

SAFETY DATA SHEET
Display® Herbicide

SDS # : 6905-A
Revision date: 2016-05-26
Format: NA
Version 1.03



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name Display® Herbicide

Other means of identification

Product Code(s) 6905-A

Synonyms

CARFENTRAZONE-ETHYL (FMC 116426): ethyl α ,2-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl]-4-fluorobenzenepropanoate (CAS name); 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 (IUPAC name)

FLUTHIACET-METHYL: Acetic acid, [[2-chloro-4-fluoro-5-[(tetrahydro-3-oxo-1H,3H-[1,3,4]thiadiazolo [3,4- α] pyridazin-1-ylidene) amino] phenyl] thio]-, methyl ester (CAS); methyl [(2-chloro-4-fluoro-5-[(1E)-3-oxo-5,6,7,8-tetrahydro-1H,3H-[1,3,4]thiadiazolo[3,4-a]pyridazin-1-ylidene]amino) phenyl)sulfanyl]acetate (IUPAC)

Active Ingredient(s) Carfentrazone-ethyl , Fluthiacet-methyl

Chemical Family Triazolinones, Imine chemicals

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

Medical Emergencies:
1 800 / 331-3148 (PROSAR - U.S.A. & Canada)
1 651 / 632-6793 (PROSAR - 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

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 |
| Serious eye damage/eye irritation | Category 2A |
| Skin sensitization | Category 1B |
| Carcinogenicity | Category 2 |
| Specific target organ toxicity (repeated exposure) | Category 2 |
| Aspiration toxicity | Category 1 |

GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Danger

Hazard Statements
 H304 - May be fatal if swallowed and enters airways
 H317 - May cause an allergic skin reaction
 H319 - Causes serious eye irritation
 H332 - Harmful if inhaled
 H351 - Suspected of causing cancer
 H373 - May cause damage to organs through prolonged or repeated exposure



Precautionary Statements - Prevention

- P201 - Obtain special instructions before use
- P202 - Do not handle until all safety precautions have been read and understood
- P271 - Use only outdoors or in a well-ventilated area
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P272 - Contaminated work clothing should not be allowed out of the workplace
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P280 - Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

- P308 + P313 - If exposed or concerned: Get medical advice/attention
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P337 + P313 - If eye irritation persists: Get medical advice/ attention
- 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
- P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor
- P331 - Do NOT induce vomiting

Precautionary Statements - Storage

- P405 - Store locked up

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

Very toxic to aquatic life with long lasting effects. May be harmful if swallowed. Causes mild skin irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Triazolinones, Imine chemicals.

| Chemical name | CAS-No | Weight % |
|-------------------------------------|-------------|----------|
| 2-Methylnaphthalene | 91-57-6 | <20 |
| Carfentrazone-ethyl | 128639-02-1 | 18.04 |
| Fluthiacet-methyl | 117337-19-6 | 4.75 |
| Naphtha (petroleum), heavy aromatic | 64742-94-5 | 10-20 |
| 1-Methylnaphthalene | 90-12-0 | <15 |
| Naphthalene | 91-20-3 | 0.1-1 |

Synonyms are provided in Section 1.

4. FIRST AID MEASURES

| | |
|---|--|
| Eye Contact | Hold eyes open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing. 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 further treatment advice. |
| Inhalation | Move to fresh air. If person is not breathing, contact emergency medical services, then give artificial respiration, preferably 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 give anything by mouth to an unconscious person. |
| Most important symptoms and effects, both acute and delayed | Central nervous system effects. Gastrointestinal effects. |
| Indication of immediate medical attention and special treatment needed, if necessary | Treatment is symptomatic and supportive. Contains petroleum distillate. Vomiting may cause aspiration pneumonia. |

5. FIRE-FIGHTING MEASURES

| | |
|--|--|
| Suitable Extinguishing Media | Water spray. Carbon dioxide (CO ₂). Foam. Dry powder. |
| Specific Hazards Arising from the Chemical | Slightly combustible. May support combustion at elevated temperatures. |
| Explosion data | |
| Sensitivity to Mechanical Impact | Not sensitive. |
| Sensitivity to Static Discharge | Not sensitive. |
| Protective equipment and precautions for firefighters | Wear self-contained breathing apparatus and protective suit. |

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. |
| Other | For further clean-up instructions, call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above. |

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.

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. Keep/store only in original container.

