

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Nufarm Iprodione SPC Fungicide
EPA Reg. No.: 228-684
Synonyms: Iprodione; 3-(3,5-dichlorophenyl)-N-(1-methylethyl)-2,4-dioxo-1-imidazolidinecarboxamide
Product Type: Fungicide
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: February 8, 2010 **Supersedes:** New
Sections Revised: New

2. HAZARDS IDENTIFICATION

Emergency Overview:**Appearance and Odor:** Off-white opaque liquid.**Warning Statements:** Caution. Keep out of reach of children. Harmful if swallowed. Causes moderate eye irritation. Avoid contact with eyes or clothing.**Potential Health Effects:****Likely Routes of Exposure:** Inhalation, eye and skin contact.**Eye Contact:** Mildly irritating based on toxicity studies.**Skin Contact:** Minimally toxic and slightly irritating based on toxicity studies.**Ingestion:** Slightly toxic if ingested based on toxicity studies.**Inhalation:** Low inhalation toxicity based on toxicity studies.**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 invertebrates. Drift or runoff from treated areas is hazardous to aquatic invertebrates in neighboring areas.

See Section 12: ECOLOGICAL INFORMATION for more information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS NO.	% BY WEIGHT
Iprodione	36734-19-7	23.3
Other Ingredients Including: Propylene Glycol	57-55-6	76.7

4. FIRST AID MEASURES

If Swallowed: Call a poison control center or doctor immediately for treatment advice. 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 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 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: Contains petroleum distillates. Vomiting may cause aspiration pneumonia.

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, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.

Hazardous Decomposition Materials (Under Fire Conditions): May produce 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: 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 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:

Store in original container only. 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:

Mixers, loaders and others exposed to the concentrate, cleaners/repairers of equipment and applicators applying as a dip treatment must wear long-sleeved shirt, long pants, chemical-resistant footwear plus socks, chemical-resistant gloves and chemical-resistant apron.

Applicators using handheld equipment must wear coveralls over long-sleeve shirt and long pants, chemical-resistant footwear plus socks, chemical-resistant gloves, chemical-resistant headgear for overhead exposure.

Applicators using aircraft or mechanical ground equipment (groundboom, airblast, etc.) and flaggers for aerial applications must wear long-sleeved shirt, long pants, shoes and socks.

Applicators using truck-mounted equipment with a handgun at the end of the hose (i.e. for commercial turfgrass or ornamental applications) and all the other handlers not specified above must wear long-sleeved shirt, long pants, shoes, socks and chemical-resistant gloves.

An emergency shower or water supply should be readily accessible to the work area.

Respiratory Protection: Not normally required, except for applicators using handheld equipment who must wear a dust-mist filtering respirator (NIOSH-approved respirator with any R, P or HE filter). In other situations 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	
Iprodione	NE	NE	NE	NE	
Propylene Glycol	10 (WEEL)	NE	NE	NE	mg/m ³

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Off-white opaque liquid.

Boiling Point:	Not determined	Solubility in Water:	Dispersible
Density:	8.6 pounds/gallon	Specific Gravity:	1.034 @ 20°C
Evaporation Rate:	Not determined	Vapor Density:	Not determined
Freezing Point:	Not determined	Vapor Pressure:	Not determined
pH:	5 – 7 (1% solution)	Viscosity:	918.086 cSt @ 20°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 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: 3,125 mg/kg (female) (estimated based on mortalities for doses tested)

Dermal: Rat LD₅₀: >5,000 mg/kg

Inhalation: Rat 4-hr LC₅₀: >2.09 mg/L

Eye Irritation: Rabbit: Mildly 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 iprodione may cause effects in the liver, adrenal, ovary and/or testes. Overexposure to propylene glycol has been associated with kidney toxicity, liver toxicity (animals) and lactic acidosis. Very high dose acute exposure may result in CNS and cardiac effects.

Carcinogenicity / Chronic Health Effects: Prolonged overexposure to iprodione can cause effects to liver, kidneys, and reproductive system. Iprodione produced benign testicular tumors in rats and benign liver and ovary tumors in mice when tested at a maximum tolerated dose. Overexposure to propylene glycol has been associated with kidney toxicity, liver toxicity (animals) and lactic acidosis.

Reproductive Toxicity: Iprodione did not cause reproductive toxicity in multi-generation studies in rats. In the mouse, propylene glycol was not a reproductive toxicant.

Developmental Toxicity: Iprodione was not a primary developmental toxicant as only minor delays or variations in fetal development were observed at doses that caused maternal toxicity. In a series of animal studies, propylene glycol was not a developmental toxicant.

Genotoxicity: For iprodione, there is no evidence of effects during *in-vitro* or *in-vivo* studies. Propylene glycol was consistently nonmutagenic.

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

See Section 2: HAZARDS IDENTIFICATION for more information.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Data on Iprodione Technical:

96-hour LC ₅₀ Bluegill:	3.7 ppm	Bobwhite Quail 8-day Dietary LC ₅₀ :	>5,620 ppm
96-hour LC ₅₀ Rainbow Trout:	4.1 ppm	Bobwhite Quail Oral LD ₅₀ :	>2,000 mg/kg
48-hour EC ₅₀ Daphnia:	0.24 ppm	Mallard Duck 8-day Dietary LC ₅₀ :	>5,620 ppm
96-hour LC ₅₀ Mysid:	0.68 ppm	Mallard Duck Oral LD ₅₀ :	10,437 mg/kg
48-hour Honey Bee Contact LD ₅₀ :	>120 µg/bee		

Environmental Fate:

The major routes of dissipation for iprodione are hydrolysis in neutral and alkaline environments and microbial degradation under both aerobic and anaerobic conditions. Soil half-lives range from 7 to >60 days and the average soil half-life is 14 days. Degradation rates vary with soil acidity, soil clay contents and history of the soil fungicide treatment. Iprodione is slightly soluble and moderately to well sorbed by most soils.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

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

Container Handling and Disposal:

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.

14. TRANSPORTATION INFORMATION

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

DOT**< 119 gallons per completed package**

Non Regulated

≥ 119 gallons per completed package

UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (IPRODIONE), 9, III, MARINE POLLUTANT

IMDG

UN 3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (IPRODIONE), 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):**

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: 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.

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