



Safety Data Sheet - GHS

1. IDENTIFICATION: CHEMICAL PRODUCT AND COMPANY

PRODUCT NAME: Flumi® SC Herbicide
EPA REGISTRATION NUMBER: 59639-221
PRODUCT CODE: C508

MANUFACTURER/DISTRIBUTOR
 VALENT U.S.A. LLC
 P.O. Box 5075
 4600 Norris Canyon Road
 San Ramon, CA 94583

EMERGENCY TELEPHONE NUMBERS
 HEALTH EMERGENCY (24 hr):
 (800) 892-0099
 TRANSPORTATION:
 U.S. Transportation (24hr): CHEMTREC (800) 424-9300
 International Transportation (24hr): (703)-741-5970

PRODUCT INFORMATION
 AGRICULTURAL PRODUCTS: (800) 682-5368

2. HAZARDS IDENTIFICATION

Classification - (per U.S. OSHA 29 CFR 1910.1200 (Hazcom 2012))

Acute toxicity - Inhalation (Dusts/Mists)	Category 4
Reproductive toxicity	Category 2
Specific Target Organ Toxicity – Repeated Exposure (Bone Marrow)	Category 2

Label elements

Signal Word
WARNING



Hazard statements

Harmful if inhaled
 Suspected of damaging fertility or the unborn child
 May cause damage to bone marrow through prolonged or repeated exposure

Precautionary statements

Prevention

Do not breathe mists, vapors or spray.
 Use only outdoors or in a well-ventilated area.
 Obtain, read and follow all safety instructions before use.
 Wear protective gloves/protective clothing/eye protection.
 Avoid release to the environment.

Response

IF EXPOSED OR CONCERNED: Get medical advice/attention.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Get medical help if you feel unwell.

Storage

Store locked up.

Disposal

Dispose of contents/container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC)

Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical name	CAS No.	Weight-%
Flumioxazin	103361-09-7	41.4
Propylene glycol	57-55-6	6.0
Other Ingredients	Multiple	52.6

Specific information on other ingredients for the management of exposures, spills, or safety assessments can be obtained by a treating physician or nurse by calling **(800) 892-0099** at any time.

4. FIRST AID MEASURES

EMERGENCY NUMBER (800) 892-0099**EYE CONTACT:**

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.

SKIN CONTACT:

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.

INGESTION:

Do not give any liquid to the person. Do not induce vomiting unless told to do so by the poison control center or doctor. Do not give anything by mouth to an unconscious person. If symptoms develop, get medical advice.

INHALATION:

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

NOTES TO PHYSICIAN:

None

5. FIRE FIGHTING MEASURES

Flash point °C >100 °C

Flash point °F > 212 °F

EXTINGUISHING MEDIA: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.

FIRE FIGHTING INSTRUCTIONS: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear. Evacuate area and fight fire upwind from a safe

Emergency Telephone: (800) 892-0099
REVISION NUMBER: 0

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REVISION DATE: 01/23/2023

distance to avoid hazardous vapors and decomposition products. Dike and collect water used to fight fire to prevent environmental damage due to run off.

HAZARDOUS DECOMPOSITION PRODUCTS: May produce gases such as fluorine compounds, and oxides of carbon and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

VALENT EMERGENCY PHONE NUMBER: (800) 892-0099
CHEMTREC EMERGENCY PHONE NUMBER: (800) 424-9300

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.

Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Methods for Cleanup and Disposal: Pump free liquid into an appropriate container. Absorb residual with inert absorbent material. Wash entire spill area with a detergent slurry, absorb and sweep into container for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.

7. HANDLING AND STORAGE

HANDLING: Avoid contact with eyes, skin or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing immediately if pesticide gets inside. Then wash thoroughly and change into clean clothing.

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. Do not contaminate other pesticides, fertilizers, water, food or feed by storage or disposal.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical name	ACGIH Exposure Limits	OSHA Exposure Limits	Other Exposure Limits (Specify)
Propylene glycol	None	None	TWA 10mg/m ³ (US WEEL)

ENGINEERING CONTROLS: Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.

Eye/Face Protection: To avoid contact with eyes, wear goggles or safety glasses.

Skin Protection: To avoid contact with skin wear long-sleeved shirt and long pants, shoes plus socks, and chemical-resistant gloves made of any waterproof material. Washing facilities should be readily accessible to the work area.

Respiratory Protection: Not normally required. If vapors or mists or dusts exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.

General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:		Vapor pressure	Not determined
Physical State	Liquid	Vapor density	Not determined
Color	Off-White Milky	Specific Gravity	Not determined
Odor	Moderately sour	Water solubility	Not determined
pH	6.38 @ 25°C (1% w/w)	Solubility in other solvents	Not determined
Melting point / freezing point	Not determined	Partition coefficient	Not determined
Boiling point / boiling range	Not determined	Autoignition temperature	Not determined
Flash point	>100 °C (>212 °F)	Decomposition temperature	Not determined
Evaporation rate	Not determined	Viscosity	487.2cPs @24°C 266.8 cPs @42°C
Flammability (solid, gas)	Not determined	Explosive properties	Not determined
Flammability Limits in Air:		Oxidizing properties	Not determined
Upper flammability limits	Not determined	Liquid Density	Not determined
Lower flammability limits	Not determined	Relative density	1.157 g/ml

10. STABILITY AND REACTIVITY

Reactivity

Not reactive.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

Hazardous polymerization will not occur.

Conditions to avoid

Excessive heat. Do not store near heat or flame.

Incompatible materials

Strong oxidizing agents, such as chlorates, nitrates, and peroxides.

