

## RIDOMIL GOLD® BRAVO® SC

Date: 9/12/2018  
Replaces: 2/19/2015

### 1. PRODUCT IDENTIFICATION

Product identifier on label: **RIDOMIL GOLD® BRAVO® SC**

Product No.: A13842C

Use: Fungicide

Manufacturer: Syngenta Crop Protection, LLC  
Post Office Box 18300  
Greensboro NC 27419

Manufacturer Phone: 1-800-334-9481

**Emergency Phone: 1-800-888-8372**

### 2. HAZARDS IDENTIFICATION

Classifications: Inhalation: Category 3  
Skin Sensitizer: Category 1B  
Carcinogenicity: Category 2  
Eye Damage/Irritation: Category 2A  
Specific Target Organ Toxicity: Respiratory Irritation Category 3

Signal Word (OSHA): Danger

Hazard Statements: May cause an allergic skin reaction  
Causes serious eye irritation  
Toxic if inhaled  
May cause respiratory irritation  
Suspected of causing cancer

Hazard Symbols:



Precautionary Statements: Obtain special instructions before use.  
Do not handle until all safety precautions have been read and understood.  
If exposed or concerned: Get medical advice/attention.  
Avoid breathing mist, vapors, spray.  
Wash hands and face thoroughly after handling.  
Use only outdoors or in a well-ventilated area.  
Contaminated work clothing must not be allowed out of the workplace.  
Wear protective gloves, protective clothing, eye protection.  
Wear eye protection.  
If on skin: Wash with plenty of soap and water.

## RIDOMIL GOLD® BRAVO® SC

Date: 9/12/2018  
Replaces: 2/19/2015

If skin irritation or rash occurs: Get medical advice.  
If inhaled: Remove person to fresh air and keep comfortable for breathing.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice.  
Call a poison center, doctor or Syngenta.  
See Section 4 First Aid Measures.  
Wash contaminated clothing before reuse.  
Store locked up.  
Dispose of contents and container in accordance with local regulations.

Other Hazard Statements: None

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical Name	Common Name	CAS Number	Concentration
1,2-Propanediol	Propylene Glycol	57-55-6	Trade Secret
Other ingredients	Other ingredients	Trade Secret	63.6%
Tetrachloroisophthalonitrile	Chlorothalonil	1897-45-6	33.1%
(R,S)-2-[(2,6-dimethylphenyl)-methoxyacetyl-amino]-propionic acid methyl ester	Mefenoxam	70630-17-0 & 69516-34-3	3.3%

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

**4. FIRST AID MEASURES**

Have the product container, label or 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. Do not give any liquid to the person. 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.

Most important symptoms/effects:

Eye irritation  
Allergic skin reaction  
Respiratory irritation

## RIDOMIL GOLD® BRAVO® SC

Date: 9/12/2018

Replaces: 2/19/2015

### Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

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

### 5. FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:

Use dry chemical, foam or CO2 extinguishing media. If water is used to fight fire, dike and collect runoff.

Specific Hazards:

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

Special protective equipment and precautions for firefighters:

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.

### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

Follow exposure controls/personal protection outlined in Section 8.

Methods and materials for containment and cleaning up:

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. Cover entire spill with absorbing material and place into 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

Precautions for safe handling:

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.

Conditions for safe storage, including any incompatibilities:

Store locked up.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

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

#### Occupational Exposure Limits:

Chemical Name	OSHA PEL	ACGIH TLV	Other	Source
Propylene Glycol	Not Established	Not Established	10 mg/m <sup>3</sup> TWA	AIHA
Other ingredients	Not Established	Not Established	Not Established	Not Applicable

## RIDOMIL GOLD® BRAVO® SC

Date: 9/12/2018  
Replaces: 2/19/2015

Chlorothalonil	Not Established	Not Established	0.1 mg/m <sup>3</sup> TWA	Syngenta
Mefenoxam	Not Established	Not Established	5 mg/m <sup>3</sup> TWA	Syngenta

### Appropriate engineering controls:

Use effective engineering controls to comply with occupational exposure limits (if applicable).

### Individual protection measures:

#### 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 gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyethylene, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.

#### Inhalation:

A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits.

In case of emergency spills, use a NIOSH certified respirator with any N, R, P or HE filter.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light beige to grey beige liquid

Odor: Weak

Odor Threshold: Not Available

pH: 6 - 8 (1% in deionized water)

Melting point/freezing point: Not Applicable

Initial boiling point and boiling range: Not Available

Flash Point (Test Method): > 212°F

Flammable Limits (% in Air): Not Available

Flammability: Not Applicable

Vapor Pressure: Chlorothalonil 0.00000057mmHg @ 77°F (25°C)

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

Vapor Density: Not Available

Relative Density: 1.208 g/cm<sup>3</sup>

Solubility (ies): Chlorothalonil 0.81 mg/l @ 77°F (25°C)

Mefenoxam 26 g/l @ 77°F (25°C)

Partition coefficient: n-octanol/water: Not Available

Autoignition Temperature: Not Available

Decomposition Temperature: Not Available

Viscosity: Not Available

Other: None

## RIDOMIL GOLD® BRAVO® SC

Date: 9/12/2018  
Replaces: 2/19/2015

### 10. STABILITY AND REACTIVITY

Reactivity: Not reactive.  
Chemical stability: Stable under normal use and storage conditions.  
Possibility of hazardous reactions: Will not occur.  
Conditions to Avoid: None known.  
Incompatible materials: None known.  
Hazardous Decomposition Products: None known.

