

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

Product Name: LAST CALL™ Selective Herbicide
EPA Reg. No.: 228-719
Synonyms: Mixture of Fenoxaprop-p-ethyl, Fluroxypyr and Dicamba
Product Type: Herbicide

Company Name: Nufarm Americas Inc.
11901 S. Austin Avenue
Alsip, IL 60803

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

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2. HAZARDS IDENTIFICATION**Emergency Overview:**

Appearance and Odor: Transparent straw colored liquid.

Warning Statements: Keep out of reach of children. CAUTION. Causes moderate eye irritation. Avoid contact with eyes, skin or clothing.

Potential Health Effects:

Likely Routes of Exposure: Ingestion, eye and skin contact, and inhalation.

Eye Contact: May cause mild irritation.

Skin Contact: May cause moderate irritation.

Ingestion: This product is no more than slightly toxic if ingested based on toxicity studies.

Inhalation: Low inhalation toxicity. Avoid breathing spray mist.

Medical Conditions Aggravated by Exposure: Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

See Section 11: TOXICOLOGICAL INFORMATION for more information.

Potential Environmental Effects:

This product is toxic to fish and aquatic invertebrates.

See Section 12: ECOLOGICAL INFORMATION for more information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Fenoxaprop-P-ethyl	71283-80-2	2.70
1-Methylheptyl Ester of Fluroxypyr	81406-37-3	3.89
Dicamba (3,6-Dichloro-o-Anisic Acid)	1918-00-9	2.70
Other Ingredients, including		90.71
N-Methylpyrrolidone	872-50-4	
Propylene Glycol	57-55-6	

4. FIRST AID MEASURES

If on Skin or Clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.

If in Eyes: Hold eye 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 treatment advice.

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person.

If Inhaled: Move person to fresh air. If person is not breathing, call 911 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.

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

5. FIRE FIGHTING MEASURES

Flash Point: 204° F (95.6° C)

Autoignition Temperature: Not determined

Flammability Limits: Not determined

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

Special Fire Fighting Procedures: Firefighters should wear NIOSH/MSHA 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: 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 and oxides of sulfur, carbon and nitrogen.

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 1 Flammability: 1 Instability: 0

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

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Isolate affected hazard area. 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.

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.

Other 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:

Avoid contact with skin, eyes or clothing. Users should wash hands with soap and water after handling and 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. 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:

Do not store over 100° F or below 10° F. Do not store near oxidizing agents. Store in original container in a cool, dry place, out of reach of children, preferably a locked storage cabinet. Protect product from freezing. 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-sleeved shirt and long pants, shoes plus socks, and chemical-resistant gloves made of any waterproof material. An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors, mists or dusts 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	
Fenoxaprop-P-Ethyl	NE	NE	10*	NE	
Fluroxypyr	NE	NE	NE	NE	
Dicamba	NE	NE	NE	NE	
N-Methylpyrrolidone	NE	NE	NE	NE	
Propylene Glycol	10 (WEEL)*	NE	NE	NE	mg/m ³

NE = Not Established

*WEEL = Workplace environmental exposure level

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Transparent straw colored liquid.

Boiling Point: Not determined
Density: 9.213 lb/gal @ 20° C
Evaporation Rate: Not determined
Freezing Point: Not determined
pH: 2.5 – 3.5 (1% dilution)

Solubility in Water: Emulsifiable
Specific Gravity: Not determined
Vapor Density: Not determined
Vapor Pressure: Not determined
Viscosity: Not determined

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

Chemical Stability: This material is stable under normal handling and storage conditions.

Conditions to Avoid: Excessive heat. Do not store near heat or flame.

Incompatible Materials: Strong oxidizing agents: bases and acids.

Hazardous Decomposition Products: Under fire conditions may produce gases such as hydrogen chloride and oxides of sulfur, carbon and nitrogen.

