Nufarm

**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:** Escalade$_{TM}$ [2]
**Synonyms:** Herbicide Mixture of 2,4-D, Fluroxypyr and Dicamba
**EPA Reg. No.:** 228-442

**Company Name:** Nufarm Americas Inc.
1333 Burr Ridge Parkway, Suite 125A
Burr Ridge, IL 60527

**Date of Issue:** July 15, 2005 **Supersedes:** June 17, 2005
**Sections Revised:** 1, 2 and 9

## 2. HAZARDS IDENTIFICATION

**Emergency Overview:**
**Appearance and Odor:** Amber colored liquid with an amine odor.
**Warning Statements:** Keep out of reach of children. WARNING. Avoid contact on skin, eyes or clothing. Causes substantial but temporary eye injury. Harmful if swallowed or absorbed through skin. Do not get in eyes, on skin or on clothing.

**Potential Health Effects:**
**Likely Routes of Exposure:** Inhalation, eye and skin contact
**Eye Contact:** Causes substantial but temporary eye damage. Vapors and mist may cause irritation.
**Skin Contact:** Moderately irritating. Overexposure by skin absorption may cause symptoms similar to those for ingestion.
**Ingestion:** Harmful if swallowed. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation, weakness and central nervous system depression.
**Inhalation:** Low inhalation toxicity.
**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. Drift or runoff from treated areas may be hazardous to aquatic organisms and non-target plants.

See Section 12: ECOLOGICAL INFORMATION for more information

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

| COMPONENT | CAS NO. | % BY WEIGHT |
|---|---|---|
| Dimethylamine Salt of 2,4-Dichlorophenoxyacetic Acid | 2008-39-1 | 39.53 |
| 1-Methylheptyl Ester of Fluroxypyr | 81406-37-3 | 5.90 |
| Dicamba (3,6-Dichloro-o-Anisic Acid) | 1918-00-9 | 4.10 |
| Other Ingredients Including: | | 50.47 |
| Aromatic Solvent | 64742-94-5 | |
| (Contains Naphthalene) | 91-20-3 | |

## 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 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 on Skin:** 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 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.

## 5. FIRE FIGHTING MEASURES

**Flash Point:** >230°F (>110°C) Setaflash
**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 hydrogen chloride, nitrogen oxides, and carbon oxides.

**National Fire Protection Association (NFPA) Hazard Rating:**
**Rating for this product: Health:** 2 **Flammability:** 1 **Reactivity:** 1
Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

## 6. ACCIDENTIAL 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 Clean-Up 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. Do not get in eyes, on skin or on clothing. Users should wash hands, face, and arms with soap and water before eating, smoking, 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.

If the container is over one gallon and less than five gallons, then persons engaged in open pouring of the product must also wear coveralls or a chemical-resistant apron. If the container is five gallons or more in capacity, do not open pour product from the container. A mechanical system (such as a probe and pump or spigot) must be used for transferring the contents of the container. If the contents of a non-refillable pesticide container are emptied, the probe must be rinsed before removal.

**Storage:**
Always use original container to store pesticides in a secured warehouse or storage building. Protect from freezing. Store at temperatures above 25°F. If allowed to freeze, remix before using. This does not alter the product. Containers should be opened in well-ventilated areas. Keep container tightly sealed when not in use. Do not stack cardboard cases more than two pallets high. Do not store near open containers of fertilizer, seed or other pesticides. 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 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. When open pouring the product, also wear coveralls or a chemical-resistant apron. An emergency shower 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:**

| | OSHA | | ACGIH | | |
|---|---|---|---|---|---|
| Component | TWA | STEL | TWA | STEL | Unit |
| DMA Salt of 2,4-D | 10* | NE | 10* | NE | $mg/m^3$ |
| Fluroxypyr | NE | NE | NE | NE | |
| Dicamba | NE | NE | NE | NE | |
| Naphthalene | 10 | NE | 10 (Skin) | 15 (Skin) | ppm |

*Based on adopted limit for 2,4-D
NE = Not Established

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance and Odor:** Amber colored liquid with an amine odor.

| | | | |
|---|---|---|---|
| **Boiling Point:** | Not determined | **Solubility in Water:** | Soluble |
| **Density:** | 9.74 pounds/gallon | **Specific Gravity:** | 1.169 |
| **Evaporation Rate:** | Not determined | **Vapor Density:** | Not determined |
| **Freezing Point:** | 25°F (4°C) | **Vapor Pressure:** | Not determined |

**pH:** 5.9 (1% solution) **Viscosity:** 51.6 cps @ 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:** 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, nitrogen oxides, and carbon oxides.
**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 $LD_{50}$: 1, 750 mg/kg (female); FIFRA Category III
**Dermal:** Rats $LD_{50}$: >2,000 and <5,000 mg/g; FIFRA Category III
**Inhalation:** Rat 4-hr $LC_{50}$: >2.07 mg/L; FIFRA Category IV
**Eye Irritation:** Rabbits (3): Moderately irritating; FIFRA Category II
**Skin Irritation:** Rabbits (3); Moderately irritating; FIFRA Category III
**Skin Sensitization:** Not a contact sensitizer in guinea pigs following repeated skin exposure.

