



SAFETY DATA SHEET

Quali-Pro 3-D

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Revision Date: October 29, 2015

SECTION 1: IDENTIFICATION

Product Name: Quali-Pro 3-D
EPA Registration No.: 53883-378
Recommended Use: Herbicide; See product label for a complete list of uses and use sites.
Restrictions on Use: See product label for any restrictions on the use of this product.
Chemical Family: N/A – Multiple active ingredients
Chemical Name of Active Ingredient(s): Dimethylamine Salt of 2,4-Dichloro-phenoxyacetic acid
Dimethylamine Salt of (+)-R-2-(2-methyl-4-chlorophenoxy) propionic acid
Dimethylamine Salt of Dicamba (3,6-dichloro-o-anisic acid)
Manufactured for: Control Solutions, Inc.
5903 Genoa-Red Bluff
Pasadena, TX 77507

FOR FIRE, SPILL, AND/OR LEAK EMERGENCIES CONTACT: CHEMTREC 1-800-424-9300

FOR MEDICAL EMERGENCIES AND HEALTH AND SAFETY INQUIRIES CONTACT: Safety Call 1-866-897-8050

SECTION 2: HAZARD(S) IDENTIFICATION

EMERGENCY OVERVIEW: Clear amber liquid with a typical phenoxy herbicide odor. Causes serious eye irritation and skin irritation.

OSHA HCS CLASSIFICATION (29 CFR 1910.1200)

Acute Oral Toxicity	Category 4
Eye Damage/Irritation	Category 1
Skin sensitization	Category 1

Signal Word: DANGER



Hazard Statement(s): Harmful if swallowed.
Causes serious eye irritation.
May cause an allergic skin reaction.

Precautionary Statement(s):

Prevention: Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves/eye protection/face protection.
Avoid breathing mist/vapors/spray.
Contaminated work clothing must not be allowed out of the workplace.

Response: **IF SWALLOWED:** Immediately call a poison control center/doctor if you feel unwell. Specific treatment (see Section 4 for first aid). Rinse mouth.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
IF ON SKIN: Wash with plenty of water. Specific treatment (see Section 4 for first aid). If skin irritation or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.

Storage: No statement required. See section 7 for storage information.

Disposal: Dispose of contents/container in accordance with Federal, state and local laws and regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS Number	Weight %
Dimethylamine Salt of 2,4-Dichloro-phenoxyacetic acid	2008-39-1	30.56%
Dimethylamine Salt of (+)-R-2-(2-methyl-4-chlorophenoxy) propionic acid	66423-09-4	8.17%
Dimethylamine Salt of Dicamba (3,6-dichloro-o-anisic acid)	2300-66-5	2.77%

*Ingredients not listed or listed with a weight % range are considered a trade secret and are withheld under 29 CFR 1910.1200(i).

SECTION 4: FIRST AID MEASURES

IF IN EYES:	Hold eye open and rinse slowly and gently with water for 15 to 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 ON SKIN:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15 to 20 minutes. Call a poison control center or doctor for treatment advice.
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.
IF INGESTED:	Call a poison control center 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 a poison control center or doctor. Do not give anything by mouth to an unconscious person.

Most important symptoms/effects, acute and delayed: Serious eye irritation, allergic skin reaction and gastrointestinal irritation.

NOTE TO PHYSICIAN:

If in eyes, specialized ophthalmologic attention may be necessary. If swallowed, probable mucosal damage may contraindicate the use of gastric lavage. There is no specific antidote; treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable Extinguishing Media:	Foam, dry chemical, carbon dioxide or water spray
Unsuitable Extinguishing Media:	Water jet
Hazardous Combustion Products:	Thermal decomposition may produce hazardous Carbon and Nitrogen oxides, Ammonia, Chlorine compounds, and Hydrogen chloride
Special Protective Equipment & Precautions:	Evacuate area and fight fire upwind from a safe distance to avoid hazardous vapors and decomposition products. Foam and/or dry chemical are preferred to minimize environmental contamination. If water is used, dike and collect water to prevent run-off. Wear self-contained breathing apparatus and full fire-fighting turn-out gear (Bunker gear).
Unusual Fire & Explosion Hazards:	None known

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions:	See Section 8 for personal protection equipment.
Environmental Precautions:	Keep spilled material and any rinsate from contaminating soil or from entering sewage and drainage systems and bodies of water.
Methods for Containment:	Isolate the spill area. Keep unnecessary and unprotected personnel from entering. Absorb small spills with sand, vermiculite or other inert absorbent. Dike large spills using absorbent or impervious material such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify and scrape up for disposal.
Methods for Clean-up:	Place contaminated material in appropriate container for disposal. After removal, flush contaminated area thoroughly with water. Pick up wash liquid with additional absorbent and place in a disposable container. Do not put spilled material back in the original container.
Other Information:	None known

SECTION 7: HANDLING AND STORAGE

Handling:	RECOMMENDATIONS ARE INTENDED FOR MANUFACTURING, PACKAGING AND COMMERCIAL BLENDING WORKERS. PESTICIDE APPLICATORS AND WORKERS must refer to the product label and Directions for Use attached to the product for Agricultural Use Requirements in accordance with the EPA Worker Protection Standard 40 CFR part 170. Handle and open container in a manner as to prevent spillage. Do not eat, drink or smoke while handling this product. Immediately wash off accidental splashes of the concentrate or spray mixture from skin, clothing and out of eyes.
Storage:	See pesticide label for full information on product storage. Do not contaminate water, food or feed by storage of this product. Store away from sources of heat, out of direct sunlight and away from incompatible materials. Pesticides should be stored in secured areas away from children and animals.
Storage Temperature (Min/Max):	Store above 32°F
Product Incompatibilities:	Strong acids and oxidizing materials.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Users of a pesticide product must refer to the product label for personal protective equipment requirements.

Exposure Guidelines:

COMPONENT	OSHA PEL	ACGIH TLV	NIOSH REL
Dimethylamine	TWA: 10 ppm TWA: 18 mg/m ³ (vacated) TWA: 10 ppm (vacated) TWA: 18 mg/m ³	STEL: 15 ppm TWA: 5 ppm	IDLH: 500 ppm TWA: 10 ppm TWA: 18 mg/m ³
2,4-D Acid	TWA: 10 mg/m ³	TWA: 10 mg/m ³ (inhalable, skin)	

Engineering Controls:	Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs or other specified exposure limits. Local exhaust ventilation is preferred.
Respiratory Protection:	In areas of poor ventilation, use a NIOSH approved respirator with cartridges/canisters approved for pesticides.
Eye Protection:	Chemical goggles or safety glasses and full-face shield.
Protective Gloves:	Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile, neoprene rubber, polyvinyl chloride (PVC) or Viton.
Other Protective Clothing:	Long-sleeved shirt, long pants and chemical resistant footwear plus socks.
General Safety Measures:	Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing immediately after handling this product. Wash outside of gloves before removing. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear amber liquid	Upper/Lower Flammability Limits:	Not determined
Odor:	Phenoxy herbicide	Vapor Pressure:	0.021 mmHg
Odor Threshold:	Not determined	Vapor Density:	Not determined
pH (neat):	8.5 – 9.0	Relative Density (@24°C):	1.13 (typical)
Melting /Freezing Point:	Not determined	Solubility:	Miscible in water
Boiling Point/Range:	212°F (100°C)	Partition Coefficient:	Not determined
Flash Point:	Does not flash	Auto-ignition Temperature:	Not determined
Evaporation Rate:	Not determined	Decomposition Temperature:	Not determined
Flammability:	Not applicable	Viscosity:	Not determined

SECTION 10: STABILITY AND REACTIVITY

Reactivity:	No hazardous chemical reactions known.
Chemical Stability:	Stable under normal storage and handling conditions.
Possibility of Hazardous Reactions:	No potential for hazardous reactions known.
Conditions to Avoid:	Excessive heat
Incompatible Materials:	Strong acids, bases and oxidizing materials.
Hazardous Decomposition Products:	Thermal decomposition may produce hazardous Carbon and Nitrogen oxides, Ammonia, Chlorine compounds, and Hydrogen chloride

SECTION 11: TOXICOLOGICAL INFORMATION

Likely Routes of Exposure:	Eye contact, Skin contact, Inhalation, Ingestion
Symptoms of Exposure:	Serious eye irritation (eye contact), allergic skin reaction (skin contact), gastrointestinal irritation, nausea, vomiting, abdominal pain, decreased blood pressure, decreased blood pressure, muscle weakness, and muscle spasms (ingestion).

