

# SAFETY DATA SHEET

Authority® 4F Herbicide

SDS # : 6355-A

Revision date: 2016-05-26

Format: NA

Version 1.03



## 1. PRODUCT AND COMPANY IDENTIFICATION

### Product Identifier

**Product Name** Authority® 4F Herbicide

### Other means of identification

**Product Code(s)** 6355-A

**Synonyms** SULFENTRAZONE (FMC 97285):  
2',4'-dichloro-5'-(4-difluoromethyl-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl)  
methanesulfonamide (IUPAC name);  
N-[2,4-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-  
1,2,4-triazol-1-yl]phenyl] methanesulfonamide (CAS name)

**Active Ingredient(s)** Sulfentrazone

**Chemical Family** Triazolinones

### Recommended use of the chemical and restrictions on use

**Recommended Use:** Herbicide

**Restrictions on Use:** Use as recommended by the label

### Manufacturer Address

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

### Emergency telephone number

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)

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

## 2. HAZARDS IDENTIFICATION

### Classification

#### OSHA Regulatory Status

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

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Specific target organ toxicity (repeated exposure)	Category 2

GHS Label elements, including precautionary statements

**EMERGENCY OVERVIEW**

**Warning**

**Hazard Statements**

H332 - Harmful if inhaled

H373 - May cause damage to organs through prolonged or repeated exposure



**Precautionary Statements - Prevention**

P271 - Use only outdoors or in a well-ventilated area

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**

P314 - Get medical advice/ attention if you feel unwell

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P312 - Call a POISON CENTER or doctor if you feel unwell

**Precautionary Statements - Disposal**

P501 - Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

No hazards not otherwise classified were identified.

**Other Information**

Very toxic to aquatic life.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Chemical Family** Triazolinones.

Chemical name	CAS-No	Weight %
Sulfentrazone	122836-35-5	40
Propylene glycol	57-55-6	5-10
Toluene	108-88-3	1-5
n-Butanol	71-36-3	1-5

Synonyms are provided in Section 1.

**4. FIRST AID MEASURES**

**Eye Contact**

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

**Skin Contact**

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

**Inhalation**

Move to fresh air. If person is not breathing, call 911 (within the U.S. and Canada) or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

Ingestion	Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	None known.
Indication of immediate medical attention and special treatment needed, if necessary	Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Carbon dioxide (CO <sub>2</sub> ). Foam. Dry powder. Water spray.
Specific Hazards Arising from the Chemical	
<u>Explosion data</u>	
Sensitivity to Mechanical Impact	Not sensitive.
Sensitivity to Static Discharge	Not sensitive.
Protective equipment and precautions for firefighters	Wear self-contained breathing apparatus and protective suit.

## 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
Other	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
Environmental Precautions	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.
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.

## 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.
Incompatible products	None known

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Toluene (108-88-3)	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm	Mexico: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>

			STEL: 560 mg/m <sup>3</sup>	
n-Butanol (71-36-3)	TWA: 20 ppm	TWA: 100 ppm TWA: 300 mg/m <sup>3</sup>	IDLH: 1400 ppm Ceiling: 50 ppm Ceiling: 150 mg/m <sup>3</sup>	Mexico: Ceiling 50 ppm Mexico: Ceiling 150 mg/m <sup>3</sup>
<b>Chemical name</b>	<b>British Columbia</b>	<b>Quebec</b>	<b>Ontario TWAEV</b>	<b>Alberta</b>
Propylene glycol (57-55-6)	-	-	TWA: 10 mg/m <sup>3</sup> aerosol only  TWA: 50 ppm aerosol and vapor  TWA: 155 mg/m <sup>3</sup> aerosol and vapor	-
Toluene (108-88-3)	TWA: 20 ppm	TWA: 50 ppm TWA: 188 mg/m <sup>3</sup> Skin	TWA: 20 ppm	TWA: 50 ppm TWA: 188 mg/m <sup>3</sup> Skin
n-Butanol (71-36-3)	TWA: 15 ppm Ceiling: 30 ppm	Ceiling: 50 ppm Ceiling: 152 mg/m <sup>3</sup> Skin	TWA: 20 ppm	TWA: 20 ppm TWA: 60 mg/m <sup>3</sup>

**Appropriate engineering controls**

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

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection** For dust, splash, mist or spray exposure, wear chemical protective goggles.

