1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

PRODUCT INFORMATION

Product name: RIDOMIL GOLD MZ 68 WG
Design code: A9651D
Use: Fungicide

Company: Syngenta Crop Protection AG
Postfach
CH-4002 Basel
Switzerland

Telephone: +41 61 323 11 11
Telefax: +41 61 323 12 12
Emergency telephone: +44 1484 538444
E-mail address: safetydatasheetcoordination@syngenta.com

2. HAZARDS IDENTIFICATION

May cause an allergic skin reaction.
Toxic to aquatic life with long lasting effects.
May form flammable dust-air mixture.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous components

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No.</th>
<th>EC-No. (REACH Registration Number)</th>
<th>Symbol(s)</th>
<th>R-phrase(s)</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>mancozeb</td>
<td>8018-01-7</td>
<td></td>
<td>Xi, N</td>
<td>R37 R43 R50/53</td>
<td>64 % W/W</td>
</tr>
<tr>
<td>metalaxyl-M</td>
<td>70630-17-0</td>
<td></td>
<td>Xn</td>
<td>R22 R41</td>
<td>4 % W/W</td>
</tr>
</tbody>
</table>

* Substances for which there are Community workplace exposure limits.
For the full text of the R-phrases mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

General advice: Have the product container, label or Material Safety Data Sheet with you when calling the Syngenta emergency number, a poison control center or physician, or going for treatment.
Inhalation: Move the victim to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a physician or poison control centre immediately.

Skin contact: Take off all contaminated clothing immediately. Wash off immediately with plenty of water. If skin irritation persists, call a physician. Wash contaminated clothing before re-use.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

Ingestion: If swallowed, seek medical advice immediately and show this container or label. Do NOT induce vomiting.

Medical advice: There is no specific antidote available. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Extinguishing media - small fires Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Extinguishing media - large fires Alcohol-resistant foam or Water spray

Extinguishing media which shall not be used for safety reasons: Do not use a solid water stream as it may scatter and spread fire.

Specific hazards during fire fighting: As the product contains combustible organic components, fire will produce dense black smoke containing hazardous products of combustion (see section 10). Exposure to decomposition products may be a hazard to health.

Special protective equipment for fire-fighters: Wear full protective clothing and self-contained breathing apparatus.

Further information: Do not allow run-off from fire fighting to enter drains or water courses. Cool closed containers exposed to fire with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Refer to protective measures listed in sections 7 and 8. Avoid dust formation.

Environmental precautions: Do not flush into surface water or sanitary sewer system.

Methods for cleaning up: Contain spillage, pick up with an electrically protected vacuum.
cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13). Do not create a powder cloud by using a brush or compressed air. Clean contaminated surface thoroughly.

**Additional advice**: If the product contaminates rivers and lakes or drains inform respective authorities.

### 7. HANDLING AND STORAGE

**HANDLING**

**Advice on safe handling**: Potential for spontaneous combustion. To avoid thermal decomposition, do not overheat. Avoid contact with skin and eyes. When using do not eat, drink or smoke. For personal protection see section 8.

**STORAGE**

**Requirements for storage areas and containers**: This material can be thermally unstable at elevated temperatures. The material is thermally stable at normal ambient temperatures as packaged. Store the material away from sources of heat such as steam pipes, radiators or heaters. Maintain an air gap between individual packages. Do not repack into larger volume packages. Do not bulk-up in silos, storage bins or hoppers without considering the potential product degradation/decomposition problem. Further advice is available from Syngenta. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children.

**Storage temperature**: < 35 °C

**Other data**: Physically and chemically stable for at least 2 years when stored in the original unopened sales container at ambient temperatures.
8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>Exposure limit(s)</th>
<th>Type of exposure limit</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>mancozeb</td>
<td>1 mg/m3</td>
<td>8 h TWA</td>
<td>SUPPLIER</td>
</tr>
<tr>
<td>metalaxyl-M</td>
<td>10 mg/m3</td>
<td>8 h TWA</td>
<td>SYNGENTA</td>
</tr>
</tbody>
</table>

ENGINEERING MEASURES

Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated.
The extent of these protection measures depends on the actual risks in use.
If airborne dust is generated, use local exhaust ventilation controls.
Assess exposure and use any additional measures to keep airborne levels below any relevant exposure limit.
Where necessary, seek additional occupational hygiene advice.

