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## Section 1 - Product and Company Identification

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### Product Identifiers:

**Product name:** Ecologic Ant & Roach Killer  
**EPA reg. number:** N/A  
**Recommended product use:** Insecticide - Crawling Bug, Aerosol

### Details of the Supplier of the Safety Data Sheet:

**Manufacturer/Supplier:** Liquid Fence  
P.O. Box 4406  
Bridgeton, MO 63044-0406  
**For product information:** 1-800-923-3623  
**For medical emergencies:** 1-800-633-2873

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## Section 2 - Hazards Identification

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Conforms to Hazard Communication Standard 29 CFR 1910.1200.

### GHS Classification of Substance or Mixture:

**Physical Hazards GHS Classification** Flammable aerosol - Category 2  
Gases under pressure – Compressed Gas  
**Health Hazards GHS Classification** Primary Eye Irritant – Category 2B

### GHS Label Elements:

Hazard pictogram(s):



Signal word:

WARNING

Hazard statements:

- Flammable aerosol
- Compressed gas – contents under pressure; may burst if heated
- Causes eye irritation

### Precautionary Statements:

- Contents under pressure.
- Do not use or store near heat or open flame.
- Do not puncture or incinerate container.
- Exposure to temperatures above 130°F may cause bursting.
- Wash hands thoroughly with soap and water after handling. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

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## Section 3 - Composition / Information on Ingredients

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Chemical Name	CAS#	Weight Percent
Lemongrass oil	8007-02-1	3.00%
Isopropyl alcohol	67-63-0	4.00%

Carbon dioxide	124-38-9	2.50%
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Note: Ingredients not identified are proprietary or non-hazardous. Values are not product specification(s).

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#### Section 4 - First Aid Measures

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<b>Eye contact:</b>	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. Call a poison control center or doctor for treatment advice.
<b>Skin contact:</b>	No special requirements
<b>Inhalation:</b>	No special requirements
<b>Ingestion:</b>	No special requirements
<b>Note to physician:</b>	None
<b>General advice:</b>	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Keep out of reach of children.

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#### Section 5 - Fire Fighting Measures

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<b>Flammable properties:</b>	Pressurized aerosol container
<b>NFPA classification:</b>	NFPA level 1 aerosol
<b>Suitable extinguishing media:</b>	Water fog, foam, CO <sub>2</sub> , dry chemical
<b>Unsuitable extinguishing media:</b>	Not available
<b>Specific hazards arising from the chemical:</b>	Contents under pressure – container may burst in heat of fire.
<b>Protective equipment for firefighters:</b>	Firefighters should wear full protective clothing including self-contained breathing apparatus.
<b>Hazardous combustion products:</b>	None known
<b>Explosion data:</b>	Not available
<b>Sensitivity to static discharge:</b>	Not available
<b>Personal precautions:</b>	Keep unnecessary personnel away. Do not touch or walk through spilled material.

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#### Section 6 - Accidental Release Measures

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<b>Personnel precautions:</b>	Remove all sources of ignition. Wear personnel protective equipment as recommended in Section 8. Wash thoroughly after handling.
<b>For emergency responders:</b>	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials.
<b>Environmental precautions:</b>	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
<b>Methods for containment and</b>	

**cleaning up:**

Stop leak if without risk. Move containers from spill area. Before attempting clean up, refer to hazard data given above. Small spills may be absorbed with earth, sand or absorbent material swept up and placed in suitable, covered, and labeled containers. Prevent large spills from entering sewers or waterways. Contact emergency services and supplier for advice. Never return spills in original containers for re-use.

**Section 7 - Handling and Storage**

**Precautions for safe handling:**

Put on appropriate personal protective equipment as recommended in Section 8. Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C (122°F). Do not pierce or burn, even after use. Do not ingest. Avoid contact with skin, eyes and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical equipment. Use only non-sparking tools. Empty containers retain product residue and can be hazardous.

**Storage:**

Store in a cool, dry area away from open flame. Do not store above 50°C (122°F).

