

Material Safety Data Sheet

ROVRAL® FLO FUNGICIDE

SDS #: 7071-A
Revision Date: 2012-06-22
Version 4



This MSDS has been prepared to meet U.S. OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Workplace Hazardous Materials Information System (WHMIS) requirements.

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	ROVRAL® FLO FUNGICIDE
Formula code	7071-A
Active Ingredient(s)	Iprodione
Synonyms	3-(3,5-dichlorophenyl)-N-isopropyl-2,4 dioximidazolidine-1-carboxamide
Chemical Family	Dicarboximide
Recommended use	Fungicide
Manufacturer FMC Corporation Agricultural Products Group 1735 Market Street Philadelphia, PA 19103 General Information: Phone: (215) 299-6000 E-Mail: msdsinfo@fmc.com	Emergency telephone number For leak, fire, spill or accident emergencies, call: +1 800 / 424 9300 (CHEMTREC - U.S.A.) +1 703 / 527 3887 (CHEMTREC - Collect - All Other Countries) Medical Emergencies: (800) 331-3148 (U.S.A. & Canada) +1 (651) 632-6793 (All Other Countries - Collect)

2. Hazards identification

Appearance	white suspension
Physical state	liquid
Odor	No off odor
Potential health effects	
Acute effects	
Eyes	May cause slight irritation.
Skin	Substance may cause slight skin irritation.
Inhalation	May cause irritation of respiratory tract. May cause additional effects as listed under "Ingestion".
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Potential for aspiration if swallowed. May cause central nervous system depression.
Chronic effects	Prolonged exposure may cause chronic effects. Possible risks of irreversible effects.

3. Composition/information on ingredients

Hazardous ingredients

Chemical Name	CAS-No	Weight %
hydrotreated light paraffinic oil	64742-55-8	30-35
Iprodione	36734-19-7	23.29997
Propylene glycol	57-55-6	1-5

4. First aid measures

Eye contact	Hold eyes 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 further treatment advice.
Skin contact	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
Inhalation	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.
Ingestion	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 a poison control center or doctor. Do not induce vomiting or give anything by mouth to an unconscious person.

5. Fire-fighting measures

Flash Point	No information available.
Sensitivity to Mechanical Impact	not applicable
Sensitivity to Static Discharge	not applicable
Suitable extinguishing media	Water spray. Carbon dioxide (CO ₂). Foam. Dry chemical.
Specific hazards arising from the chemical	Thermal decomposition can lead to release of irritating and toxic gases and vapors.
Protective equipment and precautions for firefighters	Wear self-contained breathing apparatus and protective suit.

NFPA

Health Hazard	1
Flammability	1
Stability	0
Special Hazards	-

6. Accidental release measures

Personal precautions	Isolate and post spill area. Remove all sources of ignition. Wear suitable protective clothing, gloves and eye/face protection. For personal protection see section 8.
Environmental precautions	Keep people and animals away from and upwind of spill/leak. Keep material out of lakes, streams, ponds, and sewer drains.
Methods for containment	Dike to prevent runoff. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.
Methods for cleaning up	Clean and neutralize spill area, tools and equipment by washing with bleach water and soap. Absorb rinsate and add to the collected waste. Waste must be classified and labeled prior to recycling or disposal. Dispose of waste as indicated in Section 13.

Other For further clean-up instructions call FMC Emergency Hotline number listed in Section 1 "Product and Company Identification" above.

7. Handling and storage

Handling Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

Storage Keep in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep out of reach of children and animals. Store in original container.

8. Exposure controls/personal protection

Exposure guidelines

Chemical Name	British Columbia	Quebec	Ontario TWAEV	Alberta
Propylene glycol 57-55-6			TWA: 10 mg/m ³ TWA: 50 ppm TWA: 155 mg/m ³	

Occupational exposure controls

Engineering measures Apply technical measures to comply with the occupational exposure limits. When working in confined spaces (tanks, containers, etc.), ensure that there is a supply of air suitable for breathing and wear the recommended equipment.

Personal Protective Equipment

General Information If the product is used in mixtures, it is recommended that you contact the appropriate protective equipment suppliers. These recommendations apply to the product as supplied.

Respiratory protection For dust, splash, mist or spray exposures wear a filtering mask.

Eye/face protection For dust, splash, mist or spray exposure, wear chemical protective goggles or a face-shield.

Skin and body protection Wear long-sleeved shirt, long pants, socks, shoes, and gloves.

Hand protection Protective gloves

Hygiene measures Clean water should be available for washing in case of eye or skin contamination. Wash skin prior to eating, drinking, chewing gum or using tobacco. Shower or bathe at the end of working. Remove and wash contaminated clothing before re-use. Launder work clothing separately from regular household laundry.

9. Physical and chemical properties

Appearance white suspension
Color white
Physical state liquid
Odor No off odor
pH 4.0 - 7.5
Melting Point/Range No information available.
Freezing point No information available
Boiling Point/Range >100 °C
Flash Point No information available.
Evaporation rate No information available.
Autoignition Temperature 430 °C
Vapor pressure No information available
Vapor density No information available
Density 1.03 g/cm³ @ 20°C

Water solubility	Miscible with water
Percent volatile	No information available
Partition coefficient:	not applicable
Viscosity	No information available
Oxidizing properties	not applicable

10. Stability and reactivity

Stability	Stable.
Conditions to avoid	Excessive heat
Materials to avoid	Strong acids, Strong bases, Strong oxidizing agents
Hazardous decomposition products	nitrogen oxides (NOx), Sulfur oxides, Hydrogen chloride.
Hazardous polymerization	Hazardous polymerization does not occur.