Oral LD ₅₀ :	1,697 mg/kg (rat); based upon a similar product
Dermal LD ₅₀ :	>5,000 mg/kg (rat); based upon a similar product
Inhalation LC ₅₀ :	>2.14 mg/L (4-hour)(rat); no mortalities at highest dose tested; based upon a similar product
Eye Irritation/Damage:	Corrosive (Rabbit); based upon a similar product
Skin Corrosion/Irritation:	Slightly irritating (Rabbit); based upon a similar product
Skin Sensitization:	Not a skin sensitizer (Guinea Pig); based upon a similar product
Chronic/Subchronic Toxicity:	Repeated overexposure to phenoxy herbicides may cause effects to liver, kidneys, and gross motor function. Rare cases of peripheral nerve damage have been reported, but extensive animal studies have failed to substantiate these observations, even at high doses for prolonged periods. Repeated overexposure to dicamba may cause liver changes or a decrease in body weight.
Mutagenicity:	None known
Reproductive Toxicity:	None known
Neurotoxicity:	None known
Target Organs:	Liver, kidneys and gross motor function.
Aspiration Hazard:	Not anticipated to be an aspiration hazard.
Carcinogenicity:	The International Agency for Research on Cancer (IARC) lists exposure to chlorophenoxy herbicides as a class 2B carcinogen, the category for limited evidence for carcinogenicity in humans. However, the more current 2,4-D lifetime feeding studies in rats and mice, as well as an MCPP lifetime feeding study in rats, did not show carcinogenic potential. Dicamba did not cause cancer in long-term animal studies. The U.S. EPA has given 2,4-D and dicamba a Class D classification (not classifiable as to human carcinogenicity).

Chemical Name	ACGIH	IARC	NTP	OSHA
Exposure to chlorophenoxy herbicides		2B		

SECTION 12: ECOLOGICAL INFORMATION**Environmental Hazards Statement from FIFRA Regulated Pesticide Label:**

This product is toxic to fish and aquatic invertebrates and may adversely affect nontarget plants. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination. Application around a cistern or well may result in contamination of drinking water or groundwater.

ECOTOXICITY DATA:

Fish Toxicity:	2,4-D Dimethylamine salt: Bluegill 96 hr LC ₅₀ = 524 mg/L; Rainbow trout 96 hr LC ₅₀ = 250 mg/L Mecoprop-p Dimethylamine salt: Bluegill 96 hr LC ₅₀ = 112 mg/L; Rainbow trout 96 hr LC ₅₀ = 111 mg/L
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Aquatic Invertebrate Toxicity:	Dicamba acid: Bluegill 96 hr LC ₅₀ = 135 mg/L; Rainbow trout 96 hr LC ₅₀ = 135 mg/L
	2,4-D Dimethylamine salt: Daphnia 48 hr EC ₅₀ = 184 mg/L
	Mecoprop-p Dimethylamine salt: Daphnia 48 hr EC ₅₀ = 256 mg/L
	Dicamba acid: Daphnia 48 hr EC ₅₀ = 110 mg/L
Aquatic Plant Toxicity:	Mecoprop-p Dimethylamine salt: Green algae 72 hr EC ₅₀ = 100 mg/L
Avian Toxicity:	2,4-D Dimethylamine salt: Bobwhite Quail oral LD ₅₀ = 500 mg/L; Mallard Duck 8-Day Dietary LC ₅₀ >5,620 mg/L
	Mecoprop-p Dimethylamine salt: Bobwhite Quail oral LD ₅₀ >5,600 mg/L; Mallard Duck 8-Day Dietary LC ₅₀ = 625 mg/L
	Dicamba acid: Bobwhite Quail 8-Day Dietary LC ₅₀ >10,000 mg/L
	Mallard Duck 8-Day Dietary LC ₅₀ >10,000 mg/L
Honeybee Toxicity:	No data available

ENVIRONMENTAL EFFECTS:

Persistence and Degradability:	No data available
Bioaccumulation:	No data available
Mobility:	No data available
Other Adverse Effects:	No data available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal:	Refer to the pesticide label for full information on disposal. Pesticide wastes are toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of Federal law. If these wastes cannot be used 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 in proper disposal methods.
Container Disposal:	Refer to the pesticide label for full information on disposal. When possible, triple rinse the container and offer for recycling if available.
RCRA Characteristics:	It is the responsibility of the individual disposing of this product to determine the RCRA classification and hazard status of the waste.

SECTION 14: TRANSPORTATION INFORMATION

DOT Packages less than 35 gallons are not regulated. For packages greater than or equal to 35
(Ground): gallons:
 UN3082, Environmentally hazardous substances, liquid, n.o.s (2,4-dichlorophenoxyacetic acid), 9, PG III

IMDG
(Sea): Not regulated

IATA
(Air): Not regulated

SECTION 15: REGULATORY INFORMATION

Labeling Requirements Under 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. Following is the hazard information as required on the pesticide label:

DANGER

Corrosive. Causes irreversible eye damage. Harmful if swallowed. Do not get into eyes, on skin, or on clothing.

TSCA Inventory: This product is exempt from TSCA inventory listing requirements as it is solely for FIFRA regulated use.

SARA Title III Information:

Section 302 – Extremely hazardous substances: None

Section 311/312 – Hazard Categories: Acute (Immediate); Delayed (Chronic)

Section 313 – This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS Number	Weight %
2,4-D Acid	94-75-7	25.38%
Dicamba	1918-00-9	2.30%

CERCLA – This product contains the following chemicals which have a reportable quantity (RQ) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA):

Chemical Name	CAS Number	RQ	Quantity of Finished Product
2,4-D Salts & Esters	2008-39-1	100 lbs	35 gallons
Dicamba	1918-00-9	1,000 lbs	4608 gallons

CALIFORNIA PROPOSITION 65:

Chemical Name	CAS Number	Prop 65 Category(ies)
None listed		

U.S. STATE RIGHT-TO-KNOW REGULATIONS:

Chemical Name	New Jersey	Massachusetts	Pennsylvania
2,4-D	X		X
Dicamba	X		X

SECTION 16: OTHER INFORMATION

NFPA	Health Hazards 2	Flammability 1	Instability 0	Special Hazards – None
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Revision Date: October 29, 2015
Document Superseded: April 6, 2015
Revision Note:



SAFETY DATA SHEET

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

1. IDENTIFICATION

PRODUCT NAME: Acquit 4 F
DESCRIPTION: A liquid herbicide
EPA Reg. No.: 91234-32
COMPANY IDENTIFICATION: Atticus, LLC
940 NW Cary Parkway, Ste 200
Cary, NC 27513

2. HAZARD IDENTIFICATION

WARNING

Harmful if swallowed (H302)
Harmful if inhaled (H332)
May be harmful in contact with skin (H313)
Very toxic to aquatic life (H400)
Toxic to aquatic life with long lasting effects (H411)



HAZARD CLASSIFICATION

Health Hazards

	Category
Acute toxicity, oral	4
Acute toxicity, inhalation	4
Acute toxicity, dermal	5

Physical Hazards

	Category
None	-

Environmental Hazards

	Category
Hazardous to the Aquatic Environment – Acute (short-term)	1
Hazardous to the Aquatic Environment – Chronic (long-term)	2

HAZARDS NOT REQUIRING CLASSIFICATION

Do not use or store near heat or open flame.

