

SAFETY DATA SHEET
Authority® Supreme Herbicide

SDS # : 7604-A
Revision date: 2018-09-10
Format: NA
Version 1.01



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Authority® Supreme Herbicide

Other means of identification

Product Code(s) 7604-A

Legacy Product Code F9314-3 (FO000995)

Synonyms PYROXASULFONE:
3-[[[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)-1H-pyrazol-4-yl]methyl]sulfonyl]-4,5-dihydro-5,5-dimethylisoxazole (CAS);
3-[5-(difluoromethoxy)-1-methyl-3-(trifluoromethyl)pyrazol-4-ylmethylsulfonyl]-4,5-dihydro-5,5-dimethyl-1,2-oxazole (IUPAC);

, 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)

Active Ingredient(s) Pyroxasulfone; Sulfentrazone

Chemical Family Sulfonyloxazoline; Triazolinones

PCP # 32562

Recommended use of the chemical and restrictions on use

Recommended Use: Herbicide

Restrictions on Use: Use as recommended by the label.

Supplier 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 / 741-5970 (CHEMTREC - International)
1 703 / 527-3887 (CHEMTREC - Alternate)

Medical Emergencies:
1 800 / 331-3148 (ProPharma Group - U.S.A. & Canada)
1 651 / 632-6793 (ProPharma Group - 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 |
| Carcinogenicity | Category 2 |
| Reproductive toxicity | Category 1B |

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Danger

Hazard Statements
 H332 - Harmful if inhaled
 H351 - Suspected of causing cancer
 H360 - May damage fertility or the unborn child



Precautionary Statements - Prevention

- P202 - Do not handle until all safety precautions have been read and understood
- P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
- P271 - Use only outdoors or in a well-ventilated area
- P280 - Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

- P308 + P313 - If exposed or concerned: Get medical advice/attention
- P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

Precautionary Statements - Storage

- P405 - Store locked up

Precautionary Statements - Disposal

- P501 - Dispose of contents/container according to label directions

Hazards not otherwise classified (HNOC)

No hazards not otherwise classified were identified.

Other Information

Very toxic to aquatic life with long lasting effects. May be harmful in contact with skin. Causes mild skin irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Sulfonyloxazoline; Triazolinones.

| Chemical name | CAS-No | Weight % |
|------------------|-------------|----------|
| Sulfentrazone | 122836-35-5 | 20.66 |
| Pyroxasulfone | 447399-55-5 | 20.2 |
| Propylene glycol | 57-55-6 | 5-10 |

| | | |
|---------|----------|-----|
| 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 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. 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. Do not give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | None known. |
| 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 | None known |
| Hazardous Combustion Products | Carbon oxides (CO _x), Hydrogen chloride, Hydrogen fluoride, Nitrogen oxides (NO _x). |
| Explosion data | |
| Sensitivity to Mechanical Impact | No information available. |
| Sensitivity to Static Discharge | No information available. |
| Protective equipment and precautions for firefighters | As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate upwind. |

6. ACCIDENTAL RELEASE MEASURES

| | |
|----------------------------------|---|
| Personal Precautions | Isolate and post spill area. Remove all sources of ignition. 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 | 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 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. Keep/store only in original container.

Incompatible products No information available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

| 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 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 |
| 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 | - |
| 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 suitable protective clothing. Protective shoes or boots.

Hand Protection Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the outside of gloves with soap and water before reuse. Check regularly for leaks.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

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 | Liquid |
| Physical State | Liquid |
| Color | No information available |
| Odor | No information available |
| Odor threshold | No information available |
| pH | 5.22 @ 22.7°C |
| Melting point/freezing point | No information available |
| Boiling Point/Range | No information available |
| Flash point | > 100 °C / > 212 °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 |
| Relative density | 10.10 lb/gal (1.21 g/mL) @ 19.6°C |
| Specific gravity | No information available |
| Water solubility | No information available |
| Solubility in other solvents | No information available |
| Partition coefficient | No information available |
| Autoignition temperature | No information available |
| Decomposition temperature | No information available |
| Viscosity, kinematic | 661 cSt @ 21.4°C; 532cSt @ 21.4°C |
| 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 | Stable under recommended storage 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 | Heat, flames and sparks. |
| Incompatible materials | No information available. |
| Hazardous Decomposition Products | Carbon oxides (COx), Hydrogen chloride, Hydrogen fluoride, Nitrogen oxides (NOx). |

11. TOXICOLOGICAL INFORMATION**Product Information**

| | |
|-----------------------------------|-------------------------------|
| LD50 Oral | 3129 mg/kg (rat) |
| LD50 Dermal | > 5000 mg/kg (rat) |
| LC50 Inhalation | > 2.07 mg/L 4 hr (rat) |
| Serious eye damage/eye irritation | Mildly irritating (rabbit). |
| Skin corrosion/irritation | Slightly irritating (rabbit). |
| Sensitization | Non-sensitizing |

Information on toxicological effects

| | |
|----------|--|
| Symptoms | Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. |
|----------|--|

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic toxicity Pyroxasulfone: Effects are expected to be similar to those that are seen with acute 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 Pyroxasulfone, Sulfentrazone: Not genotoxic in laboratory studies.

