

**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: **RESOLUTE 65WG HERBICIDE** Product No.: A9950A  
 EPA Signal Word: Caution  
 Active Ingredient(%): Prodiamine (65.0%) CAS No.: 29091-21-2  
 Chemical Name: N3, N3-Di-n-propyl-2,4-dinitro-6-(trifluoromethyl)-m-phenylenediamine  
 Chemical Class: Dinitroaniline Herbicide  
 EPA Registration Number(s): 100-834 **Section(s) Revised: 2, 5, 7, 14**

**2. HAZARDS IDENTIFICATION**
Health and Environmental

Harmful if inhaled. May be harmful in contact with skin. May cause an allergic skin reaction. Causes mild eye and skin irritation.

May form flammable dust-air mixture.

Hazardous Decomposition Products

None known.

Physical Properties

Appearance: Yellow granules

Odor: Odorless

Unusual Fire, Explosion and Reactivity Hazards

This material is considered explosion class (Kst) 2.

Fire will spread by burning with flame.

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

See also Sec. 7.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Crystalline Silica, Quartz and Cristobalite	10 mg/m <sup>3</sup> /(%SiO <sub>2</sub> +2) (respirable dust)	0.025 mg/m <sup>3</sup> (respirable silica)	0.05 mg/m <sup>3</sup> (respirable dust) **	IARC 1; ACGIH 1
Kaolin Clay	15 mg/m <sup>3</sup> TWA (total); 5 mg/m <sup>3</sup> TWA (respirable)	2 mg/m <sup>3</sup> TWA (respirable)	10 mg/m <sup>3</sup> TWA (total); 5 mg/m <sup>3</sup> TWA (respirable) **	No
Dispersing Agent	Not Established	Not Established	15 mg/m <sup>3</sup> TWA (total) *	No
Prodiamine (65.0%)	Not Established	Not Established	10 mg/m <sup>3</sup> TWA ***	No

- \* recommended by manufacturer
- \*\* 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 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.

Persons suffering a temporary allergic reaction may respond to treatment with antihistamines or steroid creams and/or systemic steroids.

##### 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: Combustible powder

##### Unusual Fire, Explosion and Reactivity Hazards

This material is considered explosion class (Kst) 2.

Fire will spread by burning with flame.

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

See also Sec. 7.

##### In Case of Fire

Use appropriate extinguishing media for combustibles in the area. 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**

This material is capable of forming flammable dust clouds in air, which, if ignited, can produce a dust cloud explosion. Flames, hot surfaces, mechanical sparks and electrostatic discharges can serve as ignition sources for this material. Electrical equipment should be compatible with the flammability characteristics of this material. The flammability characteristics will be made worse if the material contains traces of flammable solvents or is handled in the presence of flammable solvents.

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 dust-proof chemical 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 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 apparatus 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: Yellow granules
- Odor: Odorless
- Melting Point: Not Available
- Boiling Point: Not Applicable
- Specific Gravity/Density: 0.63 g/cm<sup>3</sup>
- pH: 8.0 (5% in deionized water)

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

Prodiamine: 0.013 ppm @ 77°F (25°C)

### Vapor Pressure

Prodiamine: <5.6 x 10<sup>(-6)</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: Thermal, mechanical and electrical ignition sources.
- Materials to Avoid: Oxidizing agents.

## 11. TOXICOLOGICAL INFORMATION

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

Ingestion:	Oral (LD50 Rabbit) :	> 5000 mg/kg body weight
Dermal:	Dermal (LD50 Rabbit) :	> 2000 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	1.81 mg/l air - 4 hours
Eye Contact:	Mildly Irritating (Rabbit)	
Skin Contact:	Practically Non-Irritating (Rabbit)	
Skin Sensitization:	Sensitizing (Guinea Pig)	

### Reproductive/Developmental Effects

Prodiamine: Fetal toxicity at high dose levels (rats); developmental and maternal toxicity observed at 1g/kg/day.

### Chronic/Subchronic Toxicity Studies

Prodiamine: Liver (alteration and enlargement) and thyroid effects (hormone imbalances) at high dose levels (rats); decreased body weight gains.

### Carcinogenicity

Prodiamine: Benign thyroid tumors (rat). None observed (mouse).

### Other Toxicity Information

None

### Toxicity of Other Components

Crystalline Silica, Quartz and Cristobalite

Chronic inhalation exposure to crystalline silica is known to cause silicosis and pulmonary fibrosis in humans. Experimental animals exposed to crystalline silica developed respiratory tract cancers.

Dispersing Agent

Exposure can result in eye, skin and respiratory tract irritation.

Kaolin Clay

May cause eye and respiratory tract irritation.

Long-term exposure to high concentrations of this dust may produce x-ray evidence of dust in the lungs.

Continued long-term exposure may affect respiratory function in some individuals.

### Target Organs

#### Active Ingredients

Prodiamine: Liver, thyroid

#### Inert Ingredients

Crystalline Silica, Quartz and Cristobalite: Respiratory tract

Dispersing Agent: Eye, skin, respiratory tract

Kaolin Clay: Eye, respiratory tract, lung

## 12. ECOLOGICAL INFORMATION

### Ecotoxicity Effects

Prodiamine:

Fish (Bluegill Sunfish) 96-hour LC50 > 552 ppb

Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 > 83 ppb

Bird (Bobwhite Quail) 14-day LD50 > 2250 mg/kg

### Environmental Fate

#### Prodiamine:

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

Does not bioaccumulate. Persistent in soil. Stable in water. Immobile in soil. Sinks in water (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

Not regulated.

### Comments

Water Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Prodiamine), Marine Pollutant

Hazard Class: Class 9

Identification Number: UN 3077

Packing Group: PG III

Air Transport - International

Proper Shipping Name: Environmentally Hazardous Substance, Solid, N.O.S. (Prodiamine)

Hazard Class: Class 9

Identification Number: UN 3077

Packing Group: PG III

Note: This product is currently not regulated for airfreight within the NAFTA region. However, effective 01/01/2011 the above classification must be used.

## **15. REGULATORY INFORMATION**

### EPCRA SARA Title III Classification

Section 311/312 Hazard Classes: Acute Health Hazard  
Chronic Health Hazard  
Fire Hazard  
Reactive 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**

NFPA Hazard Ratings

Health: 2  
Flammability: 3  
Instability: 1

HMIS Hazard Ratings

Health: 2  
Flammability: 3  
Reactivity: 1

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: 10/21/2004

Revision Date: 10/22/2010

Replaces: 8/21/2009

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