# Material Safety Data Sheet

**AIM® EC HERBICIDE**

**SDS # :** 6165-A
**Revision Date:** 2012-04-10
**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** AIM® EC HERBICIDE

**Formula code** 6165

**Active Ingredient(s)** Carfentrazone-ethyl

**Synonyms** 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 α,2-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl] -4-fluorobenzenepropanoate

**Chemical Family** 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**
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

**Appearance** brown orange liquid

**Physical state** Liquid

**Odor** aromatic

**Potential health effects**
**Principle Routes of Exposure** Eye contact, Skin contact, Inhalation, Ingestion.
**Acute effects**
**Eyes** May cause slight irritation.
**Skin** Substance may cause slight skin irritation.
**Inhalation** May cause irritation of respiratory tract. May cause central nervous system depression with nausea, headache, dizziness, vomiting, and incoordination.
**Ingestion** Potential for aspiration if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause central nervous system depression.

**Chronic effects**

Effects are expected to be similar to those that are seen with acute toxicity. Chronic exposure to aromatic hydrocarbons may cause headaches, dizziness, loss of sensations or feelings (such as numbness), and liver and kidney damage. Naphthalene causes cataracts in humans, rats, rabbits and mice. It has been classified as potential carcinogen based on animal data.

## 3. Composition/information on ingredients

**Hazardous ingredients**

| Chemical Name | CAS-No | Weight % |
|---|---|---|
| Naphtha (petroleum), heavy aromatic | 64742-94-5 | 60-70 |
| Carfentrazone-ethyl | 128639-02-1 | 22.37 |
| 2-Methylnaphthalene | 91-57-6 | <18 |
| Naphthalene | 91-20-3 | <10 |
| 1-Methylnaphthalene | 90-12-0 | <9 |
| Benzenesulfonic acid, mono-C11-13-branched alkyl derivs., calcium salts | 68953-96-8 | 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 (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.

Ingestion

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.

Notes to physician

Treatment is symptomatic and supportive. Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

## 5. Fire-fighting measures

**Flash Point** 79.9 °C / 176 °F
**Method** closed cup

**Sensitivity to Mechanical Impact** not applicable
**Sensitivity to Static Discharge** not applicable

**Suitable extinguishing media** Carbon dioxide ($CO_2$), Foam, Dry powder, Water spray.

**Protective equipment and precautions for firefighters** Wear self-contained breathing apparatus and protective suit.

**NFPA**

| | |
|---|---|
| **Health Hazard** | 1 |
| **Flammability** | 2 |
| **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 only.

## 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 | | | |
| Naphthalene<br>91-20-3 | S*<br>STEL 15 ppm<br>TWA: 10 ppm | TWA: 10 ppm TWA: 50 mg/m³ | IDLH: 250 ppm<br>TWA: 10 ppm TWA: 50 mg/m³<br>STEL: 15 ppm STEL: 75 mg/m³ | |
| 1-Methylnaphthalene<br>90-12-0 | S*<br>TWA: 0.5 ppm | | | |
| **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 | |
| Naphthalene<br>91-20-3 | TWA: 10 ppm<br>STEL: 15 ppm<br>Skin | TWA: 10 ppm TWA: 52 mg/m³<br>STEL: 15 ppm STEL: 79 mg/m³ | TWA: 10 ppm<br>STEL: 15 ppm<br>Skin | TWA: 10 ppm<br>TWA: 52 mg/m³<br>STEL: 15 ppm<br>STEL: 79 mg/m³<br>Skin |
| 1-Methylnaphthalene<br>90-12-0 | TWA: 0.5 ppm<br>Skin | | TWA: 0.5 ppm<br>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

### 9.1 Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | brown orange liquid |
| **Color** | brown orange |
| **Physical state** | Liquid |
| **Odor** | aromatic |
| **pH** | 5.3 (1% solution) |
| **Melting Point/Range** | No information available. |
| **Freezing point** | No information available. |
| **Boiling Point/Range** | not applicable |
| **Flash Point** | 79.9 °C / 176 °F closed cup |
| **Evaporation rate** | not applicable |
| **Vapor pressure** | No information available. |
| **Vapor density** | No information available. |
| **Density** | 9.0 lb/gal |
| **Specific Gravity** | 1.08 |
| **Water solubility** | No information available |
| **Percent volatile** | No information available. |
| **Partition coefficient:** | not applicable |
| **Viscosity** | No information available. |

### 9.2 Other information

## 10. Stability and reactivity

| | |
|---|---|
| **Stability** | Stable under recommended storage conditions. |
| **Conditions to avoid** | Heat, flames and sparks |
| **Materials to avoid** | Strong oxidizing agents |
| **Hazardous decomposition products** | Carbon oxides, Hydrogen chloride, Hydrogen fluoride, nitrogen oxides (NOx), Sulfur oxides. |
| **Hazardous polymerization** | Hazardous polymerization does not occur. |

## 11. Toxicological information

**Acute Toxicity**

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

| | |
|---|---|
| **Eye contact** | Minimally irritating. |
| **Skin contact** | Slightly or non-irritating (rabbit). |

**Ingestion** Potential for aspiration if swallowed. Vomiting after ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs, which may result in fatal pulmonary edema. Naphthalene, if ingested, may cause red blood cell hemolysis, especially in individuals with glucose-6-phosphate dehydrogenase deficiency.

