

SAFETY DATA SHEET
CADET™ HERBICIDE

SDS # : 6504-A
Revision date: 2015-05-04
Format: NA
Version 1.01



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name CADET™ HERBICIDE

Other means of identification

Product Code(s) 6504-A

Synonyms IUPAC name: methyl
[2-chloro-4-fluoro-5-(5,6,7,8-tetrahydro-3-oxo-1H,3H-[1,3,4]thiadiazolo[3,4-a]pyridazin-1-ylideneamino)phenylthio]acetate; CAS name: methyl
[[2-chloro-4-fluoro-5-[(tetrahydro-3-oxo-1H,3H-[1,3,4]thiadiazolo[3,4-a]pyridazin-1-ylidene)amino]phenyl]thio]acetate

Active Ingredient(s) Fluthiacet-methyl

Chemical Family Imine chemicals

Alternate Commercial Name Appeal® EC, Fluthiacet-methyl 10 EC

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
1735 Market Street
Philadelphia, PA 19103
(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
Carcinogenicity	Category 2

Reproductive toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2
Aspiration toxicity	Category 1
Flammable liquids	Category 4


GHS Label elements, including precautionary statements

EMERGENCY OVERVIEW

Danger

Hazard Statements
 H304 - May be fatal if swallowed and enters airways
 H332 - Harmful if inhaled
 H335 - May cause respiratory irritation
 H351 - Suspected of causing cancer
 H360 - May damage fertility or the unborn child
 H373 - May cause damage to organs through prolonged or repeated exposure

Physical Hazards
 H227 - Combustible liquid



Precautionary Statements - Prevention

- P201 - Obtain special instructions before use
- P202 - Do not handle until all safety precautions have been read and understood
- P281 - Use personal protective equipment as required
- P271 - Use only outdoors or in a well-ventilated area
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
- P235 - Keep cool

Precautionary Statements - Response

- P308 + P313 - IF exposed or concerned: Get medical advice/ attention
- 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
- P370 + P378 - In case of fire: Use Foam. Carbon dioxide (CO 2). Dry chemical. Water spray or fog. for extinction

Precautionary Statements - Storage

- P405 - Store locked up
- P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

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.

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

Chemical name	CAS-No	Weight %
Fluthiacet-methyl	117337-19-6	10.3
Acetophenone	98-86-2	40-50
Methyl pyrrolidone	872-50-4	20-30
Naphtha (petroleum), heavy aromatic	64742-94-5	10-20
2-Methylnaphthalene	91-57-6	<7
1-Methylnaphthalene	90-12-0	<5

Synonyms are provided in Section 1.

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 further treatment advice.
Inhalation	Move to fresh air. If person is not breathing, call 911 or an ambulance, 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	None known.
Indication of immediate medical attention and special treatment needed, if necessary	Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media	Foam. Carbon dioxide (CO ₂). Dry chemical. Water spray or fog.
Specific Hazards Arising from the Chemical	Combustible liquid
Explosion data	
Sensitivity to Mechanical Impact	Not sensitive.
Sensitivity to Static Discharge	Yes.
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate downwind.

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 See Section 12 for additional Ecological Information.

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
Acetophenone 98-86-2	TWA: 10 ppm	-	-	-
2-Methylnaphthalene 91-57-6	S* TWA: 0.5 ppm	-	-	-
1-Methylnaphthalene 90-12-0	S* TWA: 0.5 ppm	-	-	-
Chemical name	British Columbia	Quebec	Ontario TWAEV	Alberta
Acetophenone 98-86-2	TWA: 10 ppm	TWA: 10 ppm TWA: 49 mg/m ³	TWA: 10 ppm	TWA: 10 ppm TWA: 49 mg/m ³
Methyl pyrrolidone 872-50-4	-	-	TWA: 400 mg/m ³	-
2-Methylnaphthalene 91-57-6	TWA: 0.5 ppm Skin	-	TWA: 0.5 ppm Skin	-
1-Methylnaphthalene 90-12-0	TWA: 0.5 ppm Skin	-	TWA: 0.5 ppm Skin	-

Appropriate engineering controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. Ensure adequate ventilation, especially in confined areas. 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

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. These recommendations apply to the product as supplied.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Golden, liquid
Physical State	Liquid
Color	Gold
Odor	Almond
Odor threshold	No information available
pH	6 - 8
Melting point/freezing point	Not applicable
Boiling Point/Range	No information available
Flash point	87.22 °C / 188.996 °F (estimated)
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	1.06 g/cm ³
Specific gravity	No information available
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	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	Heat, flames and sparks
Incompatible materials	None known.
Hazardous Decomposition Products	Carbon oxides (COx), Nitrogen oxides (NOx), Sulfur oxides, Hydrogen chloride, Hydrogen fluoride.

