

**MATERIAL SAFETY DATA SHEET**  
**AIM® EC HERBICIDE**

MSDS #: 6165-A  
Revision date: 2015-03-06  
Version 1.04



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

**1. PRODUCT AND COMPANY IDENTIFICATION**

|  |  |
|--|--|
| <b>Product Name</b>  | AIM® EC HERBICIDE  |
| <b>Formula code</b>  | 006165   |
| <b>Active Ingredient(s)</b>  | Carfentrazone-ethyl  |
| <b>Synonyms</b>  | CARFENTRAZONE-ETHYL (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>   | Triazolinones  |
| <b>Recommended Use:</b>  | Herbicide  |
| <b><u>Manufacturer/Supplier</u></b>  | <b><u>Emergency telephone number</u></b>   |
| FMC Corporation<br>Agricultural Solutions<br>1735 Market Street<br>Philadelphia, PA 19103<br>General Information:<br>Phone: (215) 299-6000<br>E-Mail: msdsinfo@fmc.com | Medical Emergencies:<br>1 800 / 331-3148 (PROSAR - U.S.A. & Canada)<br>1 651 / 632-6793 (PROSAR - All Other Countries - Collect)<br>For leak, fire, spill or accident emergencies, call:<br>1 800 / 424 9300 (CHEMTREC - U.S.A.)<br>1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries)  |

**2. HAZARDS IDENTIFICATION**

|  |   |
|--|---|
| <b><u>Appearance</u></b>               | Brown orange liquid   |
| <b><u>Physical State</u></b>           | Liquid  |
| <b><u>Odor</u></b>                     | Aromatic  |
| <b><u>Potential Health Effects</u></b> |   |
| <b>Principal 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 central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.              |
| <b>Ingestion</b>                       | Potential for aspiration if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause central nervous system depression. |
| <b>Chronic Effects</b>                 | Carfentrazone-ethyl: Long-term exposure caused hematotoxicity and deposit of porphyrin in the liver in animal studies.  |

**Environmental Hazard**

See Section 12 for additional Ecological Information.

**3. COMPOSITION/INFORMATION ON INGREDIENTS****Hazardous ingredients**

| Chemical name                       | CAS-No      | Weight % |
|-------------------------------------|-------------|----------|
| Carfentrazone-ethyl                 | 128639-02-1 | 21.9     |
| Naphtha (petroleum), heavy aromatic | 64742-94-5  | 60-70    |
| 2-Methylnaphthalene                 | 91-57-6     | 20-30    |
| 1-Methylnaphthalene                 | 90-12-0     | 10-20    |
| Naphthalene                         | 91-20-3     | 0.1-1    |

**4. FIRST AID MEASURES**

|                           |  |
|---------------------------|--|
| <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>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>Inhalation</b>         | Move person to fresh air. If person is not breathing, call 911 (within the U.S. and Canada) 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. |
| <b>Ingestion</b>          | Immediately call a poison control center or doctor. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give any liquid to the person. Do not induce vomiting or give anything by mouth to an unconscious person.         |
| <b>Notes to Physician</b> | Treatment is symptomatic and supportive. Contains petroleum distillate. Vomiting may cause aspiration pneumonia.   |

**5. FIRE-FIGHTING MEASURES**

|  |  |
|--|--|
| <b>Suitable Extinguishing Media</b>                          | Water spray. Carbon dioxide (CO <sub>2</sub> ). Foam. Dry powder.      |
| <b>Hazardous Combustion Products</b>                         | None known.  |
| <b>Specific Hazards Arising from the Chemical</b>            | Slightly combustible. May support combustion at elevated temperatures. |
| <b>Protective equipment and precautions for firefighters</b> | Wear self-contained breathing apparatus and protective suit.           |

**NFPA**

|                        |   |
|------------------------|---|
| <b>Health Hazards</b>  | 1 |
| <b>Flammability</b>    | 2 |
| <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.   |
| <b>Environmental Precautions</b> | Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains. 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. |
| <b>Other</b>                     | For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.   |

