

SAFETY DATA SHEET
CADET® HERBICIDE

SDS # : 6504-A
Revision date: 2018-04-17
Format: NA
Version 1.04



1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Name CADET® HERBICIDE

Other means of identification

Product Code(s) 6504-A

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

Active Ingredient(s) Fluthiacet-methyl

Chemical Family Imine chemicals

Recommended use of the chemical and restrictions on use

Recommended Use: Herbicide

Restrictions on Use: Use as recommended by the label.

Supplier 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 / 741-5970 (CHEMTREC - International)
1 703 / 527 3887 (CHEMTREC - Alternate)

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

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
- P271 - Use only outdoors or in a well-ventilated area
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
- P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking
- P280 - Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

- P308 + P313 - If exposed or concerned: Get medical advice/attention
- P314 - Get medical advice/ attention if you feel unwell
- 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
- 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
- P403 + P235 - Store in a well-ventilated place. Keep cool

Precautionary Statements - Disposal

- P501 - Dispose of contents/container according to label directions

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 %
Acetophenone	98-86-2	40-50
Methyl pyrrolidone	872-50-4	20-30
Naphtha (petroleum), heavy aromatic	64742-94-5	10-20
Fluthiacet-methyl	117337-19-6	10.3
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
<u>Explosion data</u>	
Sensitivity to Mechanical Impact	Not sensitive.
Sensitivity to Static Discharge	Static electricity might be sufficient to ignite dust clouds. Possibility of ignition will depend on the minimum ignition energy (MIE) and the type of operations undertaken with the material. MIE values are not provided in this SDS.
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus and full protective gear. Isolate fire area. Evaluate upwind.

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. Keep out of waterways.
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 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)	TWA: 0.5 ppm	-	-	-
1-Methylnaphthalene (90-12-0)	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	Use protective gloves made of chemical materials such as nitrile or neoprene. Wash the outside of gloves with soap and water before reuse. Check regularly for leaks.
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.

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. Proper personal protective equipment, as described in Sections 7 and 8, must be worn while handling materials for waste disposal.

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
Proper Shipping Name Combustible liquid, n.o.s
Hazard class Combustible
Packing Group III
Marine Pollutant Fluthiacet-methyl
Description NA1993, Combustible liquid, n.o.s., III, Marine pollutant

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, 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. (Fluthiacet-methyl), 9, III

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, 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 %
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):

Chemical name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Sulfuric Acid 7664-93-9	1000 lb			X
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
Sulfuric Acid 7664-93-9	1000 lb 454 kg	1000 lb
Naphthalene 91-20-3	100 lb 45.4 kg	
Acetophenone 98-86-2	5000 lb 2270 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.

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

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

Chemical name	TSCA (United States)	DSL (Canada)	EINECS/ELINC S (Europe)	ENCS (Japan)	China (IECSC)	KECL (Korea)	PICCS (Philippines)	AICS (Australia)
Acetophenone 98-86-2	X	X	X	X	X	X	X	X
Methyl pyrrolidone 872-50-4	X	X	X	X	X	X	X	X
Naphtha (petroleum), heavy aromatic 64742-94-5	X	X	X		X	X	X	X
2-Methylnaphthalene 91-57-6	X	X	X	X	X		X	X
1-Methylnaphthalene 90-12-0	X	X	X	X	X		X	X

Mexico - Grade Moderate risk, Grade 2

WHMIS Statement

This product has been classified in accordance with the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

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: 2018-04-17
 Reason for revision: (M)SDS sections updated

Disclaimer

FMC Corporation believes that the information and recommendations contained herein (including data and statements) are accurate as of the date hereof. NO WARRANTY OF FITNESS FOR ANY PARTICULAR PURPOSE, WARRANTY OF

MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION PROVIDED HEREIN. The information provided herein relates only to the specified product designated and may not be applicable where such product is used in combination with any other materials or in any process. Use of this product is regulated by the U.S. Environmental Protection Agency (EPA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Further, since the conditions and methods of use are beyond the control of FMC Corporation, FMC corporation expressly disclaims any and all liability as to any results obtained or arising from any use of the products or reliance on such information.

Prepared By:

FMC Corporation

FMC Logo and Cadet - Trademarks of FMC Corporation

© 2018 FMC Corporation. All Rights Reserved.

End of Safety Data Sheet