1. PRODUCT IDENTIFICATION

Product Name: REVUS FUNGICIDE

EPA Signal Word: Caution

Active Ingredient(%): Mandipropamid (23.3%)

Chemical Name: 2-(4-chloro-phenyl)-N-[2-(3-methoxy-4-prop-2-ynyloxy-phenyl)-ethyl]-2-prop-2-ynyloxy-acetamide

Chemical Class: Fungicide

EPA Registration Number(s): 100-1254

Section(s) Revised: 1, 8

2. HAZARDS IDENTIFICATION

Health and Environmental

Presents a low hazard during normal handling.

Hazardous Decomposition Products

May decompose at high temperatures forming toxic gases.

Physical Properties

Appearance: Light beige liquid

Odor: Not particular

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

<table>
<thead>
<tr>
<th>Material</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>Other</th>
<th>NTP/IARC/OSHA Carcinogen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propylene Glycol</td>
<td>Not Established</td>
<td>Not Established</td>
<td>50 ppm TWA AIHA WEEL ****</td>
<td>No</td>
</tr>
<tr>
<td>Mandipropamid (23.3%)</td>
<td>Not Established</td>
<td>Not Established</td>
<td>10 mg/m³ TWA ***</td>
<td>No</td>
</tr>
</tbody>
</table>

*** Syngenta Occupational Exposure Limit (OEL)

**** Recommended by AIHA (American Industrial Hygiene Association)

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

Syngenta Hazard Category: A

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
5. FIRE FIGHTING MEASURES

Fire and Explosion

- **Flash Point (Test Method):** > 214°F (Pensky-Martens CC)
- **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. 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

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.
Skin Contact: Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear. For overhead exposure, wear chemical-resistant headgear.
Inhalation: A respirator is not normally required when handling this substance. In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Light beige liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Not particular</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not Available</td>
</tr>
<tr>
<td>Specific Gravity/Density</td>
<td>1.07 g/cm³</td>
</tr>
<tr>
<td>pH</td>
<td>5 - 9 @ 1% w/v</td>
</tr>
<tr>
<td>Solubility in H2O</td>
<td>Mandipropamid: 4.2 mg/l @ 77°F (25°C)</td>
</tr>
<tr>
<td></td>
<td>Mandipropamid: 7.1 x 10(-9) mmHg @ 68°F (20°C)</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Route of Exposure</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>Oral (LD50 Female Rat): &gt; 5000 mg/kg body weight</td>
</tr>
<tr>
<td></td>
<td>Dermal (LD50 Rat): &gt; 5000 mg/kg body weight</td>
</tr>
<tr>
<td></td>
<td>Inhalation (LC50 Rat): Not Available</td>
</tr>
<tr>
<td>Eye Contact</td>
<td>Non-Irritating (Rabbit)</td>
</tr>
<tr>
<td>Skin Contact</td>
<td>Non-Irritating (Rabbit)</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>Not a Sensitizer (Guinea Pig)</td>
</tr>
</tbody>
</table>

Reproductive/Developmental Effects
Mandipropamid: Not Available

Chronic/Subchronic Toxicity Studies
Mandipropamid: Not Available

Carcinogenicity
Mandipropamid: Test on bacterial or mammalian cell cultures did not show mutagenic effects.

Other Toxicity Information
None

Product Name: REVUS FUNGICIDE
Toxicity of Other Components

Propylene Glycol
Test results reported in Section 11 for the final product take into account any acute hazards related to the propylene glycol in the formulation.
Reported to cause central nervous system depression (anesthesia, dizziness, confusion), headache and nausea.
Chronic dietary exposure caused kidney and liver injury in experimental animals.

Target Organs
Active Ingredients
Mandipropamid: Not Available
Inert Ingredients
Propylene Glycol: CNS, kidney, liver

12. ECOLOGICAL INFORMATION

Summary of Effects
Mandipropamid:
Toxic to aquatic life.

Eco-Acute Toxicity
Mandipropamid:
Invertebrate (Water Flea) Daphnia magna EC50 > 7.1 mg/l
Green Algae ErC50 > 40 mg/l
Fish (Rainbow Trout) LC50 > 2.3 mg/l

Eco-Chronic Toxicity
Mandipropamid:
Not Available

Environmental Fate
Mandipropamid:
The information presented here is for the active ingredient, mandipropamid.

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: Under certain circumstances, discarded product may exhibit TCLP hazardous characteristics. A hazardous waste determination should be done on a case by case basis.

Listed Waste: Not Applicable

14. TRANSPORT INFORMATION

DOT Classification
Ground Transport - NAFTA
Not regulated by US DOT.

Air Transport - NAFTA
Not regulated by US DOT.

B/L Freight Classification
Fungicides, NOIBN, O/T Poison

Comments
Water Transport - International

Product Name: REVUS FUNGICIDE
15. REGULATORY INFORMATION

EPCRA SARA Title III Classification
Section 311/312 Hazard Classes: Acute Health Hazard
Section 313 Toxic Chemicals: Not Applicable

California Proposition 65
Not Applicable

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

<table>
<thead>
<tr>
<th>NFPA Hazard Ratings</th>
<th>HMIS Hazard Ratings</th>
<th>0 Minimal</th>
<th>1 Slight</th>
<th>2 Moderate</th>
<th>3 Serious</th>
<th>4 Extreme</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health:</td>
<td>Health:</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flammability:</td>
<td>Flammability:</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instability:</td>
<td>Reactivity:</td>
<td>0</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 10/9/2006
Revision Date: 1/22/2008

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End of MSDS