Hazardous Decomposition Products

Under fire conditions, may produce gases such as fluorine compounds, and oxides of carbon and nitrogen.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Oral Toxicity LD ₅₀ (rats)	>5000 mg/kg	EPA Tox Category	IV
Dermal Toxicity LD ₅₀ (rabbits)	>5000 mg/kg	EPA Tox Category	IV
Inhalation Toxicity LC ₅₀ (rats)	>2.10 mg/L (4 h)	EPA Tox Category	IV
Eye Irritation (rabbits)	Non-irritating	EPA Tox Category	IV
Skin Irritation (rabbits)	Slightly irritating	EPA Tox Category	IV
Skin Sensitization (guinea pigs)	Non-sensitizer	EPA Tox Category	Not applicable

CARCINOGEN CLASSIFICATION

Chemical name	IARC Group 1 or 2	OSHA - Select Carcinogens	NTP Carcinogen List
None			

TOXICITY OF FLUMIOXAZIN TECHNICAL:

SUBCHRONIC: 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 the NOEL is 10 mg/kg/day. Dietary administration of Flumioxazin Technical for 18 months in mice 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 in rats no evidence of an oncogenic effect was observed. The NOEL for this study is 50 ppm.

DEVELOPMENTAL TOXICITY: Flumioxazin Technical - The developmental NOEL in the rat oral and dermal developmental toxicity studies were 10 and 100 mg/kg/day, respectively. 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. Overall, Flumioxazin Technical does not present a genetic hazard.

STOT - repeated exposure Cat 2 - Rat 90-day repeated dose toxicity study: Bone marrow.

12. ECOLOGICAL INFORMATION**AVIAN TOXICITY:**

Based upon EPA designation, Flumioxazin Technical is practically non-toxic to avian species. The following results were obtained from studies with Flumioxazin Technical:

Oral LD₅₀ Bobwhite Quail: greater than 2,250 ppm
 Dietary LC₅₀ Bobwhite Quail: greater than 5,620 ppm
 Dietary LC₅₀ Mallard Duck: greater than 5,620 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.

AQUATIC ORGANISM TOXICITY: Based upon EPA designation, 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 to estuarine/marine invertebrates, based on the following tests:

96-hour LC₅₀ Rainbow Trout: 2.3 mg/L
 96-hour LC₅₀ Bluegill Sunfish: greater than 21 mg/L
 48-hour LC₅₀ Daphnia magna: greater than 5.5 mg/L
 96-hour LC₅₀ Sheepshead Minnow: greater than 4.7 mg/L
 96-hour (Shell deposition) EC₅₀ Eastern Oyster: 2.8 mg/L
 96-hour LC₅₀ 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

OTHER NON-TARGET ORGANISM TOXICITY:

Flumioxazin Technical is practically non-toxic to bees. The acute contact LC50 in bees was greater than 105 µg/bee.

13. DISPOSAL CONSIDERATIONS

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

CONTAINER DISPOSAL: Clean container promptly after emptying. Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling, if available; otherwise dispose of in a sanitary landfill or incineration, or if allowed by State and local authorities, by burning. If burned, stay out of the smoke.

DISPOSAL METHODS: Check government regulations and local authorities for approved disposal of this material. Dispose of in accordance with applicable laws and regulations.

14. TRANSPORTATION INFORMATION

DOT (ground) SHIPPING NAME: Not regulated for domestic ground transport by US DOT.
EMERGENCY RESPONSE Not applicable

ICAO/IATA SHIPPING NAME: UN 3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Flumioxazin), 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 SHIPPING NAME: UN 3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Flumioxazin), 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

15. REGULATORY INFORMATION

EPA-FIFRA LABEL INFORMATION

Pesticide products in the U.S. are registered by the EPA under FIFRA and are subject to certain labeling requirements under federal pesticide law. These requirements may differ from the classification criteria and hazard information required by OSHA GHS for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the hazard information as required on the FIFRA pesticide label:

EPA FIFRA SIGNAL WORD: CAUTION

- Harmful if inhaled.
- Avoid breathing vapors or spray.
- Avoid contact with eyes, skin and clothing.
- Keep out of reach of children.

PESTICIDE REGULATIONS: All pesticides are governed under FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act). 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.

U.S. FEDERAL REGULATIONS: Ingredients in this product are reviewed against an inclusive list of federal regulations. Therefore, the user should consult appropriate authorities. The federal regulations reviewed include: Clean Water Act, SARA, CERCLA, RCRA, DOT, TSCA and OSHA. If no components or information is listed in the space below this paragraph, then none of the regulations reviewed are applicable.

STATE REGULATIONS: Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list of all state regulations. Therefore, the user should consult state or local authorities.

16. OTHER INFORMATION

REASON FOR ISSUE:	New SDS
SDS NO.:	0595
EPA REGISTRATION NUMBER:	59639-221
REVISION NUMBER:	0
REVISION DATE:	01/23/2023
SUPERCEDES DATE:	00/00/0000
RESPONSIBLE PERSON(S):	Valent U.S.A. LLC, Corporate EH&S

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This Safety Data Sheet (SDS) may provide more information than the product label but does not replace or modify the product labeling (attached to and accompanying the product container). The product SDS and the product label both provide consistent and important health, safety, and environmental information as required by the Occupational Health and Safety Act (29 CFR 1910.1200, "Hazcom"). This requirement covers employers, employees, emergency responders, users and others handling the product. All necessary hazard classification and appropriate precautionary, use, storage, and disposal information is set forth on the labeling and the SDS.

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