

CALLISTO® GT

Date: 11/3/2015
 Replaces: 9/28/2015

1. PRODUCT IDENTIFICATION

Product identifier on label: **CALLISTO® GT**
 Product No.: A19573B
 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: Not Applicable
 Signal Word (OSHA): Not Applicable
 Hazard Statements: Not Applicable

Hazard Symbols:

Precautionary Statements: Not Applicable

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 |
|--|-------------------|--------------|---------------|
| Other ingredients | Other ingredients | Trade Secret | 62.6% |
| Glyphosate, N-(phosphonomethyl) glycine | Glyphosate Acid | 1071-83-6 | 34.0% |
| 2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione | Mesotrione | 104206-82-8 | 3.4% |

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:

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.

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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 |
|-------------------|-----------------|-----------------|-------------------------|----------------|
| Other ingredients | Not Established | Not Established | Not Established | Not Applicable |
| Glyphosate Acid | Not Established | Not Established | 5 mg/m ³ TWA | Syngenta |
| Mesotrione | 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, 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 certified respirator with any N, R, P or HE filter.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Light beige liquid
Odor: Aromatic, sweetish
Odor Threshold: Not Available
pH: 4.8 (1% solution in deionized H₂O @ 77°F [25°C])
Melting point/freezing point: Not Available
Initial boiling point and boiling range: Not Available
Flash Point (Test Method): Not Available
Flammable Limits (% in Air): Not Available
Flammability: Not Available
Vapor Pressure: Glyphosate Acid < 1.8 x 10⁻⁷ mmHg @ 77°F (25°C)
Mesotrione < 4.3 x 10⁻⁸ mmHg @ 68°F (20°C)
Vapor Density: Not Available
Relative Density: 1.320 g/cm³ ; 11.02 lbs/gal @ 68°F (20°C)
Solubility (ies): Glyphosate Acid 0.91 g/100ml @ 68°F (20°C)
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: Concentrate should not be stored in galvanized steel, carbon steel or aluminum. Brass and/or cast iron fittings should not be used. Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless or fiberglass/plastic.
Incompatible materials: None known.
Hazardous Decomposition Products: Flammable hydrogen gas may be formed on contact with incompatible metals. See "Conditions to Avoid", Section 10.

11. TOXICOLOGICAL INFORMATIONHealth effects information

Likely routes of exposure: Dermal, Inhalation

Symptoms of exposure: Not Applicable

Delayed, immediate and chronic effects of exposure: Not Applicable

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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) : | > 2.53 mg/l air - 4 hours |
| Eye Contact: | Minimally Irritating (Rabbit) | |
| Skin Contact: | Non-Irritating (Rabbit) | |
| Skin Sensitization: | Not a Sensitizer (Guinea Pig) | |

Reproductive/Developmental Effects

Glyphosate Acid: No developmental effects seen in animal studies.
Mesotrione : Did not show reproductive effects in animal experiments.

Chronic/Subchronic Toxicity Studies

Glyphosate Acid: Rat subchronic 90-day study - NOEL of 5000 ppm (410 - 440 mg/kg). Body weight reduction, clinical chemistry changes.
No evidence of neurotoxic effects in acute and subchronic rat studies (NOEL both studies 2000 mg/kg). No evidence of delayed neurotoxic effects in hens (NOEL 2000 mg/kg).
Mesotrione : No adverse effect has been observed in chronic toxicity tests.

Carcinogenicity

Glyphosate Acid: Not carcinogenic in rats or mice. Listed as Category 2A by the International Agency for Research on Cancer (IARC) but our expert opinion is that classification as a carcinogen is not warranted. Not genotoxic in Ames, mouse lymphoma, human lymphocyte and mouse micronucleus tests.
No mutagenic effects seen in animal studies.
Mesotrione : Did not show carcinogenic effects in animal experiments.

| Chemical Name | NTP/IARC/OSHA Carcinogen |
|--|--------------------------|
| Other ingredients | No |
| Glyphosate, N-(phosphonomethyl) glycine | 2A |
| 2-[4-(methylsulfonyl)-2-nitrobenzoyl]-1,3-cyclohexanedione | No |

Other Toxicity Information

None

Toxicity of Other Components

Other ingredients
Not Established

Target Organs

Active Ingredients

| | |
|------------------|----------------------------|
| Glyphosate Acid: | Skin, eye |
| Mesotrione : | Blood, eye, kidney, liver. |

Inert Ingredients

Other ingredients: Not Established

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12. ECOLOGICAL INFORMATION

Eco-Acute Toxicity

Glyphosate Acid:

- Fish (Bluegill Sunfish) 96-hour LC50 45 ppm
- Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 134 ppm
- Green Algae 4-day EC50 12.54 ppm
- Bird (Bobwhite Quail) 14-day LD50 > 2000 mg/kg

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

Glyphosate Acid:

The information presented here is for the active ingredient, glyphosate.
Not persistent in soil. Immobile in soil. Sinks in water (after 24 h).

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

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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 inhaled. Causes moderate eye irritation. Avoid breathing spray mist. Avoid contact with eyes or clothing. This product may cause skin sensitization reactions in some people. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

EPA Registration Number(s):

100-1470

EPCRA SARA Title III Classification:

Section 311/312 Hazard Classes: Acute Health Hazard

Section 313 Toxic Chemicals: None

CERCLA/SARA 304 Reportable Quantity (RQ):

Not Applicable

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: 2
 Flammability: 1
 Reactivity: 0

Syngenta Hazard Category: A

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

For non-emergency questions about this product call:

1-800-334-9481

Original Issued Date: 3/20/2013

Revision Date: 11/3/2015

Replaces: 9/28/2015

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.