**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. Keep/store only in original container. |

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure Guidelines**

| Chemical name                  | ACGIH TLV                           | OSHA PEL   | NIOSH   | Mexico   |
|--------------------------------|-------------------------------------|--|---|--|
| 2-Methylnaphthalene<br>91-57-6 | S*<br>TWA: 0.5 ppm                  |  |   |  |
| 1-Methylnaphthalene<br>90-12-0 | S*<br>TWA: 0.5 ppm                  |  |   |  |
| Naphthalene<br>91-20-3         | S*<br>TWA: 10 ppm                   | TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup>   | IDLH: 250 ppm<br>TWA: 10 ppm<br>TWA: 50 mg/m <sup>3</sup><br>STEL: 15 ppm<br>STEL: 75 mg/m <sup>3</sup> | Mexico: TWA 10 ppm<br>Mexico: TWA 50 mg/m <sup>3</sup><br>Mexico: STEL 15 ppm<br>Mexico: STEL 75 mg/m <sup>3</sup> |
| Chemical name                  | British Columbia                    | Quebec   | Ontario TWAEV   | Alberta  |
| 2-Methylnaphthalene<br>91-57-6 | TWA: 0.5 ppm<br>Skin                |  | TWA: 0.5 ppm<br>Skin  |  |
| 1-Methylnaphthalene<br>90-12-0 | TWA: 0.5 ppm<br>Skin                |  | TWA: 0.5 ppm<br>Skin  |  |
| Naphthalene<br>91-20-3         | TWA: 10 ppm<br>STEL: 15 ppm<br>Skin | TWA: 10 ppm<br>TWA: 52 mg/m <sup>3</sup><br>STEL: 15 ppm<br>STEL: 79 mg/m <sup>3</sup> | TWA: 10 ppm<br>STEL: 15 ppm<br>Skin   | TWA: 10 ppm<br>TWA: 52 mg/m <sup>3</sup><br>STEL: 15 ppm<br>STEL: 79 mg/m <sup>3</sup><br>Skin                     |

**Occupational exposure controls**

|                             |  |
|-----------------------------|--|
| <b>Engineering measures</b> | 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**

|                            |  |
|----------------------------|--|
| <b>General information</b> | 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. |
|----------------------------|--|

|                                 |   |
|---------------------------------|---|
| <b>Respiratory Protection</b>   | For dust, splash, mist or spray exposures wear a filtering mask.  |
| <b>Eye/Face Protection</b>      | For dust, splash, mist or spray exposure, wear chemical protective goggles  |
| <b>Skin and Body Protection</b> | Wear long-sleeved shirt, long pants, socks, and shoes.  |
| <b>Hand Protection</b>          | Protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion and the contact time.          |
| <b>Hygiene measures</b>         | 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

### Information on basic physical and chemical properties

|                            |                                |
|----------------------------|--------------------------------|
| <b>Appearance</b>          | Brown orange liquid            |
| <b>Color</b>               | Brown orange                   |
| <b>Physical State</b>      | Liquid                         |
| <b>Odor</b>                | Aromatic                       |
| <b>pH</b>                  | 5.3 (1% solution)              |
| <b>Boiling Point/Range</b> | Not applicable                 |
| <b>Flash point</b>         | 79.9 °C / 168.08 °F Closed cup |
| <b>Density</b>             | 9.0 lb/gal                     |
| <b>Specific gravity</b>    | 1.08 @ 20°C                    |
| <b>Water solubility</b>    | No information available       |

## 10. STABILITY AND REACTIVITY

|   |   |
|---|---|
| <b>Stability</b>                        | Stable under recommended storage conditions.  |
| <b>Conditions to Avoid</b>              | Heat, flames and sparks   |
| <b>Materials to avoid</b>               | Strong oxidizing agents   |
| <b>Hazardous Decomposition Products</b> | Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> ), Hydrogen chloride, Hydrogen fluoride, Nitrogen oxides (NO <sub>x</sub> ), Sulfur oxides. |
| <b>Hazardous polymerization</b>         | Hazardous polymerization does not occur.  |

## 11. TOXICOLOGICAL INFORMATION

### Acute Effects

#### Acute toxicity

Signs of toxicity in laboratory animals included mydriasis, cyanosis, ataxia, dyspnea, lacrimation, and diarrhea.

|                     |                                     |
|---------------------|-------------------------------------|
| <b>Eye Contact</b>  | Minimally irritating                |
| <b>Skin Contact</b> | Slightly or non-irritating (rabbit) |
| <b>LD50 Dermal</b>  | > 4000 mg/kg (rat)                  |
| <b>LD50 Oral</b>    | 4077 mg/kg (rat)                    |

**LC50 Inhalation** > 6.31 mg/L 4 hr (rat)

**Sensitization** Non-sensitizing

**Chronic Effects**

**Chronic toxicity** Carfentrazone-ethyl: Long-term exposure caused hematotoxicity and deposit of porphyrin in the liver in animal studies.

