## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** **Change Up™ Selective Herbicide**
**EPA Reg. No.:** 228-445
**Product Type:** Herbicide

**Company Name:** Nufarm Americas Inc.
11901 S. Austin Avenue
Alsip, IL 60803
1-800-345-3330

**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**

**This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not the same as the FIFRA label. Certain sections of this SDS are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.**

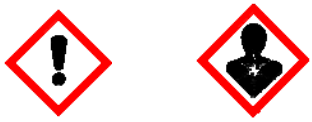
## 2. HAZARDS IDENTIFICATION

**HEALTH HAZARDS:**

| | |
|---|---|
| Serious eye damage | Category 2A |
| Skin irritation | Category 2 |
| Acute toxicity, oral | Category 4 |
| Acute toxicity, inhalation | Category 4 |
| Specific target organ toxicity – Repeated exposure | Category 2 |

**SIGNAL WORD:**
WARNING

**HAZARD STATEMENTS**:
Causes serious eye damage. Causes skin irritation. Harmful if swallowed or inhaled. May cause damage to organs (liver kidneys) through prolonged or repeated exposure.



**PRECAUTIONARY STATEMENTS**
Wash thoroughly after handling. Wear face shield, chemical goggles or shielded safety glasses. 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 irritation persists.

Wash thoroughly after handling. Wear chemical resistant gloves. 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 skin irritation occurs, get medical attention. Take off contaminated clothing and wash it before reuse

Harmful if swallowed. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. If swallowed, call a poison control center or doctor if you feel unwell. Rinse mouth. Dispose of contents and container in accordance with local and state regulations.

Avoid breathing mist, vapor, or spray. Use only outdoors or in a well-ventilated area. 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.

Do not breathe mist, vapor, or spray. Get medical advice/attention if you feel unwell.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

| COMPONENT | CAS NO. | % BY WEIGHT |
|---|---|---|
| Dimethylamine Salt of 2-Methyl-4-Chlorophenoxyacetic Acid | 2039-46-5 | 51.05 |
| 1-Methylheptyl Ester of Fluroxypyr | 81406-37-3 | 6.00 |
| Dicamba (3,6-Dichloro-o-Anisic Acid) | 1918-00-9 | 4.17 |
| Other Ingredients Including: | | 38.78 |
| Aromatic Solvent | 64742-94-5 | |
| (Contains Naphthalene) | 91-20-3 | |

**Synonyms:** Mixture of MCPA, Fluroxypyr and Dicamba

## 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 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 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

**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 and oxides of carbon and nitrogen.

## 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 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**:
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.

**STORAGE:**
Always use original container to store pesticides in a secured warehouse or storage building. Protect from freezing. Store at temperatures above 25° F. Protect product from freezing. 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. 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, and shoes plus socks. When mixing, loading or using any hand-held equipment, wear chemical-resistant gloves. 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:**

| | OSHA | | ACGIH | | |
|---|---|---|---|---|---|
| **Component** | TWA | STEL | TWA | STEL | Unit |
| Dimethylamine Salt MCPA | NE | NE | NE | NE | |
| Fluroxypyr | NE | NE | NE | NE | |
| Dicamba | NE | NE | NE | NE | |
| Naphthalene | 10 | NE | 10 (Skin) | 15 (Skin) | ppm |

NE = Not Established

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| **Appearance:** | Amber liquid |
| **Odor:** | Mild amine-like odor |
| **Odor threshold:** | No data available |
| **pH:** | 9-10 |
| **Melting point/freezing point:** | No data available |
| **Initial boiling point and boiling range** | No data available |
| **Flash point:** | >230° F (>110° C) Setaflash |
| **Evaporation rate:** | No data available |
| **Flammability (solid, gas):** | No data available |
| **Upper/lower flammability or explosive limits:** | No data available |
| **Vapor pressure:** | No data available |
| **Vapor density:** | No data available |
| **Relative density:** | 1.151 @ 25º C |
| **Solubility(ies):** | Soluble |
| **Partition coefficient: n-octanol/water:** | No data available |
| **Autoignition temperature:** | No data available |
| **Decomposition temperature:** | No data available |
| **Viscosity:** | 108.4 cPs @ 25º 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 and oxides of carbon and nitrogen.
**Hazardous Reactions:** Hazardous polymerization will not occur.

## 11. TOXICOLOGICAL INFORMATION

**Potential Health Effects:**
**Likely Routes of Exposure:** Inhalation, ingestion, 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.

**Toxicological Data:**
Data from laboratory studies conducted on a similar, but not identical, formulation:
**Oral:** Rat $LD_{50}$: 1, 750 mg/kg (female)
**Dermal:** Rat $LD_{50}$: >2,000 mg/kg
**Inhalation:** Rat 4-hr $LC_{50}$: >2.03 mg/L
**Eye Irritation:** Rabbit: Severely irritating
**Skin Irritation:** Rabbit: Moderately irritating
**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, newer rat and mouse lifetime feeding studies did not show carcinogenic potential for MCPA. Fluroxypyr did not cause cancer in laboratory animals. The U.S. EPA has given dicamba a Class D classification (not classifiable as to human carcinogenicity). 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:** Testicular effects and lower male fertility have been noted in animal studies for MCPA. 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:** MCPA studies in laboratory animals 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 MCPA 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

## 12. ECOLOGICAL INFORMATION

**Environmental Hazards:**
Drift or runoff from treated areas may be hazardous to aquatic organisms and non-target plants.

**Data on MCPA Dimethylamine Salt:**

| | | | |
|---|---|---|---|
| 96-hour $LC_{50}$ Bluegill: | >164 mg/l | Bobwhite Quail Oral $LD_{50}$: | 478 mg/kg |
| 96-hour $LC_{50}$ Rainbow Trout: | 119 mg/l | Mallard Duck 8 day Dietary $LC_{50}$: | >5,620 ppm |
| 48 hour $EC_{50}$ Daphnia: | 100 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:**
MCPA dimethylamine salt rapidly dissociates to parent MCPA acid in the environment. In soil, MCPA is microbially degraded with a typical half-life of approximately 10 to 14 days. 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. 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:**
**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 Container 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. If practical, 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 SDS.

**DOT:**

**< 2,500 gallons per complete package**
Non Regulated

**≥ 2,500 gallons per complete package**
UN 3082, Environmentally hazardous substance, liquid, n.o.s., (Dicamba), 9, III, RQ

**IMDG:**
Non Regulated

**IATA:**
Non Regulated

## 15. REGULATORY INFORMATION

### EPA FIFRA INFORMATION

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

WARNING. Causes substantial but temporary eye injury. Harmful if swallowed or absorbed through skin. Do not get in eyes, on skin or on clothing.

### 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 370.66):**
Immediate and Delayed

**Section 313 Toxic Chemical(s):**
MCPA (CAS No. 94-74-6), 41.68% equivalent by weight in product
Dicamba (CAS No. 1918-00-9), 4.17% by weight in product
Naphthalene (CAS No. 91-20-3), <0.67% by weight in product

**Reportable Quantity (RQ) under U.S. CERCLA:**
Dicamba (CAS No. 1918-00-9) 1,000 pounds
Naphthalene (CAS No. 91-20-3) 100 pounds

**RCRA Waste Code:**
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.

**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

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

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED PRODUCT LABELING (attached to and accompanying the product container). 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, 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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**Date of Issue:** October 31, 2014 **Supersedes:** August 15, 2013