



**Safety Data Sheet (GHS)**

**1. IDENTIFICATION**

**Product identifier**

**PRODUCT NAME:** Fierce® EZ Herbicide  
**PCPA REGISTRATION NUMBER:** 33869  
**VC NUMBER(S):** 2037, 2065, 2066, 2067, 2068  
**Synonyms** Fierce EZ Master Herbicide (Reg. No. 33870), Fierce EZ Manufacturing Use Product (Reg. No. 33871)  
**PRODUCT DESCRIPTION:** Herbicide

*Fierce* is a Registered trademark of Valent U.S.A. LLC

**Recommended use of the chemical and restrictions**

**on use Recommended Use** Herbicide  
**Restrictions on use** It is a violation of Federal law to use this product in a manner inconsistent with its pesticide labeling.

**Details of the supplier of the safety data sheet**

**MANUFACTURER/DISTRIBUTOR**  
 VALENT CANADA, INC.  
 201-230 Hanlon Creek Blvd.  
 Guelph, Ontario N1C 0A1  
 (519) 767-9262

**EMERGENCY TELEPHONE NUMBERS**  
 HEALTH EMERGENCY OR SPILL (24 hr):  
 (800) 682-5368  
 TRANSPORTATION (24 hr.): CHEMTREC  
 (800) 424-9300 or (202) 483-7616

**24 Hour Emergency Phone Number:** 800-682-5368

**Restrictions on emergency number** None

**2. HAZARDS IDENTIFICATION**

**Classification: Per WHMIS 2015**

**This product has been classified under the Guidelines of 2015 Health Canada requirements and the implementation of the GHS (Revision 5) under HPR and the HPA.**

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Reproductive toxicity	Category 2

**Label elements**

**WARNING****Hazard statements**

Harmful if inhaled.  
Suspected of damaging fertility or the unborn child

**Precautionary Statements - Prevention**

Obtain special instructions before use  
Do not handle until all safety precautions have been read and understood  
Wear protective gloves/protective clothing/eye protection/face protection  
Avoid breathing dust/fume/gas/mist/vapors/spray  
Use only outdoors or in a well-ventilated area  
Contaminated work clothing should not be allowed out of the workplace

**Precautionary Statements - Response**

Call a POISON CENTRE or doctor/physician if you feel unwell

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing  
Call a POISON CENTRE or doctor/physician if you feel unwell

**Precautionary Statements - Storage**

Store in a dry place. Store in a closed container

**Precautionary Statements - Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)****OTHER INFORMATION**

Toxic to aquatic life with long lasting effects

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Chemical name	CAS No.	Weight -%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
Flumioxazin	103361-09-7	14.04	-	-
Pyroxasulfone	447399-55-5	17.81	-	-
Propylene glycol	57-55-6	5 - 6	-	-
Other ingredients	Various CAS#s	60 - 65	-	-

**4. FIRST AID MEASURES**

**General advice** Have the product container or label with you when calling a poison control centre or doctor, or going for treatment. You may also contact 1-800-682-5368 for emergency medical treatment information.

**Inhalation** Move the person to fresh air. If the person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

**Eye contact** Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, and after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

**Skin contact** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control centre or doctor for treatment advice.

**Ingestion** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. DO NOT induce vomiting unless told to do so by the poison control centre or doctor. Do not give anything to an unconscious person.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** No information available.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

**5. FIRE-FIGHTING MEASURES**

**Suitable Extinguishing Media** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Small Fire** Dry chemical or CO2. Water spray.

**Large Fire** Water spray, fog, dry chemical powder, CO2, regular foam. Do NOT use water jet or straight streams.

**Unsuitable extinguishing media** Do not scatter spilled material with high pressure water streams.

**Specific hazards arising from the Chemical** No information available.

**Hazardous combustion products** Under fire conditions some components of this product may decompose. The smoke may contain unidentified toxic and/or irritating compounds. Keep people away. Isolate fire area and deny unnecessary entry.

**Explosion data**  
**Sensitivity to mechanical impact:** None.  
**Sensitivity to static discharge:** None.

**Special protective equipment for fire-fighters:**  
 Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Ensure adequate ventilation.