PRECAUTIONARY STATEMENTS

Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product. (P264+P270)

Avoid breathing mist / vapors / spray. Use only outdoors or in a well-ventilated area. (P261+P271)

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

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

IF ON SKIN: Call a POISON CENTER/doctor if you feel unwell. (P302+P312)

Avoid release to the environment not in accordance with the product label. Collect spillage. (P273+P391)

Dispose of contents / container using instructions in the product label and in accordance with local / Federal regulations. (P501)

3. COMPOSITION / INFORMATION ON INGREDIENTS

Common Name	Chemical Name	CAS #	Composition
Sulfentrazone	N-[2,4-dichloro-5-[4-(difluoromethyl)-4,5-dihydro-3-methyl-5-oxo-1H-1,2,4-triazol-1-yl]phenyl]methanesulfonamide	122836-35-5	39.6%

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. For emergency medical information concerning this product, call the poison control center at **1-800-222-1222**. You may also call SafetyCall: **1-844-685-9173**. For chemical emergency: spill, leak, fire, exposure or accident, call CHEMTREC: **1-800-424-9300**.

IF SWALLOWED: Immediately call a doctor or poison control center for treatment advice. Do not induce vomiting unless told to do so by a poison control center or doctor. Have person sip a glass of water if able to swallow. Do not give anything by mouth to an unconscious person.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor or poison control center if you feel unwell.

IF ON SKIN: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a doctor or poison control center if you feel unwell.

5. FIREFIGHTING MEASURES

Flash Point: Not determined

Flammable Limits (LFL-UFL): Not determined

Fire and Explosion Hazards: Thermal decomposition can lead to the formation of oxides of carbon, nitrogen, and sulfur.

Extinguishing Medium: Water fog, foam, dry chemical or carbon dioxide (CO₂).

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. Foam or dry chemical fire extinguishing systems are preferred to prevent environmental damage from excessive water runoff.

NFPA Ratings: Health – 1 / Flammability – 1 / Reactivity – 0



Manufactured for:
Atticus, LLC
5000 CentreGreen Way, Suite 100
Cary, NC 27513

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: 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.

Spill Cleanup: Dike spill using suitable absorbent or impervious materials such as earth, sand, or clay. Collect and contain contaminated absorbent and place in an appropriate container for disposal. Pump any free liquid into an appropriate closed container and decontaminate tools and equipment following cleanup. Collect washings for disposal.

7. HANDLING AND STORAGE

Handling: Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Keep out of reach of children.

Storage: Do not contaminate water, food or feed by storage or disposal. Do not use or store around the home. Store product in original container only, away from other pesticides, fertilizer, food or feed. Store in a cool, dry place and avoid excess heat.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower.

Protective Clothing: Applicators and other handlers must wear long-sleeved shirt and long pants, waterproof gloves, and shoes plus socks.

General: Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not re-use them. Follow manufacturer's instructions for cleaning and maintaining PPE. If there are no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: off-white viscous liquid

Odor: strong characteristic odor

Melting / Freezing point: no data available

Boiling Point / Boiling Range: no data available

Flammability: not flammable

Flammability Limits (upper/lower): no data available

Flash Point: > 110°C (> 230°F)

Auto-ignition Temperature: no data available

Decomposition Temperature: no data available

pH: 5-6 (1% aq.)

Kinematic Viscosity: no data available

Water Solubility: soluble

Partition coefficient: no data available

Vapor Pressure: no data available

Density: 1.2-1.3 g/mL

Relative Vapor Density: no data available

Particle Characteristics: no data available

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Excessive heat or open flame.

CHEMICAL STABILITY: Stable under all normal use and storage conditions.

INCOMPATIBILITY WITH OTHER MATERIALS: None known.

HAZARDOUS DECOMPOSITION PRODUCTS: This product is chemically stable and no hazardous reactions should occur if stored and handled as prescribed / indicated. Thermal decomposition can lead to the formation of oxides of carbon, nitrogen, and sulfur.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ORAL TOXICITY (rat LD₅₀): > 300 and < 2,000 mg/kg

DERMAL TOXICITY (rat LD₅₀): > 2,000 mg/kg

INHALATION TOXICITY (rat LC₅₀): > 1.0 and < 5.0 mg/L (4-hour)

EYE IRRITATION: Non-irritating

SKIN IRRITATION: Non-irritating

SKIN SENSITIZATION: Not a contact sensitizer

CARCINOGENICITY:

EPA: Not Listed

ACGIH: Not Listed **NTP:** Not Listed

IARC: Not Listed **OSHA:** Not Listed

MUTAGENIC TOXICITY: No evidence of mutagenic effects during *in vivo* and *in vitro* assays.

REPRODUCTIVE TOXICITY: Not known to cause reproductive or birth defects at normal exposure levels.

12. ECOLOGICAL INFORMATION

Sulfentrazone is highly toxic to estuarine/marine invertebrates on an acute exposure basis. Sulfentrazone was also toxic to freshwater invertebrates in chronic exposure studies.

Sulfentrazone is known to leach through soil into groundwater under certain conditions as a result of label use. Sulfentrazone can contaminate surface water through spray drift.

The following information is for the active ingredient, sulfentrazone:
AQUATIC TOXICITY

Rainbow Trout (96-hour LC₅₀): > 130 mg/L

Bluegill (96-hour LC₅₀): 93.8 mg/L

Daphnia (48-hour LC₅₀): 60.4 mg/L; (NOAEC): 0.2 mg/L

Saltwater mysid (96-hour LC₅₀): 0.8-1.2 mg/L

AVIAN TOXICITY

Bobwhite Quail (8-d LC₅₀): > 5620 mg/kg

Mallard Duck (8-d LD₅₀): > 5620 mg/kg

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.

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

14. TRANSPORT INFORMATION

US DOT: Not regulated

IMDG:

Containers ≤ 1.3 gal. (5L) in strong outer packaging:

Not regulated

Containers > 1.3 gal. (5L) or containers not in strong outer packaging:

Shipped internationally by vessel: UN3082, Environmentally hazardous substance, liquid, N.O.S. (sulfentrazone), 9, III, Marine Pollutant

IATA:

Containers ≤ 1.3 gal. (5L) in strong outer packaging:

Not regulated

Containers > 1.3 gal. (5L) or containers not in strong outer packaging:

Shipped by air: UN3082, Environmentally hazardous substance, liquid, N.O.S. (sulfentrazone), 9, III, Marine Pollutant

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 swallowed. Harmful if absorbed through skin or inhaled. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to marine/estuarine invertebrates.

GROUNDWATER ADVISORY: This chemical is known to leach through soil into groundwater under certain conditions as a result of label use.

SURFACE WATER ADVISORY: Sulfentrazone can contaminate surface water through spray drift. Under some conditions, sulfentrazone may also have a high potential for runoff into surface water (primarily via dissolution in runoff water), for several to many months post-application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlying extremely shallow groundwater, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas over-lying tile drainage systems that drain to surface waters.

PHYSICAL OR CHEMICAL HAZARDS

Do not use or store near heat or open flame.

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

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
None

CERCLA Reportable Quantity (RQ) –
None

CALIFORNIA PROP 65 STATUS –

This product does not contain any chemicals 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.

