

**1. IDENTIFICATION**

Product name: **Fluroxypyr 180 EC (PCP Reg. No. 30815)**  
 Chemical name of active ingredient(s): Fluroxypyr (present as 1-methylheptyl ester): [(4-amino-3,5-dichloro-6-fluoro-2-pyridinyl)oxy] acetic acid 1-methylheptyl ester  
 Manufacturer/Registrant: Makhteshim Agan of North America, Inc.  
 3120 Highwoods Boulevard, Suite 100  
 Raleigh, NC 27604  
 Phone: 1-919-256-9300  
 For fire, spill, and/or leak emergencies, contact Infotrac: Phone: 1-800-535-5053  
 For medical emergencies and health and safety inquiries, contact Prosar: Phone: 1-877-250-9291

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

COMMON NAME	CAS NO.	%	OSHA PEL	ACGIH TLV	OTHER	NTP/IARC/OSHA (Carcinogen)
Fluroxypyr (as 1-methylheptyl ester)	81406-37-3	26.6	NE	NE	NE	NA
Hydrocarbons (contains Naphthalene)	NA					
	91-20-3	< 1%	10 ppm (TWA)	10ppm (TWA) 15ppm (STEL, skin, A4)	NE	NTP – 2* IARC –2B**
Calcium dodecylbenzene sulphonate	26264-06-2	1 - 2	NE	NE	NE	NA
N-methyl-2-pyrrolidone	872-50-4	4 - 6	NE	NE	NE	

NE: Not established; NA: Not applicable.

\* Substances, which may reasonably be anticipated to be carcinogens.

\*\* Substance is possibly carcinogenic to humans.

**3. HAZARDS IDENTIFICATIONS**

**PHYSICAL PROPERTIES:**

Appearance: Amber brown liquid  
 Odor: Aromatic (Solvent)

**EMERGENCY OVERVIEW:** WARNING Skin and eye irritant

**LIKELY ROUTES OF EXPOSURE:** Ingestion, skin absorption, inhalation, and eye contact.

**SYMPTOMS OF ACUTE EXPOSURE:**

**EYE:** May cause moderate eye irritation. May cause slight corneal injury. Vapor may lead to eye irritation causing mild discomfort and redness.

**SKIN:** Brief contact basically non-irritating to skin. Prolonged or repeated exposure may cause skin irritation or burn. Repeated contact can lead to drying or flaking of skin. Prolonged exposure is unlikely to result in absorption of harmful amounts. The LD<sub>50</sub> for skin absorption is > 4,000 mg/kg. No allergic reactions were noted when tested in guinea pigs.

**INGESTION:** Low toxicity if swallowed. The oral LD<sub>50</sub> for rats is > 2,000 mg/kg. Swallowing small amounts incidental to normal handling operations are not likely to cause injury; however, swallowing larger

amounts may cause injury. Aspiration into the lungs may occur during ingestions or vomiting and can cause lung damage or even death due to chemical pneumonia.

**INHALATION:** No adverse effects anticipated from a single exposure to vapor. The LC<sub>50</sub> for rats is > 5.05 mg/L (4 hours). Prolonged exposure to solvent may cause respiratory irritation and central nervous system depression. May cause nausea or vomiting.

**PHYSICAL OR CHEMICAL HAZARDS COMBUSTIBLE.** Do not use or store near heat or open flame.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Chloride compounds, fluorine compounds, carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>...)

#### 4. FIRST AID MEASURES

##### FIRST AID:

**IF SWALLOWED:** Call a poison control centre or doctor immediately for treatment advice. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.

**IF ON SKIN OR CLOTHING:** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

**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 centre or doctor for further treatment advice.

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

Take the container label or product name and Pest Control Product Registration Number with you when seeking medical attention.

**TOXICOLOGICAL INFORMATION:** This product contains petroleum distillates. Treatment should be based on judgment of the physician in response to reactions of the patient. Vomiting may cause aspiration pneumonia.

#### 5. FIRE FIGHTING MEASURES

**FLASHPOINT:** > 61°C (141.8°F)

**FLAMMABLE LIMITS (% in air):** Not applicable

**AUTOIGNITION TEMPERATURE:** Not applicable

**EXTINGUISHING MEDIA:** For small fire: dry chemical powder, water spray carbon dioxide. For large fire: foam, water fog, water spray.