**Methods and material for containment and cleaning up**

**Methods for containment** Dike far ahead of spill to collect runoff water. On Land: Avoid runoff into storm sewers and ditches which lead to waterways, or other bodies of water. Contain spilled liquids with dry sorbents.

**Methods for cleaning up** Clean up spill immediately. Absorb spill with inert material (such as dry sand or earth), then 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. Prevent wash water from entering surface water or drains. Wear proper personal protective equipment.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Advice on safe handling** Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove contaminated clothing and shoes immediately. Then wash thoroughly and put on clean clothing. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep container tightly closed. Do not put concentrate into food or drink containers. Do not dilute concentrate in food or drink containers. Do not store or transport near food or feed. Do not use or store in or around the home. Keep pesticide in original container only. Store in a cool, dry secure place. Store in a well ventilated area.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Limits**

Chemical name	Alberta	British Columbia	Ontario	Quebec
Propylene glycol			TWA: 10 mg/m <sup>3</sup> TWA: 50 ppm TWA: 155 mg/m <sup>3</sup>	

**Appropriate engineering controls**

**Engineering controls** Showers, Eyewash stations, Ventilation systems

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear.

**Skin and body protection** Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including long pants, long-sleeved shirt and shoes plus socks and chemical-resistant gloves. Remove contaminated clothing.

<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.
<b>General hygiene considerations</b>	Handle in accordance with good industrial hygiene and safety practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical

<b>properties Physical state</b>	Liquid
<b>Appearance</b>	Liquid
<b>Colour</b>	White
<b>Odour</b>	Slightly Sweet
<b>Odor threshold:</b>	No information available

<u>PROPERTIES</u>	<u>Values</u>	<u>Remarks • Method</u>
<b>pH</b>	6 - 8	Neat
<b>Melting point/freezing point</b>	No Data Available	None known
<b>Boiling point/boiling range</b>	No data available	None known
<b>Flash point</b>	No Data Available	None known
<b>Evaporation rate</b>	No Data Available	None known
<b>Flammability (solid, gas)</b>	No Data Available	None known
<b>Flammability Limits in Air</b>		None known
<b>Upper flammability limits</b>	No Data Available	
<b>Lower Flammability Limit:</b>	No Data Available	
<b>Vapour pressure</b>	No Data Available	None known
<b>Vapour density</b>	No Data Available	None known
<b>Relative density</b>	1.13 - 1.16	None known
<b>Water solubility</b>	Dispersible in water	None known
<b>Solubility in other solvents</b>	No Data Available	None known
<b>Partition coefficient</b>	No Data Available	None known
<b>Autoignition temperature</b>	No Data Available	None known
<b>Decomposition temperature</b>	No Data Available	None known
<b>Kinematic viscosity</b>	No Data Available	None known
<b>Dynamic viscosity</b>	No Data Available	None known

### OTHER INFORMATION

<b>Explosive properties</b>	No information available.
<b>Oxidizing properties</b>	No information available.
<b>Softening point</b>	No information available
<b>Molecular weight</b>	No information
available <b>VOC (EPA METH.24) (G/L):</b>	No information
available <b>Liquid Density</b>	No information
available	
<b>Bulk density</b>	No information available

## 10. STABILITY AND REACTIVITY

<b>Reactivity</b>	No information available.
<b>Chemical stability</b>	Stable under normal conditions.
<b>Possibility of Hazardous Reactions</b>	None under normal processing.
<b>Conditions to avoid</b>	None known based on information supplied.

**Incompatible materials** None known based on information supplied.

**Hazardous Decomposition Products:** None known

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity:

The following information is for this product formulation.

Oral Toxicity LD <sub>50</sub> (rats)	> 5,000 mg/kg	EPA Tox Category	IV
Dermal Toxicity LD <sub>50</sub> (rats)	> 2,000 mg/kg	EPA Tox Category	III
Inhalation Toxicity LC <sub>50</sub> (rats)	> 2.04 mg/L (4 h)	EPA Tox Category	IV
Eye Irritation (rabbits)	Minimally irritating; resolved within 24 hours	EPA Tox Category	IV
Skin Irritation (rabbits)	Slightly irritating; resolved within 48 hours	EPA Tox Category	IV
Skin Sensitization (guinea pigs)	Non-sensitizer	EPA Tox Category	Not applicable

### CARCINOGEN CLASSIFICATION

Not classified

### 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:** Flumioxazin is characterized as “Not likely to be carcinogenic to humans”. Pyroxasulfone at low doses that do not result in significant systemic toxicity, Pyroxasulfone is classified as “Not likely to be carcinogenic to humans”.