PERSONAL PROTECTIVE EQUIPMENT

Protective measures: The use of technical measures should always have priority over the use of personal protective equipment.
When selecting personal protective equipment, seek appropriate professional advice.
Personal protective equipment should be certified to appropriate standards.

Respiratory protection: No personal respiratory protective equipment normally required.
A particulate filter respirator may be necessary until effective technical measures are installed.

Hand protection: Chemical resistant gloves should be used.
Gloves should be certified to an appropriate standard.
Gloves should have a minimum breakthrough time that is appropriate to the duration of exposure.
The breakthrough time of gloves varies according to the thickness, material and manufacturer.
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
Suitable material
Nitrile rubber

Eye protection: Eye protection is not usually required.
Follow any site specific eye protection policies.
Skin and body protection: Assess the exposure and select chemical resistant clothing based on the potential for contact and the permeation / penetration characteristics of the clothing material. Wash with soap and water after removing protective clothing. Decontaminate clothing before re-use, or use disposable equipment (suits, aprons, sleeves, boots, etc.). Wear as appropriate: Dust impervious protective suit

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>solid</td>
</tr>
<tr>
<td>Form</td>
<td>granules</td>
</tr>
<tr>
<td>Colour</td>
<td>light yellow to light brown</td>
</tr>
<tr>
<td>Odour</td>
<td>weak</td>
</tr>
<tr>
<td>pH</td>
<td>5 - 9 at 1 % w/v</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>not highly flammable</td>
</tr>
<tr>
<td>Minimum ignition temperature</td>
<td>340 °C</td>
</tr>
<tr>
<td>Dust explosion class</td>
<td>Forms flammable dust clouds</td>
</tr>
<tr>
<td>Minimum ignition energy</td>
<td>&gt; 1 J</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>not oxidizing</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Bulk density</td>
<td>0.45 - 0.65 g/cm³</td>
</tr>
<tr>
<td>Miscibility</td>
<td>Miscible</td>
</tr>
<tr>
<td>Surface tension</td>
<td>57.8 mN/m at 20 °C</td>
</tr>
<tr>
<td>Burning number</td>
<td>1 at 20 °C, 5 at 100 °C</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Hazardous decomposition products: Combustion or thermal decomposition will evolve toxic and irritant vapors.

Hazardous reactions: Hazardous polymerisation does not occur. This material may degrade, decompose exothermically, and may even catch fire, when large quantities are exposed to elevated temperatures.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity: Median lethal dose male and female Rat, > 5,000 mg/kg
GHS-Classification None

Acute inhalation toxicity: Median lethal concentration male and female Rat, > 5.13 mg/l, 4 h
GHS-Classification None
**Acute dermal toxicity**: LD50 male and female Rat, > 5,000 mg/kg  
GHS-Classification: None

**Skin irritation**: Rabbit: Non-irritating  
GHS-Classification: None

**Eye irritation**: Rabbit: Mildly irritating  
GHS-Classification: None

**Sensitisation**: guinea pig: A skin sensitizer in animal tests.  
GHS-Classification: Category 1

**Long term toxicity**
- **mancozeb**: Did not show carcinogenic, teratogenic or mutagenic effects in animal experiments.
- **metalaxyl-M**: Did not show carcinogenic, teratogenic or mutagenic effects in animal experiments.

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**12. ECOLOGICAL INFORMATION**

**ELIMINATION INFORMATION (PERSISTENCE AND DEGRADABILITY)**

**Stability in water**
- **mancozeb**: Degradation half life: 5.8 - 55 h  
  Mancozeb is not persistent in water.
- **metalaxyl-M**: Degradation half life: 22.4 - 47.5 d  
  Metalaxyl is not persistent in water.

**Stability in soil**
- **mancozeb**: Degradation half life: < 1 d  
  Mancozeb is not persistent in soil.
- **metalaxyl-M**: Degradation half life: < 50 d  
  Metalaxyl is not persistent in soil.

