

# Material Safety Data Sheet

## Authority® Assist Herbicide

MSDS #: 6354-A  
Revision Date: 2014-07-02  
Version 0.02



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

### 1. PRODUCT AND COMPANY IDENTIFICATION

<b>Product name</b>	Authority® Assist Herbicide
<b>Formula code</b>	6354
<b>Active Ingredient(s)</b>	Sulfentrazone, Imazethapyr
<b>Synonyms</b>	SULFENTRAZONE (FMC 97285): 2',4'-dichloro-5'-(4-difluoromethyl-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl) methanesulfonamide; N-[2,4-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H- 1,2,4-triazol-1-yl]phenyl] methanesulfonamide  IMAZETHAPYR: N-[1-[(6-chloropyridin-3-yl)methyl]-4,5-dihydroimidazol-2-yl]nitramide
<b>Chemical Family</b>	Triazolinones, Imidazolinone
<b>Recommended use:</b>	Herbicide
<b><u>Manufacturer</u></b>	<b><u>Emergency telephone number</u></b>
FMC Corporation Agricultural Solutions 1735 Market Street Philadelphia, PA 19103 General Information: Phone: (215) 299-6000 E-Mail: msdsinfo@fmc.com	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

<b><u>Appearance</u></b>	Off-white liquid
<b><u>Physical state</u></b>	Liquid
<b><u>Odor</u></b>	Low Alcohol
<b>Flammable properties</b>	Combustible liquid
<b><u>Potential health effects</u></b>	
<b>Principal Routes of Exposure</b>	Eye contact, Skin contact, Inhalation, Ingestion.
<b>Acute effects</b>	
<b>Eyes</b>	May cause slight irritation.
<b>Skin</b>	Substance may cause slight skin irritation.
<b>Inhalation</b>	May cause irritation of respiratory tract. May cause drowsiness and dizziness.
<b>Ingestion</b>	May cause central nervous system depression. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.



Stability 0  
 Special Hazards -

## 6. ACCIDENTAL RELEASE MEASURES

**Personal precautions** Isolate and post spill area. Wear suitable protective clothing, gloves and eye/face protection. Remove all sources of ignition. 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.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure guidelines**

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 STEL: 560 mg/m <sup>3</sup>	Mexico: S* Mexico: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>
Glycerin 56-81-5		TWA: 15 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>		Mexico: TWA 10 mg/m <sup>3</sup>
Chemical Name	British Columbia	Quebec	Ontario TWA/EV	Alberta
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
Glycerin 56-81-5	TWA: 10 mg/m <sup>3</sup> TWA: 3 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>
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**

**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.

**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.
<b>Skin and body protection</b>	Wear long-sleeved shirt, long pants, socks, shoes, and gloves.
<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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

<b>Appearance</b>	Off-white liquid
<b>Color</b>	Off-white
<b>Physical state</b>	Liquid
<b>Odor</b>	Low Alcohol
<b>pH</b>	3.36 (1% solution) @ 25 °C
<b>Boiling Point/Range</b>	No information available
<b>Flash Point</b>	76.6 °C / 170 °F
<b>Flammable properties</b>	Combustible liquid
<b>Density</b>	1.2 g/mL @ 25 °C
<b>Water solubility</b>	Dispersible in water
<b>Decomposition Temperature</b>	No information available

## 10. STABILITY AND REACTIVITY

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

## 11. TOXICOLOGICAL INFORMATION

### Acute effects

#### Acute Toxicity

Signs of toxicity in laboratory animals, with sulfentrazone, included clonic convulsions, ataxia, hypersensitivity to touch, chromorhinorrhea, abdominogenital staining, decreased locomotion, lacrimation, nasal discharge, and squinting eyes. Acute poisoning from ingestion of large quantities of liquid imidazolinone herbicide has resulted in hypotension, pulmonary dysfunction, oral mucosal and gastrointestinal irritation, leukocytosis, metabolic acidosis, and transient liver and renal dysfunction. Imidazolinone herbicides are CNS depressants, causing impaired consciousness and coma in some cases. Nausea and intense vomiting shortly following ingestion is common, and diarrhea may occur. Severe symptoms have included impairment of consciousness and respiratory distress requiring intubation. Decreased blood pressure may occur following excessive doses. Mucous membranes may become ulcerated following ingestions or splashes due to the corrosive action of imidazolinone. Aspiration pneumonitis is a common clinical occurrence following ingestions.

