H₁₀ClF₃N₂O₆S
Metolachlor C₁₅H₂₂ClNO₂

Company: Drexel Chemical Company
1700 Channel Avenue
Memphis, TN 38106

Identifiers:

EINECS: Fomesafen 276-439-9
Metolachlor 257-060-8

RTECS: Fomesafen TA5950000
Metolachlor AN3430000

DOT label: Non-regulated

Emergency Telephone Number:

CHEMTREC	Drexel Chemical Co.
Tel: 1-800-424-9300	901-774-4370

This product is an EPA FIFRA registered pesticide. Some of the classifications on this SDS are not the same as the FIFRA label. Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Please see **Section 15: REGULATORY INFORMATION** for explanation.

Section 2: Hazard Identification (As defined by the OSHA Hazard Communication Standard, 29)

GHS classification:

Health Hazards:	Acute inhalation	Category 4
	Skin irritation	Category 2
	Eye irritation	Category 2A
	Sensitization – skin	Category 1
	Specific target organ toxicity – (repeated exposure)	Category 2

Aquatic acute toxicity Category 1
Aquatic long term hazard Category 1

GHS label elements:

Signal Word:

DANGER



Hazard Statements:

Harmful if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause an allergic skin reaction.
May cause damage to organs (liver) through prolonged or repeated exposure.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention:

Avoid breathing mists or vapors. Use only outdoors or in well-ventilated area.
Wash exposed skin thoroughly after handling.
Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene, Nitrile/butadiene rubber (“nitrile” or “NBR”) or Polyvinyl chloride (“PVC” or “vinyl”).
Wear eye protection/face protection (see Section 8).
Contaminated work clothing must not be allowed out of the workplace.
Do not breathe dust/fume/gas/mist/vapors/spray.
Avoid release to the environment.

Response:

If inhaled: Remove person to fresh air and keep comfortable for breathing. 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.
If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash before reuse.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if easy to do. Continue rinsing. **If eye irritation persists:** Get medical advice/attention.
If you feel unwell: Get medical attention/advice.
Collect spillage.

Storage:

Store in a cool, dry, well ventilated and secure area designated specifically for pesticides and away from heat sources. Keep in original containers and keep containers closed when not in use. Do not store in excessive heat. Do not store near children, food, foodstuffs, drugs or potable water supplies.

Disposal:

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.

Section 3: Composition Information

<u>Components</u>	<u>CAS No.</u>	<u>% By Wt.</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Active Ingredient:				
Metolachlor	512818-45-2	46.4%	N/Av	N/Av
Fomesafen	72178-02-0	10.2%	2mg/m ³ TWA	N/AV
Inert Ingredients:	N/A	43.4%	N/A	N/A

Section 4: First-Aid Measures

Eye Contact: Hold eye 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 eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Rinse mouth with water then 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. Do not give anything by mouth to an unconscious person. Have product label with you when calling a poison control center or doctor.

Skin Contact: Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Destroy contaminated leather items such as shoes, belts, and watchbands.

If Inhaled: Move person 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.

Note to Physician: This product has low oral, dermal, and inhalation toxicity. If swallowed, gastric lavage using an endotracheal tube may be preferred to vomiting. May cause temporary eye irritation.

Section 5: Fire Fighting Measures

Fire Hazards: Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure. Thermal decomposition during a fire can produce fumes and irritating gases.

Flammability classification (OSHA 29 CFR 1910.1200): Non-Combustible.

Flash point: >200°F

Lower flammable limit (% by volume): N/Av

Upper flammable limit (% by volume): N/Av

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Evacuate the area and fight the fire from upwind at a safe distance to avoid hazardous vapors or decomposition products. Dike and collect fire-extinguishing water to prevent environmental damage and excessive waste runoff.

Firefighting media: Use foam, dry chemical, carbon dioxide, or water fog when fighting fires involving this product. Do not use water jet, as this may spread burning material. Minimize the use of water to avoid environmental contamination. Contain all runoff.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots, and gloves). Use full face shield

and operate in positive pressure mode. Avoid contact with this material during firefighting operations. If contact is likely, change to full chemical resistant firefighting 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.

Hazardous Combustion Products: Carbon oxides, nitrogen oxides, sulfur oxides, halogenated compounds, irritating fumes and smoke.

