

**SAFETY DATA SHEET**  
**AUTHORITY® MTZ DF HERBICIDE**

**SDS # :** 6351-A  
**Revision date:** 2016-05-26  
**Format:** NA  
**Version** 1.03



**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Identifier**

**Product Name** AUTHORITY® MTZ DF HERBICIDE

**Other means of identification**

**Product Code(s)** 6351-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)

METRIBUZIN: 4-amino-6-tert-butyl-4,5-dihydro-3-methylthio-1,2,4-triazin-5-one;  
4-amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one

**Active Ingredient(s)** Sulfentrazone, Metribuzin

**Chemical Family** Triazolinones; Triazinones

**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
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (repeated exposure)	Category 2

**GHS Label elements, including precautionary statements**

**EMERGENCY OVERVIEW**

**Danger**

**Hazard Statements**  
H318 - Causes serious eye damage  
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
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray

**Precautionary Statements - Response**

- P314 - Get medical advice/ attention if you feel unwell
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON CENTER or doctor
- 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 with long lasting effects.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

**Chemical Family** Triazolinones; Triazinones.

Chemical name	CAS-No	Weight %
Metribuzin	21087-64-9	28.7
Sulfentrazone	122836-35-5	18
Kaolin	1332-58-7	20-30
Toluene	108-88-3	1-5

Synonyms are provided in Section 1.

**4. FIRST AID MEASURES**

<b>Eye Contact</b>	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.
<b>Skin Contact</b>	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.
<b>Inhalation</b>	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.
<b>Ingestion</b>	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 Never give anything by mouth to an unconscious person
<b>Most important symptoms and effects, both acute and delayed</b>	Central nervous system effects.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

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

**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal Precautions</b>	Isolate and post spill area. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
<b>Other</b>	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
<b>Environmental Precautions</b>	See Section 12 for additional Ecological Information.
<b>Methods for Containment</b>	Use a wet sweeping compound or water to prevent dust formation.
<b>Methods for cleaning up</b>	Sweep up and shovel into suitable containers for disposal. 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**

<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.

**Incompatible products** None known

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

<b>Chemical name</b>	<b>ACGIH TLV</b>	<b>OSHA PEL</b>	<b>NIOSH</b>	<b>Mexico</b>
Metribuzin (21087-64-9)	TWA: 5 mg/m <sup>3</sup>	-	TWA: 5 mg/m <sup>3</sup>	-
Kaolin (1332-58-7)	TWA: 2 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>
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: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>
<b>Chemical name</b>	<b>British Columbia</b>	<b>Quebec</b>	<b>Ontario TWAEV</b>	<b>Alberta</b>
Metribuzin (21087-64-9)	TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>
Kaolin (1332-58-7)	TWA: 2 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup> respirable	TWA: 2 mg/m <sup>3</sup>
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

**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** Brown Granules  
**Physical State** Solid  
**Color** Brown

<b>Odor</b>	Musty
<b>Odor threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting point/freezing point</b>	Not applicable
<b>Boiling Point/Range</b>	No information available
<b>Flash point</b>	Not applicable
<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
<b>Vapor density</b>	No information available
<b>Density</b>	35-42 lb/cu ft
<b>Specific gravity</b>	1.21 20
<b>Water solubility</b>	Dispersible in water
<b>Solubility in other solvents</b>	No information available
<b>Partition coefficient</b>	No information available
<b>Autoignition temperature</b>	No information available
<b>Decomposition temperature</b>	No information available
<b>Viscosity, kinematic</b>	No information available
<b>Viscosity, dynamic</b>	No information available
<b>Explosive properties</b>	No information available
<b>Oxidizing properties</b>	No information available
<b>Molecular weight</b>	No information available
<b>Bulk density</b>	No information available

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	None under normal use conditions
<b>Chemical Stability</b>	Stable under recommended storage conditions.
<b>Possibility of Hazardous Reactions</b>	None under normal processing.
<b>Hazardous polymerization</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid</b>	None known
<b>Incompatible materials</b>	None known.
<b>Hazardous Decomposition Products</b>	Carbon oxides (COx). Nitrogen oxides (NOx). Sulfur oxides. Hydrogen chloride. Hydrogen fluoride.

