



1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Comet Selective Herbicide

EPA Reg. No.: 71368-87

Product Type: Herbicide for manufacturing use

Company Name: Nufarm Americas Inc
11901 S. Austin Avenue
Alsip, IL 60803
1-800-345-3330

Telephone Numbers: For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,
Call CHEMTREC Day or Night: 1-800-424-9300
For Medical Emergencies Only, Call 1-877-325-1840

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

PHYSICAL HAZARDS:

Flammable Liquid Category 4

HEALTH HAZARDS:

Aspiration Hazard	Category 1
Eye Irritation	Category 2A
Skin Irritation	Category 2
Carcinogen	Category 2
Reproductive Toxicity	Category 1B

ENVIRONMENTAL HAZARDS:

Hazardous to aquatic environment, acute	Category 1
Hazardous to aquatic environment, chronic	Category 1

SIGNAL WORD:

DANGER

HAZARD STATEMENTS:

Combustible liquid. May be fatal if swallowed and enters airways. Causes serious eye irritation. Causes skin irritation. May damage the unborn child by ingestion. Suspected of causing cancer. Very toxic to aquatic life with long lasting effects.



PRECAUTIONARY STATEMENTS

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from flames and hot surfaces. – No smoking. Use personal protective equipment as required. Wash thoroughly after handling. Wear protective gloves and eye protection. Avoid release to the environment.

IF exposed or concerned: Get medical attention.

IF SWALLOWED: Immediately call a POISON CENTER or doctor. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice. Take off contaminated clothing and was before reuse.

SAFETY DATA SHEET

Comet Selective Herbicide

IF IN EYES: Rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice. Collect spillage.

In case of fire: Use dry chemical or carbon dioxide.

Store in a well-ventilated place. Keep cool. Store locked up.

Dispose of contents in accordance with local, state, and federal regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
Fluroxypyr, 1-Methylheptyl Ester	81406-37-3	25.5 – 27
Solvent Naphtha (Petroleum), Heavy Aromatic	64742-94-5	56.5 – 60
1-Hexanol	111-27-3	<0.7
Naphthalene	91-20-3	<6.1
Pseudocumene (1,2,4-Trimethylbenzene)	95-63-6	<1.0
N-Methyl-2-pyrrolidone	872-50-4	4.75 – 5.25
Other Ingredients	Trade Secret	Trade Secret

Synonyms: Mixture containing Fluroxypyr meptyl; Fluroxypyr MHE; 1-methylheptyl ((4-amino-3,5-dichloro-6-fluoro-2-pyridinyl)oxy)acetate

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

4. FIRST AID MEASURES

If in Eyes: Hold eye open and rinse slowly and gently with water for several minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Get medical attention if irritation or symptoms develop. **If on Skin or Clothing:** Take off contaminated clothing. Rinse skin immediately with plenty of water. Get medical attention if irritation or symptoms develop.

If Swallowed: DO NOT induce vomiting. Get immediate medical attention.

If Inhaled: Move person to fresh air. . If symptoms develop, get medical advice.

Most Important symptoms/effects: Aspiration hazard – may be fatal if swallowed and enters airways. Causes severe eye irritation. May cause moderate skin irritation. Suspected of causing cancer. May damage to the unborn child.

Indication of Immediate medical attention and special treatment if needed: Immediate medical attention is required for ingestion. For ingestion there is no specific antidote available. Treat symptomatically.

Note to Physician: This product may pose an aspiration pneumonia hazard. Contains petroleum distillates.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Recommended for large fires: foam or water spray. Recommended for small fires: dry chemical or carbon dioxide.

Special Fire Fighting Procedures: Firefighters should wear NIOSH approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.

