

**Syngenta Crop Protection, Inc.**  
**Post Office Box 18300**  
**Greensboro, NC 27419**

**In Case of Emergency, Call**  
**1-800-888-8372**

**1. PRODUCT IDENTIFICATION**

Product Name:	<b>RIDOMIL GOLD/BRAVO</b>	Product No.:	A9597B
EPA Signal Word:	Danger		
Active Ingredient(%):	Chlorothalonil (72.0%)	CAS No.:	1897-45-6
Chemical Name:	Tetrachloroisophthalonitrile		
Chemical Class:	Chlorinated Benzonitrile Fungicide		
Active Ingredient(%):	Mefenoxam (4.4%)	CAS No.:	70630-17-0
Chemical Name:	(R,S)-2-[(2,6-dimethylphenyl)-methoxyacetyl-amino]-propionic acid methyl ester		
Chemical Class:	Phenylamide Fungicide		
EPA Registration Number(s):	100-800	Section(s) Revised:	<b>2, 3, 4, 8, 14</b>

**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Kaolin Clay	15 mg/m <sup>3</sup> TWA (total); 5 mg/m <sup>3</sup> TWA (respirable)	2 mg/m <sup>3</sup> TWA (respirable)	10 mg/m <sup>3</sup> TWA (total); 5 mg/m <sup>3</sup> TWA (respirable)**	No
Crystalline Silica, Quartz	10 mg/m <sup>3</sup> /(%SiO <sub>2</sub> +2) (respirable dust)	0.05 mg/m <sup>3</sup> (respirable silica)	0.05 mg/m <sup>3</sup> (respirable dust)**	IARC Group 2A
Amorphous Silica	80 mg/m <sup>3</sup> /%SiO <sub>2</sub> TWA (total dust)	10 mg/m <sup>3</sup> TWA (inhalable dust)	Not Established	IARC Group 3
Chlorothalonil (72.0%)	Not Established	Not Established	0.1 mg/m <sup>3</sup> TWA ***	IARC Group 2B
Mefenoxam (4.4%)	Not Established	Not Established	10 mg/m <sup>3</sup> TWA***	No

\*\* recommended by NIOSH

\*\*\* Syngenta Occupational Exposure Limit (OEL)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.  
 Syngenta Hazard Category: D, S

**3. HAZARDS IDENTIFICATION**
Symptoms of Acute Exposure

Risk of serious damage to eyes. Very toxic by inhalation. May cause sensitization by skin contact.

Hazardous Decomposition Products

Can decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Light gray powder  
 Odor: Sweet

Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

## 4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison control center or doctor, or going for treatment.

- Ingestion: If swallowed: Call Syngenta (800-888-8372), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after calling 800-888-8372 or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact: If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Skin Contact: If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Syngenta (800-888-8372), a poison control center or doctor for treatment advice.
- Inhalation: If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Syngenta (800-888-8372), a poison control center or doctor for further treatment advice.

### Notes to Physician

There is no specific antidote if this product is ingested.

Contact with eyes may require specialized ophthalmologic attention.

Persons suffering with temporary allergic skin reactions may respond to treatment with oral antihistamines and topical or oral steroids.

### Medical Condition Likely to be Aggravated by Exposure

None known.

## 5. FIRE FIGHTING MEASURES

### Fire and Explosion

Flash Point (Test Method):	Not Applicable	
Flammable Limits (% in Air):	Lower: % Not Applicable	Upper: % Not Applicable
Autoignition Temperature:	Not Available	
Flammability:	Not Flammable	

### Unusual Fire, Explosion and Reactivity Hazards

During a fire, irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

### In Case of Fire

Use dry chemical, foam or CO<sub>2</sub> extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

## 6. ACCIDENTAL RELEASE MEASURES

### In Case of Spill or Leak

Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage systems or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Sweep up material and place in a compatible disposal container. Scrub area with hard water detergent (e.g. commercial products such as Tide, Joy, Spic and Span). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in a disposal container, seal container and arrange for disposition.

