

# MATERIAL SAFETY DATA SHEET

## Galigan Slapshot™ Oxyfluorfen/Glyphosate Herbicide

Page 1 of 6

### 1. CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Product name: **Galigan Slapshot™ Oxyfluorfen/Glyphosate Herbicide**

Chemical name of active ingredient(s): Oxyfluorfen (21.1%): 2-chloro-1-(3-ethoxy-4-nitrophenoxy)-4-(trifluoromethyl) benzene (CAS # 42874-03-3)  
Glyphosate (14.2%): N-(phosphonomethyl) glycine, in the form of its isopropylammonium salt (CAS # 38641-94-0)

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	%	OSHA/PEL	ACGIH/TLV	OTHER	NTP/IARC/OSHA (Carcinogen)
Oxyfluorfen	21.1	Not established	Not established	4 mg/m <sup>3</sup> (TWA)	Not applicable
Glyphosate	14.2	Not established	Not established	Not established	Not applicable

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW:

CAUTION. Harmful if absorbed through skin. Avoid contact with skin, eyes, or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse. Wear clothing specified in PPE below in Section 8.

#### PHYSICAL PROPERTIES:

Appearance: Liquid

**HAZARDOUS DECOMPOSITION PRODUCTS:** None known

**UNUSUAL FIRE, EXPLOSION AND REACTIVITY HAZAARDS:** None known

**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** None known

**MATERIALS TO AVOID:** 10% potassium permanganate, iron powder.

### 4. FIRST AID MEASURES

#### FIRST AID

- IF ON SKIN OR CLOTHING:**
- 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:**
- 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.
- IF SWALLOWED:**
- Call a poison control center or doctor immediately for treatment advice.
  - Have person sip a glass of water if able to swallow.
  - Do not give anything by mouth to an unconscious person.
- IF INHALED:**
- Move person to fresh air.

# MATERIAL SAFETY DATA SHEET

## Galigan Slapshot™ Oxyfluorfen/Glyphosate Herbicide

Page 2 of 6

- If person is not breathing, call 911 of an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible.
- Call a poison control center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor or going for treatment. For medical emergencies, call PROSAR 24 hours a day at 1-877-250-9291.

### 5. FIRE FIGHTING MEASURES

#### FLAMMABLE PROPERTIES:

Flash Point: Not applicable

**AUTOIGNITION TEMPERATURE:** Not applicable

**FLAMMABILITY:** Not applicable

**FIRE & EXPLOSION HAZARD:** None known.

**SUITABLE EXTINGUISHING MEDIA:** Dry chemical, foam, water, or carbon dioxide (CO<sub>2</sub>).

**FIRE-FIGHTING PROCEDURES:** Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, or fumes.

### 6. ACCIDENTAL RELEASE MEASURES

**GENERAL:** Use proper protective equipment to minimize exposure (see Section 8). Take all necessary actions to prevent and to remedy the adverse effects of the spill. Notify the appropriate authorities immediately, if necessary.

**DISPOSAL:** Ensure that the disposal is in compliance with federal requirements and state or local regulations.

**LAND SPILL OR LEAK:** Contain and absorb spillage with absorptive material. Use clean shovel and place into clean, dry containers for disposal. Wash the area with detergent and water. Do not allow spilled material to enter sewer or watercourse.

**FOR 24-HOUR EMERGENCY ASSISTANCE (SPILL, LEAK OR FIRE), CALL INFOTRAC AT (800) 535-5053.**

### 7. HANDLING AND STORAGE

**HANDLING:** Read label carefully before use. Avoid contact with skin, eyes, or clothing. In case of skin contact, carefully remove contaminated clothing and wash affected area with soap and water. Do not contaminate water, food, or feed by storage or disposal or cleaning of equipment. Wash thoroughly with soap and water after handling. Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.

**STORAGE:** Do not store foods, beverages, tobacco products, or cosmetics in areas where this material is stored.

#### STORAGE TEMPERATURE (MIN/MAX):

Minimum/Maximum: Normal ambient storage temperatures.

### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THE PRODUCT. FOR COMMERCIAL APPLICATION AND 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. Always wash thoroughly after handling.

**EYE CONTACT:** To avoid eye contact, wear safety glasses with side shields or chemical goggles.

**SKIN CONTACT:** To avoid skin contact, wear rubber gloves, rubber boots, long-sleeved shirt, long pants and a head covering (for overhead exposure).

