

# TIGRIS<sup>™</sup>

# FLUMIOXAZIN XLT

## SAFETY DATA SHEET

EMERGENCY CALL: 1-800-424-9300 (CHEMTREC)

### 1. IDENTIFICATION

**PRODUCT NAME:** Tigris Flumioxazin XLT  
**DESCRIPTION:** Solid herbicide  
**EPA REG. NO.:** 92647-28  
**COMPANY IDENTIFICATION:** Tigris, LLC  
10025 Hwy. 264 Alternate  
Middlesex, NC 27557

### 2. HAZARD IDENTIFICATION

#### WARNING

May cause damage to organs through prolonged or repeated exposure. (H373)

Suspected if damaging fertility or the unborn child (H361)

Harmful if inhaled (H332)

Very toxic to aquatic life with long lasting effects (H400+H410)



#### HAZARD CLASSIFICATION

##### Health Hazards

Acute toxicity, inhalation 4  
Specific target organ toxicity, repeated exposure 2  
Reproductive toxicity 2

##### Physical Hazards

None

##### Environmental Hazards

Hazardous to the aquatic environment, short-term 1  
Hazardous to the aquatic environment, long-term 1

#### HAZARDS NOT REQUIRING CLASSIFICATION

None

#### PRECAUTIONARY STATEMENTS

Do not handle until all safety precautions have been read and understood. (P202)

Wear protective clothing as described in Section 8 of this document. (P280)

Do not breath dust. Use only outdoors or in a well-ventilated area. (P260+P271)

**IF exposed or concerned:** Get medical advice/attention. (P308+P313)

**IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell (P304+P340+P312)

**IF SWALLOWED:** Call a POISON CENTER/doctor if you feel unwell. (P301+P312)

Store locked up. (P405)

Dispose of contents / container in accordance with local regulations. Refer to the product label for specific disposal instructions. (P501)

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Common Name	Chemical Name	CAS #	Composition
Flumioxazin	2-[7-fluoro-3,4-dihydro-3-oxo-4-(2-propynyl)-2H-1,4-benzoxazin-6-yl] 4,5,6,7-tetrahydro-1Hisoindole-1,3(2H)-dione	103361-09-7	30.0%
Chlorimuron ethyl	Benzoic acid, 2-[[[(4-chloro-6-methoxy-2-pyrimidinyl)amino]carbonyl]amino]sulfonyl]-, ethyl ester	90982-32-4	10.3%

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

### 4. FIRST AID MEASURES

Have the product container or label with you when calling a poison control center or doctor, or going for treatment.

**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 a poison control center or doctor for further treatment advice.

### 5. FIREFIGHTING MEASURES

**Fire and Explosion Hazards:** Not available.

**Extinguishing Medium:** Foam, dry chemical, or carbon dioxide (CO<sub>2</sub>). If water is used to fight fire, dike and collect runoff

**Fire Fighting Equipment:** Firefighters should be equipped with self-contained positive pressure breathing apparatus and full bunker gear.

**Fire Fighting Instructions:** Evacuate area of all unnecessary personnel and fight fire from a safe distance upwind. Contain contaminated water / firefighting water; do not allow to enter drains or waterways. Use foam or dry chemical fire extinguishing systems to prevent environmental damage from excessive water runoff.

**Hazardous Combustion Products:** Not available

**NFPA Ratings:** Health - 1 / Flammability - 1 / Reactivity - 0



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## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Isolate area and keep unnecessary and unprotected personnel from entering. Wear suitable personal protective clothing and equipment as described in Section 8 of this document.

**Environmental Precautions:** Reduce airborne dust. Avoid runoff into storm sewers or other bodies of water. This material will disperse or dissolve in water. Stop the source of the release. Contain and isolate to prevent further release into soil, surface water and ground water.

**Spill Cleanup:** Clean up spill immediately. Vacuum or sweep up material and place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a chemical waste container. Clean up spill immediately. Absorb spill with inert material. Remove contaminated water for treatment or disposal.

## 7. HANDLING AND STORAGE

**Handling:** Do not contaminate water, food or feed by storage, disposal or cleaning of equipment. Open dumping is prohibited. Avoid contact with skin, eyes or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

**Storage:** Keep pesticide in original container. Store in a cool, dry, secure place. Do not put formulation or dilute spray solution into food or drink containers. Do not contaminate food or foodstuffs. Do not store or transport near feed or food. Not for use or storage in or around the home.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Engineering Controls:** Use effective engineering controls to comply with occupational exposure limits (if applicable). This material may be a respiratory irritant and, unless ventilation is adequate, the use of approved respiratory protection is recommended. Use this material only in well ventilated areas.