NFPA: Health: Flammability: Reactivity:

2 1 0

(Rating: 4-Extreme, 3-High, 2-Moderate, 1-Slight, 0-Insignificant)

Section 6: Accidental Release Measures

Steps to be taken if Material is Released or Spilled:

- Contain spilled material if possible. Small spills: absorb in earth, sand or absorbent material and sweep up. Collect in suitable and properly labeled containers. Large spills: Contact Drexel Chemical Co. for clean-up assistance. See Section 13, Disposal Considerations, for additional information.

Personal Precautions:

- 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. Ventilate area of leak or spill. 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.

Section 7: Handling and Storage

KEEP OUT OF REACH OF CHILDREN

Handling: General Handling: Avoid contact with eyes, skin, and clothing. When using do not eat, drink or smoke. Wash thoroughly after handling. Do not swallow. Avoid breathing vapor. Use with adequate ventilation. Wear long-sleeved shirt, long pants and shoes with socks when handling. Keep away from heat, sparks and flame. See Section 8, Exposure Controls and Personal Protection.

Storage: Store in a cool, dry, well ventilated and secure area designated specifically for pesticides and away from heat sources. Keep in original containers and keep containers closed when not in use. Do not store in excessive heat. Do not store near children, food, foodstuffs, drugs or potable water supplies.

Section 8: Exposure Controls / Personal Protection

Exposure Limits: Fomesafen 2mg/m³ TWA

Personal Protection:

Eye/Face Protection: Wear safety glasses with side shields or chemical splash goggles to prevent vapors or mists from entering the eyes. If using a full face shield, always use safety glasses or goggles along with the face shield to ensure adequate protection of the eyes.

Skin 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. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Neoprene, Nitrile/butadiene rubber (“nitrile” or “NBR”) or Polyvinyl chloride (“PVC” or “vinyl”).

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. When handling in enclosed areas, when large quantities of mists are generated or prolonged exposure is possible in excess of the TLV, use a respirator with either an organic vapor-removing cartridge with a prefilter approved for pesticides (MSHA/NIOSH approval number prefix TC-23C) or a canister approved for pesticides (MSHA/NIOSH approval number prefix TC-14G).

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls:

Ventilation: When handling this product proper ventilation is required to maintain exposure below the TLV. Ventilate all transport vehicles prior to unloading. Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.

Section 9: Physical and Chemical Properties

Physical state:	Liquid
Color:	Amber
Odor:	Mild
Odor threshold:	N/Av
Flash Point:	>200°F
Flammability:	Non-flammable
Upper/lower flammability or explosive limits:	N/Av
Vapor pressure (mmHg):	N/Av
Evaporation rate:	N/Av
Boiling point:	N/Av
Vapor density (air = 1):	N/Av
Bulk density (H₂O = 1):	1.11 g/cc
Freezing point:	N/Av
Solubility in water (wt. %) weight):	Miscible
Partition coefficient (n-octanol/water):	N/Av
pH:	8 - 9 @ 21°C (@ 5% dilution)
Viscosity:	230 cP
Explosive properties:	N/A
Melting point/freezing point:	N/Av

Section 10: Stability and Reactivity

Stability/Instability: Stable at typical use temperatures and in closed containers.

Conditions to Avoid: Avoid heat of open flame. Avoid high temperatures above 130°F (54.4°C).

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous Polymerization: Will not occur.

Thermal Decomposition: Decomposition products can include and are not limited to: Carbon oxides, nitrogen oxides, ammonia and halogenated compounds.

Section 11: Toxicological Information

Toxicity information for **Metolachlor technical**:

Acute Toxicity:

Ingestion (rat):

- Oral LD50: 2,780 mg/kg.

Dermal (rat):

- Dermal LD50: >2,000 mg/kg.

Inhalation (rat):

- Inhalation LC50: >4.3 mg/L.

Eye Irritation (rabbit):

- Mildly irritating

Skin Irritation (rabbit):

- Slightly irritating

Sensitization Skin (Guinea pig):

- Contact sensitizer.

Chronic Toxicity:

- None observed.

Carcinogenicity:

- Listed as Class C – Possible human carcinogen by EPA. Not listed by NTP/IARC/OSHA.

Target Organ:

- Liver.