**Section 8 - Exposure Controls / Personal Protection**

**Exposure guidelines:**

Chemical name		Exposure Limits					
		OSHA PEL		ACGIH TLV		Supplier OEL	
		ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>
Lemongrass oil	TWA	Not established		Not established		Not established	
Isopropyl alcohol	TWA	400	980	200	-----	Not listed	
Carbon dioxide	TWA	5000	-----	Not listed		Not listed	

**Engineering controls:**

General ventilation normally adequate.

**Personal protective equipment:**

**Eye/Face protection:**

During application, prevent entry into eyes. Wear safety glasses with side shields if using in large applications.

**Skin and body protection:**

None required

**Respiratory protection:**

Where exposure guideline levels may be exceeded, use an approved NIOSH respirator.

**General hygiene considerations:**

Handle in accordance with good industrial hygiene and safety practices. When using, do not eat or drink. Wash hands before breaks and immediately after handling the product.

**Section 9 - Physical & Chemical Properties**

**Appearance:**

Opaque

<b>Color:</b>	White to pale yellow
<b>Physical state:</b>	Pressurized liquid
<b>Odor:</b>	Lemon & mint
<b>Odor threshold:</b>	No data available
<b>pH:</b>	6.6 (liquid portion)
<b>Melting point:</b>	No data available
<b>Freezing point:</b>	No data available
<b>Boiling point:</b>	No data available
<b>Flash point:</b>	>200°F (liquid portion)
<b>Flame extension</b>	0" (level 1 aerosol)
<b>Flammability limits in air, lower, % by volume:</b>	No data available
<b>Flammability limits in air, upper, % by volume:</b>	No data available
<b>Vapor pressure:</b>	No data available
<b>Vapor density:</b>	No data available
<b>Relative density @ 20°C:</b>	0.992 (liquid portion)
<b>Octanol/water coefficient:</b>	No data available
<b>Auto-ignition temperature:</b>	No data available
<b>Decomposition temperature:</b>	No data available
<b>Solubility:</b>	Miscible in water
<b>Evaporation rate:</b>	No data available
<b>% Volatile organic compounds:</b>	4.0

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## Section 10 - Chemical Stability & Reactivity Information

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### Reactivity

<b>Conditions to avoid:</b>	Do not mix with other chemicals.
<b>Incompatible materials:</b>	Avoid strong oxidizers.

### Chemical stability

<b>Product stability:</b>	Stable under recommended storage conditions.
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### Other

<b>Hazardous decomposition products:</b>	None known
<b>Possibility of hazardous reactions:</b>	Hazardous polymerization does not occur.

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## Section 11 - Toxicological Information

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<b>Primary eye irritation:</b>	Causes moderate eye irritation (EPA tox. category III)
<b>Primary skin irritation:</b>	Non-irritating (EPA tox. category IV)
<b>Acute dermal:</b>	LD <sub>50</sub> > 5000 mg/kg (EPA tox. category IV)
<b>Acute inhalation:</b>	LC <sub>50</sub> > 2 mg/L (EPA tox. category IV)



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<b>Acute oral:</b>	LD <sub>50</sub> > 5000 mg/kg (EPA tox. category IV)
<b>Sensitization:</b>	Not a skin sensitizer.
<b>Chronic effects/ Carcinogenicity:</b>	No data available
<b>Mutagenicity:</b>	No data available
<b>Reproductive effects:</b>	No data available
<b>Teratogenicity:</b>	No data available
<b>Ecotoxicity:</b>	No data available

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### Section 12 - Ecological Information

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<b>Environmental effects:</b>	No data available
<b>Aquatic toxicity:</b>	None
<b>Persistence / degradability:</b>	No data available
<b>Bioaccumulation / accumulation:</b>	No data available
<b>Partition coefficient:</b>	No data available
<b>Mobility in environmental media:</b>	No data available
<b>Chemical fate information:</b>	No data available

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### Section 13 - Disposal Considerations

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<b>Waste codes:</b>	Not available
<b>Disposal instructions:</b>	Dispose in accordance with all applicable regulations.
<b>Waste from residues / unused products:</b>	Not available
<b>Contaminated packaging:</b>	Not available

