

# Material Safety Data Sheet

## Anthem™ Herbicide

SDS #: 6927-A

Revision Date: 2012-04-10

Version 1.01



This MSDS has been prepared to meet U.S. OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.

### 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product name</b>	Anthem™ Herbicide
<b>Active Ingredient(s)</b>	Pyroxasulfone, Fluthiacet-methyl
<b>Alternate Commercial Name</b>	F9310-6 SE Herbicide
<b>Synonyms</b>	Acetic acid, [[2-chloro-4-fluoro-5-[(tetrahydro-3-oxo-1H,3H-[1,3,4] thiadiazolo [3,4-alpha] pyridazin-1-ylidene) amino] phenyl] thio]-, methyl ester; 3-[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)pyrazol-4-ylmethylsulfonyl]-4,5-dihydro-5,5-dimethyl-1,2-oxazole; 3-[[[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl]methyl]sulfonyl]-4,5-dihydro-5,5-dimethylisoxazole
<b>Chemical Family</b>	Imine chemicals, Sulfonyloxazoline
<b>Recommended use</b>	Herbicide
<b>Manufacturer</b> FMC Corporation Agricultural Products Group 1735 Market Street Philadelphia, PA 19103 General Information: Phone: (215) 299-6000 E-Mail: msdsinfo@fmc.com	<b>Emergency telephone number</b>  Medical Emergencies: (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 / 527 3887 (CHEMTREC - Collect - All Other Countries)

### 2. Hazards identification

<b>Appearance</b>	liquid
<b>Physical state</b>	liquid
<b>Odor</b>	No information available.
<b>Physical or Chemical Hazards</b>	Keep away from heat, sparks, and open flame. .
<b>Potential health effects</b>	
<b>Acute effects</b>	
<b>Eyes</b>	Moderately irritating (rabbit).
<b>Skin</b>	Causes moderate skin irritation.
<b>Inhalation</b>	Inhalation of vapors in high concentration may cause irritation of respiratory system. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.
<b>Ingestion</b>	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause central nervous system depression. Potential for aspiration if swallowed.

**Chronic effects**  
**Most Important Symptoms/Effects** Repeated or prolonged exposure may cause central nervous system effects. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

**Environmental hazard** Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

### 3. Composition/information on ingredients

#### Hazardous ingredients

Chemical Name	CAS-No	Weight %
Naphtha (petroleum), heavy aromatic	64742-94-5	20-30
Pyroxasulfone	447399-55-5	22.79
Propylene glycol	57-55-6	5-10
Fluthiacet-methyl	117337-19-6	0.7

### 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 treatment advice.

**Inhalation** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.

**Ingestion** Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

**Notes to physician** Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

### 5. Fire-fighting measures

**Sensitivity to Mechanical Impact** not applicable  
**Sensitivity to Static Discharge** not applicable

**Suitable extinguishing media** Foam. Carbon dioxide (CO<sub>2</sub>). Dry chemical. Water spray or fog.

**Protective equipment and precautions for firefighters** As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate downwind.

#### NFPA

<b>Health Hazard</b>	1
<b>Flammability</b>	1
<b>Stability</b>	0
<b>Special Hazards</b>	-

### 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.

**Environmental precautions** Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.

<b>Methods for containment</b>	Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
<b>Methods for cleaning up</b>	Clean and neutralize spill area, tools and equipment by washing with bleach water and soap. Absorb rinsate and add to the collected waste. Waste must be classified and labeled prior to recycling or disposal. Dispose of waste as indicated in Section 13.
<b>Other</b>	For further clean-up instructions call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

## 7. Handling and storage

<b>Handling</b>	Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.
<b>Storage</b>	Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Store in original container only.

## 8. Exposure controls/personal protection

### Exposure guidelines

Chemical Name	British Columbia	Quebec	Ontario TWAEV	Alberta
Propylene glycol 57-55-6			TWA: 10 mg/m <sup>3</sup> TWA: 50 ppm TWA: 155 mg/m <sup>3</sup>	

### Occupational exposure controls

<b>Engineering measures</b>	Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.
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### Personal Protective Equipment

<b>General Information</b>	If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.
<b>Respiratory protection</b>	For dust, splash, mist or spray exposures wear a filtering mask.
<b>Eye/face protection</b>	For dust, splash, mist or spray exposure, wear chemical protective goggles or a face-shield.
<b>Skin and body protection</b>	Wear long-sleeved shirt, long pants, socks, shoes, chemical-resistant gloves and headgear.
<b>Hand protection</b>	Protective gloves

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

<b>Appearance</b>	liquid
<b>Physical state</b>	liquid
<b>Odor</b>	No information available.
<b>pH</b>	No information available.
<b>Melting Point/Range</b>	No information available.

