

**SAFETY DATA SHEET**  
Echelon® 4SC Herbicide

**SDS # :** 6330-A  
**Revision date:** 2016-05-26  
**Format:** NA  
**Version** 1.03



**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product Identifier**

**Product Name** Echelon® 4SC Herbicide

**Other means of identification**

**Product Code(s)** 6330-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)  
methanesulfonamide (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)  
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

**Active Ingredient(s)** Sulfentrazone, Prodiamine

**Chemical Family** Triazolinones; Dinitro aniline

**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 material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Skin sensitization	Category 1
Specific target organ toxicity (repeated exposure)	Category 2

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

H317 - May cause an allergic skin reaction

H332 - Harmful if inhaled

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

**Precautionary Statements - Prevention**

P271 - Use only outdoors or in a well-ventilated area

P272 - Contaminated work clothing should not be allowed out of the workplace

P280 - Wear protective gloves

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

**Precautionary Statements - Response**

P314 - Get medical advice/ attention if you feel unwell

P302 + P352 - IF ON SKIN: Wash with plenty of water and soap

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention

P363 - Wash contaminated clothing before reuse

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P312 - Call a POISON CENTER or doctor 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**

Toxic to aquatic life.

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Chemical Family**

Triazolinones; Dinitro aniline.

Chemical name	CAS-No	Weight %
Prodiamine	29091-21-2	27.28
Sulfentrazone	122836-35-5	13.64
Glycerin	56-81-5	5-10
Toluene	108-88-3	0.1-1

Synonyms are provided in Section 1.

**4. FIRST AID MEASURES**

<b>Eye Contact</b>	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.
<b>Skin Contact</b>	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.
<b>Inhalation</b>	Move to fresh air. If person is not breathing, call 911 (within the U.S. and Canada) or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.
<b>Ingestion</b>	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.
<b>Most important symptoms and effects, both acute and delayed</b>	None known.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	Treat symptomatically.

## 5. FIRE-FIGHTING MEASURES

<b>Suitable Extinguishing Media</b>	Carbon dioxide (CO <sub>2</sub> ). Foam. Dry powder. Water spray.
<b>Specific Hazards Arising from the Chemical</b>	
<b><u>Explosion data</u></b>	
<b>Sensitivity to Mechanical Impact</b>	Not sensitive.
<b>Sensitivity to Static Discharge</b>	Not sensitive.
<b>Protective equipment and precautions for firefighters</b>	Wear self-contained breathing apparatus and protective suit.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions</b>	Isolate and post spill area. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
<b>Other</b>	For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.
<b>Environmental Precautions</b>	See Section 12 for additional Ecological Information.
<b>Methods for Containment</b>	Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
<b>Methods for cleaning up</b>	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

<b>Handling</b>	Do not contaminate other pesticides, fertilizers, water, food, or feed by storage or disposal.
<b>Storage</b>	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.
<b>Incompatible products</b>	None known.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Chemical name	ACGIH TLV	OSHA PEL	NIOSH	Mexico
Glycerin (56-81-5)	-	TWA: 15 mg/m <sup>3</sup> TWA: 5 mg/m <sup>3</sup>	-	Mexico: TWA 10 mg/m <sup>3</sup>
Toluene (108-88-3)	TWA: 20 ppm	TWA: 200 ppm Ceiling: 300 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m <sup>3</sup> STEL: 150 ppm STEL: 560 mg/m <sup>3</sup>	Mexico: TWA 50 ppm Mexico: TWA 188 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>
Toluene (108-88-3)	TWA: 20 ppm	TWA: 50 ppm TWA: 188 mg/m <sup>3</sup> Skin	TWA: 20 ppm	TWA: 50 ppm TWA: 188 mg/m <sup>3</sup> 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**

If there is a potential for exposure to particles which could cause eye discomfort, wear chemical goggles.

**Skin and Body Protection**

Wear long-sleeved shirt, long pants, socks, and shoes.

**Hand Protection**

Protective gloves

**Respiratory Protection**

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Respiratory protection must be provided in accordance with current local regulations.

**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

<b>Appearance</b>	Yellow Liquid
<b>Physical State</b>	Liquid
<b>Color</b>	Yellow
<b>Odor</b>	Mild Phenolic
<b>Odor threshold</b>	No information available
<b>pH</b>	6.35 (1% solution)
<b>Melting point/freezing point</b>	Not applicable
<b>Boiling Point/Range</b>	No information available
<b>Flash point</b>	> 100 °C / > 112 °F
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid, gas)</b>	No information available
<b>Flammability Limit in Air</b>	
<b>Upper flammability limit:</b>	No information available

Lower flammability limit:	No information available
Vapor pressure	No information available
Vapor density	No information available
Density	9.95 lb/gal
Specific gravity	1.192
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 information available
Molecular weight	No information available
Bulk density	No information available

## 10. STABILITY AND REACTIVITY

Reactivity	None under normal use conditions.
Chemical Stability	Stable under recommended storage conditions.
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	None known based on information supplied.