*Chlorimuron-ethyl Manufacturer's Exposure Limits:* 10 mg/m<sup>3</sup> and 12 hour TWA (total dust); 5 mg/m<sup>3</sup> 8 and 12 hour TWA (respirable dust)

**Protective Clothing:** Applicators and other handlers must wear: Long-sleeved shirt and long pants, chemical resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride, socks and shoes.

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

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance:** light brown granules

**Odor:** not determined

**Melting/freezing point:** not determined

**Boiling point/Boiling range:** not determined

**Flammability:** not determined

**Flammability limits (upper/lower):** not determined

**Flashpoint:** not determined

**Auto-ignition temperature:** not determined

**Decomposition temperature:** not determined

**pH:** 6-8 (1% emulsion)

**Kinematic viscosity:** not determined

**Solubility:** dispersible in water

**Partition coefficient:** not determined

**Vapor pressure:** not determined

**Density:** 47-50 lb/ft<sup>3</sup>

**Relative vapor density:** not determined

**Particle characteristics:** not available

**Explosive Properties:** not available

## 10. STABILITY AND REACTIVITY

**CONDITIONS TO AVOID:** Extremes of temperatures and direct sunlight.

**CHEMICAL STABILITY:** Stable at normal use and storage conditions.

**INCOMPATIBILITY WITH OTHER MATERIALS:** None known.

**HAZARDOUS DECOMPOSITION PRODUCTS:** None known.

**HAZARDOUS POLYMERIZATION:** Polymerization will not occur

## 11. TOXICOLOGICAL INFORMATION

**Information presented below is from testing done on an identical or substantially similar product:**

**ORAL TOXICITY (rat LD<sub>50</sub>):** > 5,000 mg/kg

**DERMAL TOXICITY (rabbit LD<sub>50</sub>):** > 2,000 mg/kg

**INHALATION TOXICITY (rat LC<sub>50</sub>):** > 2.18 mg/L (4-hour)

**EYE IRRITATION:** Brief and/or minor irritation (Rabbit)

**SKIN IRRITATION:** Brief and/or minor irritation (Rabbit)

**SKIN SENSITIZATION:** Probable non-sensitizer (Guinea Pig)

**CARCINOGENICITY:**

**NTP:** Not listed

**IARC:** Not listed

**EPA:** Not likely to be carcinogenic to humans (flumioxazin and chlorimuron ethyl)

**TOXICITY OF FLUMIOXAZIN TECHNICAL -**

**SUBCHRONIC:** Compound related effects of Flumioxazin Technical noted in rats following subchronic exposures at high dose levels were hematotoxicity including anemia, and increases in liver, spleen, heart, kidney and thyroid weights. In dogs, the effects produced at high dose levels included a slight prolongation in activated partial thromboplastin time, increased cholesterol and phospholipid, elevated alkaline phosphatase, increased liver weights and histological changes in the liver. The lowest no-observable-effect-level (NOEL) in subchronic studies was 30 ppm in the three-month toxicity study in rats.

**CHRONIC/CARCINOGENICITY:** In a one year dog feeding study, Flumioxazin Technical produced treatment-related changes in blood chemistry and increased liver weights at 100 and 1000 mg/kg/day. Minimal treatment-related histological changes were noted in the livers of animals in the 1000 mg/kg/day group. Based on these data the NOEL is 10 mg/kg/day. Dietary administration of Flumioxazin Technical for 18 months produced liver changes in mice of the 3000 and 7000 ppm groups. There was no evidence of any treatment-related oncogenic effect. The NOEL for this study is 300 ppm. Dietary administration of Flumioxazin Technical for 24 months produced anemia and chronic nephropathy in rats of the 500 and 1000 ppm groups. The anemia lasted throughout the treatment period, however, it was not progressive nor aplastic in nature. No evidence of an oncogenic effect was observed. The NOEL for this study is 50 ppm.

**DEVELOPMENTAL TOXICITY:** Flumioxazin Technical produces developmental toxicity in rats in the absence of maternal toxicity at doses of 30 mg/kg/day by the oral route and 300 mg/kg/day by the dermal route. The developmental effects noted consisted primarily of decreased number of live fetuses and fetal weights, cardiovascular abnormalities, wavy ribs and decreased number of ossified sacrococcygeal vertebral bodies. The developmental NOEL in the rat oral and dermal developmental toxicity studies were 10 and 100 mg/kg/day, respectively. The response in rabbits was very different from that in rats. No developmental toxicity was noted in rabbits at doses up to 3000 mg/kg/day, a dose well above the maternal NOEL of 1000 mg/kg/day.

