



Material Safety Data Sheet

ROVRAL® FUNGICIDE WETTABLE POWDER

MSDS Number: 102000005680

MSDS Version 2.0

Revision Date: 07/02/2008

SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION

Product Name ROVRAL® FUNGICIDE WETTABLE POWDER
MSDS Number 102000005680
PCP Registration No. 15213

Bayer CropScience Inc
 #100 - 3131 - 114th Avenue SE
 Calgary, AB T2Z 3X2
 Canada

For MEDICAL, TRANSPORTATION or other EMERGENCY call: 1-800-334-7577 (24 hours/day)
 For Product Information call: 1-888-283-6847

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

| <u>Hazardous Component Name</u> | <u>CAS-No.</u> | <u>Average % by Weight</u> |
|---|----------------|----------------------------|
| Iprodione | 36734-19-7 | 50.00 |
| Lignin, reaction product with sodium sulfite and formaldehyde | 105859-97-0 | 4.50 |
| Sodium lauryl sulfate | 151-21-3 | 2.00 |
| Quartz (Silica, Crystalline) | 14808-60-7 | 2.30 |
| Crystalline quartz (respirable) | | |

SECTION 3. HAZARDS IDENTIFICATION

NOTE: Please refer to Section 11 for detailed toxicological information.

Emergency Overview Caution! Harmful if inhaled or absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid breathing dust. Avoid contact with skin, eyes and clothing.

Physical State solid powder

Odor none

Appearance light tan to brown

Routes of Exposure Eye contact, Skin contact, Skin Absorption, Inhalation

Immediate Effects

Eye Causes redness, irritation, tearing. Avoid contact with eyes.

Skin Causes irritation, redness, swelling. Harmful if absorbed through skin. Avoid contact with skin and clothing.

Inhalation May cause respiratory tract irritation. Harmful if inhaled. Avoid breathing dust.



Material Safety Data Sheet

MSDS Number: 102000005680
MSDS Version 2.0

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Chronic or Delayed Long-Term

This product is not listed as a carcinogen by ACGIH, NTP, IARC or OSHA. However, it may contain crystalline silica (quartz), a substance which has been listed as a carcinogen by ACGIH, NTP and IARC. Crystalline silica is a naturally-occurring mineral component of many sands and clays. Although the carcinogenic potential of crystalline silica in humans is controversial, it must be considered if it is inhaled under excessive exposure conditions. The respirable portion of the silica that may be contained in this product, however, is small, such that inhalation exposure during anticipated conditions of use is minimal.

This product or its components may have target organ effects.

Medical Conditions Aggravated by Exposure

No specific medical conditions are known which may be aggravated by exposure to this product. As with all materials which can cause upper respiratory tract irritation, persons with a history of asthma, emphysema, or hyperreactive airways disease may be more susceptible to overexposure. Pulmonary and respiratory diseases may be aggravated by exposure to respirable crystalline silica.

Potential Environmental Effect

Toxic to invertebrates.

SECTION 4. FIRST AID MEASURES

General

When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.

Eye

Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a physician or poison control center immediately.

Skin

Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.

Ingestion

Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Inhalation

Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a physician or poison control center immediately.

Notes to Physician Treatment

There is no specific antidote. Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended.



Material Safety Data Sheet
ROVRAL® FUNGICIDE WETTABLE POWDER

MSDS Number: 102000005680
 MSDS Version 2.0

SECTION 5. FIRE FIGHTING MEASURES

| | |
|-----------------------------------|---|
| Flash point | not applicable |
| Autoignition Temperature | no data available |
| Lower Flammability Limit | no data available |
| Upper Flammability Limit | no data available |
| Fire and Explosion Hazards | Dangerous gases are evolved in the event of a fire. |
| Fire Fighting Instructions | <p>Keep out of smoke. Fight fire from upwind position. Use appropriate extinguishing media for material that is supplying fuel. Cool closed containers/ tanks exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.</p> <p>Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.</p> |

SECTION 6. ACCIDENTAL RELEASE MEASURES

| | |
|--------------------------------|--|
| Personal Precautions | Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces. |
| Methods for Cleaning Up | Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Clean contaminated floors and objects thoroughly, observing environmental regulations. Decontaminate tools and equipment following cleanup. |
| Additional Advice | Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal. |

SECTION 7. HANDLING AND STORAGE

| | |
|----------------------------|--|
| Handling Procedures | <p>Maintain exposure levels below the exposure limit through the use of general and local exhaust ventilation. Handle and open container in a manner as to prevent spillage.</p> <p>Take measures to prevent the build up of electrostatic charge.</p> |
| Storing Procedures | Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area. |



Material Safety Data Sheet

ROVRAL® FUNGICIDE WETTABLE POWDER

MSDS Number: 102000005680
MSDS Version 2.0

Work/Hygienic Procedures

Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.

Remove Personal Protective Equipment (PPE) immediately after handling this product. Before removing gloves clean them with soap and water. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General Protection

Follow all label instructions. Train employees in safe use of the product.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water. Keep and wash PPE separately from other laundry.

Eye/Face Protection

Safety glasses with side-shields

Hand Protection

Chemical-resistant gloves made of waterproof material such as neoprene, butyl rubber, barrier laminate or nitrile rubber.

Body Protection

Wear long-sleeved shirt and long pants and shoes plus socks.

