MATERIAL SAFETY DATA SHEET

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: **RIDOMIL GOLD COPPER** Product No.: A9601B

EPA Signal Word: Danger

Active Ingredient(%): Copper Hydroxide (60.0%) CAS No.: 20427-59-2

Chemical Name: Copper (II) Hydroxide

Chemical Class: Weak Base of Transition Metal

Active Ingredient(%): Mefenoxam (5.0%) CAS No.: 70630-17-0

Chemical Name: (R,S)-2-[(2,6-dimethylphenyl)-methoxyacetylamino]-propionic acid methyl ester

Chemical Class: Phenylamide Fungicide

EPA Registration Number(s): 100-804 **Section(s) Revised: 2, 8, 15**

2. HAZARDS IDENTIFICATION

Health and Environmental

Corrosive to the eyes. May cause severe injury including blindness. Harmful if swallowed or inhaled. May be harmful in contact with skin.

Hazardous Decomposition Products

May decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Blue powder

Odor: Clay-like

Unusual Fire, Explosion and Reactivity Hazards

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Kaolin Clay	15 mg/m³ TWA (total); 5 mg/m³ TWA (respirable)	2 mg/m³ TWA (respirable)	10 mg/m³ TWA (total); 5 mg/m³ TWA (respirable) **	No
Crystalline Silica, Quartz	10 mg/m³/(%SiO2+2) (respirable dust)	0.025 mg/m³ (respirable silica)	0.05 mg/m³ (respirable dust) **	IARC 1; ACGIH A2
Amorphous Silica	80 mg/m³/%SiO2 TWA (total dust)	10 mg/m³ TWA (inhalable dust)	Not Established	IARC Group 3
Diatomaceous Earth	80 mg/m³/%SiO2 (20 mppcf) TWA	Not Established	6 mg/m³ TWA **	IARC 3
Mefenoxam (5.0%)	Not Established	Not Established	10 mg/m³ TWA ***	No
Copper Hydroxide (60.0%)	1 mg/m³ TWA	1 mg/m³ TWA	1 mg/m³ 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: C, S

4. FIRST AID MEASURES

Have the product container, label or Material Safety Data Sheet with you when calling Syngenta (800-888-8372), a poison contol 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.

Treat symptomatically.

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 Applicable	

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 CO2 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 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. 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 appparatus 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:	Blue powder
Odor:	Clay-like
Melting Point:	Not Available
Boiling Point:	Not Applicable
Specific Gravity/Density:	23.30 lbs./cu.ft.
pH:	8 - 10 (1% suspension in water)

Solubility in H2O

Copper Hydroxide:	0.1 - 5 ppm
Mefenoxam:	26g/l @ 77°F (25°C)

Vapor Pressure

Copper Hydroxide:	Not determined
Mefenoxam:	2.5 x 10(-5) 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:	May decompose at high temperatures forming toxic gases.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

Ingestion:

Oral (LD50 Rat) : = 550 mg/kg body weight

Dermal:

	Dermal (LD50 Rabbit) :	> 2020 mg/kg body weight
Inhalation:		
	Inhalation (LC50 Rat) :	= 1.73 mg/l air - 4 hours
Eye Contact:	Corrosive (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects

Copper Hydroxide: Not available.

Mefenoxam: None observed.

Chronic/Subchronic Toxicity Studies

Copper Hydroxide: Lung irritation and moderate temporary irritation to eyes. Exposure to copper-containing compounds is reported to cause liver injury (cirrhosis, jaundice), kidney damage, blood disorders (hemolysis, anemia, methemagolbinemia), and respiratory tract effects (nasal ulceration/irritation).

Mefenoxam: Liver effects at high dose animal tests.

Carcinogenicity

Copper Hydroxide: None observed.

Mefenoxam: None observed.

Other Toxicity Information

None

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.

Diatomaceous Earth

The carrier in this product is naturally occurring diatomaceous earth. Natural diatomaceous earth contains a small percentage of naturally occurring crystalline silica, which is considered a probable human carcinogen. Chronic inhalation exposure to crystalline silica is known to cause silicosis and pulmonary fibrosis in humans. The amount of crystalline silica in this product is minimal and the potential for overexposure in manufacturing operations is low.

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

Copper Hydroxide: Liver, blood, kidney, respiratory tract

Mefenoxam: Liver

Inert Ingredients

Amorphous Silica: Respiratory tract, skin, eye

Diatomaceous Earth: Respiratory tract

Kaolin Clay: Lung

12. ECOLOGICAL INFORMATION

Summary of Effects

Copper Hydroxide:

Not Available

Mefenoxam:

Harmful to aquatic life.

Ecotoxicity Effects

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

Copper Hydroxide:

Fish (Bluegill Sunfish) 96-hour LC50 180 ppm

Invertebrate (Water Flea) Daphnia magna EC50 6.5 ppb

Fish (Rainbow Trout) LC50 23 ppb

Bird (Bobwhite Quail) LC50 >340 mg/kg

Fish (Fathead Minnow) 96-hour LC50 23 ppb

Bird (Bobwhite Quail) 8-day LD50 >10,000 ppm

Bird (Mallard Duck) 8-day LD50 >10,000 ppm

Environmental Fate

Copper Hydroxide:

The degree of mobility of copper in the environment depends upon the pH of ambient soils and waters. The higher the acidity, the more soluble copper salts are and, hence, the more mobile. Partitioning of copper into air is negligible due to the low vapor pressure of copper salts.

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: Copper-based Pesticides, Solid, Toxic
Hazard Class or Division: Division 6.1
Identification Number: UN 2775
Packing Group: PG III

B/L Freight Classification

Fungicides, NOI, Poison

Comments

Water Transport - International
Proper Shipping Name: Copper-based Pesticides, Solid, Toxic (Copper Hydroxide), Marine Pollutant
Hazard Class or Division: Division 6.1
Identification Numbers: UN 2775
Packing Group: PG III

Air Transport - International
Proper Shipping Name: Copper-based Pesticides, Solid, Toxic (Copper Hydroxide)
Hazard Class or Division: Division 6.1
Identification Numbers: UN 2775
Packing Group: PG III

15. REGULATORY INFORMATION

EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: Copper Hydroxide (60.0%) (CAS No. 20427-59-2)

California Proposition 65

Not Applicable

CERCLA/SARA 302 Reportable Quantity (RQ)

Contains copper compounds. No RQ assigned.

RCRA Hazardous Waste Classification (40 CFR 261)

Not Applicable

TSCA Status

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings		HMIS Hazard Ratings	
Health:	3	Health:	3
Flammability:	1	Flammability:	1
Instability:	0	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: 5/3/1996
Revision Date: 3/18/2008 Replaces: 2/26/2007

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.

End of MSDS