## 7. HANDLING AND STORAGE

Store the material in a well-ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco products in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT.**

**FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.**

- Ingestion: Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.
- Eye Contact: Where eye contact is likely, use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
- Skin Contact: Where contact is likely, wear chemical-resistant (such as nitrile or butyl) gloves, coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.
- Inhalation: A particulate filter respirator may be necessary until effective engineering controls are installed to comply with occupational exposure limits. Use a NIOSH approved respirator with any HE filter.

Use a self-contained breathing apparatus in cases of emergency spills, when exposure levels are unknown, or under any circumstances where air-purifying respirators may not provide adequate protection.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light gray powder
Odor:	Sweet
Melting Point:	Not Available
Boiling Point:	Not Applicable
Specific Gravity/Density:	20.71 lbs./cu.ft.
pH:	8 - 10 (1% suspension in water)

### Solubility in H<sub>2</sub>O

Chlorothalonil:	0.81 mg/l @ 77°F (25°C)
Mefenoxam:	26 g/l @ 77°F (25°C)

### Vapor Pressure

Chlorothalonil:	5.7 x 10 <sup>(-7)</sup> mmHg @ 77°F (25°C)
Mefenoxam:	2.5 x 10 <sup>(-5)</sup> mmHg @ 77°F (25°C)

## 10. STABILITY AND REACTIVITY

Stability:	Stable under normal use and storage conditions.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	None known.
Materials to Avoid:	None known.
Hazardous Decomposition Products:	Can decompose at high temperatures forming toxic gases.

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity/Irritation Studies (Finished Product)

Ingestion:	<u>Slightly Toxic</u>	
	Oral (LD50 Rat) :	2,438 mg/kg body weight
Dermal:	<u>Slightly Toxic</u>	
	Dermal (LD50 Rabbit) :	> 2,020 mg/kg body weight
Inhalation:	<u>Moderately Toxic</u>	
	Inhalation (LC50 Rat) :	0.216 mg/l air - 4 hours
Eye Contact:	Corrosive (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Sensitizing (Guinea Pig)	

### Reproductive/Developmental Effects

Chlorothalonil:	No evidence of adverse developmental effects in rabbit and rat studies.
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Mefenoxam: None observed.

#### Chronic/Subchronic Toxicity Studies

Chlorothalonil: In dogs, 1 years administration caused a significant decrease in body weight gain and increases in absolute liver and kidney weights.  
Neurotoxicity: No evidence in regulatory studies.

Mefenoxam: Liver effects at high dose animal tests.

#### Carcinogenicity

Chlorothalonil: No evidence of carcinogenicity in dogs after administration for up to one year. Treatment related increases in the incidence of renal tubular adenoma and carcinoma were observed in rats and male mice. Squamous cell adenomas and carcinomas were also observed in the forestomach of both species. The forestomach tumors seen in rodent studies are not relevant to human health, as humans do not possess an anatomical equivalent of the rodent forestomach. The relevance of renal tumors to human health is unclear, although metabolism data suggest that the dog, a species that is resistant to chlorothalonil-induced renal injury, may be more representative of humans than the rat. IARC identifies chlorothalonil as a 2B carcinogen (possibly carcinogenic to humans).

Mefenoxam: None observed.

#### Other Toxicity Information

Studies on rats and mice have suggested that technical chlorothalonil (97%), when fed at high levels in the diet, may have oncogenic potential to these laboratory animals. However, neither chlorothalonil nor its metabolites interact with DNA and thus are not mutagenic. Tumor formation has been related to a non-genotoxic mechanism of action for which threshold levels have been established in rats and mice. Comprehensive dietary and worker exposure studies have shown exposure levels for humans to be well below these threshold levels. In addition, surveillance of chlorothalonil plant workers for over twenty years has not demonstrated any increase in oncogenic potential to humans.

May cause sensitization by skin contact. Exposure of the skin to chlorothalonil may result in weak contact dermatitis.

#### Toxicity of Other Components

##### Amorphous Silica

Amorphous Silica is listed as an IARC (Group 3) carcinogen not classifiable as a human carcinogen (No Data Available) with limited animal evidence. Prolonged exposure to amorphous silica may cause damage to respiratory system and irritation to skin and eyes.