**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.

**Reproduction:** 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.

**Mutagenicity:** 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.

**TOXICITY OF PYROXASULFONE TECHNICAL:**

**Subchronic:** Pyroxasulfone related effects include increased AST, slight liver and kidney weight increases, increased cardiomyopathy, centrilobular hepatocellular hypertrophy and hyperplastic urinary bladder mucosa. The NOAEL in rats was 50 ppm. No neurotoxicity was observed at acute doses to rats as high as 2000 mg/kg.

**Chronic/Carcinogenicity:** Pyroxasulfone was not carcinogenic in lifetime feeding studies in mice. Pyroxasulfone produced an increased incidence of urinary bladder transitional cell papillomas in male rats in a two-year carcinogenicity study. The tumours seen with Pyroxasulfone were caused through a non-genotoxic mechanism, which is not relevant at low doses.

**Reproduction:** Pyroxasulfone did not produce effects on fertility or the embryo at the dosage of which general toxicity to parental animals was observed.

**Mutagenicity:** Pyroxasulfone is not mutagenic according to results for an *in vitro* reverse mutation test, chromosomal aberration test and *in vivo* mouse bone marrow micronucleus test.

For a summary of the potential for adverse health effects from exposure to this product, refer to Section 2. For information regarding regulations pertaining to this product, refer to Section 15.

**12. ECOLOGICAL INFORMATION****AVIAN TOXICITY:**

The following results were obtained from studies with Flumioxazin Technical:

Oral LD<sub>50</sub> bobwhite quail: greater than 2,250 ppm  
 Dietary LC<sub>50</sub> bobwhite quail: greater than 5,620 ppm  
 Dietary LC<sub>50</sub> mallard duck: greater than 5,620 ppm

No reproductive effects were observed in bobwhite quail exposed to 500 ppm Flumioxazin Technical in the diet. In mallard ducks, a slight, but not statistically significant reduction in hatchlings and 14-day old survivors was observed. Based on a possible, slight effect on egg production at 500 ppm, the NOEL for this study was 250 ppm.

The following results were obtained from studies with Pyroxasulfone Technical:

LD<sub>50</sub> bobwhite quail: greater than 2250 mg/kg

**AQUATIC ORGANISM TOXICITY:** Flumioxazin Technical is slightly to moderately toxic to freshwater fish; moderately toxic to freshwater invertebrates; moderately toxic to estuarine/marine fish and moderately to highly toxic estuarine/marine invertebrates, based on the following tests:

96-hour LC<sub>50</sub> rainbow trout: 2.3 mg/L  
 96-hour LC<sub>50</sub> bluegill sunfish: greater than 21 mg/L  
 48-hour LC<sub>50</sub> Daphnia magna: 5.5 mg/L  
 96-hour LC<sub>50</sub> sheepshead minnow: greater than 4.7 mg/L  
 96-hour (shell deposition) EC<sub>50</sub> eastern oyster: 2.8 mg/L  
 96-hour LC<sub>50</sub> mysid shrimp: 0.23 mg/L  
 Fish early life-stage (rainbow trout): NOEC >7.7 µg/L, <16 µg/L  
 Chronic toxicity (mysid shrimp): NOEC >15 µg/L, <27 µg/L  
 Chronic toxicity (Daphnia magna): NOEC >52 µg/L, <99 µg/L

Pyroxasulfone Technical is very toxic to aquatic organisms; special attention should be given to aquatic plants. Based upon EPA designation, the following test results are based on Pyroxasulfone Technical:

96-hour LC<sub>50</sub> rainbow trout: greater than 2.2 mg/L  
 96-hour LC<sub>50</sub> bluegill: greater than 2.8 mg/L

48-hour LC<sub>50</sub> Daphnia magna: greater than 4.4 mg/L  
 96-hour LC<sub>50</sub> sheepshead minnow: greater than 3.3 mg/L  
 96-hour EC<sub>50</sub> algae = 0.00038 mg/L  
 7-day EC<sub>50</sub> Spirodela polyrhiza = 0.0055 mg/L  
 14-day LC<sub>50</sub> Earthworm = 997 mg/kg

**OTHER NON-TARGET ORGANISM TOXICITY:**

Flumioxazin Technical is practically non-toxic to bees. The acute contact LC<sub>50</sub> in bees was greater than 105 µg/bee.  
 Pyroxasulfone Technical is practically non-toxic to bees. The acute contact (48-hour) LD<sub>50</sub> in bees was greater than 100 µg/bee.