<b>Eye contact</b>	Slightly or non-irritating (rabbit)
<b>Skin contact</b>	Slightly or non-irritating (rabbit)
<b>LD50 Dermal</b>	> 5000 mg/kg (Rat)
<b>LD50 Oral</b>	5000 mg/kg (Rat)
<b>LC50 Inhalation</b>	> 2.09 mg/L 4 hr (Rat)
<b>Sensitization</b>	Non-sensitizing
<b><u>Chronic effects</u></b>	
<b>Chronic Toxicity</b>	Sulfentrazone: Prolonged exposure cause decreased hemoglobin content and hematocrit, and increased spleen weight and splenic extramedullary hematopoiesis at high doses in animal studies.
<b>Carcinogenicity</b>	Sulfentrazone, Imazethapyr: No evidence of carcinogenicity from animal studies.
<b>Mutagenicity</b>	Sulfentrazone, Imazethapyr: Not genotoxic in laboratory studies.
<b>Reproductive Toxicity</b>	Sulfentrazone, Imazethapyr: No toxicity to reproduction in animal studies.
<b>Neurological Effects</b>	Sulfentrazone: Clinical signs of neurotoxicity in laboratory animals was observed at high dose levels
<b>Developmental Toxicity</b>	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 protoporphyrinogen oxidase inhibitors. Developmental toxicity testing and results were generated for sulfentrazone with toluene present as an impurity.  Imazethapyr: Not teratogenic in animal studies.
<b>Target Organ Effects</b>	Sulfentrazone: Hematopoietic System.

<b>12. ECOLOGICAL INFORMATION</b>
-----------------------------------

**Ecotoxicity effects** Very toxic to aquatic organisms

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

Imazethapyr (81335-77-5)				
Active Ingredient(s)	Duration	Species	Value	Units
Imazethapyr	96 h LC50	Fish	411.47	mg/L
	EC50 96h	Algae	389.2	mg/L
	LD50 Oral	Bobwhite quail	2,200	mg/kg
	LD50 Oral	Mallard duck	2,100	mg/kg
	LD50	Bee	>100	µg/bee

**Environmental Fate**

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

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

**Mobility** Sulfentrazone: Immobile. Not expected to reach groundwater.

**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. Do not reuse or refill this container.

**14. TRANSPORT INFORMATION**

**DOT** This material is a Combustible liquid and is, therefore, not subject to the hazardous materials regulations when in non-bulk packages shipped within the USA per 49 CFR §173.150(f)(2).

**Packaging Type** Bulk  
**Proper shipping name** Combustible liquid, n.o.s.  
**UN/ID No** NA1993  
**Hazard Class** Combustible liquid  
**Packing group** III

**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, PGIII, Marine pollutant

**ICAO/IATA**

**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, PGIII, Marine pollutant

**IMDG/IMO**

**UN/ID No** UN3082  
**Proper shipping name** Environmentally hazardous substance, liquid, n.o.s.  
**Hazard Class** 9  
**Packing group** III  
**EmS No.** F-A, S-F  
**Marine pollutant** Sulfentrazone  
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (sulfentrazone), 9, PGIII, 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	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

**CERCLA**

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Toluene	1000 lb	

**TSCA (United States)**

Component	U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances
Toluene 108-88-3 ( 1-5 )	10/04/1982

**International Regulations**

**Mexico - Grade**

Moderate risk, Grade 2

Chemical Name	Carcinogen Status	Mexico
Toluene		Mexico: S* Mexico: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>
Glycerin		Mexico: TWA 10 mg/m <sup>3</sup>

**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**

B3 - Combustible liquid



**16. OTHER INFORMATION**

Revision Date: 2014-07-02  
 Reason for revision: (M)SDS sections updated.

**Disclaimer**

FMC Corporation believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specified product designated and may not be applicable where such product is used in combination with any other materials or in any process. Use of this product is regulated by the U.S. Environmental Protection Agency (EPA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Further, since the conditions and methods of use are beyond the control of FMC Corporation, FMC corporation expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

**Prepared By:**

FMC Corporation  
 FMC Logo - Trademark of FMC Corporation

© 2014 FMC Corporation. All Rights Reserved.

**End of Safety Data Sheet**