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### Section 14 - Transportation Information

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<b>U.S. Department of Transportation (DOT):</b>	UN-1950, Aerosols, Flammable, 2.1, Limited Quantity
<b>IATA:</b>	UN-1950, Aerosols, 2.1
<b>IMDG:</b>	UN-1950, Aerosols, Flammable, 2, Limited Quantity

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### Section 15 - Regulatory Information

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<b>29 CFR 1910.1200 hazardous chemical Occupational Safety and Health Administration (OSHA):</b>	No
<b>CERCLA (Superfund) reportable quantity:</b>	Not available

### Hazard categories

#### Superfund Amendments and Reauthorization Act of 1986 (SARA):

Immediate Hazard	No
Delayed Hazard	No
Fire Hazard	No

Pressure Hazard No  
Reactivity Hazard No

**Section 302 extremely hazardous Substance:**

No

**Section 311 hazardous chemical:**

No

**Clean Air Act (CAA):**

Not available

**Clean Water Act (CWA):**

Not available

**State regulations:**

**FIFRA labeling:** This product is a minimum risk pest control product and qualifies for exemption from EPA registration under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). The labeling requirements under FIFRA differ from the classification criteria and hazard information required for safety data sheets, and for workplace non-pesticide chemicals. Following is the hazard information as found on the pesticide label:

**Signal word:** CAUTION

**Precautionary statements:**

Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum or using the toilet.

Contents under pressure. Do not use or store near heat or open flame. Do not puncture or incinerate container. Exposure to temperatures above 120°F may cause bursting.

**Notification status:** All ingredients of this product are listed or are excluded from listing on the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

**California Prop. 65:** This product does not contain any chemicals known to the state of California to cause cancer, birth defects or any other reproductive harm.

**Disclaimer:** Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document.

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### Section 16 - Other Information

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**HMIS ratings:** Health Hazard 1 Flammability 2 Physical Hazard 1  
**Item numbers:** HG-75000  
**Formula number(s):** 21-1228  
**Issue date:** 3/4/2016  
**Prepared by:** Liquid Fence  
P.O. Box 4406  
Bridgeton, MO 63044-0406  
(800) 242-1166



**Enforcer M Herbicide  
Safety Data Sheet**  
{Reserved}

Issue Date: 2017-12-20

Supersedes Date: 2017-05-17

**1. Identification**

**Product Name:** Enforcer M Herbicide

**PCP Registration No.:** 30691

Refer to the approved product label for handling and use instructions.

**Product Type:** Herbicide

**Supplier:** Nufarm Agriculture Inc.  
Suite 350, 2618 Hopewell Place NE  
Calgary, Alberta, T1Y 7J7, Canada  
1-800-868-5444

**Telephone Numbers:** 24 Hour Emergency Response Number, Chemtrec, 1-800-424-9300.  
For medical emergencies, ProPharma Group, 1-877-325-1840.  
For product and use information, Nufarm Agriculture Inc.,  
1-800-868-5444.

**2. Hazard Identification**

Classified according to UN GHS Version 5.

**Physical Hazards:**

None

**Health Hazards:**

Skin irritation	Category 2
Skin sensitizer	Category 1B
Acute toxicity (Oral)	Category 4
Acute toxicity (Inhalation)	Category 4

**Environmental Hazards:**

Hazardous to aquatic environment, acute Category 1

**Signal Word:**

WARNING

**Hazard Statements:**

Causes skin irritation. May cause an allergic skin reaction. Harmful if swallowed.  
Harmful if inhaled. Very toxic to aquatic life.



**Enforcer M Herbicide  
Safety Data Sheet**

Issue Date: 2017-12-20

Supersedes Date: 2017-05-17

{Reserved}

**Precautionary Statements:**

Avoid contact with skin, eyes and clothing. Wear goggles or face shield during mixing/loading. Wear coveralls over a long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal. After use, wash hands and other exposed skin. Remove and wash contaminated clothing before reuse. Avoid breathing spray mist. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product. Harmful if swallowed. This product contains an active ingredient and petroleum distillates which are toxic to aquatic organisms.