Hazardous Reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION**Toxicological Data:**

Data from laboratory studies conducted on the formulation:

Oral: Rat LD₅₀: > 5,000 mg/kg

Dermal: Rat LD₅₀: >5,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >5.04 mg/l

Eye Irritation: Rabbit: Mildly irritating

Skin Irritation: Rabbit: Moderately irritating

Skin Sensitization: Guinea pigs: Not a contact sensitizer

Data for the active ingredients in this formulation:

Subchronic (Target Organ) Effects: **Fenoxaprop-p-ethyl** caused liver and/or adrenal effects in long-term dietary studies in rats, mice and dogs. Repeated overexposure to **Fluroxypyr** may cause effects to bone marrow, kidney, liver and respiratory tract. Repeated overexposure to **Dicamba** may cause liver changes or a decrease in body weight.

Carcinogenicity/Chronic Health Effects: **Fenoxaprop-p-ethyl** caused liver and adrenal gland tumors at the highest dose tested in mice. However, there was no evidence of carcinogenicity in a combined chronic/carcinogenicity study in rats treated with Fenoxaprop-p-ethyl. **Fluroxypyr** did not cause cancer in laboratory animals. **Dicamba** did not cause cancer in long-term animal studies. The U.S. EPA has given **Dicamba** a Class D classification (not classifiable as to human carcinogenicity).

Reproductive Toxicity: **Fenoxaprop-p-ethyl** was not a reproductive toxicant in a two-generation study in rats. In animal studies, **Fluroxypyr** has been shown not to interfere with reproduction. **Dicamba** did not interfere with fertility in reproduction studies in laboratory animals.

Developmental Toxicity: **Fenoxaprop-p-ethyl** is not a primary developmental toxicant in rats and rabbits. Developmental effects were observed in both species but not considered secondary to maternal 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. Animal tests with **Dicamba** have not demonstrated developmental effects.

Genotoxicity: In vitro and in vivo animal tests with these actives did not demonstrate genotoxic or mutagenic effects.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

See Section 2: HAZARDS IDENTIFICATION for more information.

12. ECOLOGICAL INFORMATION**Ecotoxicity:**

Data on Fenoxaprop-P-Ethyl:

96-hour LC₅₀ Rainbow Trout: 2.6 mg/l

48-hour EC₅₀ Daphnia: 4.2 mg/l

72-hour EC₅₀ Algae: 0.75 mg/l

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LAST CALL™ Selective Herbicide

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).

Data on Dicamba:

96-hour LC ₅₀ Bluegill:	135 mg/l	Bobwhite Quail 8-day Dietary LC ₅₀ :	>10,000 ppm
96-hour LC ₅₀ Rainbow Trout:	135 mg/l	Mallard Duck 8-day Dietary LC ₅₀ :	>10,000 ppm
48-hour EC ₅₀ Daphnia:	110 mg/l		

Environmental Fate:

Do not apply directly to water, to areas where surface water is present or to intertidal area below the mean high water mark. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. 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. Dicamba poorly binds to soil particles, is potentially mobile in the soil and highly soluble in water. Aerobic soil metabolism is the main degradative process for dicamba with a typical half-life of 2 weeks. Degradation is slower when low soil moisture limits microbe populations. In water, microbial degradation is the main route of dicamba dissipation. Aquatic hydrolysis, volatilization, adsorption to sediments, and bioconcentration are not expected to be significant.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixtures, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

Container Handling and Disposal:

Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. 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 if available 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.

14. TRANSPORTATION INFORMATION

Follow the precautions indicated in Section 7: HANDLING AND STORAGE of this MSDS.

DOT

Non Regulated

IMDG

Non Regulated

IATA

UN3082, Environmentally hazardous substance, liquid, n.o.s. (Fenoxaprop-P-ethyl), 9, III

15. REGULATORY INFORMATION**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):**

Immediate, Delayed

Section 313 Toxic Chemical(s):

Dicamba (CAS No 1918-00-9), 2.70% by weight in product

N-Methylpyrrolidone (CAS No 872-50-4), 10% by weight in product

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

Dicamba (CAS No 1918-00-9) 1,000 pounds

RCRA Waste Code:

None

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: WARNING. This product contains chemicals known to the State of California to cause cancer or birth defects or other reproductive harm.

16. OTHER INFORMATION

This Material Safety Data Sheet (MSDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). This MSDS 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.

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