Toxicity information for **Fomesafen technical**:

Acute Toxicity:

Ingestion (rat):

- Oral: LD50: >2,000 mg/kg.

Dermal (rat):

- LD50: >2,000 mg/kg.

Inhalation (rat):

- LC50, (24h): >3.87 mg/l.

Eye Irritation (rabbit):

- Mildly irritating

Skin Irritation (rabbit):

- Non-irritant.

Sensitization Skin:

- A moderate skin sensitizer in animal tests.

Chronic/Subchronic Toxicity Studies:

- Liver effects seen at 10 ppm and 100 ppm in 90 day rat feeding studies and 6-month dog studies at 25 mg/kg/d. No evidence of neurotoxicity from subacute or longer-term studies in mammals.

Carcinogenicity:

- Increased rates of malignant liver tumors in a 2-year mouse feeding study (1000ppm), but the results are not considered relevant to man.

Target Organs:

- Liver.

Teratogenicity, mutagenicity, and other reproductive effects: Non-genotoxic in in-vitro and in-vivo assays. Hepatic changes and a small effect on reproductive performance seen in a 3-generation rat study at 1000 ppm dose level.

Section 12: Ecological Information

Ecological information for Metolachlor:**ENVIRONMENTAL FATE:**

This product is non-toxic to birds and bees. Moderately toxic to fish and very toxic to some aquatic plants.

Persistence and Degradability:

- Persistent in water over a wide range of water acidity. Stable in water. Sinks in water (after 24 hr.).

Aquatic Toxicity:

- Rainbow Trout: 96 hour LC50: 3.9 mg/l.
- Bluegill: 96 hour LC50: 15.0 mg/l.
- Daphnia magna: 48 hour EC50: 25.1 mg/L.
- Algae: EC50: 0.1 mg/l.

Bird Toxicity:

- Bobwhite Quail: 8-day LC50: >10,000 ppm.
- Mallard Duck: 8-day LC50: >10,000 ppm

Ecological information for Fomesafen:

ENVIRONMENTAL FATE:

This product is slightly toxic to birds, fish, aquatic invertebrates and bees. This product may be toxic to non-target terrestrial plant species, primarily dicots. It is non-toxic to aquatic plants.

Persistence and Degradability:

- Fomesafen is persistent in soil and aquatic environments (half-life in soils is from 63-525 days and in water from 49-290 days). It degrades rapidly under anaerobic conditions (half-life is less than 20 days). Fomesafen is mobile in soil and has a potential to move into groundwater and to be transported off-site via runoff into surface waters. Studies indicate that Fomesafen has a very low potential for bioaccumulation.

Aquatic Toxicity:

- Rainbow Trout: 96 hour LC50: (680 mg/L).
- Bluegill: 96 hour LC50: (1,500 ppm).
- Daphnia magna: 48 hour EC50: (294 ppm).

Bees:

- 100 µg/bee.

Section 13: Disposal Considerations

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.

Section 14: Transport Information

DOT Classification: Non-Regulated.

IMDG/Water Transport - International

Proper Shipping Name: UN 3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Metolachlor), 9, PG-III Marine Pollutant

IATA/Air Transport - International

Proper Shipping Name: UN 3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Metolachlor), 9, PG-III

Freight Description: Agricultural Herbicide, Liquid, n.o.s.

ERG Guide Sheet: 171

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. 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.

Section 15: Regulatory Information

OSHA Hazard Communication Standard:

- This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
- **EPA FIFRA INFORMATION:**
This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemical. The hazard information required on the pesticide label is listed out below. The pesticide label also includes other important information, including directions for use.
- **EPA/CERCLA Reportable Quantity:** None Known

SARA/TITLE III:

- **Sec. 302. Extremely Hazardous Substance Notification:** Not applicable.
- **Sec. 311/312. Hazard Categories:** Acute health hazard
Chronic health hazard
- **Sec. 313. Toxic Chemical(s):** Metolachlor (26.1%) (CAS No. 512-45-2)
Fomesafen (10.2%) (CAS No. 72178-45-2)
- **RCRA Waste Code:** Not applicable

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986):

- This product is not listed.

Toxic Substances Control Act (TSCA):

- All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.

Section 16: Other Information

Drexel Chemical Company recommends that each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown below. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us for the most current version.

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