

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Ultra Flourish®
EPA Reg. No.: 55146-73
Synonyms: Mefenoxam: (R)-2-[(2,6-dimethylphenyl) methoxyacetyl amino] propionic acid methyl ester
Product Type: Fungicide
Company Name: Nufarm Americas Inc. AGT Division
150 Harvester Drive, Suite 200
Burr Ridge, IL 60527
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
Date of Issue: May 4, 2012 **Supersedes:** January 18, 2007
Sections Revised: 2, 3, 4, 7, 8, 11, 13, 14

2. HAZARDS IDENTIFICATION**Emergency Overview:**

Appearance and Odor: Yellow colored liquid with sweet odor.

Warning Statements: Keep out of reach of children. WARNING. Causes substantial, but temporary eye injury. Harmful if swallowed, or absorbed through skin. Do not get in eyes or on clothing. Avoid contact with skin. Flash point 105°F (40.6°C).

Potential Health Effects:

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

Eye Contact: Moderately irritating. Vapors and mist can cause irritation.

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

Ingestion: 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.

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:

Do not apply directly to water, or to areas where surface water is present or intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

See Section 12: ECOLOGICAL INFORMATION for more information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

| COMPONENT | CAS NO. | % BY WEIGHT |
|----------------------------------|------------|-------------|
| Mefenoxam | 70630-17-0 | 25.1 |
| Other Ingredients Including: | | 74.9 |
| Petroleum Distillates, including | | |
| Naphthalene | 91-20-3 | |
| 1,2,4 Trimethylbenzene | 95-63-6 | |
| Cumene | 98-82-8 | |

4. FIRST AID MEASURES

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 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 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: If this product is ingested, lavage stomach. A slurry of activated charcoal in water can be left in the stomach. Contains petroleum distillates, vomiting may cause aspiration pneumonia.

5. FIRE FIGHTING MEASURES

Flash Point: 105° F (40.6° C) Pensky Martens

Autoignition Temperature: Not determined

Flammability Limits: Not determined

Extinguishing Media: Use foam, carbon dioxide, dry chemical.

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: Combustible liquid. Can release vapors that form explosive mixtures at temperatures at or above the flash point. Containers will burst from internal pressure under extreme fire conditions. If water is used to fight fire or cool containers, dike to prevent runoff contamination of municipal sewers and waterways.

Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as oxides of carbon and nitrogen.

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

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:

Wear protective eyewear such as goggles or face shield. 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 immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (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 at temperatures above 40° F. Crystals may form at lower storage temperatures. If this occurs, place the product in a warm room (68° F or above) and roll or shake the container at frequent intervals until all crystals are dissolved.

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, socks, shoes 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 | |
| Mefenoxam | NE | NE | NE | NE | |
| Naphthalene | 10 | NE | 10 (Skin) | 15 (Skin) | ppm |
| Trimethyl benzene (mixed isomers) | 25 | NE | 25 | NE | ppm |
| Cumene | 50 | NE | 50 | NE | ppm |

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Yellow colored liquid with sweet odor.

| | | | |
|--------------------------|-------------------|-----------------------------|------------------|
| Boiling Point: | Not determined | Solubility in Water: | Emulsifiable |
| Density: | 7.9 pounds/gallon | Specific Gravity: | Not determined |
| Evaporation Rate: | Not determined | Vapor Density: | Not determined |
| Freezing Point: | Not determined | Vapor Pressure: | Not determined |
| pH: | 5.17 | Viscosity: | 4.735 cSt @ 25°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

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

Conditions to Avoid: Avoid temperatures near or above flash point 105°F (40.6°C), heat or open flame.

Incompatible Materials: Strong oxidizing agents: bases and acids.

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

Hazardous Reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological Data:

Data from laboratory studies conducted on a similar, but not identical, formulation:

Oral: Rat LD₅₀: >1,172 mg/kg

Dermal: Rabbit LD₅₀: >2,020 mg/kg

Inhalation: Rat 4-hr LC₅₀: >3.6 mg/l

Eye Irritation: Rabbit: Moderately irritating

Skin Irritation: Rabbit: Slightly irritating

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

Subchronic (Target Organ) Effects: Repeated overexposure to mefenoxam may affect the liver.

Carcinogenicity / Chronic Health Effects: Mefenoxam did not cause cancer in laboratory animals. EPA has classified mefenoxam as a Group E (not likely to be carcinogenic in humans) carcinogen. The hydrocarbon component may contain naphthalene, which is listed by IARC as a class 2B and the U.S. National Toxicology Program as reasonably anticipated to be a human carcinogen.

Reproductive Toxicity: For mefenoxam, no reproductive effects observed.

Developmental Toxicity: For mefenoxam, no developmental effects observed.

Genotoxicity: Studies with mefenoxam 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 |
| Mefenoxam | No | No | No | No |
| Naphthalene | No | 2B | Yes* | No |

*Reasonably anticipated to be a human carcinogen

See Section 2: HAZARDS IDENTIFICATION for more information.

12. ECOLOGICAL INFORMATION**Ecotoxicity:**

Data on Mefenoxam:

| | | | |
|--|------------|---|------------|
| 96-hour LC ₅₀ Rainbow Trout: | >121 mg/l | Bobwhite Quail Oral LD ₅₀ : | >981 mg/kg |
| 48-hour EC ₅₀ Daphnia: | >113 mg/l | Bobwhite Quail 8-day Dietary LC ₅₀ : | >4,830 ppm |
| 48-hour Honey Bee Contact LD ₅₀ | >25 µg/bee | | |

Environmental Fate:

In soils, Mefenoxam is moderately stable under normal environmental conditions. The primary routes of dissipation in surface soil are aerobic soil metabolism from microbial degradation and uptake by plants. Hydrolysis, photolysis and volatilization are not significant routes of breakdown. Mefenoxam is very water soluble and variably binds to organic materials in the soils. In the aquatic environment, mefenoxam degrades moderately under both aerobic and anaerobic conditions by microbial degradation.

13. DISPOSAL CONSIDERATIONS**Waste Disposal Method:**

Open dumping is prohibited. Wastes resulting from the use of this product are actually toxic. Improper disposal of unused pesticide, spray mixture, or rinsate is a violation of Federal law. Pesticide, spray mixture, or rinsate that cannot be used according the label instruction must be disposed of according to Federal, state, or local procedures. For guidance in proper disposal methods, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office.

Container 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 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 containers 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. 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

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

DOT

≤119 gallons per completed package

Non Regulated

≥119 gallons per completed package

UN1993, combustible liquid, n.o.s., (1,2,4 Trimethylbenzene), 3, III

IMDG

UN1993, Flammable liquid, n.o.s., (1,2,4 Trimethylbenzene), 3, III

IATA

UN1993, Flammable liquid, n.o.s., (1,2,4 Trimethylbenzene), 3, 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, Fire

Section 313 Toxic Chemical(s):

Naphthalene (CAS No. 91-20-3), < 4.2% by weight in product

1,2,4 Trimethylbenzene (CAS No. 95-63-6), < 1.1% by weight in product

Cumene (CAS No. 98-82-8), < 1.1% by weight in product

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

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

Cumene (CAS No. 98-82-8) 5,000 pounds

RCRA Waste Code:

Naphthalene (CAS No. 91-20-3) U165

Cumene (CAS No. 98-82-8) U055

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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