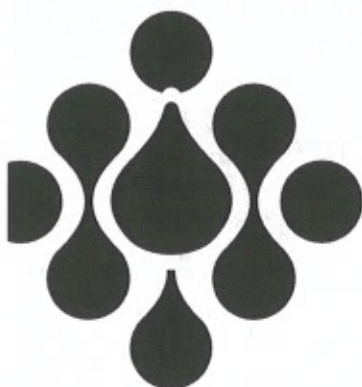
To the extent consistent with applicable law, neither Atticus, LLC nor Seller be liable for any incidental, consequential or special damages resulting from the use or handling of this product. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, THE EXCLUSIVE REMEDY OF THE USER OR BUYER, AND THE EXCLUSIVE LIABILITY OF ATTICUS, 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 ATTICUS, LLC OR SELLER, THE REPLACEMENT OF THE PRODUCT.

SDS Version: 1.3_US

Effective Date: 10/20/2020



Manufactured for:
Atticus, LLC.
940 NW Cary Parkway, Ste 200
Cary, NC 27513



SULFENTRAZONE 4L SELECT™

HERBICIDE

ACTIVE INGREDIENT

Sulfentrazone..... 39.6%

OTHER INGREDIENTS:..... 60.4%

Total 100.0%

Contains 4 pounds
active ingredient
per gallon.

GROUP	14	HERBICIDE
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KEEP OUT OF REACH OF CHILDREN CAUTION

Si usted no entiende esta etiqueta, busque a alguien para que se la explique a usted en detalle.
(If you do not understand this label, find someone to explain it to you in detail.)

FIRST AID	
IF SWALLOWED:	<ul style="list-style-type: none">• Call a poison control center 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 a poison control center or doctor.• Do not give anything by mouth to an unconscious or convulsing person.
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.
IF INHALED:	<ul style="list-style-type: none">• 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.
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.
Have the product container or label with you when calling a poison control center or doctor, or going for treatment. For emergency information concerning this product, call the poison control center at 1-800-222-1222 .	
NOTE TO PHYSICIAN: Sulfentrazone is expected to have low oral and dermal toxicity, and moderate inhalation toxicity. It is expected to be slightly irritating to the skin and minimally irritating to the eyes. Treatment is otherwise controlled removal of exposure followed by symptomatic and supportive care.	



PRIME SOURCE

Manufactured By:
Prime Source, LLC
10025 US 264 Alternate
Middlesex, NC 27557



SULFENTRAZONE 4L

SELECT™

HERBICIDE

PRECAUTIONARY STATEMENTS
HAZARDS TO HUMANS AND DOMESTIC ANIMALS
CAUTION

Causes moderate eye irritation. Harmful if inhaled, swallowed, or absorbed through skin. Avoid breathing vapor or spray mist. Avoid contact with skin, eyes or clothing.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

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,
- Shoes plus socks.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them. 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.

USER SAFETY RECOMMENDATIONS

Users should:

- Remove clothing immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

ENVIRONMENTAL HAZARDS

This pesticide is toxic to marine/estuarine invertebrates. Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to terrestrial and aquatic plants in neighboring areas. Do not contaminate water when disposing of equipment washwaters or rinsate.

Groundwater advisory

This chemical is known to leach through soil into groundwater under certain conditions as a result of label use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Do not use on coarse soils classified as sand, which have less than 1% organic matter.

Surface water advisory

Sulfentrazone can contaminate surface water through spray drift. Under some conditions, sulfentrazone may also have a high potential for runoff into surface water (primarily via dissolution in runoff water), for several to many months post-application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlying extremely shallow groundwater, areas with in-field canals or ditches that drain to surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas over-lying tile drainage systems that drain to surface waters.

PHYSICAL/CHEMICAL HAZARDS

Do not use or store near heat or open flame.

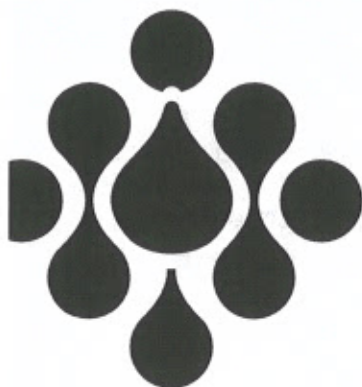
DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

Applicators must not exceed labeled rates of this product. Refer to specific directions for use for maximum use rates. Calculate the 12-month period for the purpose of maximum use rates from when **Sulfentrazone 4L Select** is first applied.

For any requirements specific to your State or Tribe, consult the Agency responsible for pesticide regulation.



SULFENTRAZONE 4L SELECT™

HERBICIDE

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR Part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry interval. These requirements only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours.

Exception: If the product is soil-injected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

Personal Protective Equipment (PPE) required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water is:

- Coveralls over long-sleeved shirt and long pants,
- Chemical-resistant gloves made of any waterproof material, and
- Shoes plus socks.

NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries or greenhouses.

Reentry Statement: Do not allow people (other than applicator) or pets on treatment area during application. Do not enter treatment area until sprays have dried.

WEED RESISTANCE MANAGEMENT

- **Sulfentrazone 4L Select** must be applied at the labeled rates and in accordance with label directions.
- Do not apply **Sulfentrazone 4L Select** at rates less than those listed in this label.
- Observe target areas prior to treatment and apply **Sulfentrazone 4L Select** when weeds are smaller.
- Scouting the application area before applying **Sulfentrazone 4L Select** to identify weeds and their growth stages and again following application of **Sulfentrazone 4L Select** will help to identify performance issues or likely weed resistance.

If levels of control provided by applications of this product is reduced, and cannot be accounted for by factors such as misapplication, abnormal levels of target species or extremes of weather, it may be the case that target species have developed a strain resistant to applications of **Sulfentrazone 4L Select**. If resistance develops, **Sulfentrazone 4L Select** may not provide sufficient control of target species. Where you suspect target species are developing resistance, contact State/local agricultural advisors.

Certain species may develop resistance to this product/other herbicides where they are used repeatedly. Application of pesticide products therefore should be carried out in consultation with local/State agricultural advisors so that local resistance management strategies can be implemented.

In order to limit the possibility of resistance developing, apply **Sulfentrazone 4L Select** in rotation with products that have a different mode of action and other classes of chemistry.



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SULFENTRAZONE 4L SELECT™

HERBICIDE

PRODUCT INFORMATION

Sulfentrazone 4L Select is a soil-applied selective herbicide. It will control listed grasses, sedges and broadleaf weeds. **Sulfentrazone 4L Select** is a flowable product that contains 4 pounds of active ingredient (sulfentrazone) per gallon.

The active ingredient sulfentrazone inhibits an enzyme required by plants in order to produce chlorophyll. Inhibiting this enzyme leads to the release of singlet oxygen (O) which then disrupts cellular membranes, resulting in cellular leakage and cellular death ultimately resulting in plant death.

Sulfentrazone 4L Select has a selective mode of action because sulfentrazone has a greater affinity for the PPO IX enzyme in listed weed species as opposed to listed crops.

Sulfentrazone 4L Select must be prepared and used in such a way so as to prevent the following:

- spills
- improper disposal of spray mixtures, rinsate or any excess pesticide
- back siphoning in wells

SETBACK

The following activities must not be carried out within 50 feet of any well (including drainage and abandoned wells) unless the activity is carried out on an impervious pad that has been built to withstand the heaviest possible weight that will be moved across the pad or placed upon it:

- Loading
- Mixing
- Washing/rinsing **Sulfentrazone 4L Select** from application equipment

The impervious pad must be made to contain any leaks or spills, as well as any rinsate/washwaters and rain that may fall upon it. An impervious pad that does not have a roof must have enough capacity to contain a minimum of 110% of the volume of the largest container that will be placed on the pad. Those pads that are covered by a roof must have enough capacity to contain a minimum of 100% of the volume of the largest container that will be placed on the pad. The roof must be big enough to completely exclude contact with the pad from rainfall.

The above containment volume minimum must be maintained. The minimum capacity volumes do not apply to the following:

- Vehicles delivering pesticide product to the load/mix area

Applicators must ensure that they are aware of any State requirements for containment and set back from wells.

