



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: Dynamo™ 40 WSP Herbicide
Synonyms: S,S-dimethyl 2-(difluoromethyl)-4-(2-methylpropyl)-6-(trifluoromethyl)-3,5-pyridinedicarbothioate
EPA Reg. No.: 228-540
Company Name: Nufarm Americas Inc.
 150 Harvester Drive, Suite 200
 Burr Ridge, IL 60527
Date of Issue: July 16, 2007 **Supersedes:** New
Sections Revised: New

2. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance and Odor: White powder.

Warning Statements: Keep out of reach of children. CAUTION. Causes moderate eye irritation. Harmful if absorbed through skin or if inhaled. Avoid contact with eyes, skin or clothing.

Potential Health Effects:

Likely Routes of Exposure: Inhalation, skin and eye contact

Eye Contact: Causes moderate eye irritation.

Skin Contact: Slightly toxic and practically non-irritating based on toxicity studies.

Ingestion: Slightly toxic based on toxicity studies.

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 and highly toxic to other aquatic organisms including oysters and shrimp.

See Section 12: ECOLOGICAL INFORMATION for more information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Dithiopyr	97886-45-8	40.0
Other Ingredients Including: Silica, amorphous	112926-00-8	60.0

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: 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.

5. FIRE FIGHTING MEASURES

Flash Point: Not applicable

Autoignition Temperature: Not applicable

Flammability Limits: Not applicable

Extinguishing Media: Carbon dioxide, dry chemical, water spray.

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 fluoride and oxides of carbon and nitrogen.

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 1 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 Cleanup and Disposal: If dry, sweep or scoop up material and place into container for disposal. If wet, 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 eyes, skin or clothing. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. 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 this product only in its original container in a dry, cool, secured storage area. Store this product above 32°F. 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 chemical goggles or shielded 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, socks, shoes and chemical-resistant gloves made of any waterproof material. 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	
Dithiopyr	NE	NE	NE	NE	
Amorphous silica	15 (T) 5 (R)	NE	NE	NE	mg/m ³

T = Total Dust
R = Respirable Fraction

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES
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Appearance and Odor: White powder.

Boiling Point: Not applicable

Density: 0.216 g/ml (tap)

Evaporation Rate: Not applicable

Freezing Point: Not applicable

pH: 7.72 (1% solution)

Solubility in Water: Soluble

Specific Gravity: Not applicable

Vapor Density: Not applicable

Vapor Pressure: Not applicable

Viscosity: Not applicable

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.

Hazardous Decomposition Products: Under fire conditions may produce gases such as hydrogen fluoride and 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: >5,000 mg/kg
- Dermal:** Rabbit LD₅₀: >5,000 mg/kg
- Inhalation:** Rat 4-hr LC₅₀: >5.0 mg/L
- Eye Irritation:** Rabbit: Slightly irritating
- Skin Irritation:** Rabbit: Practically non-irritating

Subchronic (Target Organ) Effects: Repeated overexposure to dithiopyr may cause effects to liver, kidney, adrenal gland, thyroid, gall bladder and blood.

Carcinogenicity / Chronic Health Effects: Prolonged overexposure to dithiopyr can cause effects to liver and kidneys. Dithiopyr did not cause cancer in laboratory animals.

Reproductive Toxicity: In animal studies, dithiopyr did not interfere with reproduction.

Developmental Toxicity: Dithiopyr did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Genotoxicity: *In-vitro* studies were negative for dithiopyr.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

See Section 2: HAZARDS IDENTIFICATION for more information.

12. ECOLOGICAL INFORMATION**Ecotoxicity:**

Data on Dithiopyr:

96-hour LC ₅₀ Bluegill:	0.47 mg/l	Bobwhite Quail 8-day Dietary LC ₅₀ :	>5,620 ppm
96-hour LC ₅₀ Rainbow Trout:	0.46 mg/l	Bobwhite Quail Oral LD ₅₀ :	>2,250 mg/kg
48-hour EC ₅₀ Daphnia:	17 mg/l	Mallard Duck 8-day Dietary LC ₅₀ :	>5,620 ppm
Honey Bee LD ₅₀ :	81 µg/bee		

Environmental Fate:

Dithiopyr has a low solubility in water and has a high tendency to bind to soil. Dithiopyr is stable to hydrolysis in neutral and mildly alkaline solutions. Photodegradation in water could contribute significantly to the overall degradation of dithiopyr in the environment. Photodegradation of dithiopyr on soil is not significant.

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

Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Container Handling and Disposal:

Completely empty bags into application equipment. Then dispose of empty bag in a sanitary landfill or 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

Non Regulated – See 49 CFR 173.132(b)(3)

IMDG

Non Regulated – See IMDG 2.6.2.1.3

IATA

Non Regulated – See IATA 3.6.1.5.3

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):** Delayed**Section 313 Toxic Chemical(s):** None**Reportable Quantity (RQ) under U.S. CERCLA:** None**RCRA Waste Code:** None**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.

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