**Skin and Body Protection** Wear long-sleeved shirt, long pants, socks, and shoes.

**Hand Protection** Protective gloves

**Respiratory Protection** For dust, splash, mist or spray exposures wear a filtering mask.

**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.

**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

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<b>Appearance</b>	Off-white Liquid
<b>Physical State</b>	Liquid
<b>Color</b>	Off-white
<b>Odor</b>	Low Alcohol
<b>Odor threshold</b>	No information available
<b>pH</b>	5.3-6.0 @ 20 °C
<b>Melting point/freezing point</b>	Not applicable
<b>Boiling Point/Range</b>	No information available
<b>Flash point</b>	> 94 °C / > 201 °F Tag Closed Cup
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Flammability Limit in Air</b>	
<b>Upper flammability limit:</b>	No information available
<b>Lower flammability limit:</b>	No information available
<b>Vapor pressure</b>	No information available

Vapor density	No information available
Density	No information available
Specific gravity	1.206 @ 20 °C
Water solubility	Dispersible in water
Solubility in other solvents	No information available
Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic	No information available
Viscosity, dynamic	No information available
Explosive properties	No information available
Oxidizing properties	No information available
Molecular weight	No information available
Bulk density	No information available

## 10. STABILITY AND REACTIVITY

Reactivity	Not applicable
Chemical Stability	Stable.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Excessive heat
Incompatible materials	None known.
Hazardous Decomposition Products	Carbon oxides (COx), Nitrogen oxides (NOx), Sulfur oxides, Hydrogen chloride, Hydrogen fluoride.

## 11. TOXICOLOGICAL INFORMATION

### Product Information

LD50 Oral	2084 mg/kg (rat)
LD50 Dermal	> 2000 mg/kg (rabbit)
LC50 Inhalation	> 2.72 mg/L 4 hr (rat)
Serious eye damage/eye irritation	Slightly or non-irritating (rabbit).
Skin corrosion/irritation	Slightly or non-irritating (rabbit).
Sensitization	Non-sensitizing

### Information on toxicological effects

Symptoms	Signs of toxicity in laboratory animals given sulfentrazone included clonic convulsions, ataxia, hypersensitivity to touch, chromorhinorrhea, abdominogenital staining, decreased locomotion, lacrimation, nasal discharge, and squinting eyes.
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### Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic toxicity	Sulfentrazone: Prolonged exposure cause decreased hemoglobin content and hematocrit, and increased spleen weight and splenic extramedullary hematopoiesis at high doses in animal studies.
Mutagenicity	Sulfentrazone: Not genotoxic in laboratory studies.
Carcinogenicity	Sulfentrazone: No evidence of carcinogenicity from animal studies.
Neurological effects	Sulfentrazone: Clinical signs of neurotoxicity in laboratory animals was observed at high dose levels.
Reproductive toxicity	Sulfentrazone: No toxicity to reproduction in animal studies.
Developmental toxicity	Sulfentrazone: Fetal weight decreased; delayed skeletal ossification observed at maternally non-toxic doses are reversible effects and a dose-response is established; malformations observed in fetuses at maternally toxic doses and consistent with the mode of action for protoporphyrongen oxidase inhibitors. Developmental toxicity testing and results were generated for sulfentrazone with toluene present as an impurity.
STOT - single exposure	Not classified.

**STOT - repeated exposure** May cause damage to organs through prolonged or repeated exposure. See listed target organs below.

