

MATERIAL SAFETY DATA SHEET

GLORY

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1. IDENTIFICATION

Product name: **GLORY**
Chemical name of active ingredient(s): Metribuzin: 4-Amino-6-(1,1-dimethylethyl)-3-(methylthio)-1,2,4-triazin-5(4H)-one
Manufacturer/Registrant: Makhteshim Agan of North America, Inc.
4515 Falls of Neuse Road, Suite 300
Raleigh, NC 27609
Phone: 919-256-9300
For fire, spill, and/or leak emergencies, contact Infotrac: Phone: 1-800-535-5053
For medical emergencies and health and safety inquiries, contact Prosar: Phone: 1-877-250-9291

2. COMPOSITION/INFORMATION ON INGREDIENTS

| MATERIAL | CAS # | % | OSHA PEL | ACGIH TLV | OTHER | NTP/IARC/OSHA Carcinogen |
|--------------------------|------------|-----|------------|------------|-------|--------------------------|
| Metribuzin | 21087-64-9 | 75 | N/E | 5 mg/m3 | N/E | NA |
| Total crystalline silica | 14808-60-7 | < 1 | 0.05 mg/m3 | 0.05 mg/m3 | N/E | NA |

N/E=Not Established

NA=Not applicable

3. HAZARDS IDENTIFICATIONS

PHYSICAL PROPERTIES:

Appearance: Brown granules

Odor: Faint

EMERGENCY OVERVIEW: CAUTION. May be harmful if swallowed or absorbed through skin. Causes moderate eye irritation.

LIKELY ROUTES OF EXPOSURE: Inhalation, skin contact, skin absorption, and eye contact.

SYMPTOMS OF ACUTE EXPOSURE: No specific systemic symptoms of overexposure are known to occur in humans. This product is mildly toxic orally and dermally and may cause moderate eye irritation and slight dermal irritation.

SYMPTOMS OF CHRONIC EXPOSURE: No deleterious effects or symptoms are expected from chronic exposure to the active ingredient during normal use. This product contains <1% total crystalline silica (quartz). Excessive long-term exposure to respirable crystalline silica may cause silicosis, a form of disabling, progressive pulmonary fibrosis. Severe and permanent lung damage may result.

MEDICAL CONDITIONS LIKELY TO BE AGGRAVATED BY EXPOSURE: No specific medical conditions are known which may be aggravated by exposure to the active ingredient in this product. However, pulmonary and respiratory diseases may be aggravated by exposure to respirable crystalline silica.

4. FIRST AID

FIRST AID

| | |
|----------------------|--|
| IF SWALLOWED: | <ul style="list-style-type: none">• Immediately call a poison control center or doctor.• Have person sip a glass of water if able to swallow.• Do not induce vomiting unless told to do so by a poison control center or doctor.• Do not give anything by mouth to an unconscious person. |
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| IF ON SKIN OR CLOTHING: | <ul style="list-style-type: none">• Take off contaminated clothing.• Rinse skin immediately with plenty of water for 15-20 minutes.• Call a poison control center or doctor for treatment advice. |
| IF IN EYES: | <ul style="list-style-type: none">• Hold eye open and rinse slowly and gently with water for 15-20 minutes.• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for treatment advice. |
| Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact PROSAR at 1-887-250-9291 for emergency medical treatment information. NOTE TO PHYSICIAN: Treat patient symptomatically. | |

5. FIRE FIGHTING MEASURES

FLASHPOINT: Not applicable

FLAMMABLE LIMITS (% in air): Not applicable

AUTOIGNITION TEMPERATURE: Not applicable

EXTINGUISHING MEDIA: Water, dry chemical.

FIRE FIGHTING INSTRUCTIONS: Keep out of smoke, cool exposed containers with water spray. Fight fires from an upwind position. Use self-contained breathing equipment. Contain runoff to prevent entry into sewers and waterways.

UNUSUAL FIRE/EXPLOSION HAZARDS: During the routine handling of this material there should be little risk of a dust explosion. However, tests on metribuzin (technical grade), indicate that an explosive mixture can develop. Therefore, appropriate preventative measures should be taken. If a large dust cloud develops, turn off any devices that may cause a spark and leave the area until the cloud dissipates.

HAZARDOUS DECOMPOSITION PRODUCTS: Proposed products due to extreme conditions such as fire include CO₂, SO₂, methyl mercaptan, amines.

INSTABILITY CONDITIONS: Sustained temperatures above 100°F (37.78°C); highly alkaline conditions for extended periods of time. Metribuzin may react with ketones and aldehydes.

6. ACCIDENTAL RELEASE MEASURES

SPILL OR LEAK PROCEDURES: Isolate area and keep unauthorized people away. Do not walk through spilled material. Avoid breathing dust and skin contact. Avoid generating dust (a fine water spray mist, plastic film cover, or floor sweeping compound may be used if necessary). Use recommended protective equipment while carefully sweeping up spilled material. Place in covered container for reuse or disposal. Scrub contaminated area with soap and water. Rinse with water. Use dry absorbent material such as clay granules to absorb and collect wash solution for proper disposal. Contaminated soil may have to be removed and disposed. Do not allow material to enter streams, sewers, or other waterways or contact vegetation.

