

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **HORSEPOWER® Selective Herbicide**
EPA Reg. No.: 228-313
Synonyms: Mixture of MCPA, Triclopyr and Dicamba
Product Type: Herbicide

Company Name: Nufarm Americas Inc.
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: June 1, 2009 **Supersedes:** May 22, 2007
Sections Revised: New or updated information all sections

2. HAZARDS IDENTIFICATION**Emergency Overview:**

Appearance and Odor: Amber colored liquid with amine odor.

Warning Statements: Danger. Keep out of reach of children. Corrosive, causes irreversible eye damage. Harmful if swallowed or absorbed through skin. Do not get in eyes, on skin or on clothing. Avoid contact with eyes, skin or clothing.

Potential Health Effects:

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

Eye Contact: Causes irreversible eye damage. Vapors and mist can cause irritation.

Skin Contact: Minimally irritating. Overexposure by skin absorption may cause symptoms similar to those for ingestion.

Ingestion: Harmful if swallowed. May cause nausea, vomiting, abdominal pain, decreased blood pressure, muscle weakness, muscle spasms.

Inhalation: Minimally irritating. May irritate the respiratory tract or cause dizziness.

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 may be toxic to fish, aquatic invertebrates and aquatic plants. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

See Section 12: ECOLOGICAL INFORMATION for more information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Dimethylamine Salt of 2-Methyl-4-Chlorophenoxyacetic Acid	2039-46-5	48.99
Triethylamine Salt of 3,5,6-Trichloro-2-Pyridinyloxyacetic Acid	57213-69-1	5.59
Dimethylamine Salt of Dicamba (3,6-Dichloro-o-Anisic Acid)	2300-66-5	4.82
Other Ingredients		40.60

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. 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: This product is corrosive to the eyes. Probable mucosal damage may contraindicate the use of gastric lavage.

5. FIRE FIGHTING MEASURES

Flash Point: Not applicable due to aqueous formulation

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 or cool containers, dike to prevent runoff contamination of municipal sewers and waterways.

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

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

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. Avoid contact with eyes, skin or clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove 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 store pesticides in a secured warehouse or storage building. Store at temperatures above 32°F. If allowed to freeze, remix before using. This does not alter this product. Containers should be opened in well-ventilated areas. Keep container tightly sealed with 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 or goggles. 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 made of any waterproof material. For overhead exposure, wear chemical-resistant headgear. 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	
DMA Salt MCPA	NE	NE	NE	NE	
TEA Salt of Triclopyr	NE	NE	NE	NE	
DMA Salt of Dicamba	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Amber colored liquid with amine odor.

Boiling Point: Not determined
Density: 9.58 pounds/gallon
Evaporation Rate: Not determined
Freezing Point: 32°F (0°C)
pH: 6.5 – 8.5

Solubility in Water: Soluble
Specific Gravity: 1.150 @ 20°C
Vapor Density: Not determined
Vapor Pressure: Not determined
Viscosity: 29.0 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 and oxides of carbon and nitrogen.
Hazardous Reactions: Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicological Data:

Data from laboratory studies on this product are summarized below:

- Oral:** Rat LD₅₀: 1,207 mg/kg
- Dermal:** Rabbit LD₅₀: >2,700 mg/kg
- Inhalation:** Rabbit: 4-hr LC₅₀: >2.2 mg/L
- Eye Irritation:** Rabbit: Severely Irritating/Corrosive
- 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 phenoxy herbicides may cause effects to liver, kidneys, blood chemistry, 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. Excessive exposure to Triclopyr may cause liver or kidney effects. Repeated overexposure to dicamba may cause liver changes or a decrease in body weight.

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. Triclopyr did not cause cancer in laboratory studies. Dicamba did not cause cancer in long-term animals studies. The U.S. EPA has given triclopyr and dicamba a Class D classification (not classifiable as to human carcinogenicity).

Reproductive Toxicity: MCPA studies in laboratory animals have shown testicular effects and lower male fertility. For triclopyr, in laboratory animal studies, effects on reproduction have been seen only at doses that produced significant toxicity to the parent animals. 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. For triclopyr, birth defects are unlikely. Even exposures having an adverse effect on the mother should have no effect on the fetus. 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 triclopyr 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:

Component	Regulatory Agency Listing As Carcinogen			
	ACGIH	IARC	NTP	OSHA
Chlorophenoxy Herbicides	No	2B	No	No

See Section 2: HAZARDS IDENTIFICATION for more information.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on MCPA DMA:

96-hour LC ₅₀ Bluegill:	>310 mg/l	Bobwhite Quail Oral LD ₅₀ :	390 mg/kg
96-hour LC ₅₀ Rainbow Trout:	230 mg/l	Mallard Duck 8-day Dietary LC ₅₀ :	>5,620 ppm
48-hour EC ₅₀ Daphnia:	190 mg/l		

Data on Triclopyr TEA:

96-hour LC ₅₀ Bluegill:	893 ppm	Bobwhite Quail 8-day Dietary LC ₅₀ :	>10,000 ppm
96-hour LC ₅₀ Rainbow Trout:	613 ppm	Mallard Duck Oral LD ₅₀ :	2,055 mg/kg
48 hour EC ₅₀ Daphnia:	947 ppm	Mallard Duck 8-day Dietary LC ₅₀ :	>10,000 ppm

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 DMA rapidly dissociates to parent MCPA in the environment. In soil, MCPA is microbially degraded with a typical half-life of approximately 10 to 14 days. In laboratory and field studies, Triclopyr TEA rapidly dissociates to parent acid in the environment. Triclopyr is moderately persistent and mobile. In soil, the predominant degradation pathway is microbial and the average half-life is 30 days. Half-lives tend to be shorter in warm, moist soils with a high organic content. The predominant degradation pathway for triclopyr in water is photodegradation and the average half-life is one day. Dicamba poorly binds to soil particles, is potentially mobile in the soil and highly soluble in water. Aerobic soil metabolism is the main degradative process for dicamba with a typical half-life of 2 weeks. Degradation is slower when low soil moisture limits microbe populations. In water, microbial degradation is the main route of dicamba dissipation. Aquatic hydrolysis, volatilization, adsorption to sediments, and bioconcentration are not expected to be significant.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Pesticide wastes are acutely hazardous. 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:

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.

14. TRANSPORTATION INFORMATION

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

DOT

< 2,322 gallons per complete package

Non Regulated

≥ 2,322 gallons per complete package

RQ, UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DICAMBA), 9, III

IMDG

Non-regulated

IATA

Non Regulated

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 and Delayed

Section 313 Toxic Chemical(s):

Dicamba (CAS No. 1918-00-9), 4.0% equivalent by weight in product

Triclopyr, Trimethylammonium Salt (CAS No. 57213-69-1), 5.59% by weight in product

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

Dicamba (CAS No. 1918-00-9) 1,000 pounds

RCRA Waste Code:

None Listed

State Information:

Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not Listed**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

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