**3. Composition / Information on Ingredients**

Hazardous Components	CAS No.	Wt. %
MCPA 2-ethylhexyl ester	29450-45-1	27.5-29.5
Chemical Synonyms: MCPA 2EH; 2-ethylhexyl 2-(4-chloro-2-methylphenoxy)acetate; 2-ethylhexyl (4-chloro-2-methylphenoxy)acetate		
Bromoxynil octanoate	1689-99-2	26.0-28.0
Chemical Synonyms: 2,6-dibromo-4-cyanophenyl octanoate		
Solvent naphtha (petroleum), heavy aromatic, naphthalene depleted	64742-94-5	23.5-25.0
Fluroxypyr 1-methylheptyl ester	81406-37-3	9.9-11.4
Chemical Synonyms: fluroxypyr MHE; fluroxypyr-meptyl; 1-methylheptyl [(4-amino-3,5-dichloro-6-fluoro-2-pyridinyl)oxy]acetate		

Other ingredients are considered non-hazardous.

**Content as Expressed on Product Label**

Fluroxypyr, present as 1-methylheptyl ester... 80 g a.e. /L
Bromoxynil, present as octanoate ester ... 200 g/L
MCPA, present as 2-ethylhexyl ester ... 200 g a.e. /L

**4. First Aid Measures**

**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 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.

**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.



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

DO NOT induce vomiting. This product contains petroleum distillates. Vomiting may cause aspiration pneumonia. No specific antidote. Employ supportive care. High concentrations of MCPA may cause severe irritation to the eyes. Symptoms of overexposure to MCPA could include slurred speech, twitching, jerking and spasms, drooling, low-blood pressure and unconsciousness. Treat symptomatically.

**5. Fire-fighting Measures**

**Extinguishing Media:** Water fog, alcohol foam, carbon dioxide, dry chemical.

**Special Firefighting Procedures:** Firefighters should wear self-contained breathing apparatus and full protective clothing when fighting chemical fires. Minimize and contain water runoff.

**Flash Point:**..... 100 C

**Conditions of Flammability:**..... Not classed as a combustible liquid, but may burn under fire conditions.

**Hazardous Decomposition Products:**... Under fire conditions, may produce gases such as hydrogen bromide or other bromine compounds, hydrogen chloride, nitrogen oxides and carbon oxides.

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

<b>Rating for this product: Health: 2</b>	<b>Flammability: 1</b>	<b>Reactivity: 0</b>
Hazards Scale: 0 = Minimal 1 = Slight	2 = Moderate 3 = Serious	4 = Severe

**6. Accidental Release Measures**

Use safety equipment and procedures appropriate to the size of the spill. Keep unnecessary people away. Avoid runoff to natural waters and sewers. Surround and absorb spills with inert material such as perlite, sawdust, clay granules, vermiculite, sand or dirt. Contain all affected material in a closed, labeled container for proper disposal. Isolate from other waste materials. Clean contaminated area such as hard surfaces with detergent and water, collecting cleaning solution for proper disposal. Large spills to soil or similar surfaces may necessitate removal of top soil.

**7. Handling and Storage**

**Handling:** Avoid contact with skin, eyes and clothing. Wear goggles or face shield during mixing/loading. Wear coveralls over a long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal. After use, wash hands and other exposed skin. Remove and wash contaminated clothing before reuse. Avoid breathing spray mist. Do not eat, drink or smoke when using this product.

**Storage:** Store the container tightly closed away from seeds, fertilizer, plants and foodstuffs. May be stored at any temperature. Shake well before using.

**Enforcer M Herbicide  
Safety Data Sheet**

Issue Date: 2017-12-20

Supersedes Date: 2017-05-17

{Reserved}

**8. Exposure Controls / Personal Protection**

**Engineering Controls:** Use only outdoors or in a well-ventilated area.

**Personal Protective Equipment:** Goggles or face shield, coveralls, long-sleeved shirt, long pants, socks, shoes and chemical-resistant gloves. Rinse gloves before removal.