**Subchronic (Target Organ) Effects:** Repeated overexposure may cause effects to liver, kidneys, blood chemistry, testes and gross motor function. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses for prolonged periods.
**Carcinogenicity / Chronic Health Effects:** The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as a class 2B carcinogen, the category for limited evidence for carcinogenicity in humans. However, more current 2,4-D lifetime feeding studies in rats and mice did not show carcinogenic potential. The U.S. EPA has given 2,4-D and dicamba a Class D classification (not classifiable as to human carcinogenicity). Fluroxypyr did not cause cancer in laboratory animals. 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:** No impairment of reproductive function attributable to 2,4-D have been noted in laboratory animal studies. 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:** Studies in laboratory animals with 2,4-D have shown decreased fetal body weights and delayed development in the offspring at doses toxic to mother animals. 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:** There have been some positive and some negative studies, but the weight of evidence is that 2,4-D is not mutagenic. Animal tests with fluroxypyr and dicamba did not demonstrate mutagenic effects.

**Assessment Carcinogenicity:**
This product contains substances that are considered to be probable or suspected human carcinogens as follows:

| | Regulatory Agency Listing As Carcinogen | | | |
|---|---|---|---|---|
| **Component** | **ACGIH** | **IARC** | **NTP** | **OSHA** |
| Chlorophenoxy Herbicides | No | 2B | No | No |
| Naphthalene | No | 2B | Yes* | No |

*Reasonably anticipated to be a human carcinogen

See Section 2: HAZARDOUS IDENTIFICATION for more information.

## 12. ECOLOGICAL INFORMATION

**Ecotoxicity:**

Data on 2,4-D Dimethylamine Salt

| | | | |
|---|---|---|---|
| 96-hour $LC_{50}$ Bluegill: | 524 mg/l | Bobwhite Quail Oral $LD_{50}$: | 500 mg/kg |
| 96-hour $LC_{50}$ Rainbow Trout: | 250 mg/l | Mallard Duck 8 day Dietary $LC_{50}$: | >5,620 ppm |
| 48 hour $EC_{50}$ Daphnia: | 184 mg/l | | |

*Data on Fluroxypyr 1-Methylheptyl Ester:

| | | |
|---|---|---|
| Acute $LC_{50}$ Blue Gill: above water solubility | Bobwhite Quail Acute Oral $LD_{50}$: | >2,000 mg/kg |
| Acute $LC_{50}$ Rainbow Trout: above water solubility | Mallard Duck Acute Oral $LC_{50}$: | >2,000 mg/kg |

Acute Immobilization EC 50 Daphnia Magna: >499 µg/L

*Fluroxypyr 1-Methylheptyl Ester is highly insoluble in water.

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:**

In laboratory and field studies, 2,4-D DMA salt rapidly dissociated to parent acid in the environment. The typical half-life of the resultant 2,4-D acid ranged from a few days to a few weeks. Fluroxypyr has a hydrolysis half-life of 12.8 to 16.5 hours. Under aerobic and anaerobic soil conditions the half-life for Fluroxypyr is 7 days. Dicamba has low bioaccumulation potential, is not persistent in soil, is highly mobile in soil and degrades rapidly.

## 13. DISPOSAL CONSIDERATIONS

**Waste Disposal Method:**

Pesticide wastes are toxic. If container is damaged or if pesticide has leaked, contain all spillage. Absorb and clean up all spilled material with granules or sand. Place in a closed, labeled container for proper disposal. Improper disposal of excess pesticide, spray mixtures, or rinsate is a violation of Federal law and may contaminate groundwater. 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:**

**Plastic Bottles and Non-Returnable Plastic Drums:** Triple rinse (or equivalent). 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.

**Returnable/Refillable Containers:** Close all openings and replace all caps. Contact Nufarm Customer Service at 1-800-345-3330, to arrange for return of the empty refillable container.