**Carcinogenicity** Carfentrazone-ethyl : No evidence of carcinogenicity from animal studies. There was no evidence of carcinogenic activity of naphthalene in male mice, but there was some evidence of carcinogenic activity in female mice and clear evidence of carcinogenic activity in male and female rats in 2-year inhalation studies conducted by the National Toxicology Program (NTP).

**Mutagenicity** Carfentrazone-ethyl : Not genotoxic in laboratory studies.

**Reproductive toxicity** Carfentrazone-ethyl : No toxicity to reproduction in animal studies.

**Neurological effects** Carfentrazone-ethyl : Not neurotoxic.

**Developmental toxicity** Carfentrazone-ethyl : Not teratogenic in animal studies.

| Chemical name | ACGIH | IARC     | NTP                    | OSHA | NIOSH - Target Organs             |
|---------------|-------|----------|------------------------|------|-----------------------------------|
| Naphthalene   | A3    | Group 2B | Reasonably Anticipated | X    | eyes,blood,liver,kidneys,skin,CNS |

**Legend:**

**ACGIH (American Conference of Governmental Industrial Hygienists)**

A3 - Animal Carcinogen

**IARC (International Agency for Research on Cancer)**

Group 2B - Possibly Carcinogenic to Humans

**NTP (National Toxicology Program)**

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

**OSHA (Occupational Safety and Health Administration of the US Department of Labor)**

X - Present

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity effects**

| <b>Carfentrazone-ethyl (128639-02-1)</b> |           |           |        |       |
|--|-----------|-----------|--------|-------|
| Active Ingredient(s)                     | Duration  | Species   | Value  | Units |
| Carfentrazone-ethyl                      | 72 h EC50 | Algae     | 0.012  | mg/L  |
|  | 96 h LC50 | Fish      | 1.6    | mg/L  |
|  | 48 h LC50 | Daphnia   | >9.8   | mg/L  |
|  | 96 h NOEC | Algae     | 1.0    | µg/L  |
|  | 21 d NOEC | Fish      | 0.0187 | mg/L  |
|  | 21 d NOEC | Crustacea | 0.22   | mg/L  |

| Chemical name | Toxicity to algae | Toxicity to fish | Toxicity to Microorganisms | Toxicity to daphnia and other aquatic invertebrates |
|---------------|-------------------|------------------|----------------------------|---|
|               |                   |                  |                            |   |

|                                     |  |  |  |  |
|-------------------------------------|--|--|--|--|
| Naphtha (petroleum), heavy aromatic |  | 96 h LC50: = 19 mg/L (Pimephales promelas)<br>96 h LC50: = 2.34 mg/L (Oncorhynchus mykiss)<br>96 h LC50: = 1740 mg/L (Lepomis macrochirus)<br>96 h LC50: = 45 mg/L (Pimephales promelas)<br>96 h LC50: = 41 mg/L (Pimephales promelas)                   |  | 48 h EC50: 0.95 mg/L (Daphnia magna)   |
| Naphthalene                         |  | 96 h LC50: 5.74 - 6.44 mg/L (Pimephales promelas)<br>96 h LC50: = 1.6 mg/L (Oncorhynchus mykiss)<br>96 h LC50: 0.91 - 2.82 mg/L (Oncorhynchus mykiss)<br>96 h LC50: = 1.99 mg/L (Pimephales promelas)<br>96 h LC50: = 31.0265 mg/L (Lepomis macrochirus) |  | 48 h LC50: 2.16 mg/L (Daphnia magna) 48 h EC50: 1.96 mg/L (Daphnia magna) 48 h EC50: 1.09 - 3.4 mg/L (Daphnia magna) |

