

SAFETY DATA SHEET
Authority® Assist Herbicide

SDS # : 6354-A
Revision date: 2016-05-26
Format: NA
Version 1.04



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Authority® Assist Herbicide

Other means of identification

Product Code(s) 6354-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)
methanesulfonanilide (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)

IMAZETHAPYR: N-[1-[(6-chloropyridin-3-yl)methyl]-4,5-dihydroimidazol-2-yl]nitramide

Active Ingredient(s) Sulfentrazone, Imazethapyr

Chemical Family Triazolinones, Imidazolinone

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, Imidazolinone.

Chemical name	CAS-No	Weight %
Sulfentrazone	122836-35-5	33.3
Glycerin	56-81-5	5-10
Imazethapyr	81335-77-5	6.7
Toluene	108-88-3	1-5
Propylene glycol	57-55-6	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 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. 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, contact emergency medical services, 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	Central nervous system effects.
Indication of immediate medical attention and special treatment needed, if necessary	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Carbon dioxide (CO ₂). Foam. Dry powder. Water spray.
Specific Hazards Arising from the Chemical	Sensitive to static discharge Combustible liquid
Hazardous Combustion Products	Carbon oxides (CO _x), Nitrogen oxides (NO _x), Sulfur oxides, Hydrogen chloride, Hydrogen fluoride.
Explosion data	
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. Wear suitable protective clothing, gloves and eye/face protection. Remove all sources of ignition. 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.
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
Glycerin (56-81-5)	-	TWA: 15 mg/m ³ TWA: 5 mg/m ³	-	Mexico: TWA 10 mg/m ³
Toluene (108-88-3)	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m ³ STEL: 150 ppm STEL: 560 mg/m ³	Mexico: TWA 50 ppm Mexico: TWA 188 mg/m ³
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Glycerin (56-81-5)	TWA: 10 mg/m ³ TWA: 3 mg/m ³	TWA: 10 mg/m ³	-	TWA: 10 mg/m ³
Toluene (108-88-3)	TWA: 20 ppm	TWA: 50 ppm TWA: 188 mg/m ³ Skin	TWA: 20 ppm	TWA: 50 ppm TWA: 188 mg/m ³ Skin
Propylene glycol (57-55-6)	-	-	TWA: 10 mg/m ³ aerosol only TWA: 50 ppm aerosol and vapor TWA: 155 mg/m ³ aerosol and vapor	-

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

Appearance Off-white Liquid
Physical State Liquid
Color Off-white
Odor Low Alcohol
Odor threshold No information available
pH 3.36
Melting point/freezing point Not applicable
Boiling Point/Range No information available
Flash point 76.6 °C / 169.88 °F

Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Density	1.2 g/mL @ 25°C
Specific gravity	No information available
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	None under normal use conditions.
Chemical Stability	Stable.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	Heat, flames and sparks.
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	5000 mg/kg (rat)
LD50 Dermal	> 5000 mg/kg (rat)
LC50 Inhalation	> 2.09 mg/L 4 hr (rat)
Serious eye damage/eye irritation	Minimally irritating (rabbit).
Skin corrosion/irritation	Non-irritating.
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. 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.
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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, Imazethapyr: Not genotoxic in laboratory studies.

Carcinogenicity Sulfentrazone, Imazethapyr: 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, Imazethapyr: 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.

Imazethapyr: Not teratogenic in animal studies.
 Not classified.

STOT - single exposure May cause damage to organs through prolonged or repeated exposure.

STOT - repeated exposure

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

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

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).

UN/ID no NA1993
Proper Shipping Name Combustible liquid, n.o.s
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
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	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

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
Ammonium hydroxide 1336-21-6	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
Methyl ethyl ketone 78-93-3	5000 lb 2270 kg	
Ammonium hydroxide 1336-21-6	1000 lb 454 kg	
Toluene 108-88-3	1000 lb 454 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

*Causes moderate eye irritation. Harmful if inhaled, swallowed, 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

This product does not contain any substances regulated by state right-to-know regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Glycerin 56-81-5	X	X	X
Toluene 108-88-3	X	X	X
Propylene glycol 57-55-6	X		X

International Inventories

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Glycerin 56-81-5	X	X	X	X	X	X	X	X

Imazethapyr 81335-77-5					X			
Toluene 108-88-3	X	X	X	X	X	X	X	X
Propylene glycol 57-55-6	X	X	X	X	X	X	X	X

Mexico - Grade Moderate risk, Grade 2

Chemical name	Carcinogen Status	Mexico
Glycerin		Mexico: TWA 10 mg/m ³
Toluene		Mexico: TWA 50 ppm Mexico: TWA 188 mg/m ³

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 Statement

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

NFPA	Health Hazards 1	Flammability 2	Instability 0	Special Hazards -
HMIS	Health Hazards 1*	Flammability 2	Physical hazard 0	Personal Protection X

Revision date: 2016-05-26
 Reason for revision: (M)SDS sections updated

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End of Safety Data Sheet