**Exposure Guidelines:**

Component	TWA*	STEL**	Reference/Note
MCPA 2-ethylhexyl ester	N/E	N/E	None found
Bromoxynil octanoate	0.21 mg/m <sup>3</sup>	N/E	Supplier recommendation
Solvent naphtha (petroleum), heavy aromatic, naphthalene depleted	50 mg/m <sup>3</sup>	N/E	Supplier recommendation
Fluroxypyr 1-methylheptyl ester	10 mg/m <sup>3</sup>	N/E	Supplier recommendation

\*Time-weighted Average, 8-hour unless otherwise noted.

\*\*Short Term Exposure Limit

NE = Not Established

Refer to approved product label for additional exposure control guidance.

**9. Physical and Chemical Properties**

**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. If no value is determined for the formulation, the value listed is the most relevant value of the predominant ingredient(s).

<b>Appearance (physical state, colour, etc.)</b> .....	clear amber liquid
<b>Odour</b> .....	hydrocarbon-like
<b>Odour threshold</b> .....	not available
<b>pH</b> .....	4.2 (1% w/w dilution)
<b>Melting point / Freezing point</b> .....	~-20C
<b>Initial boiling point and boiling range</b> .....	>185C (bromoxynil octanoate)
<b>Flash point</b> .....	100C
<b>Evaporation rate</b> .....	<0.01 (n-butyl acetate = 1) (solvent)
<b>Flammability (solids, gases)</b> .....	not applicable
<b>Upper / Lower flammability or explosive limits</b> ...	LEL = 0.7, UEL = 5.6 vol. % in air (solvent)
<b>Vapour pressure</b> .....	4.0 Pa @ 20C (solvent) < 10 <sup>-7</sup> Pa @ 25C (bromoxynil octanoate) 5.7 x 10 <sup>-3</sup> mm Hg @ 25C (MCPA 2EH) 1.349 x 10 <sup>-3</sup> mPa @20C (fluroxypyr MHE)
<b>Vapour density</b> .....	5.6 @ 101 kPa (air = 1) (solvent)
<b>Relative density</b> .....	1.135 @ 20C
<b>Solubility(ies)</b> .....	negligible in water, emulsifiable highly soluble in organic solvents
<b>Partition coefficient: n-octanol/water</b> .....	logP = 5.9 @ pH 7, 25C (bromoxynil octanoate) logP = 6.8 (MCPA 2EH)

**Enforcer M Herbicide  
Safety Data Sheet**

Issue Date: 2017-12-20

Supersedes Date: 2017-05-17

{Reserved}

logP = 5.04 @ pH 7 (fluroxypyr MHE)

**Autoignition temperature** ..... not available  
**Decomposition temperature** ..... >60C (fluroxypyr MHE)  
**Viscosity (kinematic)**..... 36.75 cSt @ 20C

**10. Stability and Reactivity**

**Reactivity:** Not reactive.

**Chemical Stability:** Stable under normal handling and storage conditions.

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

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

**Incompatible Materials:** Avoid contact with strong acidic, basic or oxidizing agents.

**Hazardous Decomposition Products:** Under fire conditions, may produce gases such as hydrogen bromide or other bromine compounds, hydrogen chloride, nitrogen oxides and carbon oxides.

**11. Toxicological Information**

**Likely routes of exposure:** Inhalation, ingestion, skin and eye contact.

**Eye contact:** May cause eye irritation, generally of minimal degree. Causes redness and tearing.

**Skin contact:** Causes skin irritation. May cause an allergic skin reaction.

**Ingestion:** Harmful if swallowed. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation, abdominal pain, central nervous system depression, temporary loss of muscle coordination, decreased blood pressure, fatigue, muscle weakness, muscle spasms, unconsciousness, respiratory failure, or in extreme cases, death.

**Inhalation:** Harmful if inhaled. Vapours could cause coughing, burning, headache, dizziness, respiratory irritation and symptoms similar to those from ingestion.

