

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

**In Case of Emergency, Call**  
**1-800-888-8372**

**1. PRODUCT IDENTIFICATION**

Product Name: **REVUS TOP** Product No.: A14576A  
 EPA Signal Word: Caution  
 Active Ingredient(%): Difenoconazole(21.9%) CAS No.: 119446-68-3  
 Chemical Name: 1H-1,2,4-Triazole, 1-[[2-[2-chloro-4-(4-chlorophenoxy)phenyl]-4-methyl-1,3-dioxolan-2-yl]methyl]-  
 Chemical Class: Triazole Fungicide  
 Active Ingredient(%): Mandipropamid(21.9%) CAS No.: 374726-62-2  
 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): 100-1278 **Section(s) Revised: 14**

**2. HAZARDS IDENTIFICATION**

Health and Environmental

Irritating to eyes and skin.

Hazardous Decomposition Products

Not Available

Physical Properties

Appearance: Off-white to brown liquid

Odor: Sweet; chalky

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
Difenoconazole(21.9%)	Not Established	Not Established	8 mg/m <sup>3</sup> TWA ***	No
Mandipropamid(21.9%)	Not Established	Not Established	10 mg/m <sup>3</sup> TWA ***	No

\*\*\* Syngenta Occupational Exposure Limit (OEL)

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.  
 Syngenta Hazard Category: B

**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 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

Not Available

## **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: 842°F

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 CO<sub>2</sub> 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 AND PACKAGING 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, 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 approved respirator with any N, R, P or HE filter.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance: Off-white to brown liquid
- Odor: Sweet; chalky
- Melting Point: Not Available
- Boiling Point: Not Available
- Specific Gravity/Density: 1.145 g/cm<sup>3</sup> @ 68°F (20°C)
- pH: 5 - 9 (1% in deionized water)

### Solubility in H<sub>2</sub>O

- Difenoconazole: 15 mg/l @ 77°F (25°C)
- Mandipropamid: 4.2 mg/l @ 77°F (25°C)

### Vapor Pressure

- Difenoconazole: 2.5 x 10<sup>(-10)</sup> mmHg @ 77°F (25°C)
- Mandipropamid: 7.1 x 10<sup>(-9)</sup> mmHg @ 68°F (20°C)

## 10. STABILITY AND REACTIVITY

- Stability: Stable under normal use and storage conditions.
- Hazardous Polymerization: Will not occur.
- Conditions to Avoid: Not Available
- Materials to Avoid: Not Available
- Hazardous Decomposition Products: Not Available

## 11. TOXICOLOGICAL INFORMATION

### Acute Toxicity/Irritation Studies (Finished Product)

- Ingestion: Oral (LD50 Female Rat) : 2958 mg/kg body weight
- Dermal: Dermal (LD50 Rat) : > 5000 mg/kg body weight
- Inhalation: Inhalation (LC50 Rat) : > 5.12 mg/l air - 4 hours
- Eye Contact: Minimally Irritating (Rabbit)
- Skin Contact: Mildly Irritating (Rabbit)
- Skin Sensitization: Not a Sensitizer (Guinea Pig)

### Reproductive/Developmental Effects

- Difenoconazole: None observed.

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

#### Chronic/Subchronic Toxicity Studies

Difenoconazole: Kidney and liver effects at high doses (>5000 ppm; rats); Eye effects in dogs at high dose levels.

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

#### Carcinogenicity

Difenoconazole: 2/70 male rats in the highest dose group (20000 ppm) were found to have squamous cell carcinoma in the non-glandular stomach. Effect did not occur in female rats or in mice and not considered relevant to humans.

Increase in brain tumors (mice) at doses exceeding the Maximum Tolerated Dose (MTD) (>2500 ppm).

Mandipropamid: Did not show mutagenic effects in animal experiments.

Did not show carcinogenic effects in animal experiments.

#### Other Toxicity Information

None

#### Toxicity of Other Components

Not Applicable

#### Target Organs

##### Active Ingredients

Difenoconazole: Brain, liver, kidney, gastrointestinal tract

Mandipropamid: Not Applicable

##### Inert Ingredients

Not Applicable

## **12. ECOLOGICAL INFORMATION**

#### Ecotoxicity Effects

Difenoconazole:

Fish (Rainbow Trout) 96-hour LC50 1.06 ppm

Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 0.77 ppm

Bird (Mallard Duck) 21-day LD50 > 2150 mg/kg

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

Difenoconazole:

The information presented here is for the active ingredient, difenoconazole.

Stable in soil and water. Low to moderate mobility in soil. Sinks in water (after 24 h).

Mandipropamid:

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

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: 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. (Difenoconazole, 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. (Difenoconazole, Mandipropamid)  
Hazard Class: Class 9  
Identification Number: UN 3082  
Packing Group: PG III

**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 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: 1  
Flammability: 1  
Instability: 0

HMIS Hazard Ratings

Health: 1  
Flammability: 1  
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: 2/28/2007

Revision Date: 9/10/2013

Replaces: 7/30/2010

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.

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