**Environmental Fate**

| Chemical name       | Partition coefficient |
|---------------------|-----------------------|
| 2-Methylnaphthalene | 3.86                  |
| Naphthalene         | 3.3                   |

**Persistence and degradability** Carfentrazone-ethyl : Non-persistent. Readily hydrolyzed. Not readily biodegradable.

**Bioaccumulation** Carfentrazone-ethyl : The substance does not have a potential for bioconcentration.

**Mobility** Carfentrazone-ethyl : Mobility in soil: Not relevant

**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. Do not reuse or refill this container.

**14. TRANSPORT INFORMATION**

**DOT** This material is a Combustible liquid and is, therefore, not subject to the hazardous materials regulations when in non-bulk packages shipped within the USA per 49 CFR §173.150(f)(2).

|                                 |  |
|---------------------------------|--|
| <b>Packaging Type</b>           | Bulk   |
| <b>Proper Shipping Name</b>     | Combustible liquid, n.o.s  |
| <b>UN/ID no</b>                 | NA1993   |
| <b>Hazard class</b>             | 3  |
| <b>Packing Group</b>            | III  |
| <b>Reportable Quantity (RQ)</b> | Naphthalene  |
| <b>Additional Information</b>   | Naphthalene is a "RQ" quantity when this material meets or exceeds 100 pounds (45.4 kg) per package. |

**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>Hazard class</b>     | 9                   |
| <b>Packing Group</b>    | III                 |
| <b>Marine Pollutant</b> | Carfentrazone-ethyl |

**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (Carfentrazone-ethyl), 9, PG III, Marine Pollutant

**ICAO/IATA**

**UN/ID no** UN3082  
**Hazard class** 9  
**Packing Group** III  
**Marine Pollutant** Carfentrazone-ethyl  
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (Carfentrazone-ethyl), 9, PG III, Marine Pollutant

**IMDG/IMO**

**UN/ID no** UN3082  
**Hazard class** 9  
**Packing Group** III  
**EmS No.** F-A, S-F  
**Marine Pollutant** Carfentrazone-ethyl  
**Description** UN3082, Environmentally hazardous substance, liquid, n.o.s. (Carfentrazone-ethyl), 9, PG III, 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

| Chemical name | CAS-No  | Weight % | SARA 313 - Threshold Values % |
|---------------|---------|----------|-------------------------------|
| n-Butanol     | 71-36-3 | 1-5      | 1.0                           |
| Naphthalene   | 91-20-3 | 0.1-1    | 0.1                           |

**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):

| Chemical name | Hazardous Substances RQs | Extremely Hazardous Substances RQs |
|---------------|--------------------------|------------------------------------|
| Naphthalene   | 100 lb                   |                                    |

**TSCA (United States)**

| Component                        | U.S. - TSCA (Toxic Substances Control Act) - Section 4 - Chemical Test Rules (40 CFR 799)                                 | U.S. - TSCA (Toxic Substances Control Act) - Section 5(a)(2) - Chemicals with Significant New Use Rules (SNURs) |
|----------------------------------|---|---|
| Naphthalene<br>91-20-3 ( 0.1-1 ) | 40 CFR 799.5115   |   |
| Chemical name                    | U.S. - TSCA (Toxic Substances Control Act) - Section 8(a) - Chemical-Specific Reporting and Recordkeeping                 |   |
| Naphthalene                      | PAIR: 08/04/1995  |   |
| Component                        | U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances |   |
| Naphthalene<br>91-20-3 ( 0.1-1 ) | 06/01/1987  |   |

**International Regulations**

Mexico - Grade Moderate risk, Grade 2

| Chemical name | Carcinogen Status | Mexico   |
|---------------|-------------------|--|
| Naphthalene   |                   | Mexico: TWA 10 ppm<br>Mexico: TWA 50 mg/m <sup>3</sup><br>Mexico: STEL 15 ppm<br>Mexico: STEL 75 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

B3 - Combustible liquid  
 D2A - Very toxic materials



**16. OTHER INFORMATION**

Revision date: 2015-03-06  
 Reason for revision: (M)SDS sections updated.

**Disclaimer**

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Prepared By:

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**End of Safety Data Sheet**