## 14. TRANSPORTATION INFORMATION

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

For Department of Transportation (DOT) regulatory information, if required, consult transportation regulations, product-shipping papers or call Nufarm's DOT Manager at 708-755-2104, Monday through Friday, 8:00 AM to 5:00 PM Central Time.

## 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):**
Acetic Acid, (2,4-Dichlorophenoxy)- (CAS No. 94-75-7), 32.83% equivalent by weight in product
Dicamba (CAS No. 1918-00-9), 4.10% by weight in product
Naphthalene (CAS No. 91-20-3), 0.77% by weight in product

**Reportable Quantity (RQ) under U.S. CERCLA:**
Acetic Acid, (2,4-Dichlorophenoxy)- (CAS No. 94-75-7) 100 pounds
Dicamba (CAS No. 1918-00-9) 1,000 pounds
Naphthalene (CAS No. 91-20-3) 100 pounds

**RCRA Waste Code:**
Acetic Acid, (2,4-Dichlorophenoxy)- (CAS No. 94-75-7) U240
Naphthalene (CAS No. 91-20-3) U165

**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.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Nufarm Americas Inc. makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Nufarm Americas Inc. be responsible for damages of any nature whatsoever resulting from the use or of reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.

#11278

syngenta

# MATERIAL SAFETY DATA SHEET

**Syngenta Crop Protection, Inc**
**Post Office Box 18300**
**Greensboro, NC 27419**

**In Case of Emergency, Call**
**1-800-888-8372**

## 1. CHEMICAL IDENTIFICATION

Product Name: **BARRICADE 4FL HERBICIDE** Product No.: A12333D

EPA Signal Word: Caution

Active Ingredient(%): Prodiamine (40.7%) CAS No.: 29091-21-2

Chemical Name: N3,N3-Di-n-propyl-2,4-dinitro-6-(trifluoromethyl)-m-phenylenediamine

Chemical Class: Dinitoaniline Herbicide

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

| Material | OSHA PEL | ACGIH TLV | Other | NTP/IARC/OSHA Carcinogen |
|---|---|---|---|---|
| Propylene Glycol | Not Established | Not Established | 50 ppm 8-hr TWA AIHA WEEL | No |
| Attapulgite Clay | Not Established | Not Established | Not Established | IARC, 3 |
| Crystalline Silica, Quartz | 10 mg/m3/%SiO2+2 (Respirable) | 0.1 mg/m3 (Respirable) | Not Established | IARC, 2A |
| Prodiamine (40.7%) | Not Established | Not Established | Not Established | No |

## 3. HAZARDS IDENTIFICATION

Symptoms of Acute Exposure

Exposure may cause eye or skin irritation. A skin sensitizing (allergic) reaction may occur in some individuals.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Yellow liquid

Odor: Not Available

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

## 4. FIRST AID MEASURES

If poisoning is suspected, immediately contact a physician, the nearest hospital, or the nearest Poison Control Center. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given.

Ingestion: If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.

Inhalation: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

Notes to Physician

There is no specific antidote if this product is ingested.

Treat symptomatically.

Medical Condition Likely to be Aggravated by Exposure

Not known

## 5. FIRE FIGHTING MEASURES

Fire and Explosion

| | |
|---|---|
| Flash Point (Test Method): | Not Available |
| Flammable Limits (% in Air): | Lower: %; Upper: % Not Available |
| Autoignition Temperature: | Not Available |
| Flammability: | Not Available |

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

In Case of Fire

Use dry chemical, foam or CO2 extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

## 6. ACCIDENTAL RELEASE MEASURES

In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions in Protective Equipment Section. If a solid, sweep up material and place in a compatible disposal container. If a liquid, cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

## 7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

## 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 APPLICATIONS AND ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.**

Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

| | |
|---|---|
| Eye Contact: | Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. |
| Skin Contact: | Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear. |
| Inhalation: | Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below exposure limits. Concentrate can dry to a highly irritating dust. A NIOSH-certified combination air-purifying respirator with an N, P or R 95 or HE class filter and an organic vapor cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a pressure demand atmosphere-supplying respirator if there is any potential for uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection. |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Appearance: | Yellow liquid |
| Odor: | Not Available |
| Melting Point: | Not Available |
| Boiling Point: | Not Available |
| Specific Gravity/Density: | 1.17 g/mL |
| pH: | 7.7 |

Solubility in H2O

Prodiamine : 0.013 ppm @ 25C (77F)

Vapor Pressure

Prodiamine : 1.00E-06 mm Hg @ 20C (68F)

## 10. STABILITY AND REACTIVITY

Reactivity

| | |
|---|---|
| Stability: | Stable under standard conditions. |
| Hazardous Polymerization: | Will not occur. |
| Conditions to Avoid: | Oxidizing agents, thermal and electrical ignition sources. |

