

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Nufarm Halosulfuron Pro
EPA Reg. No.: 2749-528-228
Synonyms: Halosulfuron-methyl: Methyl 5-[(4,6-dimethoxy-2-pyrimidinyl) amino] carbonyl aminosulfonyl-3-chloro-1-methyl-1H-pyrazole-4-carboxylate
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: March 6, 2009 **Supersedes:** March 5, 2009
Sections Revised: 1 and 3

2. HAZARDS IDENTIFICATION**Emergency Overview:**

Appearance and Odor: Light tan colored powder with a mild soapy odor.

Warning Statements: Caution. Keep out of reach of children. Causes moderate eye irritation. Harmful if swallowed. Avoid contact with eyes or clothing.

Potential Health Effects:

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

Eye Contact: Moderately irritating based on toxicity studies.

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

Ingestion: Moderately 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 non-target vascular plants.

See Section 12: ECOLOGICAL INFORMATION for more information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Halosulfuron-Methyl	100784-20-1	75.0
Other Ingredients		25.0

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 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: Not applicable

Autoignition Temperature: Not applicable

Flammability Limits: Not applicable

Extinguishing Media: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.

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 oxides of carbon, nitrogen and sulfur.

National Fire Protection Association (NFPA) Hazard Rating:

Rating for this product: Health: 1 Flammability: 0 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: Avoid creation of dusty conditions. If dry, sweep or scoop up material and place into container for disposal. If wet, pump any free liquid into an appropriate closed container. 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 or clothing. 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.

Storage:

Store in a dry and secure location. 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: Not normally required. 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 and shoes. 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	
Halosulfuron-methyl	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Light tan colored powder with a mild soapy odor.

Boiling Point: Not applicable

Solubility in Water: Insoluble

Density: 36 – 38 pounds/cubic foot

Specific Gravity: Not applicable

Evaporation Rate: Not applicable

Vapor Density: Not applicable

Freezing Point: Not applicable

Vapor Pressure: Not applicable

pH: 4.8 (1% solution)

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. Avoid moisture.

Incompatible Materials: Reducing agents. Acids.

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

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: 1,287 mg/kg

Dermal: Rat LD₅₀: >5,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >5.7 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 halosulfuron-methyl may cause effects to kidneys, liver, blood and decreased body and organ weights.

Carcinogenicity / Chronic Health Effects: Repeated overexposure to halosulfuron-methyl may cause effects to kidneys, liver, and blood. No carcinogenic effects were observed in animal tests with halosulfuron-methyl.

Reproductive Toxicity: Animal tests with halosulfuron-methyl have not demonstrated reproductive effects.

Developmental Toxicity: At doses that were toxic to mother animals, studies on halosulfuron-methyl resulted in increased resorptions, decreased pup weights and malformations.

Genotoxicity: Halosulfuron-methyl did not produce genetic changes in a variety of standard tests using animals and animal or bacterial cells.

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

See Section 2: HAZARDS IDENTIFICATION for more information.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on Halosulfuron-methyl technical:

96-hour LC₅₀ Bluegill: >118 mg/l

96-hour EC₅₀ Rainbow Trout: >131 mg/l

48-hour EC₅₀ Daphnia: >107 mg/l

5-day EC₅₀ Green Algae 0.0041 mg/l

Honey Bee Contact LD₅₀: >100 µg/bee

Bobwhite Quail 5-day Dietary LC₅₀: >5,620 ppm

Bobwhite Quail Oral LD₅₀: >2,250 mg/kg

Mallard Duck 8-day Dietary LC₅₀: >5620 ppm

Environmental Fate:

Halosulfuron-methyl is degraded by microbes and by non-microbial hydrolysis with rapid rates at both high and low pH soils. Under anaerobic conditions, however; microbial degradation is slow and most degradation is by hydrolysis. Terrestrial and aquatic half-life ranged from 13 – 27 days.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Pesticides wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture 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 container. Do not reuse or refill this container. 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.

Once triple rinsed, recycle if available. Some agricultural pesticide containers can be taken to a container collection site or pick up for recycling. To find the nearest site, contact your chemical dealer or manufacturer. If recycling is not available, dispose of in a sanitary landfill or by incineration if allowed by state and local ordinances.

14. TRANSPORTATION INFORMATION

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

DOT

< 882 pounds per completed package

Non Regulated

≥ 882 pounds per completed package

UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, NOS,
(HALOSULFURON-METHYL), 9, III, MARINE POLLUTANT

IMDG

UN 3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, NOS,
(HALOSULFURON-METHYL), 9, III, MARINE POLLUTANT

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):

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.

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 of or 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.