11. TOXICOLOGICAL INFORMATION

Product Information

LD50 Oral Similar formulation:: 2,537 mg/kg (rat)
LD50 Dermal Similar formulation:: > 2,020 mg/kg (rabbit)
LC50 Inhalation Similar formulation: > 2.73 mg/L 4 hr (rat)

Serious eye damage/eye irritation Moderately irritating (rabbit).
Skin corrosion/irritation Slightly irritating (rabbit).
Sensitization Based on a similar formulation, this product is not expected to produce skin sensitization.

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

Chronic toxicity Effects are expected to be similar to those that are seen with acute toxicity.
Mutagenicity Fluthiacet-methyl: Not genotoxic in laboratory studies.
Carcinogenicity 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.
Neurological effects Fluthiacet-methyl: Not neurotoxic.
Reproductive toxicity Fluthiacet-methyl: No toxicity to reproduction in animal studies.
Developmental toxicity Fluthiacet-methyl: A slight delay in fetal development in the rat, with no effects in the rabbit. Contains ingredients that have suspected developmental hazards.
STOT - single exposure May cause respiratory irritation.
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 Fluthiacet-methyl: Not neurotoxic.
Aspiration hazard Vomiting after ingestion of this product may cause aspiration of aromatic hydrocarbons into the lungs, which may result in fatal pulmonary edema.

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

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 Fluthiacet-methyl: Non-persistent. Does not readily hydrolyze.
Bioaccumulation Fluthiacet-methyl: The substance does not have a potential for bioconcentration.
Mobility 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. Do not reuse or refill this container.

14. TRANSPORT INFORMATION

DOT	Not regulated for transportation if shipped in Non Bulk packaging. The classification below pertains to the shipment in Bulk packaging.
UN/ID no	NA1993
Hazard class	Combustible
Packing Group	III
TDG	
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. (Fluthiacet-methyl), 9, PGIII, 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. (Fluthiacet-methyl), 9, PGIII
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	Fluthiacet-methyl
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Fluthiacet-methyl), 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 %
Acetophenone - 98-86-2	98-86-2	40-50	1.0
Methyl pyrrolidone - 872-50-4	872-50-4	20-30	1.0

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	Yes
Fire hazard	Yes
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):

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	RQ
Acetophenone 98-86-2	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ

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.
 This pesticide is toxic to fish and aquatic invertebrates, and to some plants at very low concentrations.*

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:.

Chemical name	California Prop. 65
Methyl pyrrolidone - 872-50-4	Developmental
Naphthalene - 91-20-3	Carcinogen

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
Acetophenone 98-86-2	X	X	X
Methyl pyrrolidone 872-50-4	X	X	X
2-Methylnaphthalene 91-57-6	X		
1-Methylnaphthalene 90-12-0	X	X	X

International Inventories

Component	TSCA (United States)	DSL (Canada)	EINECS/ELI NCS (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Acetophenone 98-86-2 (40-50)	X	X	X	X	X	X	X	X
Methyl pyrrolidone 872-50-4 (20-30)	X	X	X	X	X	X	X	X

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Naphtha (petroleum), heavy aromatic 64742-94-5 (10-20)	X	X	X	X	X	X	X	X
2-Methylnaphthalene 91-57-6 (<7)	X	X	X	X	X		X	X
1-Methylnaphthalene 90-12-0 (<5)	X	X	X	X	X		X	X

Mexico - Grade Moderate risk, Grade 2

WHMIS Hazard Class B3 - Combustible liquid
 D2A - Very toxic materials



16. OTHER INFORMATION

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

Revision date: 2015-05-04
Revision note (M)SDS sections updated

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End of Safety Data Sheet