The impervious pad must be self-contained so that surface water cannot flow over or from one pad. They must also be sloped to allow for material removal.

Do not load or mix **Sulfentrazone 4L Select** within 50 feet of any sinkholes, reservoirs, impounded or natural lakes, wells (including drainage and abandoned wells) or intermittent/perennial rivers and streams. This restriction does not apply where there are properly diked loading/mixing areas or impervious pads. The restriction also does not apply where abandoned wells are properly plugged or capped.

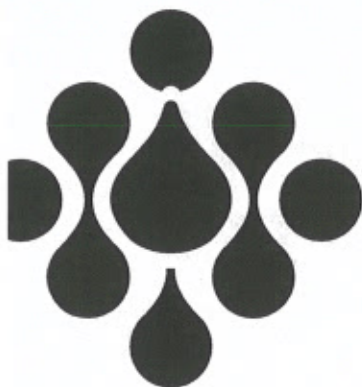
APPLICATION INSTRUCTIONS

Apply **Sulfentrazone 4L Select** as a broadcast treatment at rates indicated, in enough water to obtain good coverage and to make at least 10 gallons finished spray per acre.

When **Sulfentrazone 4L Select** is tank mixed or applied alone use water as the carrier.

In order to assure appropriate amounts of moisture for activation of product, best results will be obtained if **Sulfentrazone 4L Select** is applied in early spring, late summer or fall.

Make application with a boom and nozzle sprayer or boomless application system. Make application at spray pressure of 25 psi or below, unless the manufacturer specifies otherwise. Achieve best possible spray delivery and coverage, with minimum amounts of fine spray droplets by utilizing properly chosen and adjusted nozzles, spray tips, and screens.



SULFENTRAZONE 4L SELECT™

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Applications only to railroad rights of way can be made by helicopter.

Do not allow spray to drift onto adjacent plants as injury to other plants may occur.

When **Sulfentrazone 4L Select** has been activated, it will provide control of listed weed species. The level of control will depend on the size and type of weed species when **Sulfentrazone 4L Select** is activated. The control of listed germinating weed species will be reduced when rain or irrigation follows a period of dry weather.

When there are prolonged periods when rainfall/irrigation is not available, alternative weed control methods should be considered.

Once a treatment with **Sulfentrazone 4L Select** has been made, seedlings and germinating seeds absorb sulfentrazone from the soil solution. The amount of available active ingredient contained in the soil solution, is determined by the following factors:

- Soil type
- Soil pH
- Soil organic matter content

Sulfentrazone is adsorbed by the organic matter and clay parts of soils. This absorption reduces the amount of active ingredient available for weed uptake. Clay content in soil tends to increase as the soil gets finer. Crop Use Directions are indicated per soil types. Refer to the following chart to determine the category of a particular soil type:

Coarse Soil	Sand
	Loamy Sand
	Sandy Loam
Medium Soil	Sandy clay loam
	Sandy clay
	Loam
	Silt Loam
	Silt
Medium Soil	Silty clay loam
	Silty clay
	Clay loam
	Clay

The organic matter in soil will vary widely within soil classifications. In order to assess organic matter soil content, a detailed analysis will be required.

The amount of sulfentrazone available for uptake by weed species will increase as the pH of the soil increases. The pH of the soil must be accurately assessed using representative soil samples. In addition, irrigation with water with a high pH (i.e. alkaline water) following treatment, will increase the amount of available sulfentrazone for uptake by target species. However, if irrigation water pH exceeds 7.5, crop damage may result. The likelihood of an adverse response by crops will decrease as the growth stage of crops advances.

APPLICATION BY AIR

- Apply **Sulfentrazone 4L Select** using appropriate nozzles that will allow for optimal coverage, will minimize drift and will keep fine spray droplets to a minimum.
- Do not apply **Sulfentrazone 4L Select** when wind speed is likely to cause drift outside the target area.



SULFENTRAZONE 4L

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APPLICATION BY AIR RESTRICTIONS

- Aerial application is allowed only when environmental conditions prohibit ground application. Aerial application will be allowed when the field is too wet to safely apply pesticides using ground equipment.
- For aerial applications, the maximum release height must be 10 feet from the top of the crop canopy, unless a greater application height is required for pilot safety.
- When this product is allowed to be applied by air, applicator must use a minimum finished spray volume of 5 gallons per acre.
- For Non-Crop use, application can be made by helicopter to railroad rights-of-way only

APPLICATION BY GROUND

- Apply **Sulfentrazone 4L Select** using a boom and nozzle sprayer with the appropriate spray tips, screens and nozzles. Application equipment must be calibrated for optimal coverage and spray distribution at the appropriate pressure.
- Use spray nozzles that will minimize drift by keeping fine spray droplets to a minimum.
- Apply **Sulfentrazone 4L Select** in an appropriate volume for sufficient coverage. Higher volumes of water are more effective if weed populations are dense.

APPLICATION BY GROUND RESTRICTIONS

- Ground applicators must use a minimum finished spray volume of 10 gallons per acre.
- When sulfentrazone is tank mixed with a contact burndown herbicide, ground applicators must use a minimum spray volume of 15 gallons per acre.
- For boom spraying, the maximum release height must be 30 inches from the soil for ground applications.
- Do not apply **Sulfentrazone 4L Select** when wind speed is likely to cause drift outside the target area.

CALIFORNIA ONLY SPECIFIC RESTRICTIONS ON APPLICATIONS OF SULFENTRAZONE 4L SELECT

Runoff Ground Water Protection Areas. Do not use in areas identified by the California Department of Pesticide Regulation as runoff ground water protection areas* unless one of the following management practices can be met:

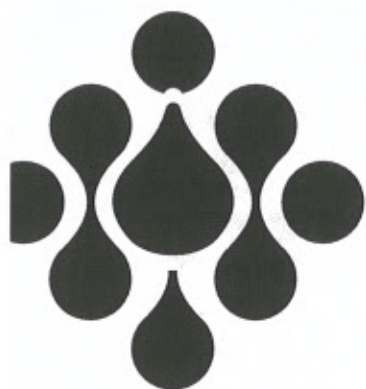
- a) Incorporation of the pesticide. Within 48 hours after the day this product is applied, the pesticide shall be incorporated on at least 90 percent of the area treated; using a disc, harrow, rotary tiller, or other mechanical method, or by sprinkler or low flow irrigation, including chemigation where allowed by the label, using a minimum of $\frac{1}{2}$ inch of irrigation water and a maximum of one inch as described under Application Instructions, at application rates that do not cause surface water runoff from the treated property or to wells on the treated property; or
- b) Retention of runoff on field. For six months following the application, the field shall be designed, by berms, levees, or non-draining circulation systems, to retain all irrigation runoff and all precipitation on, and drainage through, the field. The retention area on the field shall not have a percolation rate of more than 0.2 inches per hour (5 inches per 24 hours); or
- c) Retention of runoff in a holding area off the field. For six months following application, all runoff shall be channeled to a holding area off the application site, under the control of the property owner, that is designed to retain all irrigation runoff and all precipitation on, and drainage through, the treated field and all other areas draining onto that holding area. The holding area shall not have a percolation rate of more than 0.2 inches per hour (5 inches per 24 hours); or
- d) runoff onto a fallow field. For six months following application, runoff shall be managed so that it runs off into an adjacent unenclosed fallow field at least 300 feet long that is not irrigated for six months after application with the exception of the addition of adequate moisture that is required for herbicidal activation following application as described under Application Instructions, with full consideration of any plant back restrictions.

ARTIFICIAL RECHARGE BASINS

Do not use below the high water line inside artificial recharge basins (a surface facility, such as an infiltration pond or basin, or spreading ground that is specifically designed and managed to increase the infiltration of introduced surface water supplies into a ground water basin), unless this product is applied six months or more before the basin is used to recharge ground water.

