



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

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Nufarm Polaris® AC Herbicide  
**EPA Reg. No.:** 228-480  
**Synonyms:** Imazapyr, Isopropylamine Salt; IPA Salt of Imazapyr; 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1H-imidazol-2-yl]-3-pyridine-carboxylic acid, salt with 2-propanamine (1:1)  
**Product Type:** Herbicide  
**Company Name:** Nufarm Americas Inc.  
 150 Harvester Drive, Suite 200  
 Burr Ridge, IL 60527  
**Date of Issue:** January 14, 2008      **Supersedes:** New  
**Sections Revised:** New

### 2. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance and Odor:** Clear, light green colored liquid with a faint ammonia-like odor.

**Warning Statements:** Keep out of reach of children. CAUTION. Harmful if inhaled. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist.

**Potential Health Effects:**

**Likely Routes of Exposure:** Inhalation, eye and skin contact.

**Eye Contact:** Minimally irritating based on toxicity studies.

**Skin Contact:** Slightly toxic and slightly irritating based on toxicity studies.

**Ingestion:** Slightly toxic based on toxicity studies.

**Inhalation:** Low inhalation toxicity.

**Medical Conditions Aggravated by Exposure:** None known.

See Section 11: TOXICOLOGICAL INFORMATION for more information.

**Potential Environmental Effects:**

This product is phytotoxic at extremely low concentrations. Non-target plants may be adversely affected from drift.

See Section 12: ECOLOGICAL INFORMATION for more information.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Isopropylamine Salt of Imazapyr	81510-83-0	53.10
Other Ingredients		46.90

**4. FIRST AID MEASURES**

**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.

**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 on Skin:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minute.

**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.

**5. FIRE FIGHTING MEASURES**

**Flash Point:** 212°F (>100°C) Pinsky-Martens

**Autoignition Temperature:** Not determined    **Flammability Limits:** Not determined

**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/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 oxides of carbon, hydrogen and nitrogen.

**National Fire Protection Association (NFPA) Hazard Rating:**

**Rating for this product: Health: 1    Flammability: 1    Reactivity: 0**

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

**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.

**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. Avoid breathing spray mist. Users should wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Spray solutions of this product should be mixed, stored and applied only in stainless steel, fiberglass, plastic and plastic-lined steel containers. Do not mix, store or apply this product or spray solutions of this product in unlined steel (except stainless steel) containers or spray tanks.

**Storage:**

Do not store below 10°F. Do not contaminate water, food or feed by storage or disposal.

<b>8. EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
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**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:** Not normally required. To avoid contact with eyes, wear chemical goggles or shielded safety glasses. 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 and socks. 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	
Isopropylamine Salt of Imazapyr	NE	NE	NE	NE	

NE = Not Established

<b>9. PHYSICAL AND CHEMICAL PROPERTIES</b>
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**Appearance and Odor:** Clear, light green colored liquid with a faint ammonia-like odor.

<b>Boiling Point:</b>	Not determined	<b>Solubility in Water:</b>	Soluble
<b>Density:</b>	9.26 pounds/gallon	<b>Specific Gravity:</b>	1.112 @ 20°C
<b>Evaporation Rate:</b>	Not determined	<b>Vapor Density:</b>	Not determined
<b>Freezing Point:</b>	Not determined	<b>Vapor Pressure:</b>	Not determined
<b>pH:</b>	5.82 (1% solution)	<b>Viscosity:</b>	31.371 cst @ 20°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.

<b>10. STABILITY AND REACTIVITY</b>
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**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:** Oxidizing agents and reducing agents.

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

**Hazardous Reactions:** Hazardous polymerization will not occur.

## 11. TOXICOLOGICAL INFORMATION

### Toxicological Data:

Data from laboratory studies on this product are summarized below:

**Oral:** Rat LD<sub>50</sub>: >5,000 mg/kg (female)

**Dermal:** Rat LD<sub>50</sub>: >5,000 mg/kg

**Inhalation:** Rat 4-hr LC<sub>50</sub>: >2.06 mg/L

**Eye Irritation:** Rabbit: Minimally irritating

**Skin Irritation:** Rabbit: Slightly irritating

**Skin Sensitization:** Not a contact sensitizer in guinea pigs following repeated skin exposure.

**Subchronic (Target Organ) Effects:** No adverse effects at approximately 1,700 mg/kg/day (highest dose tested).

**Carcinogenicity / Chronic Health Effects:** Imazapyr did not cause cancer in laboratory animals. EPA has classified imazapyr as a Group E (evidence of non-carcinogenicity for humans) carcinogen.

**Reproductive Toxicity:** The results of animal studies gave no indication of a fertility impairing effect.

**Developmental Toxicity:** No indications of a developmental toxic / teratogenic effect were seen in animal studies.

**Genotoxicity:** No mutagenic effect was found in various tests with microorganisms and mammals.

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

See Section 2: HAZARDS IDENTIFICATION for more information.

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity:

Data on Imazapyr:

96-hour LC <sub>50</sub> Bluegill:	>100 mg/l	Bobwhite Quail 8-day Dietary LC <sub>50</sub> :	>5,000 ppm
96-hour LC <sub>50</sub> Rainbow Trout:	>100 mg/l	Bobwhite Quail Oral LD <sub>50</sub> :	>2,150 mg/kg
48-hour EC <sub>50</sub> Daphnia:	>100 mg/l	Mallard Duck 8-day Dietary LC <sub>50</sub> :	>5,000 ppm
Honey Bee LD <sub>50</sub> :	>100 mg/bee	Mallard Duck Oral LD <sub>50</sub> :	>2,150 mg/kg

### Environmental Fate:

Imazapyr is degraded by microbial metabolism and can be relatively persistent in soils. It has an average half-life in soils that ranges from 2 weeks to 5 months. Half-lives tend to be shorter in forest litter and soils. Imazapyr is water-soluble and variably binds to organic materials in the soils. Although the potential to leach is high, leaching is limited under typical field conditions. In water, imazapyr can be rapidly degraded by photolysis with a half-life averaging 2 days. Due to its rapid photodegradation by sunlight, water contamination by imazapyr is generally not of concern.

## 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:

**Plastic Bottles and Non-Returnable Plastic Drums:** Triple rinse container (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in an approved sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

**Returnable/Refillable Containers:** When this container is empty, replace the cap and seal all openings that have been opened during use, and return the container to the point of purchase, or to a designated location. This container must only be refilled with the pesticide product. Do not reuse the container for any other purpose. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn out threads and closure devices. Check for leaks after refilling and before transport. Do not transport if this container is damaged or leaking. If the container is damaged or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling. Disposal of container must be in compliance with state and local regulations.

#### 14. TRANSPORTATION INFORMATION

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

**DOT**

Non Regulated – See 173.132(b)(3)

**IMDG**

Non Regulated - See IMDG 2.6.2.1.3

**IATA**

Non Regulated - See IATA 3.6.1.5.3

#### 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

**Section 313 Toxic Chemical(s):**

None

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

None

**RCRA Waste Code:**

None

**State Information:**

Other state regulations may apply. Check individual state requirements.

**California Proposition 65:** Not listed

#### 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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