Carcinogenicity Pyroxasulfone: Increased incidence of urinary bladder transitional papillomas was reported in male rat in two-year carcinogenicity study. Limited evidence of carcinogenic effects.
 Sulfentrazone: No evidence of carcinogenicity from animal studies.

Neurological effects Pyroxasulfone: Not neurotoxic.
 Sulfentrazone: Clinical signs of neurotoxicity in laboratory animals was observed at high dose levels.

Reproductive toxicity Pyroxasulfone: Any signs of effect to fertility or embryo were not observed in rat one-generation and two generation reproductive studies at the dosage of which general toxicity to parental animals was observed. However, developmental toxicity was observed in offspring in a rat. May cause harm to the unborn child.
 Sulfentrazone: No toxicity to reproduction in animal studies.

Developmental toxicity Pyroxasulfone: Developmental toxicity was observed in rat offspring. May cause harm to unborn child. Not teratogenic in animal studies.
 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.

STOT - single exposure Not classified.
STOT - repeated exposure Not classified.
Target organ effects Pyroxasulfone: Liver, kidney, bladder, cardiovascular system. Sulfentrazone: Hematopoietic system.
Neurological effects Pyroxasulfone: Not neurotoxic.
 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 | | |

Legend:
 IARC (International Agency for Research on Cancer)
 Group 3 - Not classifiable as to its carcinogenicity to humans

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 |

| Pyoxasulfone (447399-55-5) | | | | |
|----------------------------|-----------|------------------|---------|-------|
| Active Ingredient(s) | Duration | Species | Value | Units |
| Pyoxasulfone | 96 h LC50 | Rainbow trout | >2.2 | mg/L |
| | 96 h LC50 | Bluegill sunfish | >2.8 | mg/L |
| | 48 h EC50 | Daphnia magna | >4.4 | mg/L |
| | 96 h LC50 | Algae | 0.00079 | mg/L |

Persistence and degradability Pyroxasulfone: Moderately persistent. Sulfentrazone: Persistent, Does not readily hydrolyze, Not readily biodegradable.

Bioaccumulation Pyroxasulfone, Sulfentrazone: The substance has a low potential to bioaccumulate in the environment.

Mobility Pyroxasulfone, 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. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.

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 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 UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard class 9
Packing Group III
Marine Pollutant Pyroxasulfone, Sulfentrazone.
Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (Pyroxasulfone, Sulfentrazone), 9, III, 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. (Pyroxasulfone, Sulfentrazone), 9, III, Marine Pollutant

IMDG/IMO

UN/ID no UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard class 9
Packing Group III

| | |
|--|---|
| <p>EmS No. Marine Pollutant Description</p> | <p>F-A, S-F Pyroxasulfone, Sulfentrazone UN3082, Environmentally hazardous substance, liquid, n.o.s. (Pyroxasulfone, Sulfentrazone), 9, III, Marine Pollutant</p> |
|--|---|

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 |
|---------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| 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 |
|---------------------|--------------------------|------------------------------------|
| 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

Harmful if swallowed, inhaled or absorbed through skin.

This product is toxic to aquatic invertebrates. This product is highly toxic to algae and toxic to fish and aquatic organisms.

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 |
|-----------------------------|------------|---------------|--------------|
| Propylene glycol 57-55-6 | X | | X |
| Toluene 108-88-3 | X | X | X |

International Inventories

| Chemical name | TSCA (United States) | DSL (Canada) | EINECS/ELINCS (Europe) | ENCS (Japan) | China (IECSC) | KECL (Korea) | PICCS (Philippines) | AICS (Australia) |
|-----------------------------|----------------------|--------------|------------------------|--------------|---------------|--------------|---------------------|------------------|
| Propylene glycol 57-55-6 | 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 |
|---------------|-------------------|---|
| 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 Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

WHMIS Hazard Class D2B - Toxic materials



16. OTHER INFORMATION

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

*Indicates a chronic health hazard.

NFPA/HMIS Ratings Legend Severe = 4; Serious = 3; Moderate = 2; Slight = 1; Minimal = 0

Revision date: 2018-09-10
Reason for revision: (M)SDS sections updated

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Prepared By:

FMC Corporation

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End of Safety Data Sheet