

Material Safety Data Sheet

Authority® First DF Herbicide

SDS #: 6150-A

Revision Date: 2012-04-19

Version 1



This MSDS has been prepared to meet U.S. OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	Authority® First DF Herbicide
Active Ingredient(s)	Sulfentrazone, Cloransulam-methyl
Synonyms	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 ; N-(2-carbomethoxy-6-chlorophenyl)-5-ethoxy-7-fluoro(1,2,4)triazolo-[1,5-c]pyrimidine-2-sulfonamide
Chemical Family	Triazolinones, Triazolopyrimidine sulfonamide
Recommended use	Herbicide
Manufacturer FMC Corporation Agricultural Products Group 1735 Market Street Philadelphia, PA 19103 General Information: Phone: (215) 299-6000 E-Mail: msdsinfo@fmc.com	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: (800) 331-3148 (U.S.A. & Canada) +1 (651) 632-6793 (All Other Countries - Collect)

2. Hazards identification

Appearance	Tan granules
Physical state	solid
Odor	musty
Physical or Chemical Hazards	.
Flammable properties	Finely dispersed particles can form explosive mixtures in air.
Potential health effects	
Acute effects	
Eyes	May cause slight irritation.
Skin	Substance may cause slight skin irritation.
Inhalation	May cause irritation of respiratory tract. May cause additional effects as listed under "Ingestion".
Ingestion	May cause central nervous system depression. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Chronic effects	Effects are expected to be similar to those that are seen with acute toxicity.

Environmental hazard Very toxic to aquatic organisms.

3. Composition/information on ingredients

Hazardous ingredients

Chemical Name	CAS-No	Weight %
Sulfentrazone	122836-35-5	62.1
Chloroansulam-methyl	147150-35-4	7.9
Toluene	108-88-3	<5

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 treatment advice.

Inhalation Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by 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 induce vomiting or give anything by mouth to an unconscious person.

5. Fire-fighting measures

Flammable properties Finely dispersed particles can form explosive mixtures in air.

Sensitivity to Mechanical Impact not applicable
Sensitivity to Static Discharge not applicable

Suitable extinguishing media Carbon dioxide (CO₂). Foam. Dry powder. Water spray.

Protective equipment and precautions for firefighters Wear self-contained breathing apparatus and protective suit.

NFPA

Health Hazard 1
Flammability 1
Stability 0
Special Hazards -

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.

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 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.

Other For further clean-up instructions call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

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.

8. Exposure controls/personal protection

Exposure guidelines

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: S* Mexico: TWA 50 ppm Mexico: TWA 188 mg/m ³

Chemical Name	British Columbia	Quebec	Ontario TWAEV	Alberta
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

Occupational exposure 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.

Personal Protective Equipment

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.

Respiratory protection For dust, splash, mist or spray exposures wear a filtering mask.

Eye/face protection For dust, splash, mist or spray exposure, wear chemical protective goggles or a face-shield.

Skin and body protection Wear long-sleeved shirt, long pants, socks, shoes, and gloves.

Hand protection Protective gloves

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.

9. Physical and chemical properties

Appearance	Tan granules
Color	Tan
Physical state	solid
Odor	musty
pH	6-8
Melting Point/Range	No information available.
Freezing point	No information available
Boiling Point/Range	not applicable
Flash Point	not applicable
Evaporation rate	not applicable
Autoignition Temperature	not applicable
Flammable properties	Finely dispersed particles can form explosive mixtures in air.
Vapor pressure	No information available
Vapor density	No information available
Bulk density	35 - 42 lb/cu ft
Water solubility	Dispersible in water
Percent volatile	No information available
Partition coefficient:	not applicable
Viscosity	No information available
Explosive properties	Fine dust dispersed in air may ignite
Oxidizing properties	No data available

10. Stability and reactivity

Stability	Stable.
Conditions to avoid	Excessive heat
Hazardous decomposition products	Carbon oxides, nitrogen oxides (NOx), Sulfur oxides, Hydrogen chloride, Hydrogen fluoride.
Hazardous polymerization	Hazardous polymerization does not occur

11. Toxicological information

Acute Toxicity

Signs of toxicity in laboratory animals, with sulfentrazone, included clonic convulsions, ataxia, hypersensitivity to touch, chromorhinorrhea, abdominogenital staining, decreased locomotion, lacrimation, nasal discharge, and squinting eyes.

Eye contact	Slightly or non-irritating (rabbit)
Skin contact	Slightly or non-irritating (rabbit)

LD50 Dermal	> 5,000 mg/kg (rabbit)
LD50 Oral	2,504 mg/kg (rat)
LC50 Inhalation:	> 4.9 mg/L 4 hr (rat)

Sensitization	Non-sensitizing
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Chronic Toxicity - Other Ingredient(s)

Chronic Toxicity	Effects are expected to be similar to those that are seen with acute toxicity.
Carcinogenicity	Sulfentrazone, Cloransulam-methyl: Not carcinogenic.
Mutagenicity	Sulfentrazone: Did not show mutagenic effects in animal experiments.
Reproductive toxicity	Offspring Toxicity (sulfentrazone): LOAEL = 33 mg/kg/day for males; 40 mg/kg/day for females. Cloransulam-methyl: No toxicity to reproduction.