**OTHER ENVIRONMENTAL INFORMATION:**

This product is toxic to non-target plants and aquatic invertebrates. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below mean high water mark. Do not apply where runoff is likely to occur. Do not apply where weather conditions favor drift from areas treated. Do not contaminate water when cleaning equipment or disposing of equipment washwater or rinsate.

### 13. DISPOSAL CONSIDERATIONS

**Waste treatment methods**

**Waste from residues/unused**

**Products:** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging:** Do not reuse empty containers.

### 14. TRANSPORTATION INFORMATION

**DOT (ground) shipping name:** Not regulated for domestic ground transport by US DOT or Canada TDG.

**Emergency Response**

**Guidebook No.:** Not applicable

**ICA/O/IATA proper shipping name:** UN3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Flumioxazin, Pyroxasulfone), 9, III, Marine Pollutant

**Remarks:** Single or inner packaging less than 5 L (liquid) or 5 Kg net (solids) excepted from Dangerous Goods regulations – see IATA Special Provision A197.

**IMDG proper shipping name:** UN3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Flumioxazin, Pyroxasulfone), 9, III, Marine Pollutant

**Remarks:** Single or inner packaging less than 5 L (liquid) or 5 Kg net (solids) excepted from Dangerous Goods regulations – see IMDG 2.10.2.7

For US shipping, Emergency Response Guidebook No. 171

**EMS No.:** F-A, S-F

### 15. REGULATORY INFORMATION

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**PMRA LABEL INFORMATION:**

Pesticide products in Canada are registered by Pest Management Regulatory Agency (PMRA) and are subject to certain labeling requirements under federal pesticide law. The label, as specified in the Pest Control Products Act (PCPA), is the main document to be followed for safety, use, and handling. These label requirements may differ from the classification criteria and hazard information required under WHMIS GHS for the data sheets and for workplace labels of non-pesticide chemicals. The following hazard information is required on the product label:



**PMRA pesticide label hazard information:** Harmful if absorbed through skin Avoid Contact with skin or clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet.

Chemical name	Canada DSL Inventory List -	Canada NDSL Inventory List -	EINECS Inventory List -
Propylene glycol	Present		Present

For information regarding potential adverse health effects from exposure to this product, refer to Sections 2 and 11.

**PESTICIDE REGULATIONS:** All pesticides are governed under PCPA. Therefore, the regulations presented below are pertinent only when handled outside of the normal use and applications of pesticides. This includes waste streams resulting from manufacturing/formulation facilities, spills or misuse of products, and storage of large quantities of products containing hazardous or extremely hazardous substances.

**PROVINCIAL REGULATIONS:** This product did not trigger any provincial regulations.

**International Regulations**

**The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable

**The Stockholm Convention on Persistent Organic Pollutants** Not applicable

**The Rotterdam Convention** Not applicable

**16. OTHER INFORMATION**

**REASON FOR ISSUE:** General Update  
**SDS NO.:** CAN-0522  
**EPA REGISTRATION NUMBER:** Not Applicable  
**PCPA REGISTRATION NUMBER:** 33869  
**REVISION NUMBER:** 4  
**REVISION DATE:** 08/01/2021  
**SUPERCEDES DATE:** 27/10/2020  
**RESPONSIBLE PERSON(S):** Valent U.S.A. LLC, Corporate EH&S

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The Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE PMRA-APPROVED PRODUCT LABEL (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.

The product label provides information specifically for product use in the ordinary course. Use, storage and disposal of pesticide products is regulated by the PMRA under the authority of the *Pest Control Products Act* through the product label. All necessary hazard classification and appropriate precautionary use, storage, and disposal information is set forth on that label or labeling accompanying the pesticide or to which reference is made on the label. It is a violation of federal law to use a PMRA-registered pesticide product in any manner inconsistent with its labeling.

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