Incompatible products None known

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH | Mexico |
|-------------------------------|-------------------------------------|--|---|--|
| 1-Methylnaphthalene (90-12-0) | TWA: 0.5 ppm | - | - | - |
| Naphthalene (91-20-3) | TWA: 10 ppm | TWA: 10 ppm TWA: 50 mg/m ³ | IDLH: 250 ppm TWA: 10 ppm TWA: 50 mg/m ³ STEL: 15 ppm STEL: 75 mg/m ³ | Mexico: TWA 10 ppm Mexico: TWA 50 mg/m ³ Mexico: STEL 15 ppm Mexico: STEL 75 mg/m ³ |
| Chemical name | British Columbia | Quebec | Ontario TWAEV | Alberta |
| 1-Methylnaphthalene (90-12-0) | TWA: 0.5 ppm Skin | - | TWA: 0.5 ppm Skin | - |
| Naphthalene (91-20-3) | TWA: 10 ppm STEL: 15 ppm Skin | TWA: 10 ppm TWA: 52 mg/m ³ STEL: 15 ppm STEL: 79 mg/m ³ | TWA: 10 ppm STEL: 15 ppm Skin | TWA: 10 ppm TWA: 52 mg/m ³ STEL: 15 ppm STEL: 79 mg/m ³ 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 For dust, splash, mist or spray exposure, wear chemical protective goggles.

Skin and Body Protection Wear long-sleeved shirt, long pants, socks, and shoes.

Hand Protection 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.

Respiratory Protection For dust, splash, mist or spray exposures wear a filtering mask.

| | |
|----------------------------|---|
| 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. |

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| | |
|-------------------------------------|-------------------------------|
| Appearance | Amber Liquid |
| Physical State | Liquid |
| Color | Amber |
| Odor | Aromatic hydrocarbon |
| Odor threshold | No information available |
| pH | 4.87 |
| Melting point/freezing point | Not applicable |
| Boiling Point/Range | No information available |
| Flash point | 66 - 68 °C / 150.8 - 154.4 °F |
| Evaporation Rate | No information available |
| Flammability (solid, gas) | No information available |
| Flammability Limit in Air | |
| Upper flammability limit: | No information available |
| Lower flammability limit: | No information available |
| Vapor pressure | No information available |
| Vapor density | No information available |
| Density | 9.0 lb/gal |
| Specific gravity | 1.08 |
| Water solubility | No information available |
| Solubility in other solvents | No information available |
| Partition coefficient | No information available |
| Autoignition temperature | No information available |
| Decomposition temperature | No information available |
| Viscosity, kinematic | 37.1 cSt |
| 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 | Heat, flames and sparks |
| Incompatible materials | None known. |
| Hazardous Decomposition Products | Carbon oxides (COx), Hydrogen chloride, Hydrogen fluoride, Nitrogen oxides (NOx). |

11. TOXICOLOGICAL INFORMATION

Product Information

| | |
|------------------------|------------------------|
| LD50 Oral | 3129 mg/kg (rat) |
| LD50 Dermal | > 5000 mg/kg (rat) |
| LC50 Inhalation | > 2.04 mg/L 4 hr (rat) |

Serious eye damage/eye irritation Moderately irritating to eyes.
Skin corrosion/irritation Moderately irritating to skin.
Sensitization Sensitizer

Information on toxicological effects

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

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

Chronic toxicity Carfentrazone-ethyl: Long-term exposure caused hematotoxicity and deposit of porphyrin in the liver in animal studies. Fluthiacet-methyl: Effects are expected to be similar to those that are seen with acute toxicity.

Mutagenicity Carfentrazone-ethyl , Fluthiacet-methyl: Not genotoxic in laboratory studies.
Carcinogenicity Carfentrazone-ethyl : No evidence of carcinogenicity from animal studies. Fluthiacet-methyl caused increases in benign pancreatic tumors in male rats at the highest dose, along with pancreatic and liver toxicity. There was an increase in liver tumors at two highest doses in male mice, along with hepatotoxicity, that could both be secondary to liver toxicity. New data indicates that there is no human risk. 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).

Neurological effects Carfentrazone-ethyl , Fluthiacet-methyl: Not neurotoxic.
Reproductive toxicity Carfentrazone-ethyl : No toxicity to reproduction in animal studies. Fluthiacet-methyl: No toxicity to reproduction in animal studies.

Developmental toxicity Carfentrazone-ethyl : Not teratogenic in animal studies. Fluthiacet-methyl: A slight delay in fetal development in the rat, with no effects in the rabbit.

STOT - single exposure Not classified.
STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure. See listed target organs below.

Target organ effects Fluthiacet-methyl: Liver, bone marrow, spleen, pancreas, lymphatic system, hematopoietic system, uterus and blood.