## 11. TOXICOLOGICAL INFORMATION

### Product Information

<b>LD50 Oral</b>	5000 mg/kg (rat)
<b>LD50 Dermal</b>	> 5,000 mg/kg (rat)
<b>LC50 Inhalation</b>	> 2.09 mg/L 4 hr (rat)

<b>Serious eye damage/eye irritation</b>	Severely irritating to the eyes.
<b>Skin corrosion/irritation</b>	Slightly or non-irritating (rabbit).
<b>Sensitization</b>	Non-sensitizing

### Information on toxicological effects

<b>Symptoms</b>	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

<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
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**Mutagenicity** animal studies.  
**Carcinogenicity** Sulfentrazone, Metribuzin: Not genotoxic in laboratory studies.  
**Neurological effects** Sulfentrazone, Metribuzin: No evidence of carcinogenicity from animal studies.  
Sulfentrazone: Clinical signs of neurotoxicity in laboratory animals was observed at high dose levels. Metribuzin: Transient neurobehavioral effects only were observed.  
**Reproductive toxicity** Sulfentrazone: No toxicity to reproduction in animal studies. Metribuzin: Maternal toxicity (NOEL): 30 ppm, Reproductive toxicity (NOEL): 750 ppm.  
**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. Metribuzin: Not teratogenic in animal studies.  
**STOT - single exposure** Not classified.  
**STOT - repeated exposure** May cause damage to organs through prolonged or repeated exposure.  
**Target organ effects** Sulfentrazone, Hematopoietic system. Metribuzin: Liver, kidneys, thyroid, testicular effects.  
**Neurological effects** Sulfentrazone: Clinical signs of neurotoxicity in laboratory animals was observed at high dose levels. Metribuzin: Transient neurobehavioral effects only were observed.

**Aspiration hazard** No information available.

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

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

<b>Metribuzin (21087-64-9)</b>				
Active Ingredient(s)	Duration	Species	Value	Units
Metribuzin	48 h EC50	Daphnia	4.5	mg/L
	96 h LC50	Fish	64-76	mg/L
	LD50	Bird	100-200	mg/L
	72 h EC50	Algae	0.02	mg/L

<b>Sulfentrazone (122836-35-5)</b>				
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 in soil. Does not readily hydrolyze. Not readily biodegradable.  
Metribuzin: Moderately persistent.

**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** UN3077  
**Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s.  
**Hazard class** 9  
**Packing Group** III  
**Marine Pollutant** Sulfentrazone, Metribuzin.  
**Description** UN3077, Environmentally hazardous substance, solid, n.o.s. (Sulfentrazone, Metribuzin), 9, PGIII, Marine Pollutant

**ICAO/IATA**

**UN/ID no** UN3077  
**Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s.  
**Hazard class** 9  
**Packing Group** III  
**Description** UN3077, Environmentally hazardous substance, solid, n.o.s. (Sulfentrazone, Metribuzin), 9, PGIII, Marine Pollutant

**IMDG/IMO**

**UN/ID no** UN3077  
**Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s.  
**Hazard class** 9  
**Packing Group** III  
**EmS No.** F-A, S-F  
**Marine Pollutant** Sulfentrazone, Metribuzin  
**Description** UN3077, Environmentally hazardous substance, solid, n.o.s. (Sulfentrazone, Metribuzin), 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 %
Metribuzin - 21087-64-9	21087-64-9	28.7	1.0
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):

**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):

**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. Causes moderate eye irritation.  
 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
Metribuzin 21087-64-9	X	X	X
Kaolin 1332-58-7	X	X	X
Toluene 108-88-3	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)
Metribuzin 21087-64-9			X		X	X		X
Kaolin 1332-58-7	X	X	X	X	X	X	X	X
Toluene 108-88-3	X	X	X	X	X	X	X	X

**Mexico - Grade** Serious risk, Grade 3

Chemical name	Carcinogen Status	Mexico
Kaolin		Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>
Toluene		Mexico: TWA 50 ppm Mexico: TWA 188 mg/m <sup>3</sup>

**WHMIS Hazard Class**

D2A - Very toxic materials  
 D2B - Toxic materials





**16. OTHER INFORMATION**

<b>NFPA</b>	<b>Health Hazards 3</b>	<b>Flammability 1</b>	<b>Instability 0</b>	<b>Special Hazards -</b>
<b>HMIS</b>	<b>Health Hazards 3*</b>	<b>Flammability 1</b>	<b>Physical hazard 0</b>	<b>Personal Protection X</b>

*\*Indicates a chronic health hazard.*

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

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**Prepared By:**

FMC Corporation

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**End of Safety Data Sheet**