Neurological Effects Sulfentrazone: Altered motor activity and FOB effects, which reverse after single exposure, with no signs of histopathology

Developmental Toxicity Sulfentrazone: NOAEL of 10 mg/kg/day in the developmental toxicity study in rat. NOAEL of 14 mg/kg/day in a 2-generation reproduction study. Cloransulam-methyl: Not teratogenic in animal studies. Contains ingredients that have suspected developmental hazards: Inhalation of toluene vapors at high doses have resulted in an increased incidence of malformations and decreased fetal weight in laboratory animals.

Target Organ Effects Sulfentrazone: Hematopoietic System.

Chemical Name	ACGIH	IARC	NTP	OSHA	NIOSH - Target Organs
Toluene					SNC, les yeux, les reins, le foie, les voies respiratoires, la peau

12. Ecological information

Ecotoxicity

Ecotoxicity effects Very toxic to aquatic organisms.

Sulfentrazone (122836-35-5)

Active Ingredient(s)	Duration	Species	Value	Units
Sulfentrazone	120 h LC50	Algae	31	µg/L
	48 h LC50	Aquatic organisms	60.4	mg/L
	96 h LC50	Fish	94	mg/L
	LD50 Oral	Bobwhite quail	>2250	mg/kg
	LD50 Dietary	Mallard duck	>5620	ppm

Chloransulam-methyl (147150-35-4)

Active Ingredient(s)	Duration	Species	Value	Units
Cloransulam-methyl	LC50	Fish	>86	mg/L
	LC50	Daphnia magna	98	mg/L
	EC50	Algae	3.5-12	µg/L
	LD50 Oral	Bobwhite quail	>2200	mg/kg

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Toluene	>433 mg/L EC50 96 h (Pseudokirchneriella subcapitata) 12.5 mg/L EC50 72 h (Pseudokirchneriella subcapitata)	LC50 15.22-19.05 mg/L Pimephales promelas 96 h LC50 12.6 mg/L Pimephales promelas 96 h LC50 5.89-7.81 mg/L Oncorhynchus mykiss 96 h LC50 14.1-17.16 mg/L Oncorhynchus mykiss 96 h LC50 5.8 mg/L Oncorhynchus mykiss 96 h LC50 11.0-15.0 mg/L Lepomis macrochirus 96 h LC50 54 mg/L Oryzias latipes 96 h LC50 28.2 mg/L Poecilia reticulata 96 h LC50 50.87-70.34 mg/L Poecilia reticulata 96 h		EC50 5.46 - 9.83 mg/L 48 h EC50 11.5 mg/L 48 h

Environmental Fate

Sulfentrazone (122836-35-5)

Active Ingredient(s)	Type of Test	Result
Sulfentrazone	Bioconcentration factor (BCF)	2
	Half-life in soil	2-18 months
	log Pow	1.5
	Mobility in soil	Potential to reach groundwater
	Stability in water	Stable to hydrolysis over a wide range of pH values.

Chloransulam-methyl (147150-35-4)

Active Ingredient(s)	Type of Test	Result
Cloransulam-methyl	log Pow	.20
	Bioconcentration factor (BCF)	<100

Chemical Name	log Pow
Toluene	2.65

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.

Packaging Type Non-Bulk, Bulk

TDG Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.

Proper shipping name Environmentally hazardous substance, solid, n.o.s.
Hazard Class 9
UN/ID No UN3077
Packing group III
Marine pollutant Sulfentrazone, Cloransulam-methyl.
Description UN3077, Environmentally hazardous substance, solid, n.o.s. (Sulfentrazone, Cloransulam-methyl), 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
Marine pollutant Sulfentrazone, Cloransulam-methyl
Description UN3077, Environmentally hazardous substance, solid, n.o.s. (Sulfentrazone, Cloransulam-methyl), 9, PGIII, Marine Pollutant

IMDG/IMO

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Hazard Class	9
UN/ID No	UN3077
Packing group	III
EmS No.	F-A, S-F
Marine pollutant	Sulfentrazone, Cloransulam-methyl
Description	UN3077, Environmentally hazardous substance, solid, n.o.s. (Sulfentrazone, Cloransulam-methyl), 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	<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

CERCLA

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Toluene	1000 lb	

TSCA Inventory (United States of America)

Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances
Toluene	10/04/1982

International Regulations

Mexico - Grade

Slight risk, Grade 1

Chemical Name	Carcinogen Status	Mexico
Toluene		Mexico: S* Mexico: TWA 50 ppm Mexico: TWA 188 mg/m ³

Canada

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 Non-controlled

16. Other information

Revision Date: 2012-04-19
Reason for revision: Initial Release.

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End of Material Safety Data Sheet