**Mobility**
- **mancozeb**: Mancozeb has low mobility in soil.
- **metalaxyl-M**: Metalaxyl has a range from low to very high mobility in soil depending on soil type.

**Bioaccumulation**
- **metalaxyl-M**: Metalaxyl has low potential for bioaccumulation.
ECOTOXICITY EFFECTS

Toxicity to fish
: LC50 Cyprinus carpio (Carp), 23 mg/l, 96 h
GHS-Classification
Category 3

Toxicity to daphnia and other aquatic invertebrates.
: EC50 Daphnia magna Straus, 0.8 mg/l, 48 h
GHS-Classification
Category 1

Toxicity to algae
: ErC50, ErC50 Pseudokirchneriella subcapitata (green algae), 0.219 mg/l, 72 h
: EbC50 Pseudokirchneriella subcapitata (green algae), 0.0929 mg/l, 72 h
GHS-Classification
Category 1

13. DISPOSAL CONSIDERATIONS

Product
: Do not contaminate ponds, waterways or ditches with chemical or used container.
Do not dispose of waste into sewer.
Where possible recycling is preferred to disposal or incineration.
If recycling is not practicable, dispose of in compliance with local regulations.

Contaminated packaging
: Empty remaining contents.
Triple rinse containers.
Empty containers should be taken to an approved waste handling site for recycling or disposal.
Do not re-use empty containers.

14. TRANSPORT INFORMATION

Land transport

ADR:
UN-Number: 3077
Class: 9
Labels: 9
Packaging group: III
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (MANCOZEB)
Environmentally hazardous: Environmentally hazardous

Sea transport

IMDG:
UN-Number: 3077
Class: 9
<table>
<thead>
<tr>
<th>Labels:</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging group:</td>
<td>III</td>
</tr>
<tr>
<td>Proper shipping name:</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (MANCOZEB)</td>
</tr>
<tr>
<td>Marine pollutant:</td>
<td>Marine pollutant</td>
</tr>
</tbody>
</table>

**Air transport**

<table>
<thead>
<tr>
<th>IATA-DGR:</th>
<th>UN 3077</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN/ID No.:</td>
<td>9</td>
</tr>
<tr>
<td>Class:</td>
<td>9</td>
</tr>
<tr>
<td>Labels:</td>
<td>9</td>
</tr>
<tr>
<td>Packaging group:</td>
<td>III</td>
</tr>
<tr>
<td>Proper shipping name:</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (MANCOZEB)</td>
</tr>
</tbody>
</table>

## 15. REGULATORY INFORMATION

### Labelling according to EC Directives

Hazardous components which must be listed on the label:
- mancozeb

**Symbol(s):**
- N: Dangerous for the environment
- Xi: Irritant

**R-phrase(s):**
- R43: May cause sensitisation by skin contact.
- R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S-phrase(s):**
- S 2: Keep out of the reach of children.
- S 13: Keep away from food, drink and animal feedingstuffs.
- S20/21: When using do not eat, drink or smoke.
- S35: This material and its container must be disposed of in a safe way.
- S36/37: Wear suitable protective clothing and gloves.
- S57: Use appropriate container to avoid environmental contamination.

**Note:** The mixture is classified as dangerous in accordance with Directive 1999/45/EC.

**Special labelling of certain mixtures:** To avoid risks to man and the environment, comply with the instructions for use.

**GHS-Labelling**

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
RIDOMIL GOLD MZ 68 WG

Version 15
Revision Date 12.10.2009

Pictogram

Signal word : Warning

Hazard statements : H317 May cause an allergic skin reaction.
                    H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements : P102 Keep out of reach of children.
                           P270 Do not eat, drink or smoke when using this product.
                           P273 Avoid release to the environment.
                           P280 Wear protective gloves/clothing.
                           P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
                           P501 Dispose of contents/container to an approved waste disposal plant.

Hazardous components which must be listed on the label:
  • mancozeb

16. OTHER INFORMATION

Further information

Text of R-phrases mentioned in Section 3:

R22 Harmful if swallowed.
R37 Irritating to respiratory system.
R41 Risk of serious damage to eyes.
R43 May cause sensitisation by skin contact.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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