Neurological effects Carfentrazone-ethyl , Fluthiacet-methyl: Not neurotoxic.
Aspiration hazard 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.

| Chemical name | ACGIH | IARC | NTP | OSHA |
|------------------------|-------|----------|------------------------|------|
| Naphthalene 91-20-3 | A3 | Group 2B | Reasonably Anticipated | X |

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

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

| Fluthiacet-methyl (117337-19-6) | | | | |
|---------------------------------|-----------|-----------|---------|-------|
| Active Ingredient(s) | Duration | Species | Value | Units |
| Fluthiacet-methyl | 72 h LC50 | Algae | 0.00251 | mg/L |
| | 96 h LC50 | Fish | 0.043 | mg/L |
| | 48 h EC50 | Crustacea | 2.3 | mg/L |
| | 21 d NOEC | Fish | 0.0027 | mg/L |
| | 21 d NOEC | Crustacea | 0.035 | mg/L |

Persistence and degradability Carfentrazone-ethyl . Non-persistent. Readily hydrolyzed. Not readily biodegradable. Fluthiacet-methyl: Non-persistent. Does not readily hydrolyze.

Bioaccumulation Carfentrazone-ethyl , Fluthiacet-methyl: The substance does not have a potential for bioconcentration.

Mobility Carfentrazone-ethyl : Mobility in soil, Not relevant. Fluthiacet-methyl: Slightly mobile, Not expected to reach groundwater.

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.

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
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard class 9
Packing Group III
Marine Pollutant Carfentrazone-ethyl , Fluthiacet-methyl.
Description UN3082, Environmentally hazardous substance, liquid, N.O.S. (Carfentrazone-ethyl , Fluthiacet-methyl), 9, PG III, Marine Pollutant

ICAO/IATA

UN/ID no UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard class 9
Packing Group III
Description UN3082, Environmentally hazardous substance, liquid, N.O.S. (Carfentrazone-ethyl , Fluthiacet-methyl), 9, PG III, Marine Pollutant

IMDG/IMO

UN/ID no UN3082
Proper Shipping Name Environmentally hazardous substance, liquid, n.o.s.
Hazard class 9
Packing Group III
EmS No. F-A, S-F
Marine Pollutant Carfentrazone-ethyl , Fluthiacet-methyl
Description UN3082, Environmentally hazardous substance, liquid, N.O.S. (Carfentrazone-ethyl , Fluthiacet-methyl), 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 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 | 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 |

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 |
|------------------------|-----------------------------|------------------------|---------------------------|----------------------------|
| Naphthalene 91-20-3 | 100 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 |
|-----------------------------|--------------------------|------------------------------------|
| Isobutyl alcohol 78-83-1 | 5000 lb 2270 kg | |
| Acetophenone 98-86-2 | 5000 lb 2270 kg | |
| Naphthalene 91-20-3 | 100 lb 45.4 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:

WARNING

Causes substantial, but temporary eye injury.

DISPLAY HERBICIDE is very toxic to algae and moderately toxic to fish.

US State Regulations**California Proposition 65**

This product contains the following Proposition 65 chemicals.

| Chemical name | California Prop. 65 |
|-----------------------|---------------------|
| Naphthalene - 91-20-3 | Carcinogen |

U.S. State Right-to-Know Regulations

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This product does not contain any substances regulated by state right-to-know regulations

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|--------------------------------|------------|---------------|--------------|
| 1-Methylnaphthalene 90-12-0 | X | X | X |
| Naphthalene 91-20-3 | X | X | X |

International Inventories

| Chemical name | TSCA (United States) | DSL (Canada) | EINECS/ELINC S (Europe) | ENCS (Japan) | China (IECSC) | KECL (Korea) | PICCS (Philippines) | AICS (Australia) |
|--|-------------------------|-----------------|----------------------------|-----------------|------------------|--------------|------------------------|---------------------|
| Carfentrazone-ethyl 128639-02-1 | | | | | X | | | |
| Naphtha (petroleum), heavy aromatic 64742-94-5 | X | X | X | X | X | X | X | X |
| 1-Methylnaphthalene 90-12-0 | X | X | X | X | X | | X | X |
| Naphthalene 91-20-3 | X | X | X | X | X | X | X | X |

Mexico - Grade Moderate risk, Grade 2

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

WHMIS Hazard Class D2A - Very toxic materials, D2B - Toxic materials



16. OTHER INFORMATION

| | | | | |
|-------------|--------------------------|-----------------------|--------------------------|------------------------------|
| NFPA | Health Hazards 2 | Flammability 1 | Instability 0 | Special Hazards - |
| HMIS | Health Hazards 2* | Flammability 1 | Physical hazard 0 | Personal Protection X |

*Indicates a chronic health hazard.

Revision date: 2016-05-26
Reason for revision: (M)SDS sections updated

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Prepared By:

FMC Corporation

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End of Safety Data Sheet