1. PRODUCT IDENTIFICATION

Product Name: TENACITY
EPA Signal Word: Caution
Product No.: A12738A
Active Ingredient(%): Mesotrione (40.0%)
CAS No.: 104206-82-8
Chemical Name: 2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione
Chemical Class: Benzoylcyclohexanedione Herbicide
EPA Registration Number(s): 100-1267

2. HAZARDS IDENTIFICATION

Health and Environmental
Causes mild eye and skin irritation. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Hazardous Decomposition Products
Not Available

Physical Properties
Appearance: Beige to tan liquid
Odor: Faint; pleasant

Unusual Fire, Explosion and Reactivity 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.

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>Ethylene Glycol</td>
<td>Not Established</td>
<td>100 mg/m³ (ceiling) [aerosol]</td>
<td>Not Established</td>
<td>No</td>
</tr>
<tr>
<td>Mesotrione (40.0%)</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)

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.
### 5. FIRE FIGHTING MEASURES

**Fire and Explosion**
- **Flash Point (Test Method):**  > 200°F
- **Flammable Limits (% in Air):**  Lower: Not Applicable  Upper: Not Applicable
- **Autoignition Temperature:**  Not Available
- **Flammability:**  Can burn in fire, releasing toxic vapors.

**Unusual Fire, Explosion and Reactivity 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.

**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

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.
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, 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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Beige to tan liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Faint; pleasant</td>
</tr>
<tr>
<td>Melting Point</td>
<td>Not Available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>Not Available</td>
</tr>
<tr>
<td>Specific Gravity/Density</td>
<td>1.2 g/ml; 10 lbs/gal @ 68°F (20°C)</td>
</tr>
<tr>
<td>pH</td>
<td>2.4 - 2.8 @ 68°F (20°C)</td>
</tr>
<tr>
<td>Solubility in H2O</td>
<td>Mesotrione : 160 mg/l @ 68°F (20°C) (99.7% pure)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Mesotrione : &lt; 4.3 x 10^-8 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: 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.

Materials to Avoid: See "Conditions to Avoid", Section 10.

Hazardous Decomposition Products: Not Available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

<table>
<thead>
<tr>
<th>Route</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>Oral (LD50 Rat) : &gt; 5000 mg/kg body weight</td>
</tr>
<tr>
<td>Dermal</td>
<td>Dermal (LD50 Rat) : &gt; 5000 mg/kg body weight</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Inhalation (LC50 Rat) : &gt; 5.19 mg/l air - 4 hours</td>
</tr>
<tr>
<td>Eye Contact</td>
<td>Mildly Irritating (Rabbit)</td>
</tr>
<tr>
<td>Skin Contact</td>
<td>Slightly Irritating (Rabbit)</td>
</tr>
<tr>
<td>Skin Sensitization</td>
<td>Not a Sensitizer (Guinea Pig)</td>
</tr>
</tbody>
</table>

Product Name: TENACITY
Reproductive/Developmental Effects
Mesotrione : Not a reproductive hazard.

Chronic/Subchronic Toxicity Studies
Mesotrione : Animal studies showed evidence of reduced bodyweight gain, increased liver and kidney weights, blood effects (polycythemia, reduced white blood cell count) and eye effects (keratitis). No known neurotoxic effects based on animal studies.

Carcinogenicity

Other Toxicity Information
None

Toxicity of Other Components
Ethylene Glycol (< 15%)
Test results reported in Section 11 for the final product take into account any acute hazards related to the ethylene glycol in the formulation.

Target Organs
Active Ingredients
Mesotrione : Eye
Inert Ingredients
Ethylene Glycol: Not Applicable

12. ECOLOGICAL INFORMATION

Ecotoxicity Effects
Mesotrione :
Fish (Rainbow Trout) 96-hour LC50 > 114 ppm
Green Algae 5-day EC50 1.9 ppm
Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 840 ppm
Bird (Bobwhite Quail) 14-day LD50 > 2000 mg/kg

Environmental Fate
Mesotrione :
The information presented here is for the active ingredient, mesotrione.

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
15. REGULATORY INFORMATION

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)

California Proposition 65
This product does not contain chemical(s) known to the State of California to cause cancer and birth defects or other reproductive harm.

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

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

For non-emergency questions about this product call:
1-800-334-9481

Original Issued Date: 4/17/2007
Revision Date: 11/7/2012
Replaces: 3/9/2012

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End of MSDS