**Target organ effects** Sulfentrazone: Hematopoietic system.

**Neurological effects** Sulfentrazone: Clinical signs of neurotoxicity in laboratory animals was observed at high dose levels.

**Aspiration hazard** No information available.

Chemical name	ACGIH	IARC	NTP	OSHA
Toluene 108-88-3		Group 3		

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity

Sulfentrazone (122836-35-5)				
Active Ingredient(s)	Duration	Species	Value	Units
Sulfentrazone	72 h EC50	Algae	32.8	mg/L
	48 h EC50	Crustacea	60.4	mg/L
	96 h LC50	Fish	94	mg/L
	21 d NOEC	Fish	5.9	mg/L
	21 d NOEC	Crustacea	0.51	mg/L

**Persistence and degradability** Sulfentrazone: Persistent. Does not readily hydrolyze.

**Bioaccumulation** Sulfentrazone: The substance does not have a potential for bioconcentration.

**Mobility** Sulfentrazone: Mobile, Has potential to reach ground water.

## 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.

**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

**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s.

**Hazard class** 9

**Packing Group** III

**Marine Pollutant** Sulfentrazone.

**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (Sulfentrazone), 9, III, Marine Pollutant

**ICAO/IATA**

**UN/ID no** UN3082

**Proper Shipping Name** Environmentally hazardous substance, liquid, n.o.s.

**Hazard class** 9

**Packing Group** III

<b>Description</b>	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Sulfentrazone), 9, III
<b>IMDG/IMO</b>	
<b>UN/ID no</b>	UN3082
<b>Proper Shipping Name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>Hazard class</b>	9
<b>Packing Group</b>	III
<b>EmS No.</b>	F-A, S-F
<b>Marine Pollutant</b>	Sulfentrazone
<b>Description</b>	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Sulfentrazone), 9, III, Marine Pollutant

## 15. REGULATORY INFORMATION

### U.S. Federal Regulations

#### SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical name	CAS-No	Weight %	SARA 313 - Threshold Values %
Toluene - 108-88-3	108-88-3	1-5	1.0
n-Butanol - 71-36-3	71-36-3	1-5	1.0

#### 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

#### Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sodium Hydroxide 1310-73-2	1000 lb			X
Toluene 108-88-3	1000 lb	X	X	X

#### CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Sodium Hydroxide 1310-73-2	1000 lb 454 kg	
Toluene 108-88-3	1000 lb 454 kg	
n-Butanol 71-36-3	5000 lb 2270 kg	

#### FIFRA Information

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

CAUTION

*Harmful if swallowed, inhaled or absorbed through skin.  
This pesticide is toxic to marine/estuarine invertebrates.*

## US State Regulations

### California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical name	California Prop. 65
Toluene - 108-88-3	Developmental

### U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Propylene glycol 57-55-6	X		X
Toluene 108-88-3	X	X	X
n-Butanol 71-36-3	X	X	X

### International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINC S (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Propylene glycol 57-55-6	X	X	X	X	X	X	X	X
Toluene 108-88-3	X	X	X	X	X	X	X	X
n-Butanol 71-36-3	X	X	X	X	X	X	X	X

### Mexico - Grade

Slight risk, Grade 1

Chemical name	Carcinogen Status	Mexico
Toluene		Mexico: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>
n-Butanol		Mexico: Ceiling 50 ppm Mexico: Ceiling 150 mg/m <sup>3</sup>

Chemical name	Mexico - Pollutant Release and Transfer Register - Reporting Emissions for Fabrication, Process or Use - Threshold Quantities	Pollutant Release and Transfer Register - Reporting Emissions - Threshold Quantities
Toluene	1000 5000 kg/yr	1000 kg/yr

### WHMIS Hazard Class

D2B - Toxic materials



## 16. OTHER INFORMATION



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

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Reason for revision: (M)SDS sections updated

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**End of Safety Data Sheet**