**SPECIAL EXPOSURE HAZARDS:** Flashback may occur along vapor trail.

**FIRE AND EXPLOSION HAZARDS:** Dangerous gases are evolved in the event of a fire.

**FIRE-FIGHTING PROCEDURES:** Self-contained breathing apparatus and total protection required in enclosed areas.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Chloride compounds, fluorine compounds, carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>...).

#### 6. ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS:** Wear suitable protective clothing, gloves and eye/face protection.

**ACTION TO TAKE FOR SPILLS:** Absorb in sand or other inert material. Collect spills and put it into appropriated container. Dispose of this material and its container at hazardous or special waste collection point.

**ADDITIONAL INFORMATION:** Environmental precautions: Do not empty into drains. Do not discharge into the environment.

## 7. HANDLING AND STORAGE

**PRECAUTIONS TO BE TAKEN IN HANDLING:** Ventilation required. Handle in accordance with good industrial hygiene and safety procedures.

**PRECAUTIONS TO BE TAKEN IN STORAGE:** Store in original containers in a secure, dry heated, well-ventilated area. If product is frozen, bring to room temperature and agitate before use. Do not allow contamination of seeds, plants, fertilizers or other pesticides. Do not contaminate food, feedstuffs or domestic water supplies. If containers are damaged or spill occurs, use the product immediately or contain the spill with absorbent materials and dispose of waste. Store away from direct sunlight. Keep away from heat, sparks, and flame.

**STORAGE TEMPERATURE (MIN/MAX):** Normal ambient temperatures.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, AND PACKAGING OF THE PRODUCT.**

**FOR COMMERCIAL APPLICATION AND ON-FARM APPLICATIONS, CONSULT THE PRODUCT LABEL.**

**EYE PROTECTION:** Use safety glasses, goggles, or face shield.

**HAND PROTECTION:** Wear chemical-resistant gloves. Rinse gloves before removal.

**SKIN PROTECTION:** Wear clean clothing with full length sleeves and pants.

**RESPIRATORY PROTECTION:** When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Follow manufacturer's instructions for cleaning/ maintaining personal protective equipment, PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

**EXPOSURE GUIDELINES:** Refer to Section 2.

**ENGINEERING CONTROLS:** Use adequate ventilation to minimize airborne concentrations of this material.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE:** Amber brown liquid

**ODOR:** Aromatic (Solvent)

**FLASH POINT:** 61°C (141.8°F)

**pH:** 5 - 7

**DENSITY:** 20 g/mL @ 20° C

## 10. STABILITY AND REACTIVITY

**STABILITY:** This product is stable under normal conditions.

**CONDITIONS TO AVOID:** None known.

**MATERIALS TO AVOID:** Oxidizing agents, acids, alkali.

**HAZARDOUS REACTIONS:** See materials to avoid.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Chloride compounds, fluorine compounds, carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>...).

## 11. TOXICOLOGICAL INFORMATION

### ACUTE TOXICITY/IRRITATION STUDIES:

Acute Oral LD <sub>50</sub> (Rat):	>2,000 mg/kg
Acute Dermal LD <sub>50</sub> (Rabbit):	>4,000 mg/kg
Acute Inhalation LC <sub>50</sub> (Rat):	> 5.05 mg/L air (4 hours).
Eye Irritation (Rabbit):	Severely irritating at 72 hours.

Dermal Irritation (Rabbit): Moderately irritating  
Dermal Sensitization (Guinea pig): Not a skin sensitizer.

**SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:** Effects have been reported on the following organs: bone marrow, kidney, liver, and respiratory tract.

**CARCINOGENICITY:** Fluroxypyr did not cause cancer in laboratory animals.

**REPRODUCTIVE TOXICITY:** Fluroxypyr did not interfere with reproduction in laboratory animal studies.

**TERATOLOGY (BIRTH DEFECTS):** 1-Methyl-2-pyrrolidinone caused toxic effects to the fetus in laboratory animals at high dose levels with either mild or undetectable maternal toxicity. Fluroxypyr did not cause birth defects; however, in laboratory animals, other toxic effects to the fetus have been seen.