## 11. TOXICOLOGICAL INFORMATION

### Product Information

LD50 Oral	> 5000 mg/kg (rat)
LD50 Dermal	> 5000 mg/kg (rat)
LC50 Inhalation	> 2.09 mg/L (rat)
Serious eye damage/eye irritation	Mildly irritating (rabbit).
Skin corrosion/irritation	Slightly irritating (rabbit).
Sensitization	Sensitizer

### Information on toxicological effects

**Symptoms** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

<b>Chronic toxicity</b>	Sulfentrazone: Prolonged exposure cause decreased hemoglobin content and hematocrit, and increased spleen weight and splenic extramedullary hematopoiesis at high doses in animal studies.
<b>Mutagenicity</b>	Prodiamine, Sulfentrazone: Not genotoxic in laboratory studies.
<b>Carcinogenicity</b>	Prodiamine, Sulfentrazone: No evidence of carcinogenicity from animal studies.
<b>Neurological effects</b>	Sulfentrazone: Clinical signs of neurotoxicity in laboratory animals was observed at high dose levels.
<b>Reproductive toxicity</b>	Prodiamine, Sulfentrazone: No toxicity to reproduction in animal studies.
<b>Developmental toxicity</b>	Prodiamine: Not teratogenic in animal studies. 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.
<b>STOT - single exposure</b>	Not classified.

**STOT - repeated exposure**

May cause damage to organs through prolonged or repeated exposure. See listed target organs below.

**Target organ effects**

Prodiamine: 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.

**Neurological effects**

Sulfentrazone: Hematopoietic system.  
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		

IARC (International Agency for Research on Cancer)  
Group 3 - Not classifiable as to its carcinogenicity to humans

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

<b>Prodiamine (29091-21-2)</b>				
Active Ingredient(s)	Duration	Species	Value	Units
Prodiamine	LC50	Fish	>552	ppb
	LC50	Aquatic organisms	>658	ppb

<b>Sulfentrazone (122836-35-5)</b>				
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

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Toluene 108-88-3	72 h EC50: = 12.5 mg/L (Pseudokirchneriella subcapitata) static 96 h EC50: > 433 mg/L (Pseudokirchneriella subcapitata)	96 h LC50: 11.0 - 15.0 mg/L (Lepomis macrochirus) static 96 h LC50: 14.1 - 17.16 mg/L (Oncorhynchus mykiss) static 96 h LC50: 15.22 - 19.05 mg/L (Pimephales promelas) flow-through 96 h LC50: 5.89 - 7.81 mg/L (Oncorhynchus mykiss) flow-through 96 h LC50: 50.87 - 70.34 mg/L (Poecilia reticulata) static 96 h LC50: = 12.6 mg/L (Pimephales promelas) static 96 h LC50: = 28.2 mg/L (Poecilia reticulata) semi-static 96 h LC50: = 5.8 mg/L (Oncorhynchus mykiss) semi-static 96 h LC50: = 54 mg/L (Oryzias latipes) static	48 h EC50: 5.46 - 9.83 mg/L (Daphnia magna) Static 48 h EC50: = 11.5 mg/L (Daphnia magna)

**Persistence and degradability**

Prodiamine: Moderately persistent. Does not readily hydrolyze. Sulfentrazone: Persistent. Does not readily hydrolyze.

**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.

Chemical name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Toluene 108-88-3	U220	Included in waste streams: F005, F024, F025, F039, K015, K036, K037, K149, K151		
Chemical name			California Hazardous Waste Status	
Toluene 108-88-3			Toxic Ignitable	

## 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.

<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

**ICAO/IATA**

<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>Description</b>	UN3082, Environmentally hazardous substance, liquid, n.o.s. (sulfentrazone), 9, PGIII, Marine Pollutant

**IMDG/IMO**

<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>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 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	0.1-1	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

**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):

Chemical name	Hazardous Substances RQs	Extremely Hazardous Substances RQs
Toluene 108-88-3	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. Prolonged or frequently repeated skin contact while mixing or handling may cause allergic reaction in certain individuals.  
This product 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
Glycerin 56-81-5	X	X	X
Toluene 108-88-3	X	X	X

**International Inventories**

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Prodiamine 29091-21-2	X	X	X					X