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Do not contaminate water, food, or feed by storage or disposal. Handle and open container in a manner as to prevent spillage.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

STORAGE TEMPERATURE (MIN/MAX):

Minimum: Normal ambient temperatures.

Maximum: Do not exceed 30 day average of 100° F (37.78°C).

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, AND PACKAGING OF THE PRODUCT.

EYE PROTECTION: Goggles may be useful in some situations to prevent dust or spray mixture from getting into eyes.

SKIN PROTECTION: Avoid skin contact. Use chemical-resistant gloves such as nitrile to prevent dermal exposure. Wash the outside of gloves before removing. Applicators and other handlers must wear long-sleeved shirt, long pants, chemical-resistant gloves, and shoes plus socks.

VENTILATION: Maintain exposure levels below the applicable exposure limit through the use of general and local exhaust ventilation.

RESPIRATORY: Under normal handling conditions no respiratory protection is needed. However, if needed to prevent respiratory irritation, a NIOSH-approved particulate respirator may be used.

Follow manufacturer's instructions for cleaning/ maintaining personal protective equipment, PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

USER SAFETY RECOMMENDATIONS:

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

EXPOSURE GUIDELINES: Refer to Section 2.

ENGINEERING CONTROLS: Use adequate ventilation to minimize airborne concentrations of this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Brown granules

ODOR: Faint

DENSITY: 0.429 – 0.525 g/mL at 20°C

pH: No Data Available

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBILITY: Strong caustics.

INSTABILITY CONDITIONS: Sustained temperatures above 100° F (37.78°C); highly alkaline conditions for extended periods of time. Metribuzin may react with ketones and aldehydes. Explosive dust may develop during handling.

HAZARDOUS DECOMPOSITION PRODUCTS: Proposed products due to extreme conditions such as fire include CO₂, SO₂, methyl mercaptan, amines.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES:

| | |
|------------------------------------|--|
| Acute oral LD 50 (Rat): | 2,365 mg/kg (male rat); 1,449 mg/kg (female rat) |
| Acute Dermal LD 50(Rat): | >2,000 mg/kg (male and female) |
| Acute Inhalation (Rat): | >4.84 mg/L (4-hour) (male and female rat) |
| Eye Irritation (Rabbit): | Moderate irritation (rabbit) |
| Dermal Irritation (Rabbit): | Slight irritation (rabbit) |
| Dermal Sensitization (Guinea pig): | Not a dermal sensitizer (guinea pig) |

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REPRODUCTIVE AND DEVELOPMENTAL TOXICITY:

REPRODUCTION: Metribuzin was not a reproductive toxicant in a 2-generation reproductive study in rats.

DEVELOPMENTAL TOXICITY: Metribuzin was not a primary developmental toxicant in laboratory animals. Developmental effects were observed only at doses that caused maternal toxicity.

NEUROTOXICITY:

Metribuzin has been tested in acute and subchronic neurotoxicity screening studies in rats. Transient neurobehavioral effects (e.g., decreased motor activity) were observed in the acute study. Neuropathological changes were not observed in either study.

MUTAGENICITY: Metribuzin was not mutagenic or genotoxic based on the overall weight of evidence in a battery of in vitro and in vivo tests.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not apply when weather conditions favor drift from areas treated. Do not contaminate water when disposing of equipment wash waters.

SUMMARY OF EFFECTS: Moderately to slightly toxic to birds. Slightly toxic to fish. Non-toxic to bees.

Rainbow Trout 96-hour LC50: 64 - 76 mg/L

Bluegill Sunfish 96-hour LC50: 80 mg/L

Goldfish 96-hour LC50: >10 mg/L

Daphnia magna 48-hour EC50: 4.5 mg/L

Marine shrimp 96-hour EC50: 48.3 mg/L

Bobwhite quail, mallard duck, Japanese quail LD50: 100 - 200 mg/kg

13. DISPOSAL CONSIDERATIONS

END USERS MUST DISPOSE OF ANY UNUSED PRODUCT AS PER THE LABEL RECOMMENDATIONS.

PESTICIDE DISPOSAL: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.

14. TRANSPORT INFORMATION

DOT CLASSIFICATION:

Not regulated

INTERNATIONAL TRANSPORTATION

IMO (vessel): Not regulated

IATA (air): Not regulated

15. REGULATORY INFORMATION

SARA TITLE III CLASSIFICATION:

Section 302: Not applicable

Section 311/312: Acute health hazard (immediate)

Section 313: Metribuzin (CAS #21087-64-9) – 75%

CA PROPOSITION 65: Not applicable

CERCLA RQ: Not applicable

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RCRA CLASSIFICATION: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

TSCA STATUS: The ingredients of this product are listed on the TSCA inventory or are exempt.

16. OTHER INFORMATION

NFPA HAZARD RATINGS

| | | | |
|----------------------|---|---|----------|
| HEALTH: | 1 | 0 | MINIMAL |
| FLAMMABILITY: | 3 | 1 | SLIGHT |
| REACTIVITY: | 1 | 2 | MODERATE |
| | | 3 | HIGH |
| | | 4 | SEVERE |

MSDS DATE: 6-3-11.

The information herein is given in good faith, but no warrant, express or implied, is made. Consult Makhteshim Agan of North America, Inc. for further information.