Unusual Fire and Explosion Hazards: Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source, is a potential dust explosion hazard. If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as hydrogen chloride, hydrogen fluoride, oxides and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

SAFETY DATA SHEET

Comet Selective Herbicide

Methods for Cleanup and Disposal: Pump any free liquid into an appropriate closed container. Collect washings for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

Handling:

Do not get in eyes or on clothing. Avoid contact with skin. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. If pesticide gets on skin, wash immediately with soap and water. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Storage:

Store above 10°F or warm and agitate before use. Do not contaminate water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:

Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Personal Protective Equipment:

Eye/Face Protection: To avoid contact with eyes, wear face shield, goggles or safety glasses with front, brow and temple protection. An emergency eyewash or water supply should be readily accessible to the work area.

Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, shoes plus socks, and chemical-resistant gloves such as barrier laminate or Viton. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Exposure Guidelines:

Component	OSHA		ACGIH		Unit
	TWA	STEL	TWA	STEL	
Fluroxypyr	NE	NE	NE	NE	
Solvent Naphtha (Petroleum), Heavy Aromatic	NE	NE	NE	NE	
1-Hexanol	NE	NE	NE	NE	
Naphthalene	10	NE	10 (skin)	NE	ppm
Pseudocumene (1,2,4-Trimethylbenzene)	NE	NE	25	NE	ppm
N-Methyl-2-pyrrolidone	NE	NE	NE	NE	
Other Ingredients	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light amber translucent liquid
Odor:	Pungent
Odor threshold:	No data available
pH:	4.82 (1% w/w dispersion in DIW)
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	154.5° F (68° C)
Evaporation rate:	No data available

SAFETY DATA SHEET

Comet Selective Herbicide

Flammability (solid, gas): No data available
Upper/lower flammability or explosive limits: No data available
Vapor pressure: No data available
Vapor density: No data available
Relative density: 0.992 g/mL @ 20° C
Solubility(ies): No data available
Partition coefficient: n-octanol/water: No data available
Autoignition temperature: No data available
Decomposition temperature: No data available
Viscosity: 5.785 cSt @ 20° C; 3.492 cSt @ 40° C
Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.
Chemical Stability: This material is stable under normal handling and storage conditions.
Possibility of Hazardous Reactions: Hazardous polymerization will not occur.
Conditions to Avoid: Keep away from heat, sparks and open flame. Minimize dust generate and accumulation.
Incompatible Materials: Strong oxidizing agents: bases and acids.
Hazardous Decomposition Products: Under fire conditions may produce gases such as hydrogen chloride, hydrogen fluoride, oxides and nitrogen.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, eye and skin contact.
Symptoms of Exposure:
Eye Contact: Causes substantial but temporary eye injury. Vapors and mist may cause irritation.
Skin Contact: Moderately irritating based on toxicity studies.
Ingestion: May be harmful if swallowed. The petroleum hydrocarbon component, if aspirated into the respiratory system during ingestion or vomiting may cause mild or severe pulmonary injury, possibly progressing to death.
Inhalation: Low inhalation toxicity. Overexposure to petroleum hydrocarbon component may cause irritation to respiratory tract, headaches, anaesthesia, drowsiness, unconsciousness and other central nervous system effects, possibly including death.
Delayed, immediate and chronic effects of exposure: None reported.
Toxicological Data:
Data from laboratory studies conducted on Fluroxypyr, 1-Methylheptyl Ester Technical:
Oral: Rat LD₅₀: >5,000 mg/kg
Dermal: Rat LD₅₀: >5,000 mg/kg
Inhalation: Rat 4-hr LC₅₀: > 2.11 mg/L
Eye Irritation: Rabbit: Severely irritating (MMTS=39.0)
Skin Irritation: Rabbit: Moderately irritating (PDII=2.3)
Skin Sensitization: Not a contact sensitizer in guinea pigs following repeated skin exposure.
Subchronic (Target Organ) Effects: Repeated exposure to fluroxypyr may cause effects to bone marrow, kidney, liver and respiratory tract.
Carcinogenicity / Chronic Health Effects: Fluroxypyr did not cause cancer in laboratory animals.
Reproductive Toxicity: In animal studies, fluroxypyr has been shown not to interfere with reproduction.
Developmental Toxicity: Fluroxypyr did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects in the mother.
Genotoxicity: Animal tests with fluroxypyr did not demonstrate mutagenic effects.

