

SAFETY DATA SHEET
AUTHORITY® MTZ DF HERBICIDE

SDS # : 6351-A
Revision date: 2015-04-20
Format: NA
Version 1.01



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; N-[2,4-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-
1,2,4-triazol-1-yl]phenyl] methanesulfonamide

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
1735 Market Street
Philadelphia, PA 19103
(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 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. |
| 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. 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: S* 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 | 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. |
|-----------------|---|

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, Metribuzin: Not genotoxic in laboratory studies.

Carcinogenicity Sulfentrazone, Metribuzin: No evidence of carcinogenicity from animal studies.

Neurological effects 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):

| Chemical name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|---------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| 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 | RQ |
|---------------------|--------------------------|------------------------------------|---|
| Toluene 108-88-3 | 1000 lb | | RQ 1000 lb final RQ RQ 454 kg final RQ |

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 |
|---|--------------------------------------|
| crystalline silica, quartz - 14808-60-7 | Carcinogen |
| Toluene - 108-88-3 | Developmental Female Reproductive |

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

| Component | TSCA (United States) | DSL (Canada) | EINECS/ELI NCS (Europe) | ENCS (Japan) | China (IECSC) | KECL (Korea) | PICCS (Philippines) | AICS (Australia) |
|-----------------------------------|----------------------|--------------|-------------------------|--------------|---------------|--------------|---------------------|------------------|
| Metribuzin 21087-64-9 (28.7) | | | X | | X | X | | X |
| Kaolin 1332-58-7 (20-30) | X | X | X | X | X | X | X | X |
| Toluene 108-88-3 (1-5) | X | X | X | X | X | X | X | X |

Mexico - Grade

Serious risk, Grade 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: 2015-04-20
 Revision note (M)SDS sections updated

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FMC Corporation

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End of Safety Data Sheet