

REVUS®

Date: 9/11/2015
 Replaces: 6/18/2015

1. PRODUCT IDENTIFICATION

Product identifier on label: **REVUS®**
 Product No.: A12946B
 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: Not Applicable
 Signal Word (OSHA): Not Applicable
 Hazard Statements: Not Applicable

Hazard Symbols:

Precautionary Statements: Not Applicable

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	<76.7%
2-(4-chloro-phenyl)-N-[2-(3-methoxy-4-prop-2-ynyloxy-phenyl)-ethyl]-2-prop-2-ynyloxy-acetamide	Mandipropamid	374726-62-2	23.3%

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

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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:

Not Applicable

Indication of immediate medical attention and special treatment needed:

There is no specific antidote if this product is ingested.

Treat symptomatically.

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.

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7. HANDLING AND STORAGEPrecautions 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:

Not Applicable

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 ³ TWA	AIHA
Other ingredients	Not Established	Not Established	Not Established	Not Applicable
Mandipropamid	Not Established	Not Established	5 mg/m ³ 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.

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.

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

Appearance: Off-white to white liquid

Odor: Not particular

Odor Threshold: Not Available

pH: 6.5 - 9.2

Melting point/freezing point: Not Available

Initial boiling point and boiling range: Not Available

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Flash Point (Test Method): > 214°F (Pensky-Martens CC)
 Flammable Limits (% in Air): Not Available
 Flammability: Not Applicable
 Vapor Pressure: Mandipropamid 7.1 x 10(-9) mmHg @ 68°F (20°C)
 Vapor Density: Not Available
 Relative Density: 1.052 - 1.092 g/cm³ @ 68°F (20°C)
 Solubility (ies): Mandipropamid 4.2 mg/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

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: Not Available

11. TOXICOLOGICAL INFORMATION

Health effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Not Applicable

Delayed, immediate and chronic effects of exposure: Not Applicable

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

Ingestion:	Oral (LD50 Female Rat) :	> 5000 mg/kg body weight
Dermal:	Dermal (LD50 Rat) :	> 5000 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	> 4.89 mg/l - 4 hours (calculated)
Eye Contact:	Mildly Irritating (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

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Reproductive/Developmental Effects

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

Chronic/Subchronic Toxicity Studies

Mandipropamid: No adverse effect has been observed in chronic toxicity tests.

Carcinogenicity

Mandipropamid: Did not show mutagenic effects in animal experiments.
Did not show carcinogenic effects in animal experiments.

Chemical Name	NTP/IARC/OSHA Carcinogen
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1,2-Propanediol	No
Other ingredients	No
2-(4-chloro-phenyl)-N-[2-(3-methoxy-4-prop-2-ynyloxy-phenyl)-ethyl]-2-prop-2-ynyloxy-acetamide	No

Other Toxicity Information

None

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

Mandipropamid: Not Applicable

Inert Ingredients

Other ingredients: Not Established
Propylene Glycol: CNS, kidney, liver

12. ECOLOGICAL INFORMATION

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

Environmental Fate

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

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This material is persistent in soil. This material is moderately mobile in soil.

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

Comments

Water Transport - International
Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S. (Mandipropamid), 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. (Mandipropamid)
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:

Not Applicable: Keep out of reach of children.

EPA Registration Number(s):

100-1254

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: None

CERCLA/SARA 304 Reportable Quantity (RQ):

None

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Not Applicable

TSCA Status:

Exempt from TSCA, subject to FIFRA

16. OTHER INFORMATION

NFPA Hazard Ratings

Health: 1
Flammability: 1
Instability: 0

HMIS Hazard Ratings

Health: 1
Flammability: 1
Reactivity: 0

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

Syngenta Hazard Category: A

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 10/9/2006

Revision Date: 9/11/2015

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Section(s) Revised: 11

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.