UNLINED CANALS AND DITCHES

Do not use below the high water line inside unlined canals and ditches unless either (a) the pesticide user can document that the percolation rate of the canal or ditch is equal to or less than 0.2 inches per hour (0.002 gallons per minute per square foot), or (b) the pesticide is applied six months before water is run in the canal or ditch.



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RIGHTS-OF-WAY

Do not use on engineered rights-of-way in areas established by the California Department of Pesticide Regulation as leaching or runoff ground water protection areas* unless either (a) any runoff from the treated right-of-way shall pass through a noncrop fully vegetated area adjacent, and equal in area, to the treated area, or spread out onto an adjacent unenclosed fallow field that is at least 300 feet long and that will not be irrigated for six months following application with the exception of the addition of adequate moisture that is required for herbicidal activation following application as described under Application Instructions, with full consideration of any plantback restrictions, or (b) the property operator complies with any permit issued pursuant to the storm water provisions of the federal Clean Water Act pertaining to the treated area.

LEACHING GROUND WATER PROTECTION AREAS

Do not use in areas designated by the California Department of Pesticide Regulation as leaching ground water protection areas* unless either (a) the user does not apply any irrigation water for six months following application of this product or (b) the user applies this product to the planting bed or the berm above the level of irrigation water in the furrow or basin and the water level shall remain at or below the level for six months following application of the pesticide with the exception of the addition of adequate moisture that is required for herbicidal activation following application as described under Application Instructions, or (c) irrigation is managed so that the ratio of the amount of irrigation water applied divided by the net irrigation requirement is 1.25 or less for six months following application of this product.

*Consult with your County Agricultural Commissioner to determine whether the application will be within an area designated by the California Department of Pesticide Regulation as either a Runoff Ground Water Protection Area or a Leaching Ground Water Protection Area. Details regarding the locations of these areas are also available via the internet at www.cdDr.ca.gov/docs/emon/arndwtr/awD_reos.htm.

MIXING WITH LIQUID FERTILIZERS

Sulfentrazone 4L Select may be applied in combination with liquid fertilizers. Local advice regarding fertilizers can yield recommendations of products best suited in your area (e.g., urea or UAN solutions). Follow use and mixing and directions on fertilizer labels. Determine the compatibility of a liquid fertilizer combination before mixing [In a lidded glass jar (1 quart size), add all mix partners, in their relative proportions. Invert, shake or mix the jar thoroughly. If mixture forms precipitates (flakes or sludge), gels, balls up or forms oily films or layers, this indicates incompatibility. Though signs of incompatibility will typically be seen within 5 minutes of mixing, mixture should be observed for approximately 30 minutes].

CHEMIGATION APPLICATION

Sulfentrazone 4L Select may be applied through sprinkler irrigation systems including center pivot, lateral move, end tow, solid set, or hand move irrigation systems. Do not apply this product through any other type of irrigation system. Do not connect any irrigation system (including greenhouse systems) used for pesticide application to a public water system. Crop injury, lack of effectiveness or illegal residues on or in the crop can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.

The system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from backflow. The pesticide injection pipeline must also contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.



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Sulfentrazone 4L Select should be metered into the irrigation system continuously for the duration of the water application.

Sulfentrazone 4L Select should be diluted in sufficient volume to insure accurate application over the area to be treated. Use the appropriate amount of water to carry the product to the soil surface. Continuous agitation is required to maintain product suspension in the solution tank. A jar test should be conducted to ensure that phase separation would not occur during dilution and application. Failure to achieve a uniform dilution throughout the time of application may result in undesirable residues or less than desirable weed control. Flush the lines at the completion of the application and then turn the water off promptly.

When using water from public water systems; **DO NOT APPLY Sulfentrazone 4L Select THROUGH ANY IRRIGATION SYSTEM PHYSICALLY CONNECTED TO A PUBLIC WATER SYSTEM.** Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days of the year. **Sulfentrazone 4L Select** may be applied through irrigation systems, which may be supplied by a public water system only if water from the water system is discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and to top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. Before beginning chemigation, always make sure that the air gap exists and that there is no blockage of the overflow of the reservoir tank.

Crop response to treatment with **Sulfentrazone 4L Select** will depend on the following factors:

- application rate and timing
- volume of water applied and pH
- sensitivity of crop type to treatment with **Sulfentrazone 4L Select**
- growth stage of the crop when irrigated

The amount of sulfentrazone available for uptake by weed species will increase as the pH of the soil increases. The pH of the soil must be accurately assessed using representative soil samples. In addition, irrigation with water with a high pH (i.e. alkaline water) following treatment, will increase the amount of available sulfentrazone for uptake by target species. However, if irrigation water pH exceeds 7.5, crop damage may result. The likelihood of an adverse response by crops will decrease as the growth stage of crops advances.

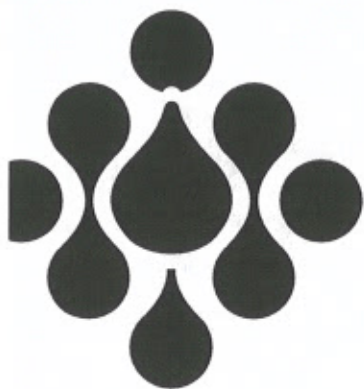
MIXING AND LOADING INSTRUCTIONS

- **Sulfentrazone 4L Select** may be applied on its own or in combination with other herbicides for a broader spectrum of weed control. Combinations with other products may not have been tested, therefore, carry out a compatibility test before mixing and applying. In a lidded glass jar (1 quart size), add all mix partners, in their relative proportions. Invert, shake or mix the jar thoroughly. If mixture forms precipitates (flakes or sludge), gels, balls up or forms oily films or layers, this indicates incompatibility. Though signs of incompatibility will typically be seen within 5 minutes of mixing, mixture should be observed for approximately 30 minutes.
- Read and follow the label of each tank mix product used for precautionary statements, directions for use, rates and timings, and other restrictions.
- Spray equipment must be clean and free of product residue prior to mixing an application solution of **Sulfentrazone 4L Select**. Refer to Cleaning Directions below and to the cleaning directions of the product(s) previously applied.
- Mix **Sulfentrazone 4L Select** using the following procedure:
 1. Fill a clean spray tank with 1/2 of water required for treatment.
 2. Begin agitation.
 3. Use a clean container to create a slurry of **Sulfentrazone 4L Select** and water.
 4. Add the slurry slowly to the spray tank, continuing agitation throughout.
 5. Rinse the slurry mix container and add rinsate solution to spray tank.
 6. Finish filling spray tank to required level.
 7. Maintain agitation throughout. The **Sulfentrazone 4L Select**/water slurry must be mixed thoroughly prior to application.
- For best mixing of the **Sulfentrazone 4L Select** water slurry, add the slurry using induction systems on the sprayer fill plumbing system.



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- The spray application solution must be applied immediately following mixture.
- Maintain agitation throughout mixture and application.
- Do not store spray solution in the spray tank for an extended period of time, or overnight.
- A tank mixture containing **Sulfentrazone 4L Select** must not be premixed in nurse tanks.

CLEANING APPLICATION EQUIPMENT

Adverse crop reaction may result if residues of this product are left in spray equipment following application. Spray equipment must be cleaned immediately after treatment with **Sulfentrazone 4L Select**, and before applications with other products.