**Medical Conditions Aggravated by Exposure:** Skin exposure may aggravate preexisting skin conditions. Inhalation of mist may aggravate preexisting respiratory conditions.

**Toxicological Data:**

**Acute oral LD<sub>50</sub> (mg/kg)** ..... 550 mg/kg (Rat, female)

**Acute dermal LD<sub>50</sub> (mg/kg)** ..... >5000 (Rat, male & female)

**Acute inhalation LC<sub>50</sub> (mg/l)** ..... >2.1 (Rat, male & female, 4-hour, nose-only exposure)

**Skin corrosion/irritation** ..... Moderately irritating to skin (Rabbit)

**Serious eye damage/irritation** ..... Mildly irritating to the eye (Rabbit)

**Respiratory or skin sensitization** ... Potential skin sensitizer (Guinea pig)

**Germ cell mutagenicity** ..... The weight of evidence is that MCPA and bromoxynil are not mutagenic. Fluroxypyr shows no evidence of genotoxicity. Products similar to the hydrocarbon component are not considered to be mutagenic.

**Carcinogenicity** ..... Bromoxynil phenol has been classified by U.S. EPA in Group C, possible human carcinogen. The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as possibly carcinogenic to humans (Group 2B), the category for limited evidence for carcinogenicity in humans. MCPA was not carcinogenic to rats or mice in lifetime feeding studies. Fluroxypyr shows no evidence of carcinogenicity. Products

similar to the hydrocarbon component are not considered to be mutagenic and are unlikely to cause tumors.

**Reproductive toxicity** ..... Animal reproduction studies with MCPA, bromoxynil phenol and bromoxynil octanoate indicate there is no increased sensitivity of the young relative to maternal animals. Fluroxypyr shows no evidence of reproductive toxicity.

**12. Ecological Information**

**Ecotoxicity:**

Data are from laboratory studies conducted on MCPA-2-ethylhexyl technical.

**Aquatic Invertebrate:** 48-Hour EC<sub>50</sub> (mg/L) ..... 0.28 (*Daphnia*)

**Fish:** 96-Hour LC<sub>50</sub> (mg/L) ..... 3.2 (Rainbow Trout), > 3.2 (Bluegill Sunfish)

**Algae:** 120-Hour EC<sub>50</sub> (mg ae/L) 0.25 (*Selenastrum*), 1.2 (*Navicula*), 0.085 (*Skeletonema*)

**Birds:** Oral LD<sub>50</sub> (mg ae/kg) ..... >2250 (Bobwhite); Dietary LDD<sub>50</sub> > 3800 (Bobwhite), > 930 (Mallard) (mg ae/kg bw/d)

**Bees:** Oral LD<sub>50</sub> ..... > 250 µg 500 g/L MCPA 2EH formulation/bee

**Bees:** Contact LD<sub>50</sub> ..... > 210 µg 500 g/L MCPA 2EH formulation/bee

Data are from laboratory studies conducted on bromoxynil octanoate technical.

**Aquatic Invertebrate:** 48-Hour EC<sub>50</sub> (mg/L) ..... 0.46 (*Daphnia*)

**Fish:** 96-Hour LC<sub>50</sub> (mg/L) ..... 0.041 (Rainbow Trout), 0.06 (Bluegill Sunfish)

**Algae:** 120-Hour EC<sub>50</sub> (mg/L) .... 0.22 (*Selenastrum*), 0.043 (*Navicula*)

**Birds:** Oral LD<sub>50</sub> (mg/kg) ..... 170 (Bobwhite), 2350 (Mallard); 5-d Dietary LC<sub>50</sub> (ppm) 1315 (Bobwhite), 2150 (Mallard)

**Bees:** LD<sub>50</sub> ..... >100 µg/bee (48 h contact), >119.8 µg/bee (96 h oral)

Data are for fluroxypyr 1-methylheptyl ester technical, from published sources.