Freezing point	No information available
Boiling Point/Range	not applicable
Flash Point	not applicable
Evaporation rate	not applicable
Autoignition Temperature	not applicable
Vapor pressure	No information available
Vapor density	No information available
Density	9.24 lb/gal
Water solubility	No information available
Percent volatile	No information available
Partition coefficient:	not applicable
Viscosity	No information available
Oxidizing properties	not applicable

## 10. Stability and reactivity

Stability	Stable
Conditions to avoid	Heat, flames and sparks
Hazardous decomposition products	Carbon oxides, nitrogen oxides (NOx), Sulfur oxides, Hydrogen chloride, Hydrogen fluoride.
Hazardous polymerization	Hazardous polymerization does not occur

## 11. Toxicological information

Eye contact	Mild irritant (rabbit)
Skin contact	Moderately irritating to skin (rabbit)
Ingestion	Potential for aspiration if swallowed. Vomiting after ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs, which may result in fatal pulmonary edema. May cause drowsiness and dizziness.
Inhalation	Inhalation of hydrocarbon vapors may cause headaches, dizziness, disturbances in vision, drowsiness, respiratory irritation, anesthesia, unconsciousness, and other central nervous system effects.
LD50 Dermal	5000 mg/kg (rat)
LD50 Oral	5000 mg/kg (rat)
LC50 Inhalation:	2.02 mg/L (rat)
Sensitization	Non-sensitizing
<b>Chronic Toxicity - Other Ingredient(s)</b>	
Chronic Toxicity	Repeated or prolonged exposure may cause central nervous system effects.
Carcinogenicity	Fluthiacet-methyl caused increases in benign tumors of pancreas in male rats at highest dose, along with pancreatic and liver toxicity. Increase in liver tumors at two highest doses in male mouse, along with hepatotoxicity, that could both be secondary to porphyria. Not recognized as carcinogenic by Research Agencies (IARC, NTP, OSHA, ACGIH).
Mutagenicity	Fluthiacet-methyl was positive in in-vitro chromosomal aberration tests and negative in in-vivo tests of mutagenicity, chromosomal aberrations, clastogenicity, DNA damage and dominant lethality. Pyroxasulfone: Not mutagenic.
Reproductive toxicity	Fluthiacet-methyl: Reproductive toxicity was observed in the rat only at doses well in excess of those causing systemic toxicity in parents.

<b>Neurological Effects</b>	Fluthiacet-methyl: Not neurotoxic.
<b>Developmental Toxicity</b>	Fluthiacet-methyl: A slight delay in fetal development in the rat, with no effects in the rabbit.
<b>Target Organ Effects</b>	Chronic and subchronic toxicity tests have shown effects on the liver, bone marrow, spleen, pancreas, lymphatic system, hematopoietic system, uterus and blood at high doses. High doses of fluthiacet-methyl have been shown to increase the incidence of liver tumors in male mice and pancreatic tumors in male rats.
<b>Chronic Toxicity - Other Ingredient(s)</b>	Repeated overexposure to propylene glycol can produce central nervous system depression, hemolysis and minimal kidney damage. Chronic exposure to aromatic hydrocarbons may cause headaches, dizziness, loss of sensations or feelings (such as numbness), and liver and kidney damage.