### 11. TOXICOLOGICAL INFORMATION

#### Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Eye irritation, Rash, redness or itching, Respiratory irritation

Delayed, immediate and chronic effects of exposure: Eye irritation, Allergic skin reaction, Respiratory irritation

#### Numerical measures of toxicity (acute toxicity/irritation studies (finished product))

Ingestion:	Oral (LD50 Female Rat) :	5000 mg/kg body weight
Dermal:	Dermal (LD50 Rat) :	> 5050 mg/kg body weight
Inhalation:	Inhalation (LC50 Male Rat) :	> 0.563 < 1.12 mg/l air - 4 hours
Eye Contact:	Severely Irritating (Rabbit)	
Skin Contact:	Non-Irritating (Rabbit)	
Skin Sensitization:	Sensitizing (Guinea Pig)	

#### Reproductive/Developmental Effects

Chlorothalonil: Did not show reproductive toxicity effects in animal experiments. Did not show teratogenic effects in animal experiments.

Mefenoxam: None observed.

#### Chronic/Subchronic Toxicity Studies

Chlorothalonil: In dogs, 1 year 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: Chlorothalonil causes kidney tumors in rats and mice via a nongentoxic mode of action secondary to target organ toxicity.

Did not show mutagenic effects in animal experiments.

IARC identifies chlorothalonil as a 2B carcinogen (possibly carcinogenic to humans).

Mefenoxam: None observed.

## RIDOMIL GOLD® BRAVO® SC

Date: 9/12/2018  
Replaces: 2/19/2015

Chemical Name	NTP/IARC/OSHA Carcinogen
1,2-Propanediol	No
Other ingredients	No
Tetrachloroisophthalonitrile	IARC Group 2B
(R,S)-2-[(2,6-dimethylphenyl)-methoxyacetyl-amino]-propionic acid methyl ester	No

### 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

Other ingredients

Not Established

Propylene Glycol

Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea. Also, eye irritation may occur with lacrimation but no residual discomfort or injury. Prolonged contact to skin may cause mild to moderate irritation and possible allergic reactions. Chronic dietary exposure caused kidney and liver injury in experimental animals.

### Target Organs

#### Active Ingredients

Chlorothalonil: Lung, kidney

Mefenoxam: Liver

#### Inert Ingredients

Other ingredients: Not Established

Propylene Glycol: CNS, kidney, liver

## 12. ECOLOGICAL INFORMATION

### Eco-Acute Toxicity

Chlorothalonil:

Green Algae 5-day EC50 190 ppb

Bird (Mallard Duck) LD50 Oral > 4640 mg/kg

Invertebrate (Water Flea) 48-hour EC50 70 ppb

Fish (Rainbow Trout) 96-hour LC50 47 ppb

Mefenoxam:

Fish (Rainbow Trout) 96-hour LC50 > 121 ppm

Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 > 113 ppm

Bird (Bobwhite Quail) 14-day LD50 981 mg/kg

## RIDOMIL GOLD® BRAVO® SC

Date: 9/12/2018

Replaces: 2/19/2015

### 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

Not regulated

### Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Chlorothalonil), Marine Pollutant

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

Air Transport

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Chlorothalonil)

Hazard Class: Class 9

Identification Number: UN 3082

Packing Group: PG III

## 15. REGULATORY INFORMATION

### Pesticide Registration:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Warning: Causes substantial but temporary eye injury. Do not get in eyes or on clothing. Harmful if inhaled. Avoid breathing vapor or spray mist. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

### EPA Registration Number(s):

100-1221

### EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard

Chronic Health Hazard

## RIDOMIL GOLD® BRAVO® SC

Date: 9/12/2018  
Replaces: 2/19/2015

Section 313 Toxic Chemicals: Chlorothalonil 33.1% (CAS No. 1897-45-6)

California Proposition 65:

ATTENTION: This product can expose you to chemicals including chlorothalonil, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

CERCLA/SARA 304 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: 2  
Flammability: 1  
Reactivity: 0

0	Minimal
1	Slight
2	Moderate
3	Serious
4	Extreme
*	Chronic

Syngenta Hazard Category: D,S

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 4/19/2005

Revision Date: 9/12/2018

Replaces: 2/19/2015

Section(s) Revised: 15

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.