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

## 11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies

| | | |
|---|---|---|
| Ingestion: | Practically Non-Toxic | |
| | Oral LD50 (Rat) : | > 5,000 mg/kg body weight |
| Dermal: | Practically Non-Toxic | |
| | Dermal LD50 (Rat) : | > 5,000 mg/kg body weight |
| Inhalation: | Practically Non-Toxic | |
| | Inhalation LC50 (Rat) : | > 2.55 mg/l air - 4 hours |
| Eye Contact: | Minimally Irritating (Rabbit) | |
| Skin Contact: | Slightly Irritating (Rabbit) | |
| Skin Sensitization: | Sensitizing (Guinea Pig) | |

Mutagenic Potential

Prodiamine: None Observed

Reproductive Hazard Potential

Prodiamine: Fetal toxicity at high dose levels (rats); developmental and maternal toxicity observed at 1g/kg/day.

Chronic/Subchronic Toxicity Studies

Prodiamine: Liver (alteration and enlargement) and thyroid effects (hormone imbalances) at high dose

levels (rats); decreased body weight gains.

Carcinogenic Potential

Prodiamine: Benign thyroid tumors (rat). None observed (mouse).

Other Toxicity Information

Not Available

Toxicity of Other Components

Attapulgite Clay

Listed as an IARC (Group 3) carcinogen not classifiable as human carcinogen (No Data Available) with limited animal evidence. Prolonged or repeated inhalation of dust may cause a disabling, progressive pulmonary fibrosis. Inhalation hazard may not exist in the liquid form. May cause eye irritation.

Propylene Glycol

Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea. Also, eye irritation may occur with lacrimation but no residual discomfort or injury. Prolonged contact to skin may cause mild to moderate irritation and possible allergic reactions. Chronic dietary exposure caused kidney and liver injury in experimental animals.

Target Organs

Active Ingredients

| | |
|---|---|
| Prodiamine | Liver and Thyroid |

Inert Ingredients

| | |
|---|---|
| Attapulgite Clay | : Respiratory Tract and Eyes |
| Propylene Glycol | : Central Nervous System, Skin, Eyes, Kidneys and Liver |

## 12. ECOLOGICAL INFORMATION

Summary of Effects

Prodiamine:

Not Available

Eco-Acute Toxicity

Prodiamine: Rainbow Trout 96-hour LC50 >829 ug/L
Bluegill Sunfish 96-hour LC50 >552 ug/L
Daphnia magna 48-hour LC50 >658 ug/L

Eco-Chronic Toxicity

Prodiamine: Not Available

Environmental Fate

Prodiamine:

No data available for the formulation. The information presented here is for the active ingredient, prodiamine. A thorough review of environmental information is not possible in this document. For additional information call the toll free number listed in Section 16.

ENVIRONMENTAL PERSISTENCE/MOBILITY:

Stable in sterile water, in the dark at pH 5,7 and 9, but degrades rapidly in the light, in both water ($t_{1/2}$ = 0.3 hr @ pH 5.5) and soil ($t_{1/2}$ = 50 hr). Degradation in soil, in the dark is variable under aerobic conditions ($t_{1/2}$ ~ 57 - 218 d), more rapid under anaerobic conditions ($t_{1/2}$ ~ 30 d). Immobile in various soils (Koc >9000). Bioaccumulation is high (BCF = 1300X, whole fish).

## 13. DISPOSAL CONSIDERATION

Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

## 14. TRANSPORT INFORMATION

DOT Classification:
Not regulated by DOT.

B/L Freight Classification
Herbicides, NOIBN

International Transportation
(Water): Not Applicable

## 15. REGULATORY INFORMATION

SARA Title III Classification
Section 311/312: Acute Health Hazard
Section 313 chemical(s): Not Applicable

Proposition 65
Not Applicable

CERCLA Reportable Quantity (RQ)
None

RCRA Classification
Not Applicable

TSCA Status
Exempt from TSCA, subject to FIFRA

## 16. OTHER INFORMATION

NFPA Hazard Ratings

| | |
|---|---|
| Health: | 1 |
| Flammability: | 1 |
| Reactivity: | 0 |

| | |
|---|---|
| 0 | Least |
| 1 | Slight |
| 2 | Moderate |
| 3 | High |
| 4 | Severe |
| 5 | Not Known |

Questions concerning the safe handling of the product should be referred to:

1-800-334-9481

Issued Date: 10/01/2001
Revised Date: Supersedes:

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