11. Toxicological information

Eye contact	Slightly or non-irritating (rabbit).
Skin contact	Slightly or non-irritating (rabbit).
Ingestion	Potential for aspiration if swallowed. Aspiration may cause pulmonary edema and pneumonitis.
LD50 Dermal	> 2,000 mg/kg (rat)
LD50 Oral	> 5000 mg/kg (male rat)
LC50 Inhalation:	> 3.2 mg/L 1 hr (rat) estimated
Sensitization	Non-sensitizer
<u>Chronic Toxicity - Other Ingredient(s)</u>	
Chronic Toxicity	Prolonged exposure may cause chronic effects. Possible risks of irreversible effects.
Carcinogenicity	Iprodione: Animal experiments showed a statistically significant number of benign tumors (testicular, liver, and ovarian).
Mutagenicity	Iprodione: Not mutagenic.
Reproductive toxicity	Iprodione: Some evidence of toxicity to the Offspring occurred only at a dose high enough to produce significant toxicity to the parent
Neurological Effects	Iprodione: Not neurotoxic.
Developmental Toxicity	Iprodione: Caused minor delays or variations in fetal development at doses that were maternally toxic.
Target Organ Effects	Iprodione caused effects in the liver, adrenal, ovary and/or testes in chronic feeding studies in rats and dogs [NOEL: 2-year Study (rats): 150 mg/kg diet; 1-year Study (dogs): 18 mg/kg].

Chemical Name	ACGIH	IARC	NTP	OSHA	NIOSH - Target Organs
hydrotreated light paraffinic oil	A2	1		X	

12. Ecological information**Ecotoxicity**

Acute aquatic toxicity							
Compartment	Method	Species	Endpoint type	Values	Unit	Exposure time	Unit
Toxicity to fish		Oncorhynchus mykiss	LC50	24	mg/L	96	hours
Toxicity to daphnia and other aquatic invertebrates		Daphnia magna	EC50	0.25	mg/L	48	hours
Toxicity to algae		Scenedesmus subspicatus	EC50	12.8	mg/L	72	hours

Active Ingredient(s)

Iprodione (36734-19-7)

Active Ingredient(s)	Duration	Species	Value	Units
Iprodione	48 h EC50	Daphnia magna	0.7	mg/L
	72 h EC50	Algae (selenastrum)	3.12	mg/L
	96 h LC50	Rainbow trout	4.1	mg/L

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to microorganisms	Toxicity to daphnia and other aquatic invertebrates
hydrotreated light paraffinic oil		LC50 > >5000 mg/L Oncorhynchus mykiss 96 h		EC50 > >1000 mg/L 48 h
Propylene glycol	19000 mg/L EC50 96 h (Pseudokirchneriella subcapitata)	LC50 51600 mg/L Oncorhynchus mykiss 96 h LC50 41 - 47 mL/L Oncorhynchus mykiss 96 h LC50 51400 mg/L Pimephales promelas 96 h LC50 710 mg/L Pimephales promelas 96 h		EC50 > >10000 mg/L 24 h EC50 > >1000 mg/L 48 h

Environmental Fate**Active Ingredient(s)**

Iprodione (36734-19-7)

Active Ingredient(s)	Type of Test	Result
Iprodione	log Pow	3.0
	Mobility in soil	Limited mobility in soil due to its strong affinity for adsorption to organic matter.

13. Disposal considerations**Waste disposal methods**

Improper disposal of excess pesticide, spray mixture, or rinsate is prohibited. If these wastes cannot be disposed of by use according to label instructions, contact appropriate disposal authorities for guidance.

Contaminated packaging

Containers must be disposed of in accordance with local, state and federal regulations. Refer to the product label for container disposal instructions.

14. Transport information**DOT**

This material is not a hazardous material as defined by U.S. Department of Transportation at 49 CFR Parts 100 through 185.

Packaging Type

Bulk, Non-Bulk

TDG

Classification below is only applicable when shipped by vessel and is not applicable when shipped by road or rail only.

Hazard Class	9
UN/ID No	UN3082
Packing group	III
Marine pollutant	Iprodione.
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Iprodione), 9, PG III, Marine Pollutant

ICAO/IATA

UN/ID No	UN3082
Hazard Class	9
Packing group	III
Marine pollutant	Iprodione
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Iprodione), 9, PG III, Marine Pollutant

IMDG/IMO

Hazard Class	9
UN/ID No	UN3082
Packing group	III
EmS No.	F-A, S-F
Marine pollutant	Iprodione
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Iprodione), 9, PG III, Marine Pollutant

15. Regulatory information**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	no
Chronic Health Hazard	yes
Fire Hazard	no
Sudden Release of Pressure Hazard	no
Reactive Hazard	no

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

TSCA Inventory (United States of America)

Chemical Name	U.S. - TSCA (Toxic Substances Control Act) - Section 8(a) - Chemical-Specific Reporting and Recordkeeping
hydrotreated light paraffinic oil	Partially exempt chemical substance termed Petroleum Process Stream

International Regulations**Mexico - Grade**

Slight risk, Grade 1

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

D2A Very toxic materials



16. Other information

Revision Date: 2012-06-22
Reason for revision: Initial Release.

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End of Material Safety Data Sheet