Respiratory Protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Exposure Limits

| | | | | |
|------------------------------|------------|------------|-----|-------------|
| Iprodione | 36734-19-7 | OES BCS* | | 2 mg/m3 |
| Quartz (Silica, Crystalline) | 14808-60-7 | OEL (QUE) | TWA | 0.1 mg/m3 |
| | | CAD AB OEL | TWA | 0.1 mg/m3 |
| | | CAD BC OEL | TWA | 0.025 mg/m3 |
| | | CAD ON OEL | TWA | 0.10 mg/m3 |

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

light tan to brown

Physical State

solid powder

Odor

none



Material Safety Data Sheet
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MSDS Number: 102000005680
 MSDS Version 2.0

| | |
|---|--|
| pH | no data available |
| Vapor Pressure | not applicable |
| Vapor Density (Air = 1) | not applicable |
| Bulk Density | 14 - 23 lb/ft ³ (bulk density tapped) |
| Evaporation rate | no data available |
| Melting / Freezing Point | no data available |
| Water solubility | slightly soluble |
| Minimum Ignition Energy | no data available |
| Decomposition Temperature | no data available |
| Partition coefficient: n-octanol/water | no data available |

SECTION 10. STABILITY AND REACTIVITY

| | |
|---|---|
| Conditions to Avoid | no data available |
| Incompatibility | Strong bases Strong acids Strong oxidizing agents |
| Hazardous Decomposition Products | Thermal decomposition Hydrogen chloride (HCl) Nitrogen oxides (NO _x) |
| Hazardous Reactions | No hazardous reactions when stored and handled according to prescribed instructions. Stable under normal conditions. |

SECTION 11. TOXICOLOGICAL INFORMATION

Only acute toxicity studies have been performed on the formulated product. The non-acute information pertains to the technical-grade active ingredient, iprodione.

| | |
|------------------------------|--------------------------|
| Acute Oral Toxicity | rat: LD50: > 2,000 mg/kg |
| Acute Dermal Toxicity | rat: LD50: > 2,000 mg/kg |



Material Safety Data Sheet

ROVRAL® FUNGICIDE WETTABLE POWDER

MSDS Number: 102000005680
MSDS Version 2.0

Acute Inhalation Toxicity rat: LC50: > 5.0 mg/l
Exposure time: 4 h
Determined in the form of dust.

rat: LC50: > 20 mg/l
Exposure time: 1 h
Determined in the form of dust.
Extrapolated from the 4 hr LC50.

Skin Irritation rabbit: Slight irritation.

Eye Irritation rabbit: Mild eye irritation.

Sensitization guinea pig: Non-sensitizing.

Chronic Toxicity Iprodione caused effects in the liver, adrenal, ovary and/or testes in chronic feeding studies in rats and dogs.

Assessment Carcinogenicity

Iprodione produced benign testicular tumors in rats and benign liver and ovary tumors in mice when tested at a maximum tolerated dose.

ACGIH

| | | |
|------------------------------|------------|----------|
| Quartz (Silica, Crystalline) | 14808-60-7 | Group A2 |
|------------------------------|------------|----------|

NTP

Crystalline quartz (respirable)

IARC

| | | |
|------------------------------|------------|-----------------------|
| Quartz (Silica, Crystalline) | 14808-60-7 | Overall evaluation: 1 |
|------------------------------|------------|-----------------------|

OSHA

None.

Reproductive & Developmental Toxicity REPRODUCTION: Iprodione did not cause reproductive toxicity in multi-generation studies in rats.

DEVELOPMENTAL TOXICITY: Iprodione was not a primary developmental toxicant as only minor delays or variations in fetal development were observed only at doses that caused maternal toxicity.

Neurotoxicity Iprodione is not considered to be a neurotoxicant.

Mutagenicity Iprodione was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

SECTION 12. ECOLOGICAL INFORMATION



Material Safety Data Sheet

ROVRAL® FUNGICIDE WETTABLE POWDER

MSDS Number: 102000005680
MSDS Version 2.0

Environmental Precautions Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites. Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water. Apply this product as specified on the label.

SECTION 13. DISPOSAL CONSIDERATIONS

General Disposal Guidance Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

Container Disposal Completely empty container into application equipment, then dispose of empty container in a sanitary landfill, by incineration or by other procedures approved by state/provincial and local authorities. If burned, stay out of smoke. Follow advice on product label and/or leaflet.

SECTION 14. TRANSPORT INFORMATION

TDG (Canada):
Not regulated for road or rail.

SECTION 15. REGULATORY INFORMATION

PCP Registration No. 15213

US Federal Regulations

TSCA list

Lignin, reaction product with sodium sulfite and formaldehyde 105859-97-0
Sodium lauryl sulfate 151-21-3
Quartz (Silica, Crystalline) 14808-60-7

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.

SARA Title III - Section 302 - Notification and Information
None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting
None.

US States Regulatory Reporting

CA Prop65

This product contains a chemical known to the State of California to cause cancer.
Crystalline quartz (respirable)

This product does not contain any substances known to the State of California to cause reproductive harm.



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MSDS Number: 102000005680
MSDS Version 2.0

US State Right-To-Know Ingredients

Quartz (Silica, Crystalline) 14808-60-7 IL, MA, MN
None.

Canadian Regulations

Canadian Domestic Substance List

Lignin, reaction product with sodium sulfite and formaldehyde 105859-97-0
Sodium lauryl sulfate 151-21-3
Quartz (Silica, Crystalline) 14808-60-7

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

None.

SECTION 16. OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Reactivity - 0 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason to Revise: Updated due to new system and numbering scheme. Updated for general editorial purposes.

Prepared by the HSE Department of Bayer CropScience Inc. (306)-721-0310.

Revision Date: 07/02/2008

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