##### Kaolin Clay

Long term exposure to high concentrations of this dust may produce x-ray evidence of dust in the lungs. Continued long term overexposure may affect respiratory function in some individuals.

#### Target Organs

##### Active Ingredients

Chlorothalonil: Lung, eye, kidney  
Mefenoxam: Liver

##### Inert Ingredients

Amorphous Silica: Respiratory tract, skin, eye  
Kaolin Clay: Lung

## **12. ECOLOGICAL INFORMATION**

#### Summary of Effects

Chlorothalonil:  
Toxic to fish.

Mefenoxam:  
Practically non-toxic to aquatic organisms and wildlife.

#### Eco-Acute Toxicity

Chlorothalonil: Bees LC50/EC50 > 181 ug/bee  
Invertebrates (Water Flea) LC50/EC50 0.068 ppm  
Fish (Trout) LC50/EC50 0.04 ppm

Fish (Bluegill) LC50/EC50 0.06 ppm  
Birds (8-day dietary - Bobwhite Quail) LC50/EC50 > 5,200 ppm  
Birds (8-day dietary - Mallard Duck) LC50/EC50 > 5,200 ppm  
Mefenoxam: Bees LC50/EC50 > 25 ug/bee  
Invertebrates (Water Flea) LC50/EC50 > 113 ppm  
Fish (Trout) LC50/EC50 > 121 ppm  
Birds (8-day dietary - Bobwhite Quail) LC50/EC50 5,620 ppm

#### Eco-Chronic Toxicity

Chlorothalonil: Not Available  
Mefenoxam: Not Available

#### Environmental Fate

Chlorothalonil:

The information presented here is for the active ingredient, chlorothalonil.  
Low bioaccumulation potential. Not persistent in soil or water. Low mobility in soil. Sinks in water (after 24 h).

Mefenoxam:

The information presented here is for the active ingredient, mefenoxam.  
Does not bioaccumulate. Not persistent in soil or water. Moderate mobility in soil. Mixes/sinks (after 24 h).

### **13. DISPOSAL CONSIDERATIONS**

#### Disposal

Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable

### **14. TRANSPORT INFORMATION**

#### DOT Classification

Ground Transport - NAFTA  
Proper Shipping Name: Pesticides, Solid, Toxic, N.O.S. (Chlorothalonil)  
Hazard Class or Division: Division 6.1  
Identification Number: UN 2588  
Packing Group: PG II

#### B/L Freight Classification

Fungicides, NOI, Poison

#### Comments

Water Transport - International  
Proper Shipping Name: Pesticides, Solid, Toxic, N.O.S. (Chlorothalonil), Marine Pollutant  
Hazard Class or Division: Division 6.1  
Identification Number: UN 2588  
Packing Group: PG II  
IMDG EMS #: F-A, S-A

Air Transport - International  
Proper Shipping Name: Pesticides, Solid, Toxic, N.O.S. (Chlorothalonil)  
Hazard Class or Division: Division 6.1  
Identification Number: UN 2588  
Packing Group: PG II  
Packing Auth.: Passenger - 613, Cargo Aircraft Only - 615  
Note: 613 Max inner pkg. 2.5 kg, Max. single pkg. 25 kg.  
615 Max inner pkg. 5 kg, Max. single pkg. 100 kg.

### **15. REGULATORY INFORMATION**

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard  
Chronic Health Hazard

Section 313 Toxic Chemicals: Chlorothalonil (72.0%) (CAS No. 1897-45-6)

California Proposition 65

WARNING: This product contains a chemical (chlorothalonil) known to the State of California to cause cancer.

CERCLA/SARA 302 Reportable Quantity (RQ)

None

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

**16. OTHER INFORMATION**

NFPA Hazard Ratings

Health: 3  
Flammability: 1  
Instability: 0

HMIS Hazard Ratings

Health: 3  
Flammability: 1  
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 07/21/1995

Revision Date: 01/13/2006

Replaces: 12/03/2003

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein.

RSVP# : SCP-955-800B-00119K

End of MSDS