

SAFETY DATA SHEET
AUTHORITY® MTZ DF HERBICIDE

SDS # : 6351-A
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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)
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)

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

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, 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 Never 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	Finely dispersed particles can form explosive mixtures in air.
<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. 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	See Section 12 for additional Ecological Information.
Methods for Containment	Use a wet sweeping compound or water to prevent dust formation.
Methods for cleaning up	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

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
Metribuzin (21087-64-9)	TWA: 5 mg/m ³	-	TWA: 5 mg/m ³	-
Kaolin (1332-58-7)	TWA: 2 mg/m ³	TWA: 15 mg/m ³ TWA: 5 mg/m ³	TWA: 10 mg/m ³ TWA: 5 mg/m ³	Mexico: TWA 10 mg/m ³ Mexico: STEL 20 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
Metribuzin (21087-64-9)	TWA: 5 mg/m ³	TWA: 5 mg/m ³	TWA: 5 mg/m ³	TWA: 5 mg/m ³
Kaolin (1332-58-7)	TWA: 2 mg/m ³	TWA: 5 mg/m ³	TWA: 2 mg/m ³ respirable	TWA: 2 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

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

Odor	Musty
Odor threshold	No information available
pH	No information available
Melting point/freezing point	Not applicable
Boiling Point/Range	No information available
Flash point	Not applicable
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	35-42 lb/cu ft
Specific gravity	1.21 20
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 under recommended storage conditions.
Possibility of Hazardous Reactions	None under normal processing.
Hazardous polymerization	Hazardous polymerization does not occur.
Conditions to avoid	None known
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	> 5,000 mg/kg (rat)
LC50 Inhalation	> 2.09 mg/L 4 hr (rat)

Serious eye damage/eye irritation	Severely irritating to the eyes.
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
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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

Metribuzin (21087-64-9)				
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

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 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 ³ Mexico: STEL 20 mg/m ³
Toluene		Mexico: TWA 50 ppm Mexico: TWA 188 mg/m ³

WHMIS Hazard Class

D2A - Very toxic materials
 D2B - Toxic materials



16. OTHER INFORMATION

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

**Indicates a chronic health hazard.*

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

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End of Safety Data Sheet