**INHALATION:** Ensure good ventilation. If not adequate, wear suitable respirator for spray mist.

# MATERIAL SAFETY DATA SHEET

## Galigan Slapshot™ Oxyfluorfen/Glyphosate Herbicide

Page 3 of 6

**EXPOSURE GUIDELINES:** Refer to Section 2.

**ENGINEERING CONTROLS:** Refer to product label.

### 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.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**APPEARANCE:** Liquid

**DENSITY:** 1.160 g/mL (9.672 lbs/gal)

**VAPOR PRESSURE:** Oxyfluorfen: 0.026 mPa @ 25°C

Glyphosate: Negligible

**WATER SOLUBILITY:** Oxyfluorfen: 0.1 mg/L

Glyphosate: 12,000 mg/L @ 25°C

**pH:** 4.27

## 10. STABILITY AND REACTIVITY

**STABILITY:** Stable under normal ambient and anticipated storage conditions.

**HAZARDOUS POLYMERIZATION:** Will not occur.

**CONDITIONS TO AVOID:** None known.

**HAZARDOUS DECOMPOSITION PRODUCTS:** None known.

**MATERIALS TO AVOID:** 10% potassium permanganate, iron powder.

## 11. TOXICOLOGICAL INFORMATION

**INGESTION:** Oral LD50 (Rat) >5,000 mg/kg

**DERMAL:** Dermal LD50 (Rabbit) >2,000 mg/kg

**INHALATION:** Inhalation LC50 (Rat) >2.56 mg/L (4-hour)

**EYE CONTACT:** Mildly irritating

**SKIN CONTACT:** Non-irritating

**SKIN SENSITIZATION:** Not a Sensitizer (Guinea Pig)

### EFFECTS OF CHRONIC EXPOSURE:

#### OXYFLUORFEN:

Effects on the liver have been observed in long-term feeding studies with rats, mice, and dogs.

#### GYLPHOSATE:

Studies of glyphosate lasting up to 2 years, have been conducted with rats, dogs, mice, and rabbits, and with few exceptions no effects were observed. For example, in a chronic feeding study with rats, no toxic effects were observed in rates given doses as high as 400 mg/kg/day. Also, no toxic effects were observed in a chronic feeding study with dogs fed up to 500 mg/kg/day, the highest dose tested.

### CARCINOGENICITY:

#### OXYFLUORFEN:

In a 20-month study with mice fed 0.3, 3, or 30 mg/kg/day, doses at and above 3 mg/kg/day produced non-significant increases in both benign and malignant liver tumors in male mice. No increased tumor formation was seen in female mice at any dose. No carcinogenic effects were observed in a 23-year study with rats fed doses 2 mg/kg/day, nor in dogs at doses of 3 mg/kg/day. These data suggest that oxyfluorfen is not carcinogenic.

#### GYLPHOSATE:

# MATERIAL SAFETY DATA SHEET

## Galigan Slapshot™ Oxyfluorfen/Glyphosate Herbicide

Page 4 of 6

Rats given oral doses of up to 400 mg/kg/day did not show any signs of cancer, nor did dogs given oral doses of up to 500 mg/kg/day or mice fed glyphosate at does of up to 4500 mg/kg/day. It appears that glyphosate is not carcinogenic.

### MUTAGENICITY:

#### OXYFLUORFEN:

Mutagenicity tests on rats, mice and on bacterial cell cultures have produced mixed results. However, unscheduled DNA synthesis assays have been negative. Due to the conflicting results, it is not possible to determine the mutagenic potential of oxyfluorfen.

#### GYLPHOSATE:

Glyphosate mutagenicity and genotoxicity assays have been negative. These included the Ames test, other bacterial assays, and the Chinese Hamster Ovary cell culture, rat bone marrow cell culture, and mouse dominant lethal assays. It appears that glyphosate is not mutagenic.

### REPRODUCTIVE TOXICITY:

#### OXYFLUORFEN:

In developmental study with rats given doses of 10, 100, or 1000 mg/kg/day by gavage, decreased implantation, increased resorption, and lower fetal survival was seen at the 1000 mg/kg level. Toxic effects on the mothers were also seen at this dose. At 5 mg/kg/day, there was decreased survival of fetuses and decreased maternal and fetal weights. It does not appear likely that oxyfluorfen will cause reproductive effects in humans at likely levels of exposure.

#### GYLPHOSATE:

Laboratory studies show that glyphosate produces reproductive change sin test animals very rarely and then only at very high doses (over 150 mg/kg/day). It is unlikely that the compound would produce reproductive effects in humans.

### TERATOGENICITY:

#### OXYFLUORFEN:

In a developmental study with rabbits, 30 mg/kg/day, the highest dose tested, produced an increase in fused sternal bones in the fetuses as well as toxic effects on the mothers. These data suggest oxyfluorfen may have teratogenic effects, but only at very high doses.

#### GYLPHOSATE:

In a teratology study with rabbits, no developmental toxicity was observed in the fetuses the highest dose tested (350 mg/kg/day). Rats given doses up to 175 mg/kg/day on days 6 to 19 of pregnancy had offspring with no teratogenic effects, but other toxic effects were observed in both the mothers and the fetuses. No toxic effects to the fetuses occurred at 50 mg/kg/day. Glyphosate does not appear to be teratogenic.

