

# Material Safety Data Sheet

## BROADHEAD™ HERBICICDE

SDS #: 6516-A  
Revision Date: 2012-02-24  
Version 1.01



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

<b>Product name</b>	BROADHEAD™ HERBICICDE
<b>Formula code</b>	6516-A
<b>Active Ingredient(s)</b>	Quinclorac, Carfentrazone-ethyl
<b>Alternate Commercial Name</b>	F7275 Herbicide
<b>Synonyms</b>	3,7-dichloroquinoline-8-carboxylic acid; 3,7-dichloro-8-quinolinecarboxylic acid ; FMC 116426; ethyl (RS)-2-chloro-3-[2-chloro-5-(4-difluoromethyl-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl)-4-fluorophenyl] propionate; ethyl $\alpha$ ,2-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl] -4-fluorobenzenepropanoate
<b>Chemical Family</b>	Quinoline derivative, Triazolinones
<b>Recommended use</b>	Herbicide
<b>Manufacturer</b> FMC Corporation Agricultural Products Group 1735 Market Street Philadelphia, PA 19103 General Information: Phone: (215) 299-6000 E-Mail: msdsinfo@fmc.com	<b>Emergency telephone number</b>  Medical Emergencies: (800) 331-3148 (U.S.A. & Canada) +1 (651) 632-6793 (All Other Countries - Collect) 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)

### 2. Hazards identification

<b>Appearance</b>	White to Tan granules
<b>Physical state</b>	solid
<b>Odor</b>	slight sweet
<b>Flammable properties</b>	Finely dispersed particles can form explosive mixtures in air.
<b>Potential health effects</b>	
<b>Principle Routes of Exposure</b>	Eye contact, Skin contact, Inhalation, Ingestion.
<b>Acute effects</b>	
<b>Eyes</b>	May cause slight irritation.
<b>Skin</b>	May cause moderate skin irritation.
<b>Inhalation</b>	May cause irritation of respiratory tract.

**Ingestion**  
**Chronic effects**

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.  
Effects are expected to be similar to those that are seen with acute toxicity.

**3. Composition/information on ingredients****Hazardous ingredients**

Chemical Name	CAS-No	Weight %
Quinclorac	84087-01-4	66.05
Kaolin	1332-58-7	5-10
Formaldehyde condensate	RR-24503-4	1-5
Carfentrazone-ethyl	128639-02-1	3.95
Sodium N-methyl-N-oleoyltaurine	137-20-2	1-5
Amorphous silica gel	7631-86-9	1-5

**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 give anything by mouth to an unconscious person.
Notes to physician	Treatment is symptomatic and supportive.

**5. Fire-fighting measures**

<b>Flammable properties</b>	Finely dispersed particles can form explosive mixtures in air.
<b>Sensitivity to Mechanical Impact</b>	not applicable
<b>Sensitivity to Static Discharge</b>	not applicable
<b>Suitable extinguishing media</b>	Carbon dioxide (CO <sub>2</sub> ), Foam, Dry powder, Water spray.
<b>Protective equipment and precautions for firefighters</b>	Wear self-contained breathing apparatus and protective suit.

**NFPA**

<b>Health Hazard</b>	1
<b>Flammability</b>	1
<b>Stability</b>	0
<b>Special Hazards</b>	-

**6. Accidental release measures**

<b>Personal precautions</b>	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.
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**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** 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.

**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 only.

**8. Exposure controls/personal protection**

Exposure guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Kaolin 1332-58-7	TWA: 2 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>
Amorphous silica gel 7631-86-9			IDLH: 3000 mg/m <sup>3</sup> TWA: 6 mg/m <sup>3</sup>	

Chemical Name	British Columbia	Quebec	Ontario TWAEV	Alberta
Kaolin 1332-58-7	TWA: 2 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>	TWA: 2 mg/m <sup>3</sup>

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

<b>Appearance</b>	White to Tan granules
<b>Physical state</b>	solid
<b>Odor</b>	slight sweet
<b>pH</b>	3.6
<b>Melting Point/Range</b>	No information available.
<b>Freezing point</b>	No information available
<b>Boiling Point/Range</b>	not applicable
<b>Flash Point</b>	not applicable
<b>Evaporation rate</b>	not applicable
<b>Autoignition Temperature</b>	not applicable
<b>Flammable properties</b>	Finely dispersed particles can form explosive mixtures in air.
<b>Vapor pressure</b>	No information available
<b>Vapor density</b>	No information available
<b>Density</b>	36.53 lb/gal
<b>Water solubility</b>	No information available
<b>Percent volatile</b>	No information available
<b>Partition coefficient:</b>	not applicable
<b>Viscosity</b>	No information available
<b>Oxidizing properties</b>	not applicable

## 10. Stability and reactivity

<b>Stability</b>	Stable under recommended storage conditions.
<b>Conditions to avoid</b>	Heat, flames and sparks
<b>Hazardous decomposition products</b>	Carbon oxides, Hydrogen chloride, Hydrogen fluoride, nitrogen oxides (NO <sub>x</sub> ).
<b>Hazardous polymerization</b>	Hazardous polymerization does not occur

## 11. Toxicological information

### Acute Toxicity

Signs of toxicity with carfentrazone-ethyl, in laboratory animals, included tremors, abdominal gripping, mucoid anal discharge, bloody oral discharge, hypothermia, squinting eyes, lacrimation, and pink to orange-brown discoloration of urine.

