

Material Safety Data Sheet

Broadaxe™ Herbicide

SDS #: 6918-A

Revision Date: 2012-03-19

Version 1.02



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	Broadaxe™ Herbicide
Active Ingredient(s)	s-Metolachlor, Sulfentrazone
Alternate Commercial Name	F7583-3 Herbicide
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 Acetamide, 2-chloro-N-(2-ethyl-6-methylphenyl)-N-(2-methoxy-1-methylethyl)-(S)
Chemical Family	Chloroacetanilide herbicide; Triazolinones
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	amber liquid
Physical state	liquid
Odor	mild
Flammable properties	Not flammable
Potential health effects	
Principle Routes of Exposure	Eye contact, Skin contact, Inhalation, Ingestion.
Acute effects	
Eyes	Moderately irritating (rabbit).
Skin	Causes moderate skin irritation. May cause sensitization by skin contact.
Inhalation	May cause irritation of respiratory tract. May be harmful if inhaled.
Ingestion	May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Chronic effects	Prolonged exposure may cause chronic effects.

Environmental hazard

See Section 12 for additional Ecological Information.

3. Composition/information on ingredientsHazardous ingredients

Chemical Name	CAS-No	Weight %
s-Metolachlor	87392-12-9	68.25
Naphtha (petroleum), heavy aromatic	64742-94-5	<10
Sulfentrazone	122836-35-5	7.55
N,N-Dimethylcaprylamide	1118-92-9	1-5
2-Methylnaphthalene	91-57-6	<2.6
Oxirane, methyl-, polymer with oxirane, monobutyl ester	9038-95-3	1-5
Decanamide, N,N-dimethyl-	14433-76-2	1-5
1-Methylnaphthalene	90-12-0	<1.6

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 measuresFlammable properties Not flammable

Flash Point 94-98 °C

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. Remove all sources of ignition. 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 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.
- 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
2-Methylnaphthalene 91-57-6	S* TWA: 0.5 ppm			
1-Methylnaphthalene 90-12-0	S* TWA: 0.5 ppm			

Chemical Name	British Columbia	Quebec	Ontario TWAEV	Alberta
2-Methylnaphthalene 91-57-6	TWA: 0.5 ppm Skin		TWA: 0.5 ppm Skin	
1-Methylnaphthalene 90-12-0	TWA: 0.5 ppm Skin		TWA: 0.5 ppm 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	amber liquid
Color	amber
Physical state	liquid
Odor	mild
pH	4.78
Melting Point/Range	No information available.
Freezing point	No information available
Boiling Point/Range	not applicable
Flash Point	94-98 °C
Evaporation rate	not applicable
Autoignition Temperature	not applicable
Flammable properties	Not flammable
Vapor pressure	No information available
Vapor density	No information available
Water solubility	No information available
Percent volatile	No information available
Partition coefficient:	not applicable
Viscosity	No information available
Oxidizing properties	not applicable

10. Stability and reactivity

Stability	Stable
Conditions to avoid	Excessive heat
Hazardous decomposition products	None known
Hazardous polymerization	Hazardous polymerization does not occur

11. Toxicological information

Eye contact	Moderately irritating (rabbit) (rabbit)
Skin contact	Moderately irritating to skin (rabbit) (rabbit)
LD50 Dermal	> 5000 mg/kg (rat)
LD50 Oral	3129 mg/kg (rat)
LC50 Inhalation:	> 2.02 mg/L (rat)
Sensitization	May cause sensitization by skin contact
<u>Chronic Toxicity - Other Ingredient(s)</u>	
Chronic Toxicity	Prolonged exposure may cause chronic effects.
Carcinogenicity	s-Metolachlor produced benign liver tumors in female rats administered high doses. Sulfentrazone: Did not show carcinogenic effects in animal experiments.
Mutagenicity	Sulfentrazone: Did not show mutagenic effects in animal experiments

Reproductive toxicity	s-Metolachlor: No toxicity to reproduction. Offspring Toxicity (sulfentrazone): LOAEL = 33 mg/kg/day for males; 40 mg/kg/day for females.
Neurological Effects	Sulfentrazone: Altered motor activity and FOB effects, which reverse after single exposure, with no signs of histopathology
Developmental Toxicity	s-Metolachlor: Not teratogenic in animal studies. 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.
Target Organ Effects	s-Metolachlor: Liver. Sulfentrazone: Hematopoietic System.

12. Ecological information

Ecotoxicity

s-Metolachlor (87392-12-9)

Active Ingredient(s)	Duration	Species	Value	Units
s-Metolachlor	96 h LC50	Rainbow trout	11.9	mg/L
	5 day, EC50	Algae	0.008	mg/L
	48 h EC50	Water flea	26	mg/L
	LD50 Oral	Bobwhite quail	>2510	mg/kg

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

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Naphtha (petroleum), heavy aromatic	2.5 mg/L EC50 72 h (Skeletonema costatum)	LC50 19 mg/L Pimephales promelas 96 h LC50 2.34 mg/L Oncorhynchus mykiss 96 h LC50 1740 mg/L Lepomis macrochirus 96 h LC50 45 mg/L Pimephales promelas 96 h LC50 41 mg/L Pimephales promelas 96 h		EC50 0.95 mg/L 48 h

Environmental Fate

s-Metolachlor (87392-12-9)

Active Ingredient(s)	Type of Test	Result
s-Metolachlor	Half-life in soil	Not persistent in soil
	Stability in water	Stable in water.
	Bioconcentration factor (BCF)	Low bioaccumulation potential

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.

Chemical Name	log Pow
Naphtha (petroleum), heavy aromatic	2.9 - 6.1
2-Methylnaphthalene	3.86

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

Proper shipping name Environmentally hazardous substance, liquid, n.o.s.
Hazard Class 9
UN/ID No UN3082
Packing group III
Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (s-Metolachlor), 9, PGIII

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. (s-Metolachlor), 9, PGIII

IMDG/IMO

Proper shipping name Environmentally hazardous substance, liquid, n.o.s.
Hazard Class 9
UN/ID No UN3082
Packing group III
Description UN3082, Environmentally hazardous substance, liquid, n.o.s. (s-Metolachlor), 9, PGIII

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 does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

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

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)

TSCA Inventory (United States of America)

Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(a) - Chemical-Specific Reporting and Recordkeeping
Naphtha (petroleum), heavy aromatic	Partially exempt chemical substance termed Petroleum Process Stream

International Regulations

Mexico - Grade

Slight risk, Grade 1

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

D2B Toxic materials



16. Other information

Revision Date: 2012-03-19
Reason for revision: Initial Release.

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