## 12. ECOLOGICAL INFORMATION

**ENVIRONMENTAL HAZARDS:** Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of equipment washwaters. This product is highly toxic to aquatic invertebrates, aquatic plants, wildlife, and fish. Use with care when applying in areas frequented by wildlife or adjacent to any body of water or wetland area. Do not apply when weather conditions favor drift or erosion from target areas.

### ECOLOGICAL EFFECTS (provided by EXTOUNET):

**OXYFLUORFEN:** Oxyfluorfen is practically non-toxic to birds and non-toxic to bees.. Oxyfluorfen is highly toxic to aquatic invertebrates, freshwater clams, oysters, aquatic plants, and fish.

Rainbow Trout 96-hour LC50: 410 µg/L  
Bluegill Sunfish 96-hour LC50: 200 µg/L  
*Daphnia magna* 48-hour EC50: 1,500 µg/L  
Bobwhite Quail LD50: >2,200 mg/L  
Mallard Duck LD50: >4,000 mg/L

# MATERIAL SAFETY DATA SHEET

## Galigan Slapshot™ Oxyfluorfen/Glyphosate Herbicide

Page 5 of 6

**GLYPHOSATE:** Glyphosate is slightly toxic to birds and non-toxic to bees. It is practically non-toxic to fish and may be slightly toxic to aquatic invertebrates.

Rainbow Trout 96-hour LC50:	168 mg/L
Bluegill Sunfish 96-hour LC50:	86 mg/L
<i>Daphnia magna</i> 48-hour EC50:	780 mg/L
Bobwhite Quail LD50:	>4,500 mg/L
Mallard Duck LD50:	>4,500 mg/L

### ENVIRONMENTAL FATE (provided by EXTOKNET):

**OXYFLUORFEN:** Oxyfluorfen is moderately persistent in most soil environments, with a representative field half-life of about 30 to 40 days. Oxyfluorfen is not subject to microbial degradation or hydrolysis. The main mechanism of degradation in soils may be photodegradation and evaporation/codistillation in moist soils. It is practically insoluble in water and has a tendency to adsorb to soil. It will be sorbed to suspended particles or sediments. In water, oxyfluorfen is rapidly decomposed by light. Because oxyfluorfen is nearly insoluble in water and has a tendency to adsorb to soil, it will be sorbed to suspended particles or sediments.

**GLYPHOSATE:** Glyphosate is moderately persistent in soil with an estimated average half-life of 47 days. It is strongly adsorbed to most soils, even those with lower organic and clay content. Thus, even though it is highly soluble in water, field and laboratory studies show it does not leach appreciable and has low potential for runoff (except as adsorbed to colloidal matter). Microbes are primarily responsible for the breakdown of the product and volatilization or photodegradation losses will be negligible. In water, glyphosate is strongly adsorbed to suspended organic and mineral matter and is broken down primarily by microorganisms.

### 13. DISPOSAL CONSIDERATIONS

**PESTICIDE DISPOSAL:** Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility. Ensure that the disposal is in compliance with federal requirements and state or local regulations.

**CONTAINER DISPOSAL:** Triple rinse (or equivalent), then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, by incineration, or if allowed by state and local authorities, by burning. If burned, stay out of smoke.

### 14. TRANSPORT INFORMATION

**DOT CLASSIFICATION:**

Not regulated

**B/L FREIGHT CLASSIFICATION:** Item 50320 [Compounds; Weed Killing (Herbicide), NOI, Other than Poison], Class 60

**INTERNATIONAL TRANSPORTATION:**

**IMO (vessel):** Environmentally hazardous liquid, N.O.S., (oxyfluorfen 21.1%), 9, UN3082, PGIII, Marine Pollutant

**IATA (air):** Not regulated

### 15. REGULATORY INFORMATION

**SARA TITLE III CLASSIFICATION:**

SECTION 302: Not applicable  
SECTION 311/312: Acute (Immediate) Health Hazard  
SECTION 313 Chemical(s): Not applicable

**CA PROPOSITION 65:** Not Applicable

**CERCLA REPORTABLE QUANTITY (RQ):** None

# MATERIAL SAFETY DATA SHEET

## Galigan Slapshot™ Oxyfluorfen/Glyphosate Herbicide

Page 6 of 6

**RCRA CLASSIFICATION:** If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, 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.

**TOXIC SUBSTANCES CONTROL ACT (TSCA):** Exempt.

### 16. OTHER INFORMATION

HAZARD RATINGS	NFPA	
HEALTH:	1	0 MINIMAL
FLAMMABILITY:	0	1 SLIGHT
REACTIVITY:	0	2 MODERATE
		3 HIGH
		4 SEVERE

**MSDS Date:** 05-02-2006

The information contained herein is given in good faith and is believed to be correct, but no warrant, express or implied, is made. Consult Makhteshim-Agan for further information.

Galigan Slapshot is a registered trademark.