

SAFETY DATA SHEET

Portfolio® 4F Herbicide

SDS # : 1466-7-A

Revision date: 2016-05-26

Format: NA

Version 1.01



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Portfolio® 4F Herbicide

Other means of identification

Product Code(s) 1466-7-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)

Active Ingredient(s) Sulfentrazone,

Chemical Family Triazolinones

Alternate Commercial Name Portfolio™ 4F California Herbicide

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 chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Specific target organ toxicity (repeated exposure)

Category 2

GHS Label elements, including precautionary statements**EMERGENCY OVERVIEW****Warning****Hazard Statements**

H373 - May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements - Prevention**

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

P314 - Get medical advice/ attention 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.

| Chemical name | CAS-No | Weight % |
|------------------|-------------|----------|
| Sulfentrazone | 122836-35-5 | 40 |
| 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 15-20 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 | If swallowed, do not induce vomiting - seek medical advice. 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 induce vomiting or 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 | Thermal decomposition can lead to release of irritating and toxic gases and vapors. |
| 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. 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 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 |
|-----------------------|-------------|----------------------------------|---|---|
| Toluene (108-88-3) | TWA: 20 ppm | TWA: 200 ppm Ceiling: 300 ppm | IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m ³ | Mexico: TWA 50 ppm Mexico: TWA 188 mg/m ³ |

| | | | | |
|-------------------------------|-------------------------|---|--|---|
| | | | STEL: 150 ppm STEL: 560 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 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 | 5.3-6.0 @ 20 °C |
| Melting point/freezing point | 123 °C |
| Boiling Point/Range | No information available |
| Flash point | > 94 °C / > 201 °F Tag Closed Cup |
| 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 | 1 x 10 ⁻⁹ mm Hg at 25°C |
| Vapor density | No information available |
| Density | 10.07 lb/gal |
| Specific gravity | 1.206 @ 20 °C (water = 1) |
| 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 data 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 | Excessive heat |
| 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 | 2084 mg/kg (rat) |
| LD50 Dermal | > 2000 mg/kg (rabbit) |
| LC50 Inhalation | > 2.72 mg/L 4 hr (rat) - Maximum attainable concentration (zero mortality) |
| Serious eye damage/eye irritation | Non-irritating. |
| Skin corrosion/irritation | Minimally irritating. |
| Sensitization | Did not cause sensitization on laboratory animals. |

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: Not genotoxic in animal studies |
| Carcinogenicity | Sulfentrazone: 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: 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. |
| STOT - single exposure | Not classified. |
| STOT - repeated exposure | May cause damage to organs through prolonged or 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 |

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: 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 | 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 |
| 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 |
|-------------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Toluene 108-88-3 | 1000 lb | X | X | X |
| Sodium Hydroxide 1310-73-2 | 1000 lb | | | X |

CERCLA

| Chemical name | Hazardous Substances RQs | Extremely Hazardous Substances RQs |
|-------------------------------|--------------------------|------------------------------------|
| Toluene 108-88-3 | 1000 lb 454 kg | |
| Sodium Hydroxide 1310-73-2 | 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

| 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/ELINC S (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

Slight risk, Grade 1

| 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 hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class

D2A - Very toxic materials

**16. OTHER INFORMATION**

| | | | | |
|------|-------------------|----------------|-------------------|-----------------------|
| NFPA | Health Hazards 1 | Flammability 1 | Instability 0 | Special Hazards - |
| HMIS | Health Hazards 1* | Flammability 1 | 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