**Aquatic Invertebrate:** 48-Hour EC<sub>50</sub> (mg/L) ..... >0.09 (solubility limit) (*Daphnia*)

**Fish:** 96-Hour LC<sub>50</sub> (mg/L) ..... >0.09 (solubility limit) (Rainbow Trout)

**Algae:** 120-Hour EC<sub>50</sub> (mg/L) .... >0.09 (solubility limit) (*Selenastrum*), 0.093 (*Navicula*)

**Birds:** Oral LD<sub>50</sub> (mg/kg) ..... >2000 (Mallard and Bobwhite)

**Bees:** Oral and Contact LD<sub>50</sub> ..... >100 µg/bee

**Persistence and Degradability:** MCPA 2EH rapidly hydrolyzes to parent MCPA acid. MCPA is microbially degraded with typical half-life (ester and acid) of 5 to 20 days. Persistent in anaerobic environments. Bromoxynil octanoate degrades readily to bromoxynil phenol by abiotic hydrolysis, photolytic degradation, and microbially-mediated metabolism, in both aerobic and anaerobic environments. Representative soil half-lives are 2 days for the octanoate and 14 days for the phenol. Fluroxypyr MHE is rapidly converted to fluroxypyr acid in all soil types. Fluroxypyr is degraded microbially with representative soil half-lives for fluroxypyr MHE and acid of 11 to 38 days.

**Mobility in Soil:** MCPA and bromoxynil have moderate to high mobility potential, but are rapidly degraded. Field studies with fluroxypyr demonstrate no evidence of significant leaching.

**Bioaccumulation Potential:** MCPA and fluroxypyr have negligible potential. Bromoxynil octanoate can bioaccumulate, but will depurate.



**13. Disposal Considerations**

For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Disposal should be made in accordance with federal, provincial and local regulations.

Do not reuse container for any purpose. If applicable, return container in accordance with return program. If a recyclable container, dispose of at a container collection site. Contact local distributor, dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site, triple or pressure rinse the empty container adding rinsings to spray tank, and make container unsuitable for further use. If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

**14. Transport Information**

**Canadian TDG Description (Road & Rail):**

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (MCPA Ester, bromoxynil, fluroxypyr), Class 9, PG III, Marine pollutant.

Section 1.45.1 of the TDG Regulations provides an exemption from documentation and safety marks only for this product and only when transported by a road or railway vehicle.

**United States DOT Description:**

**< 119 gallons per completed package**

Non Regulated

**≥ 119 but < 300 gallons per completed package**

UN 3082, Environmentally hazardous substance, liquid, n.o.s., (MCPA ester, Bromoxynil octanoate), 9, III, Marine Pollutant, RQ

**≥ 300 gallons per completed package**

UN 3082, Environmentally hazardous substance, liquid, n.o.s., (MCPA ester, Bromoxynil octanoate), (Naphthalene), 9, III, Marine Pollutant, RQ

**IMDG**

UN 3082, Environmentally hazardous substance, liquid, n.o.s., (MCPA ester, Bromoxynil octanoate), 9, III, Marine Pollutant

**IATA**

UN 3082, Environmentally hazardous substance, liquid, n.o.s., (MCPA ester, Bromoxynil octanoate), 9, III, Marine Pollutant

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### 15. Regulatory Information

*Pest Control Products Act* Registration Number: ..... 30691

Read the approved label, authorized under the Pest Control Products Act, prior to using or handling the pest control product.

This chemical is a pest control product registered by Health Canada Pest Management Regulatory Agency and is subject to certain labelling requirements under the Pest Control Products Act. These requirements differ from the classification criteria and hazard information required for GHS-consistent safety data sheets. Following is the hazard information required on the pest control product label:



WARNING POISON  
POTENTIAL SKIN SENSITIZER  
EYE AND SKIN IRRITANT

WHMIS exempt.

### 16. Other Information

This Safety Data Sheet (SDS) is designed to comply with the Globally Harmonized System (GHS) of classification, and the *Hazardous Products Regulations*.

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. The product labeling provides that information specifically for product use as intended.

Company and published information is used in the development of this SDS. The information herein is presented in good faith and believed accurate at the date of publication. However, no warranty, expressed or implied, is given.

Revisions to the last issue: Addition of PMRA guidance info to Section 15.

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