

Material Safety Data Sheet

Anthem™ ATZ Herbicide

SDS # : 7009-A

Revision Date: 2012-04-10

Version 1.02



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

Product name	Anthem™ ATZ Herbicide
Active Ingredient(s)	Atrazine, Pyroxasulfone, Fluthiacet-methyl
Synonyms	2-Chloro-4-ethylamino-6-isopropylamino-s-triazine; 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;
Chemical Family	Triazine, Imine chemicals, Sulfonyloxazoline
Recommended use	Herbicide
Manufacturer FMC Corporation Agricultural Products Group 1735 Market Street Philadelphia, PA 19103 General Information: Phone: (215) 299-6000 E-Mail: msdsinfo@fmc.com	Emergency telephone number 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

Appearance	cream white suspension
Physical state	Liquid
Odor	odorless
Physical or Chemical Hazards	. Keep away from heat, sparks, and open flame.
Potential health effects	
Acute effects	
Eyes	May cause moderate eye irritation.
Skin	May cause moderate skin irritation.
Inhalation	Toxic by inhalation. May cause drowsiness and dizziness.
Ingestion	Toxic if swallowed. May cause central nervous system depression. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic effects Repeated or prolonged exposure may cause central nervous system effects. May cause adverse cardiovascular effects.

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 %
Atrazine	1912-24-9	43.5
Propylene glycol	57-55-6	5-10
Pyroxasulfone	447399-55-5	5.44
2-METHYLNAPHTHALENE	91-57-6	<3
Naphtha (petroleum), heavy aromatic	64742-94-5	<2
1-Methylnaphthalene	90-12-0	<2
Fluthiacet-methyl	117337-19-6	0.15

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

Flash Point > 100 °C
Sensitivity to Mechanical Impact not applicable
Sensitivity to Static Discharge not applicable

Suitable extinguishing media Foam. Carbon dioxide (CO₂). 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

Health Hazard	1
Flammability	1
Stability	0
Special Hazards	-

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.
Methods for containment	Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	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.
Other	For further clean-up instructions call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

7. Handling and storage

Handling	Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.
Storage	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	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Atrazine 1912-24-9	TWA: 5 mg/m ³		TWA: 5 mg/m ³	
1-Methylnaphthalene 90-12-0	S* TWA: 0.5 ppm			
Chemical Name	British Columbia	Quebec	Ontario TWAEV	Alberta
Atrazine 1912-24-9	TWA: 5 mg/m ³	TWA: 5 mg/m ³	TWA: 5 mg/m ³	TWA: 5 mg/m ³
Propylene glycol 57-55-6			TWA: 10 mg/m ³ TWA: 50 ppm TWA: 155 mg/m ³	
1-Methylnaphthalene 90-12-0	TWA: 0.5 ppm Skin		TWA: 0.5 ppm Skin	

Occupational exposure controls

Engineering measures	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

General Information	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.
Respiratory protection	For dust, splash, mist or spray exposures wear a filtering mask.
Eye/face protection	For dust, splash, mist or spray exposure, wear chemical protective goggles or a face-shield.
Skin and body protection	Wear long-sleeved shirt, long pants, socks, shoes, chemical-resistant gloves and headgear.
Hand protection	Protective gloves

Hygiene measures

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.

9. Physical and chemical properties

Appearance	cream white suspension
Color	white
Physical state	Liquid
Odor	odorless
pH	4.70 (1% solution)
Melting Point/Range	No information available.
Freezing point	No information available.
Boiling Point/Range	not applicable
Flash Point	> 100 °C
Evaporation rate	not applicable
Autoignition Temperature	not applicable
Vapor pressure	No information available.
Vapor density	No information available.
Density	9.43 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	Moderately irritating (rabbit).
Skin contact	Moderately irritating to skin (rabbit)
LD50 Dermal	> 2000 mg/kg (rat)
LD50 Oral	310.2 mg/kg (rat)
LC50 Inhalation:	2.10 mg/L (rat)
Sensitization	Non-sensitizer

Chronic Toxicity - Other Ingredient(s)

Chronic Toxicity	Repeated or prolonged exposure may cause central nervous system effects. May cause adverse cardiovascular effects.
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Carcinogenicity

Not recognized as carcinogenic by Research Agencies (IARC, NTP, OSHA, ACGIH). Atrazine: Mammary tumors noted in female rats (sex and strain specific - Sprague-Dawley rats). No effects noted in male rats of same strain, male and female rats of different strain, or in mice. 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.

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

Atrazine:: No toxicity to reproduction. Fluthiacet-methyl: Reproductive toxicity was observed in the rat only at doses well in excess of those causing systemic toxicity in parents.

Neurological Effects

Fluthiacet-methyl: Not neurotoxic.

Developmental Toxicity

Fluthiacet-methyl: A slight delay in fetal development in the rat, with no effects in the rabbit.

Target Organ Effects

Cardiotoxicity was observed in dogs given high doses of Atrazine in long term studies. 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.

Chronic Toxicity - Other Ingredient(s)

Repeated overexposure to propylene glycol can produce central nervous system depression, hemolysis and minimal kidney damage.

12. Ecological information

Ecotoxicity

Active Ingredient(s)				
Atrazine (1912-24-9)				
Active Ingredient(s)	Duration	Species	Value	Units:
Atrazine	96 h LC50	Rainbow trout	4.5	mg/L
	5 day EC50	Algae	49	µg/L
	48 h EC50	Daphnia magna	6.9	mg/L
	12 day LD50	Bobwhite quail	940	mg/kg
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
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
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

Environmental Fate

Active Ingredient(s)		
Atrazine (1912-24-9)		
Active Ingredient(s)	Type of Test	Result
Atrazine	Bioconcentration factor (BCF)	Low bioaccumulation potential
	Half-life in soil	Not persistent in soil
	Stability in water	Stable in water.
	Mobility in soil	Highly mobile in soil.
Pyroxasulfone (447399-55-5)		
Active Ingredient(s)	Type of Test	Result
Pyroxasulfone	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

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

UN/ID No	UN3082
Hazard Class	9
Packing group	III
Marine pollutant	Atrazine. Pyroxasulfone. Fluthiacet-methyl.
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Atrazine, Pyroxasulfone, Fluthiacet-methyl), 9, PG III, Marine Pollutant

ICAO/IATA

UN/ID No	UN3082
Hazard Class	9
Packing group	III
Marine pollutant	Atrazine Pyroxasulfone Fluthiacet-methyl
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Atrazine, Pyroxasulfone, Fluthiacet-methyl), 9, PG III, Marine Pollutant

IMDG/IMO

UN/ID No	UN3082
Hazard Class	9
Packing group	III
EmS No.	F-A, S-F
Marine pollutant	Atrazine Pyroxasulfone Fluthiacet-methyl
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Atrazine, Pyroxasulfone, Fluthiacet-methyl), 9, PG 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	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
Atrazine	PAIR: 09/29/2006
Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances
Atrazine	09/29/2006

International Regulations

Mexico - Grade

Moderate risk, Grade 2

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

D1B Toxic materials
 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