

# Material Safety Data Sheet

## Echelon® 4SC Herbicide

SDS #: 6330-A

Revision Date: 2012-02-24

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

<b>Product name</b>	Echelon® 4SC Herbicide
<b>Formula code</b>	6330-A
<b>Active Ingredient(s)</b>	Sulfentrazone, Prodiamine
<b>Synonyms</b>	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 5-dipropylamino- $\alpha,\alpha,\alpha$ -trifluoro-4,6-dinitro-o-toluidine; 2,6-dinitro-N1,N1-dipropyl-4-trifluoromethyl-m-phenylenediamine; 2,4-dinitro-N3,N3-dipropyl-6-(trifluoromethyl)-1,3-benzenediamine
<b>Chemical Family</b>	Triazolinones; Dinitro aniline
<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>  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

<b>Appearance</b>	Yellow liquid
<b>Physical state</b>	liquid
<b>Odor</b>	mild phenolic
<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>	Substance may cause slight skin irritation.
<b>Inhalation</b>	May cause irritation of respiratory tract. May cause additional effects as listed under "Ingestion".
<b>Ingestion</b>	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause central nervous system depression.
<b>Chronic effects</b>	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 %
prodiamine	29091-21-2	27.28
Sulfentrazone	122836-35-5	13.64
Glycerin	56-81-5	5-10

### 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

Flash Point	> 100 °C / > 112 °F
Sensitivity to Mechanical Impact	not applicable
Sensitivity to Static Discharge	not applicable
Suitable extinguishing media	Carbon dioxide (CO <sub>2</sub> ). 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 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
Glycerin 56-81-5	TWA: 10 mg/m <sup>3</sup>	TWA: 15 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>		Mexico: TWA 10 mg/m <sup>3</sup>

Chemical Name	British Columbia	Quebec	Ontario TWAEV	Alberta
Glycerin 56-81-5	TWA: 10 mg/m <sup>3</sup> TWA: 3 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	TWA: 10 mg/m <sup>3</sup>	TWA: 10 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

**Appearance** Yellow liquid  
**Color** yellow  
**Physical state** liquid  
**Odor** mild phenolic  
**pH** 6.35 (1% solution)  
**Melting Point/Range** No information available.  
**Freezing point** No information available  
**Boiling Point/Range** not applicable

Flash Point	> 100 °C / > 112 °F
Evaporation rate	not applicable
Autoignition Temperature	not applicable
Vapor pressure	No information available
Vapor density	No information available
Density	9.95 lb/gal
Specific Gravity	1.192
Water solubility	Dispersible in water
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

### Acute Toxicity

Signs of toxicity in laboratory animals included intermittent tremors, decreased activity, prostration, shallow breathing, ocular discharge, salivation and decreased food consumption.

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

LD50 Dermal	> 5000 mg/kg (rat)
LD50 Oral	> 5000 mg/kg (rat)
LC50 Inhalation:	> 2.19 mg/L (rat)

Sensitization	Non-sensitizing
---------------	-----------------

### Chronic Toxicity - Other Ingredient(s)

Chronic Toxicity	Effects are expected to be similar to those that are seen with acute toxicity.
Carcinogenicity	Sulfentrazone, Prodiamine: Did not show carcinogenic effects in animal experiments.
Mutagenicity	Sulfentrazone, Prodiamine: 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. Prodiamine: 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. Prodiamine: Not teratogenic in animal studies.

## Target Organ Effects

Sulfentrazone: Hematopoietic System. In long-term feeding studies with prodiamine, the NOEL was 200 ppm in rats, and 500 ppm in mice. Toxicity was identified in the liver and thyroid of rats at 3200 ppm, where decreased body-weight gains, liver enlargement and alterations, and species specific benign thyroid tumors were seen. At 5000 ppm in mice, both decreased body weight gains and increased liver weights were reported, but no compound related tumors were observed.

Chemical Name	ACGIH	IARC	NTP	OSHA	NIOSH - Target Organs
Glycerin					respiratory system, skin, eyes, kidneys

## 12. Ecological information

### Ecotoxicity

#### prodiamine (29091-21-2)

Active Ingredient(s)	Duration	Species	Value	Units
Prodiamine	LC50	Fish	>552	ppb
	LC50	Aquatic organisms	>658	ppb

#### 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
Glycerin		LC50 51 - 57 mL/L Oncorhynchus mykiss 96 h		EC50 > >500 mg/L 24 h

### Environmental Fate

#### prodiamine (29091-21-2)

Active Ingredient(s)	Type of Test	Result
Prodiamine	Half-life in soil	<57 days
	Stability in water	Stable to hydrolysis over a wide range of pH values.

#### 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

Glycerin	-1.76
----------	-------

### 13. Disposal considerations

<b>Waste disposal methods</b>	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.
<b>Contaminated packaging</b>	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

<b><u>DOT</u></b>	This material is not a hazardous material as defined by U.S. Department of Transportation at 49 CFR Parts 100 through 185.
<b>Packaging Type</b>	Non-Bulk, Bulk
<b><u>TDG</u></b>	Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.
<b>Proper shipping name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>Hazard Class</b>	9
<b>UN/ID No</b>	UN3082
<b>Packing group</b>	III
<b>Marine pollutant</b>	Sulfentrazone.
<b>Description</b>	UN3082, Environmentally hazardous substance, liquid, n.o.s. (sulfentrazone), 9, PGIII, Marine Pollutant
<b><u>ICAO/IATA</u></b>	
<b>UN/ID No</b>	UN3082
<b>Proper shipping name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>Hazard Class</b>	9
<b>Packing group</b>	III
<b>Marine pollutant</b>	Sulfentrazone
<b>Description</b>	UN3082, Environmentally hazardous substance, liquid, n.o.s. (sulfentrazone), 9, PGIII, Marine Pollutant
<b><u>IMDG/IMO</u></b>	
<b>Proper shipping name</b>	Environmentally hazardous substance, liquid, n.o.s.
<b>Hazard Class</b>	9
<b>UN/ID No</b>	UN3082
<b>Packing group</b>	III
<b>EmS No.</b>	F-A, S-F
<b>Marine pollutant</b>	Sulfentrazone
<b>Description</b>	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 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, 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
Glycerin	Partially exempt chemical substance under 40 CFR 710.46(b)(2)

**International Regulations****Mexico - Grade**

Slight risk, Grade 1

Chemical Name	Carcinogen Status	Mexico
Glycerin		Mexico: TWA 10 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

Non-controlled

**16. Other information**

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

**Disclaimer**

FMC Corporation believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specified product designated and may not be applicable where such product is used in combination with any other materials or in any process. , Use of this product is regulated by the U.S. Environmental Protection Agency (EPA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. , Further, since the conditions and methods of use are beyond the control of FMC Corporation, FMC corporation expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

**Prepared By**

FMC Corporation  
FMC Logo - Trademark of FMC Corporation

© 2012 FMC Corporation. All Rights Reserved

**End of Material Safety Data Sheet**