- Use the following procedure:
 1. Drain the spray application equipment, including tank, hoses, spray boom and nozzles.
 2. Clean inside the spray tank with a high-pressure detergent, removing residues and sediment.
 3. Thoroughly rinse the spray tank.
 4. Flush the spray system out using water, including hoses, spray boom and spray nozzles.
 5. Combine 3 gallons of ammonia (with a minimum of 3% active ingredient) in 100 gallons of water. Make sufficient cleaning solution to operate the spray application equipment for a minimum of 15 minutes so that the system is thoroughly flushed.
 6. Remove spray tips, and all screens and filters and clean separately using the ammonia solution (step 5).
 7. Leave the cleaning solution or water in the nozzles, spray booms, hoses and spray tank overnight (or during storage) to ensure thorough cleaning.
 8. Drain the system completely prior to re-use. Use clean water to rinse/flush nozzles, spray booms, hoses and the spray tank. Remove spray tips, and all screens and filters and clean separately, using the ammonia solution (step 5).
 9. Dispose of rinsate and excess cleaning solution in compliance with Federal, State, and local regulations and guidelines.
- Rinsate and cleaning solution must not be applied to sensitive crops.
- Spray application equipment must not be stored for any extended period while **Sulfentrazone 4L Select** application solution remains in the spray lines, nozzles, strainers, or boom plumbing.
- When application equipment has been idle or in storage, flush the nozzles and spray boom with clean water prior to use for application of product.
- If small amounts of this product remain in equipment after cleaning, **Sulfentrazone 4L Select** may be released during later applications, which may cause an adverse reaction from certain crops/other vegetation. The applicator is solely responsible for any damage caused by equipment that is not properly cleaned.
- Equipment must not be flushed or drained near desirable plants/trees.
- Ensure that bodies of water are not contaminated with application solution, rinsate or cleaning solution, including water that may be used for other crops, i.e. irrigation water.

SPRAY DRIFT REDUCTION ADVISORY

To avoid drift, do not apply when wind speeds exceed 10 mph. Do not exceed spray pressures of 40 psi unless specified by the manufacturer of drift reducing spray tips and nozzles.

Select nozzle and application pressure that deliver medium to coarse or larger spray droplets as indicated in the nozzle manufacturer's recommendations and in accordance with ASABE Standard S-572.

Select coarse to very coarse droplet size when sulfentrazone is used as a pre-emergent/pre-plant application.

Select medium to very coarse droplet size when sulfentrazone is used post-emergence with a contact burndown herbicide.

Applicators may spray only when wind speed is between 3 and 10 mph.

Do not apply as spray droplets smaller than medium to coarse (defined by the ASABE standard).



SULFENTRAZONE 4L SELECT™

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SPRAY DRIFT MANAGEMENT

AVOIDING SPRAY DRIFT AT THE APPLICATION SITE IS THE RESPONSIBILITY OF THE APPLICATOR AND THE GROWER.

The interaction of many equipment and weather related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

The following drift management requirements must be followed to avoid off-target movement from aerial applications. These requirements do not apply to forestry applications, public health uses or to applications of dry materials.

1. The distance of the outermost nozzles on the boom must not exceed 75 % the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees.
3. Observe the regulations of the State where applications are made.
4. Applicators must observe and abide by the requirements of the Aerial Drift Reduction Advisory.

INFORMATION ON DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage for pesticide performance. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions. (See information on Wind, Temperature and Humidity, and Temperature Inversions in subsequent sections).

CONTROLLING SPRAY DROPLET SIZE

Volume - Use high flow rate nozzles to apply the greatest practical spray volume. Nozzles with higher rated flow generally produce larger droplets.

Pressure - When higher flow rates are needed, use higher flow rate nozzles rather than increasing spray pressure. Do not exceed the nozzle manufacturer's specified pressures. Lower pressure produces larger droplets in many types of nozzles.

Number of Nozzles - Use the minimum number of nozzles that provide uniform coverage.

Nozzle Orientation - For aerial application, the recommended practice is to orient nozzles so that the spray is released parallel to the airstream. This orientation usually produces larger droplets as compared to other nozzle orientations. Significant nozzle deflection from horizontal will reduce droplet size and increase drift potential.

Nozzle Type - Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low drift nozzles for both ground and aerial applications. Solid stream nozzles oriented straight back usually produce the largest droplets and the lowest drift potential in aerial applications.

Boom Length - For some aerial use patterns, reducing the effective boom length to less than 75% of the wingspan or rotor length may further reduce drift without reducing swath width.

Application Height - To minimize spray drift, make applications at a height < 10 feet above the top of the target plant canopy unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment - When aerial applications are made with a crosswind, the swath will be displaced downwind. Therefore, on the upwind and downwind edges of the field, the applicator must compensate for this displacement by the path of the aircraft upwind. Increase swath adjustment or offset distance when conditions favor increased drift potential (higher winds, smaller droplets, etc.).

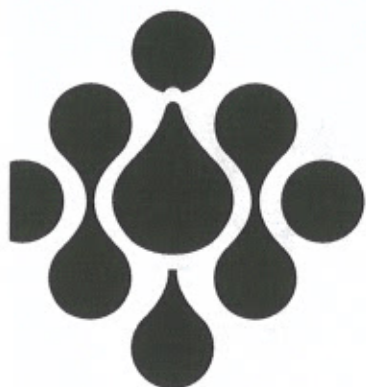
Wind - Drift potential is lowest between wind speeds of 3-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. Do not make applications below 3 mph due to variable wind direction and high inversion potential. NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they may potentially affect spray drift.

Temperature and Humidity - When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.



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Temperature Inversions - Do not make applications during a temperature inversion because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small-suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the low speed and variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common during conditions of limited cloud cover and little to no wind. They often begin to form as the sun sets and may often continue into the morning. The presence of a temperature inversion may be indicated by ground fog. However, if fog is not present, the movement of smoke from a ground source or an aircraft smoke generator can also identify inversions. Smoke that remains in layers and moves laterally in a concentrated cloud (under low speed wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas - Only apply pesticide when the wind is blowing away from sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops).

SULFENTRAZONE 4L SELECT DRIFT

If **Sulfentrazone 4L Select** solutions drift into non-target areas, contact with other plants/crops can cause adverse reaction. Initially, adverse crop/plant reaction may be in localized areas, depending on factors such as plant sensitivity to the application solution and spray solution droplet size. Lesions or spots caused by drift may or may not coalesce. The effects of drift will not normally cause lasting effects on plant growth, but may adversely affect the value of fruit or foliage where value is affected by appearance. Where plants are sensitive to **Sulfentrazone 4L Select** and drift is significant, defoliation may result.

Avoid drift of this product/solutions containing this product to non-target areas by taking adequate notice of the prevailing environmental conditions. Use appropriate and accurately calibrated application equipment and utilize treatment procedures that will minimize the risk of drift.

Misapplication of this product where label directions are not followed may result in drift. The applicator/user of this product is solely responsible for any misapplication of **Sulfentrazone 4L Select**.

REPLANTING AND ROTATIONAL CROPS

- During replanting, keep soil tillage to a minimum so that the herbicide barrier is preserved, thereby maximizing weed control.
- In the event that the planting of crops listed in label directions does not produce a stand, only crops specified in this label or the tank mix partner may be planted. Where there is a tank mixture, the most restrictive label directions must be followed.
- The planted area must not be retreated with **Sulfentrazone 4L Select** or any other-product containing sulfentrazone.
- Do not plant crops in previously treated areas unless in full compliance with the Rotational Restrictions (below)

CROP	MINIMUM ROTATIONAL INTERVAL
Barley Rye Triticale Wheat	4 months
Corn, Field Rice Sorghum ¹	10 months
Alfalfa Cereal Grains (Buckwheat, Oats, Pearl Millet, Proso Millet, Teosinte, Wild Rice) Sweet Potatoes	12 months
Corn, Pop Corn, Sweet Cotton	18 months



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Canola	24 months
Sugar Beets	36 months
Asparagus Berries Brassica, head and stem (Broccoli and Cabbage) Brassica, leafy greens Citrus Cowpea, succulent (TN Only) Dry Shell Peas and Beans Flax Fruiting Vegetables (except cucurbits) Okra Grapes Horseradish Lima beans, succulent (TN Only) Melons Mint Peanuts Potatoes Rhubarb Soybeans Strawberry Succulent peas Sugarcane Sunflower subgroup 20B Tobacco Tree nuts SELECT Turnips Wheat, spring (Pacific Northwest states ID, OR, WA only)	Crops can be planted at any point following the application of Sulfentrazone 4L Select

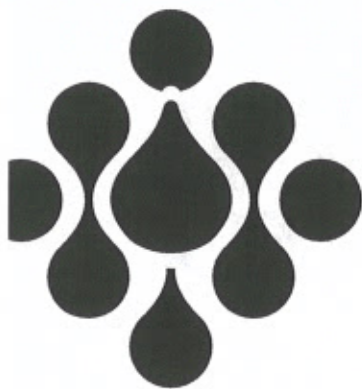
¹18 month minimum rotational interval for sorghum where use rates are greater than 8 oz. of **Sulfentrazone 4L Select** per acre.