<b>Eye contact</b>	Slightly or non-irritating (rabbit)
<b>Skin contact</b>	Moderately irritating (rabbit)

<b>LD50 Dermal</b>	> 2000 mg/kg (rat)
<b>LD50 Oral</b>	3129 mg/kg (rat)
<b>LC50 Inhalation:</b>	> 2.06 mg/L (4-hr) (rat)

<b>Sensitization</b>	Sensitizer
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### Chronic Toxicity - Other Ingredient(s)

<b>Chronic Toxicity</b>	Effects are expected to be similar to those that are seen with acute toxicity.
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**Carcinogenicity** Quinclorac, Carfentrazone-ethyl: Not carcinogenic. Not recognized as carcinogenic by Research Agencies (IARC, NTP, OSHA, ACGIH).

**Mutagenicity** Quinclorac, Carfentrazone-ethyl: Not mutagenic.

**Reproductive toxicity** Quinclorac: No effects on reproduction in rats; In rabbits effects only at maternally toxic levels. Carfentrazone-ethyl: No toxicity to reproduction.

**Developmental Toxicity** Quinclorac, Carfentrazone-ethyl: Not teratogenic in animal studies.

**Target Organ Effects** Quinclorac: Kidney, Liver, Blood. Carfentrazone-ethyl: Red blood cell reduction can occur due to hemoglobin biosynthesis inhibition. Accumulation of precursors of hemoglobin may lead to secondary toxicity to liver and other organs.

Chemical Name	ACGIH	IARC	NTP	OSHA	NIOSH - Target Organs
Kaolin					respiratory system, stomach
Amorphous silica gel					eyes, respiratory system

## 12. Ecological information

### Ecotoxicity

#### Quinclorac (84087-01-4)

Active Ingredient(s)	Duration	Species	Value	Units
Quinclorac	48 h EC50	Daphnia	>100	mg/L
	EC50 96h	Algae	>100	mg/L
	96 h LC50	Fish	>100	mg/L
	LC50	Mallard duck	>5000	ppm
	LD50	Bobwhite quail	>2000	mg/kg
	LD50	Bee	>100	µg/bee

#### Carfentrazone-ethyl (128639-02-1)

Active Ingredient(s)	Duration	Species	Value	Units
Carfentrazone-ethyl	120 h LC50	Algae	5.7 - 17	µg/L
	96 h LC50	Fish	1.6 - 2.0	mg/L
	48 h LC50	Daphnia	>9.8	mg/L
	LD50 Oral	Bobwhite quail	>2250	mg/kg

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
Amorphous silica gel	440 mg/L EC50 72 h (Pseudokirchneriella subcapitata)	LC50 5000 mg/L Brachydanio rerio 96 h		EC50 7600 mg/L 48 h

### Environmental Fate

#### Quinclorac (84087-01-4)

Active Ingredient(s)	Type of Test	Result
Quinclorac	Half-life in soil	10-40 days
	Stability in water	Stable in water.

	Mobility in soil	Variable depending on soil type.
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**Carfentrazone-ethyl (128639-02-1)**

Active Ingredient(s)	Type of Test	Result
Carfentrazone-ethyl	Bioconcentration factor (BCF), Rainbow trout	159
	Half-life in soil	<1.5 days
	log Pow	3.3
	Mobility in soil	Not expected to reach groundwater
	Stability in water	Hydrolysis unstable at pH 5 to 9.

**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**                                      Bulk, Non-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**    Carfentrazone-ethyl .  
**Description**    UN3077, Environmentally hazardous substance, solid, n.o.s. (Carfentrazone-ethyl), 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**    Carfentrazone-ethyl  
**Description**    UN3077, Environmentally hazardous substance, solid, n.o.s. (Carfentrazone-ethyl), 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**    Carfentrazone-ethyl  
**Description**    UN3077, Environmentally hazardous substance, solid, n.o.s. (Carfentrazone-ethyl), 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 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**

<b>Acute Health Hazard</b>	yes
<b>Chronic Health Hazard</b>	yes
<b>Fire Hazard</b>	no
<b>Sudden Release of Pressure Hazard</b>	no
<b>Reactive Hazard</b>	no

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

**TSCA Inventory (United States of America)**

Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(a) - Chemical-Specific Reporting and Recordkeeping
Sodium N-methyl-N-oleoyltaurine	PAIR: 09/29/2006

Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances
Sodium N-methyl-N-oleoyltaurine	12/28/1984 09/29/2006

**International Regulations**

**Mexico - Grade**

Moderate risk, Grade 2

Chemical Name	Carcinogen Status	Mexico
Kaolin		Mexico: TWA 10 mg/m <sup>3</sup> Mexico: STEL 20 mg/m <sup>3</sup>

**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:** 2012-02-24  
**Reason for revision:** (M)SDS sections updated.

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**End of Material Safety Data Sheet**