Assessment Carcinogenicity:
This product contains substances that are considered to be probable or suspected human carcinogens as follows:

Component	Regulatory Agency Listing As Carcinogen			
	ACGIH	IARC	NTP	OSHA
Fluroxypyr methyl heptyl ester	No	No	No	No
Solvent Naphtha (Petroleum), Heavy Aromatic	No	No	No	No

Naphthalene	A3	2B	Yes	No
1-Hexanol	No	No	No	No
Pseudocumene (1,2,4-Trimethylbenzene)	No	No	No	No
N-Methyl-2-pyrrolidone	No	No	No	No
Other Ingredients	No	No	No	No

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on Fluroxypyr 1-Methylheptyl Ester:

Fluroxypyr 1-Methylheptyl Ester is highly toxic to aquatic invertebrates on an acute basis (LC₅₀ or EC₅₀ is between 0.1 and 1 mg/L). Concentrations for fish were not determined because they exceed water solubility.

Fluroxypyr 1-Methylheptyl Ester is highly insoluble in water. Fluroxypyr 1-Methylheptyl Ester is practically non-toxic to birds on an acute and dietary basis (LD₅₀ >2,000 mg/kg and LC₅₀ >5,000 ppm).

Environmental Fate:

In laboratory and field studies, Fluroxypyr 1-Methylheptyl Ester rapidly de-esterified to parent acid in the environment. The typical soil half-life for fluroxypyr (acid and ester) ranged from one to four weeks. Microbial metabolism is the primary degradation mechanism in soil. The typical aquatic half-life ranged from 4 to 14 days.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

Container Handling and Disposal:

Nonrefillable Containers 5 Gallons or Less: Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke.

Nonrefillable Containers larger than 5 Gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable container larger than 5 gallons: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents from this container into application equipment or a mix tank. Fill the container about 10% full with water and, if possible, spray all sides while adding water. If practical, agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

14. TRANSPORTATION INFORMATION

SAFETY DATA SHEET

Comet Selective Herbicide

DOT

< 119 gallons per completed package
Non Regulated

≥ 119 gallons and ≤ 200 gallons per completed package

NA 1993, Combustible liquid, n.o.s., (naphthalene), III, Marine Pollutant,
(Fluroxypyr 1-methylheptyl ester)

> 200 gallons per completed package

NA 1993, Combustible liquid, n.o.s., (naphthalene), III, Marine Pollutant,
(Fluroxypyr 1-methylheptyl ester) RQ

IMDG

UN 3082, Environmentally hazardous substance, liquid, n.o.s.,
(Fluroxypyr 1-methylheptyl ester), 9, III, Marine Pollutant

IATA

UN 3082, Environmentally hazardous substance, liquid, n.o.s.,

(Fluroxypyr 1-methylheptyl ester), 9, III, Marine Pollutant **15. REGULATORY INFORMATION**

EPA FIFRA INFORMATION

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

WARNING. Causes substantial but temporary eye injury. Harmful if swallowed or absorbed through the skin. Do not get in eyes or on clothing. Avoid contact with skin.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:

Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370):

Acute Health, Chronic Health, Fire Hazard

Section 313 Toxic Chemical(s):

Naphthalene (CAS No. 91-20-3) < 6.1% by weight in product.

1,2,4-Trimethylbenzene (CAS No. 95-63-6) < 1.0% by weight in product.

N-Methyl-2-pyrrolidone (CAS No. 872-50-4) 4.75 – 5.25% by weight in product

Reportable Quantity (RQ) under U.S. CERCLA:

Naphthalene (CAS No. 91-20-3) 100 pounds

RCRA Waste Code:

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: WARNING. This product contains chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm. (Naphthalene)

16. OTHER INFORMATION

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 2 Flammability: 2 Reactivity: 0

Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

SAFETY DATA SHEET

Comet Selective Herbicide

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

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