Mechanistic studies indicate that the effects seen in the rat are highly unlikely to occur in the human and that flumioxazin would not be a developmental toxicant in the human.



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## 11. TOXICOLOGICAL INFORMATION (continued)

**MUTAGENIC TOXICITY:** Flumioxazin Technical was not mutagenic in most in vitro assays: gene mutation and a chromosome aberration assay in the absence of metabolic activation. In three in vivo assays, chromosome aberration, unscheduled DNA synthesis and micronucleus assay, Flumioxazin Technical was not mutagenic. The only positive response was observed in the in vitro chromosome aberration assay in the presence of metabolic activation. Overall, Flumioxazin Technical does not present a genetic hazard.

**REPRODUCTIVE TOXICITY/TERATOGENICITY:** Reproductive toxicity was observed in F1 males, P1 females and F1 females at 300 ppm Flumioxazin Technical, the highest dose tested and a dose that also produced signs of systemic toxicity. Toxicity was also observed in the F1 and F2 offspring at doses of 200 ppm and greater.

### TOXICITY OF CHLORIMURON ETHYL TECHNICAL

**CHRONIC/CARCINOGENICITY:** Chlorimuron ethyl technical was administered to rats for 2 years at dietary concentrations of 0, 25, 250 and 2500 ppm. This compound was not oncogenic at any dose. The NOEL was 250 ppm based on transient anemia observed during the first year of the study and slight body weight and organ weight changes. Chlorimuron ethyl technical was administered to mice for 18 months at dietary concentrations of 0, 12.5, 125 and 1250 ppm. There were no oncogenic effects or other effects observed at any dose. The NOEL was 1250 ppm, the highest dose tested. Chlorimuron ethyl technical was fed to dogs at dose levels of 0, 25, 250 or 1500 ppm in the diet. The NOEL was 250 ppm based on increased liver weight, clinical chemistry changes and anemia at the high dose.

**DEVELOPMENTAL TOXICITY:** Rats were dosed via intubation at 0, 30, 150 or 600 mg/kg/day chlorimuron ethyl technical. The NOEL for maternal and fetotoxicity was 30 mg/kg/day based on reduced food consumption and body weight gain and increased frequency of fetal variations. There was a slight increase in the number of fetal malformations in the presence of overt maternal toxicity at the high dose. Although this was not statistically significant, it was considered to be a weak teratogenic response. In this study chlorimuron ethyl technical was not demonstrated to be a unique hazard to the conceptus. Rabbits were dosed via intubation at 0, 15, 60 or 300 mg/kg/day. There were no teratogenic effects at any dose. The NOELs for maternal and fetotoxicity were 60 and 15 mg/kg/day respectively. These were based on reduced body weight gain and increased frequency of fetal variations due to retarded development.

**REPRODUCTION:** Chlorimuron ethyl technical was administered in the diet at concentrations of 0, 25, 250 or 2,500 ppm in a 2-generation rat reproduction study. Reproduction and lactation performance were not affected at any dose. The NOEL for maternal and fetotoxicity was 250 ppm. This was based on reduced maternal and fetal body weights and a compromised nutritional state among offspring at the high dose.

**MUTAGENICITY:** Chlorimuron ethyl technical was negative in the following genotoxicity tests: Ames bacterial assay, in vitro mutagenicity test in Chinese hamster ovary cells, in vivo cytogenetic assay (rat bone marrow cells), and in vitro unscheduled DNA synthesis (rat liver cells).

## 12. ECOLOGICAL INFORMATION

This pesticide is moderately toxic to freshwater fish, freshwater invertebrates, estuarine/marine fish, and moderately to highly toxic to estuarine/marine invertebrates. This pesticide is toxic to non-target plants. No significant bioaccumulation is expected. These chemicals demonstrate the properties and characteristics associated with chemicals detected in ground water.

**The following information is for the active ingredient, Flumioxazin:**

### AQUATIC TOXICITY

Rainbow Trout:	(96-hr LC <sub>50</sub> ):	2.3 mg/L
	(NOAEC):	0.0077 mg/L
Daphnia Magna:	(48-hr EC <sub>50</sub> ):	> 5.5 mg/L
	(NOAEC):	0.028 mg/L
Mysid Shrimp	(96-hr LC <sub>50</sub> ):	0.23 mg/L
Blue-green Algae	(EC <sub>50</sub> ):	0.00083 mg/L
	(NOAEC):	0.000022 mg/L

### AVIAN TOXICITY

Bobwhite Quail	(Oral LD <sub>50</sub> ):	>2,250 mg/kg
Bobwhite Quail	(Dietary LD <sub>50</sub> ):	>5,620 ppm
Mallard Duck	(Dietary LD <sub>50</sub> ):	>5,620 ppm