## 12. Ecological information

### Ecotoxicity

#### Pyroxasulfone (447399-55-5)

Active Ingredient(s)	Duration	Species	Value	Units
Pyroxasulfone:	96 h LC50	Rainbow trout	>2.2	mg/L
	96 h LC50	Bluegill sunfish	>2.8	mg/L
	48 h EC50	Daphnia magna	>4.4	mg/L
	96 h LC50	Algae	0.00079	mg/L

#### Fluthiacet-methyl (117337-19-6)

Active Ingredient(s)	Duration	Species	Value	Units
Fluthiacet-methyl	72 h LC50	Algae	0.00251	mg/L
	48 h LC50	Daphnia magna	>2.3	mg/L
	LC50	Bluegill sunfish	0.14	mg/L
	LC50	Rainbow trout	0.43	mg/L
	LD50 Oral	Bobwhite quail	>2250	mg/kg
	LD50 Oral	Mallard duck	>2250	mg/kg

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Naphtha (petroleum), heavy aromatic	2.5 mg/L EC50 72 h (Skeletonema costatum)	LC50 19 mg/L Pimephales promelas 96 h LC50 2.34 mg/L Oncorhynchus mykiss 96 h LC50 1740 mg/L Lepomis macrochirus 96 h LC50 45 mg/L Pimephales promelas 96 h LC50 41 mg/L Pimephales promelas 96 h		EC50 0.95 mg/L 48 h
Propylene glycol	19000 mg/L EC50 96 h (Pseudokirchneriella subcapitata)	LC50 51600 mg/L Oncorhynchus mykiss 96 h LC50 41 - 47 mL/L Oncorhynchus mykiss 96 h LC50 51400 mg/L Pimephales promelas 96 h LC50 710 mg/L Pimephales promelas 96 h		EC50 > >10000 mg/L 24 h EC50 > >1000 mg/L 48 h

### Environmental Fate

**Pyoxasulfone (447399-55-5)**

Active Ingredient(s)	Type of Test	Result
Pyoxasulfone:	log Pow	2.39

**Fluthiacet-methyl (117337-19-6)**

Active Ingredient(s)	Type of Test	Result
Fluthiacet-methyl	Bioconcentration factor (BCF), Bluefill sunfish (Lepomis macrochirus)	240
	log Pow	4.1
	Mobility in soil	Not expected to reach groundwater
	Soil degradation	<2 days
	Stability in water	Hydrolysis half-life of 18 days (pH 7); Stable at pH 5 and unstable at pH 9.

Chemical Name	log Pow
Naphtha (petroleum), heavy aromatic	2.9 - 6.1

**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.

**Contaminated packaging**

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 at 49 CFR Parts 100 through 185.

**Packaging Type**

Bulk, Non-Bulk

**TDG****Proper shipping name**

Environmentally hazardous substance, liquid, n.o.s.

**Hazard Class**

9

**UN/ID No**

UN3082

**Packing group**

III

**Marine pollutant**

Pyoxasulfone, Fluthiacet-methyl.

**Description**

UN3082, Environmentally hazardous substance, liquid, n.o.s. (Pyoxasulfone, Fluthiacet-methyl), 9, PG III

**ICAO/IATA****UN/ID No**

UN3082

**Proper shipping name**

Environmentally hazardous substance, liquid, n.o.s.

**Hazard Class**

9

**Packing group**

III

**Marine pollutant**

Pyoxasulfone, Fluthiacet-methyl

**Description**

UN3082, Environmentally hazardous substance, liquid, n.o.s. (Pyoxasulfone, Fluthiacet-methyl), 9, PG III

**Limited quantity**

30 kg G

**IMDG/IMO****Proper shipping name**

Environmentally hazardous substance, liquid, n.o.s.

**Hazard Class**

9

**UN/ID No**

UN3082

**Packing group**

III

EmS No.	F-A, S-F
Marine pollutant	Pyroxasulfone, Fluthiacet-methyl
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Pyroxasulfone, Fluthiacet-methyl), 9, PG III

## 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	yes
Fire Hazard	no
Sudden Release of Pressure Hazard	no
Reactive Hazard	no

#### 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.

#### TSCA Inventory (United States of America)

Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(a) - Chemical-Specific Reporting and Recordkeeping
Naphtha (petroleum), heavy aromatic	Partially exempt chemical substance termed Petroleum Process Stream

### International Regulations

#### Mexico - Grade

Slight risk, Grade 1

#### Canada

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

#### WHMIS Hazard Class

D2B Toxic materials



## 16. Other information

Revision Date:	2012-04-10
Reason for revision:	Initial Release.

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**End of Material Safety Data Sheet**