## 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL HAZARDS:** This product contains a petroleum distillate which is moderately to highly toxic to aquatic organisms. Avoid contamination of aquatic systems during application. Do not contaminate these systems through direct application, disposal of waste or cleaning of equipment.

### ECOTOXICITY INFORMATION:

Rainbow trout LC50 (96-h): >100 mg/L (Fluroxypyr).  
>0.9 mg/L (Fluroxypyr-meptyl).

Daphnia magna EC50 (48-h): >100 mg/L (Fluroxypyr).  
>0.9 mg/L (Fluroxypyr-meptyl).

Rainbow trout NOEC (21-d): 0.2 (Fluroxypyr-meptyl).

Daphnia magna NOEC (21-d): 0.1 mg/L (Fluroxypyr-meptyl).

Algae EC50 (96-h) : >100 mg/L (Fluroxypyr).  
>0.9 (Fluroxypyr-meptyl).

Bobwhite quail LD50: >2,000 mg/kg (Fluroxypyr-meptyl+Fluroxypyr).

Mallard duck >2,000 mg/kg (Fluroxypyr-meptyl+Fluroxypyr).

Bees LD50 [ $\mu$ g/Bee]: Oral>100 (Fluroxypyr-meptyl).  
Contact>100 (Fluroxypyr-meptyl).  
Contact>25 (Fluroxypyr).

**PERSISTENCE AND DEGRADABILITY:** Soil degradation is primarily via microorganisms and hydrolysis. This product is not persistent. The product is poorly biodegradable. Moderate to low soil mobility.

## 13. DISPOSAL CONSIDERATIONS

Do not contaminate water, food, or feed by storage or disposal.

**PESTICIDE DISPOSAL:** For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for cleanup of spills.

**CONTAINER DISPOSAL:** Dispose of product containers, waste containers, and residues according to label instructions and municipal, provincial, and federal health and environmental regulations.

## 14. TRANSPORT INFORMATION

### CANADIAN TDG CLASSIFICATION:

Road/Rail: Not regulated

Vessel only: UN 3082, Environmentally hazardous substances, liquid, n.o.s. (Fluroxypyr-methyl, naphta), 9, PG III, Marine Pollutant

### US DOT CLASSIFICATION:

Non-bulk : Not Regulated

MATERIAL SAFETY DATA SHEET

**Fluroxypyr 180 EC**

Page 5 of 5

**Bulk :** NA 1993, Combustible Liquid (contains hydrocarbon solvent), PG III

**INTERNATIONAL TRANSPORTATION:**

**IMO (vessel):** UN 3082, Environmentally Hazardous Substances, Liquid, n.o.s. (Fluroxypyr-methyl, naphta), 9, PG III, Marine Pollutant

**IATA (air):** UN 3082, Environmentally Hazardous Substances, Liquid, n.o.s. (Fluroxypyr-methyl, naphta), 9, PG III, Marine Pollutant

**15. REGULATORY INFORMATION**

**CANADIAN REGULATIONS:**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR) and the MSDS contains all the information required by the CPR.

**INGREDIENT DISCLOSURE LIST:**

Naphthalene CAS #:91-20-3 (<1%)

**U.S. FEDERAL REGULATIONS:**

**SARA TITLE III CLASSIFICATION:**

Section 302: Not applicable

Section 311/312: Acute health hazard (immediate)

Chronic health hazard (delayed)

Section 313: Naphthalene (<0.1%) CAS #: 91-20-3

1-methyl-2-Pyrrolidinone (4-6%) CAS #: 872-50-4

**CA PROPOSITION 65:** Not applicable

**CERCLA RQ:** Naphthalene: 100 lbs.

**RCRA CLASSIFICATION:** 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.

**TSCA STATUS:** The ingredients of this product are listed on the TSCA inventory or are exempt.

**16. OTHER INFORMATION**

**NFPA HAZARD RATINGS**

**HEALTH:** 2  
**FLAMMABILITY:** 2  
**INSTABILITY:** 0

0	MINIMAL
1	SLIGHT
2	MODERATE
3	HIGH
4	SEVERE

**MSDS DATE:** 2-25-13. Supersedes version dated 2-19-13. Changes made to Sections 2 and 14.

The information herein is given in good faith, but no warrant, express or implied, is made. Consult Makhteshim Agan of North America, Inc. for further information.