**The following information is for the active ingredient, Chlorimuron ethyl:**

### AQUATIC TOXICITY

Rainbow Trout:	(96-hr LC <sub>50</sub> ):	>1,000 mg/L
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### AVIAN TOXICITY

Bobwhite Quail	(Dietary LD <sub>50</sub> ):	>5,620 ppm
Mallard Duck	(Dietary LD <sub>50</sub> ):	>2,510 ppm

### OTHER NON-TARGET ORGANISM TOXICITY

Bees	(LC <sub>50</sub> ):	>105 g/bee (flumioxazin)
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## 13. DISPOSAL CONSIDERATIONS

**PESTICIDE DISPOSAL:** Pesticide spray mixture or rinsate that cannot be used must be disposed of in a landfill approved for pesticides. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

**CONTAINER DISPOSAL:** Nonrefillable container. Do not reuse or refill this container. Refer to the product label for specific container disposal instructions.



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## 14. TRANSPORT INFORMATION

### US-DOT:

**Containers ≤ 11 lbs. (5 kg)  
in strong outer packaging:** Not regulated

**Containers > 11 lbs. (5 kg)  
shipped "ground only"::** Not regulated

**Containers > 11 lbs. (5 kg)  
shipped all or in part by vessel:**  
Shipping Description: UN3077, Environmentally hazardous  
substance, solid, N.O.S. (contains  
flumioxazin, chlorimuron ethyl), 9,  
PG III, Marine Pollutant

Emergency Guide: 171

### IMDG:

**Containers ≤ 11 lbs. (5 kg)  
in strong outer packaging:** Not regulated

**Containers > 11 lbs. (5 kg):** Not regulated

### IATA:

**Containers ≤ 11 lbs. (5 kg)  
in strong outer packaging:** Not regulated

**Containers > 11 lbs. (5 kg):**  
Shipped internationally by air: UN3077, Environmentally hazardous  
substance, solid, N.O.S. (contains  
flumioxazin, chlorimuron ethyl), 9,  
PG III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

## 15. REGULATORY INFORMATION

### FIFRA –

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. The following is the hazard information as required on the pesticide label:

#### PRECAUTIONARY STATEMENTS

##### HAZARDS TO HUMANS AND DOMESTIC ANIMALS

**CAUTION.** Harmful if absorbed through skin. Harmful if inhaled. Causes moderate eye irritation. Avoid contact with skin, eyes or clothing. Avoid breathing dust and spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet.

##### ENVIRONMENTAL HAZARDS

This product is toxic to non-target plants and aquatic invertebrates.

**Groundwater advisory:** Chlorimuron-ethyl is known to leach through soil into groundwater under certain conditions as a result of label use. This chemical may leach into groundwater if used in areas where soils are permeable, particularly where the water table is shallow.

**Surface water advisory:** This product may impact surface water quality due to runoff of rainwater. This is especially true for poorly draining soils and soils with shallow ground water. This product is

classified as having high potential for reaching surface water via runoff for several months or more after application. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams and springs will reduce the potential loading of chlorimuron-ethyl from runoff water and sediment. Runoff of this product will be greatly reduced by avoiding applications when rainfall or irrigation is expected to occur within 48 hours.

All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide. This product is excluded from listing requirements under EPA/TSCA.

### SARA Title III – Section 302 Extremely Hazardous Substances

Not listed

### SARA Title III – Section 311/312 Hazard Categories

Immediate, Delayed

### SARA Title III – Section 312 Threshold Planning Quantity

The threshold planning quantity (TPQ) for this product treated as a mixture is 10,000 lbs. This product contains no ingredients with a TPQ of less than 10,000 lbs.

### SARA Title III – Section 313 Reportable Ingredients

Not listed

### CERCLA Reportable Quantity (RQ) –

Not listed

### CALIFORNIA PROP 65 STATUS –

This product does not contain any chemical known to the state of California to cause cancer or reproductive harm.

### CANADA –

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

## 16. OTHER INFORMATION

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA APPROVED PRODUCT LABELING (attached to and accompanying the product container). This SDS provides important health, safety, and environmental information for employers, employees, emergency responders and others handling large quantities of the product in activities generally other than product use, while the labeling provides that information specifically for product use in the ordinary course.

To the extent consistent with applicable law, neither Tigris, LLC nor Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF TIGRIS, LLC AND SELLER FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THE PRODUCT OR, AT THE ELECTION OF TIGRIS, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

SDS Version: 1.1  
Tigris Flumioxazin XLT v1 08252020

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