**Inhalation** Inhalation of aromatic hydrocarbon vapors may cause dizziness, disturbances in vision, drowsiness, respiratory irritation, and eye, skin and mucous membrane irritation.

**LD50 Dermal** > 4000 mg/kg (rat)
**LD50 Oral** 4077 mg/kg (rat)
**LC50 Inhalation:** > 6.31 mg/L (4-hr) (rat)

**Chronic Toxicity - Other Ingredient(s)**

**Chronic Toxicity** Effects are expected to be similar to those that are seen with acute toxicity. Chronic exposure to aromatic hydrocarbons may cause headaches, dizziness, loss of sensations or feelings (such as numbness), and liver and kidney damage. Naphthalene causes cataracts in humans, rats, rabbits and mice. It has been classified as potential carcinogen based on animal data.

**Carcinogenicity** Carfentrazone-ethyl: Did not show carcinogenic effects in animal experiments. Not recognized as carcinogenic by Research Agencies (IARC, NTP, OSHA, ACGIH). 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.

**Reproductive toxicity** Carfentrazone-ethyl: No toxicity to reproduction.

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

**Target Organ Effects** 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 |
|---|---|---|---|---|---|
| Naphthalene | | 2B | Reasonably Anticipated | X | eyes,blood,liver,kidneys,skin,CNS |

**Legend:**
**IARC: (International Agency for Research on Cancer)**
Group 2B - Possibly Carcinogenic to Humans
**NTP: (National Toxicity Program)**
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
**OSHA: (Occupational Safety & Health Administration)**
X - Present

## 12. Ecological information

**Ecotoxicity**

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 |
|---|---|---|---|---|

| | | | | |
|---|---|---|---|---|
| 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 |
| Naphthalene | 0.4 mg/L EC50 72 h (Skeletonema costatum) | LC50 5.74-6.44 mg/L Pimephales promelas 96 h LC50 1.6 mg/L Oncorhynchus mykiss 96 h LC50 0.91-2.82 mg/L Oncorhynchus mykiss 96 h LC50 1.99 mg/L Pimephales promelas 96 h LC50 31.0265 mg/L Lepomis macrochirus 96 h | | LC50 2.16 mg/L 48 h EC50 1.96 mg/L 48 h EC50 1.09 - 3.4 mg/L 48 h |

**Environmental Fate**

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. |
| | | |

| **Chemical Name** | **log Pow** |
|---|---|
| Naphtha (petroleum), heavy aromatic | 2.9 - 6.1 |
| 2-Methylnaphthalene | 3.86 |
| Naphthalene | 3.3 |

## 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 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).

**Packaging Type** Bulk
**UN/ID No** NA1993
**Hazard Class** 3
**Packing group** III
**Reportable Quantity (RQ)** Napthalene
**Additional information** Naphtalène est un "RQ" quantité lorsque ce matériau est 100 livres (45,4 kg) ou plus par paquet.

**TDG**

Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.

**UN/ID No** UN3082
**Hazard Class** 9
**Packing group** III
**Marine pollutant** Carfentrazone-ethyl .

**ICAO/IATA**

| | |
|---|---|
| **UN/ID No** | UN3082 |
| **Hazard Class** | 9 |
| **Packing group** | III |
| **Marine pollutant** | Carfentrazone-ethyl |

**IMDG/IMO**

| | |
|---|---|
| **UN/ID No** | UN3082 |
| **Hazard Class** | 9 |
| **Packing group** | III |
| **EmS No.** | F-A, S-F |
| **Marine pollutant** | Carfentrazone-ethyl |

## 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 % |
|---|---|---|---|
| Naphthalene | 91-20-3 | <10 | 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 Inventory (United States of America)**

| Chemical Name | 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 | 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 |
| **Chemical Name** | **U.S. - TSCA (Toxic Substances Control Act) - Section 8(d) - 716.120(a) - Health and Safety Reporting - List of Substances** |
| Naphthalene | 06/01/1987 |

### International Regulations

**Mexico - Grade** Moderate risk, Grade 2

**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:** 2012-04-10
**Reason for revision:** (M)SDS sections updated.

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**End of Material Safety Data Sheet**