

## TENACITY®

Date: 6/16/2015  
 Replaces: 12/10/2014

### 1. PRODUCT IDENTIFICATION

Product identifier on label: **TENACITY®**  
 Product No.: A12738A  
 Use: Herbicide  
 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: Specific Target Organ Toxicity: Repeated Category 2  
 Signal Word (OSHA): Warning  
 Hazard Statements: May cause damage to organs through prolonged or repeated exposure

Hazard Symbols:



Precautionary Statements: Do not breathe mist, vapors, spray.  
 Get medical advice if you feel unwell.  
 Dispose of contents and container in accordance with local regulations.

Other Hazard Statements: Flammable hydrogen gas may be formed on contact with incompatible metals. See "Conditions to Avoid", Section 10.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Chemical Name  | Common Name       | CAS Number   | Concentration |
|--|-------------------|--------------|---------------|
| Ethylene Glycol  | Ethylene Glycol   | 107-21-1     | <15%          |
| Other ingredients  | Other ingredients | Trade Secret | >45%          |
| 2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione | Mesotrione        | 104206-82-8  | 40.0%         |

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

## TENACITY®

Date: 6/16/2015

Replaces: 12/10/2014

---

### 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:

Flammable hydrogen gas may be formed on contact with incompatible metals. See "Conditions to Avoid", Section 10.

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.

## TENACITY®

Date: 6/16/2015  
 Replaces: 12/10/2014

### 7. HANDLING AND STORAGE

**Precautions for safe handling:**

Spray solutions of this product should be mixed, stored and applied using only plastic, plastic-lined steel, stainless steel or fiberglass/plastic containers. Concentrate should not be stored or maintained in long-term contact with galvanized steel, carbon steel, aluminum, brass or cast iron.

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         |
|-------------------|-----------------|---|-------------------------|----------------|
| Ethylene Glycol   | Not Established | 100 mg/m <sup>3</sup> (ceiling) [aerosol] | Not Established         | Not Applicable |
| Other ingredients | Not Applicable  | Not Applicable                            | Not Applicable          | Not Applicable |
| Mesotrione        | Not Established | Not Established                           | 5 mg/m <sup>3</sup> 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. 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.

## TENACITY®

Date: 6/16/2015  
Replaces: 12/10/2014

---

### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Beige to tan liquid  
Odor: Faint; pleasant  
Odor Threshold: Not Available  
pH: 2.4 - 2.8 @ 68°F (20°C)  
Melting point/freezing point: Not Available  
Initial boiling point and boiling range: Not Available  
Flash Point (Test Method): > 200°F  
Flammable Limits (% in Air): Not Available  
Flammability: Can burn in fire, releasing toxic vapors.  
Vapor Pressure: Mesotrione < 4.3 x 10<sup>-8</sup> mmHg @ 68°F (20°C)  
Vapor Density: Not Available  
Relative Density: 1.2 g/ml ; 10 lbs/gal @ 68°F (20°C)  
Solubility (ies): Mesotrione 160 mg/l @ 68°F (20°C) (99.7% pure)  
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: Spray solutions of this product should be mixed, stored and applied using only plastic, plastic-lined steel, stainless steel or fiberglass/plastic containers. Concentrate should not be stored or maintained in long-term contact with galvanized steel, carbon steel, aluminum, brass or cast iron.  
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

## TENACITY®

Date: 6/16/2015  
 Replaces: 12/10/2014

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

|                     |                               |                           |
|---------------------|-------------------------------|---------------------------|
| Ingestion:          | Oral (LD50 Rat) :             | > 5000 mg/kg body weight  |
| Dermal:             | Dermal (LD50 Rat) :           | > 5000 mg/kg body weight  |
| Inhalation:         | Inhalation (LC50 Rat) :       | > 5.19 mg/l air - 4 hours |
| Eye Contact:        | Mildly Irritating (Rabbit)    |                           |
| Skin Contact:       | Slightly Irritating (Rabbit)  |                           |
| Skin Sensitization: | Not a Sensitizer (Guinea Pig) |                           |

### Reproductive/Developmental Effects

Mesotrione : Did not show reproductive effects in animal experiments.

### Chronic/Subchronic Toxicity Studies

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

### Carcinogenicity

Mesotrione : Did not show carcinogenic effects in animal experiments.

| Chemical Name  | NTP/IARC/OSHA Carcinogen |
|--|--------------------------|
| Ethylene Glycol  | No                       |
| Other ingredients  | No                       |
| 2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione | No                       |

### Other Toxicity Information

None

### Toxicity of Other Components

#### Ethylene Glycol

Ethylene glycol has been shown to produce dose-related teratogenic effects in rats and mice. Exposure to high concentrations of mists or aerosols may result in effects on the hematopoietic system and central nervous system with headache, dizziness and drowsiness. Severe kidney damage results from swallowing large amounts of ethylene glycol.

#### Other ingredients

Not Applicable

### Target Organs

#### Active Ingredients

Mesotrione : Blood, eye, kidney, liver.

#### Inert Ingredients

Ethylene Glycol: Blood, kidney, CNS

Other ingredients: Not Applicable

## TENACITY®

Date: 6/16/2015

Replaces: 12/10/2014

---

### 12. ECOLOGICAL INFORMATION

#### Eco-Acute Toxicity

##### Mesotrione :

Fish (Rainbow Trout) 96-hour LC50 >120 mg/l

Fish (Bluegill Sunfish) 96-hour LC50 >120 mg/l

Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 900 mg/l

Green Algae 72-hour EbC50 4.5 mg/l

#### Environmental Fate

##### Mesotrione :

The substance has low potential for bioaccumulation. Mesotrione has medium to high mobility 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. (Mesotrione), 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. (Mesotrione)

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:

Caution: Harmful if absorbed through skin. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals. Avoid contact with skin, eyes, or clothing.

## TENACITY®

Date: 6/16/2015  
 Replaces: 12/10/2014

EPA Registration Number(s):  
 100-1267

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: Ethylene Glycol <15% (CAS No. 107-21-1)

CERCLA/SARA 304 Reportable Quantity (RQ):

Report product spills > 3260 gal. (based on ethylene glycol [RQ = 5000 lbs.] content in the formulation) (CERCLA)

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: 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: B

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 4/17/2007

Revision Date: 6/16/2015

Replaces: 12/10/2014

Section(s) Revised: 2, 4, 7, 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.