- Certain crops have a rotational interval of more than 12 months because of sensitivity and the risk of crop injury. Carry out a representative bioassay of the target area on the rotational crop in order to assess the crop's sensitivity to applications of this product.
- For all crops not listed in the table above, there must be a minimum rotational interval of 12 months.
- When this product is tank mixed with another product(s), read and follow the directions of all tanks mix partners. The most restrictive directions must apply, including directions for re-cropping.

SELECT GRASSES

(Including Residential and Institutional Lawns, Athletic Fields, Golf Course Fairways and Roughs and Commercial Sod Farms)

Sulfentrazone 4L Select can be used to control broadleaf, grass and sedge weeds in established turfgrasses (seeded, sodded or sprigged). SELECT grasses should be established (good root system; uniform stand) tolerant to **Sulfentrazone 4L Select** (see below). A healthy root system is necessary to fill in exposed edges, which are more susceptible to **Sulfentrazone 4L Select**.



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TOLERANT SELECT GRASSES

Cool Season Grasses: Apply **Sulfentrazone 4L Select** at 4 to 8 oz. per acre (unless noted) to: Bentgrass, creeping*, Fescue Fine** (Festuca rubra), Fescue, Tall** (Festuca arundinacea), Ryegrass, Perennial (Lolium perenne), Bluegrass, Kentucky (Poa pratensis), Bluegrass, Rough*** (Poa trivialis)

*Apply a maximum of 4 oz. **Sulfentrazone 4L Select** to creeping bentgrass

** An undesirable plant response can occur if applying **Sulfentrazone 4L Select** to certain varieties of Chewings fine fescue or tall fescue.

Warm Season Grasses: Apply **Sulfentrazone 4L Select** at 8 to 12 oz. per acre to: Bahiagrass*** (Paspalum notatum), Buffalograss (Buchloe dactyloides), Carpetgrass (Axonopus affinis), Centipedegrass (Eremochloa ophiuroides), Kikuyugrass (Pennisetum clandestinum), Seashore Paspalum (Paspalum vaginatum), Zoysiagrass*** (Zoysia japonica), Bermudagrass (Cynodon dactylon), Bermudagrass Hybrids (Cynodon bluegrass), St. Augustinegrass*** (Stenotaphrum secundatum)

*** St. Augustine grass and some varieties of Bahiagrass, rough bluegrass or Zoysiagrass, particularly turfgrass that has been stress-weakened can experience temporary leaf surface discoloration (removed upon mowing) upon application of **Sulfentrazone 4L Select**. Chemicals, certain cultural practices, disease, mechanical exposure and cultivation and weather can all be causes of stress-weakened turf.

Not all varieties or cultivars have been tested with **Sulfentrazone 4L Select**. Consult with university or weed management specialists for information on using **Sulfentrazone 4L Select** with specific local varieties or cultivars of turfgrass. Prior to treatment on new turfgrass varieties, test response to **Sulfentrazone 4L Select** by applying to a small area of turfgrass.

Do not apply more than 0.375 lbs. sulfentrazone (12.0 fl. oz. product) per acre per 12 month period. The 12 month period starts at the point of first application.

PREEMERGENCE WEED CONTROL

When applied as indicated on this label, the following weeds will be controlled or suppressed with **Sulfentrazone 4L Select** :

Summer Annual Weeds - apply in early spring, prior to germination of weed seeds.

Broadleaf Weeds:

Black medic (*Medicago lupulina*)
Pigweed, redroot (*Amaranthus retroflexus*)
Prostrate knotweed (*Polygonum aviculare*)
Spurge, prostrate (*Euphorbia supine*)
Common purslane (*Portulaca oleracea*)
Pigweed, smooth (*Amaranthus hybridus*)
Spurge (*Euphorbia spp*)
Spurge, spotted (*Euphorbia maculate*)

Grassy Weeds:

Barnyardgrass (*Echinochloa crusgalli*)
Crabgrass, smooth (*Digitaria ischaemum*)
Foxtail, yellow (*Setaria glauca*)
Crabgrass, large (*Digitaria sanguinalis*)
Foxtail, green (*Setaria viridis*)
Goosegrass (*Eleusine indica*)

Winter Annual Weeds - apply in late summer or early fall.

Broadleaf Weeds:

Buttercups (*Ranunculus spp.*)
Chickweed, common (*Stellaria media*)
Common groundsel (*Senecio vulgaris*)
Hairy bittercress (*Cardamine hirsute*)



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Knawel (*Scieranthus annuus*)
Parsley-piert (*Alchemilla microcarpa*)
Violet, Johnny-jump-up (*Viola rafeinesquii*)
Carolina geranium (*Geranium carolinianum*)
Chickweed, mouseear (*Cerastium vulgatum*)
Corn Speedwell (*Veronica arvensis*)
Henbit (*Lamium amplexicaule*)
Large Hop clover (*Trifolium campestre*)
Spurweed (*Soliva pterosperma*)

Grassy Weeds:

Annual bluegrass (*Poa annua*)
Annual ryegrass (*Lolium multiflorum*)

POST-EMERGENCE WEED CONTROL

When applied as indicated on this label, the following weeds in turfgrass will be controlled or suppressed with **Sulfentrazone 4L Select**:

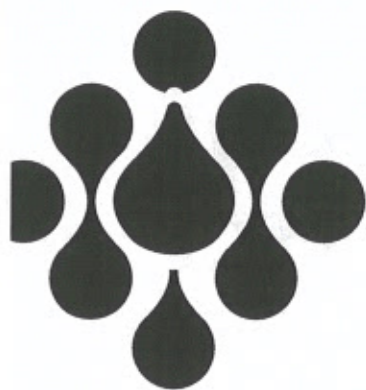
Broadleaf Weeds:

Bedstraw, catchweed (*Galium aparine*)
Bittercress (*Cardamine* spp.)
Buttercup (*Ranunculus* spp.)
Carpetweed (*Mollugo verticillata*)
Beggarweed, Florida (*Desmodium tortuosum*)
Black Medic (*Medicago lupulina*)
Carolina Geranium (*Geranium carolinianum*)
Chickweed, Common (*Stellaria media*)
Chickweed, Mouseear (*Cerastium vulgatum*)
Clover (*Trifolium* spp.)
Cudweed (*Gnaphalium* spp.)
Dock, Curly (*Rumex crispus*)
Eclipta (*Eclipta prostrata*)
Fiddleneck (*Amsinckia* spp.)
Galinsoga (*Galinsoga ciliata*)
Goldenrod (*Solidago* spp.)
Groundsel, common (*Senecio vulgaris*)
Knawel (*Scieranthus annuus*)
Kochia (*Kochia scoparia*)
Lawn Burweed (Spurweed) (*Soliva pterosperma*)
Mallow, Common (*Malva neglecta*)
Parsley-piert (*Alchemilla arvensis*)
Pigweed, Smooth (*Amaranthus hybridus*)
Pineapple Weed (*Matricaria matricarioides*)
Puncture Weed (*Tribulus terrestris*)
Pusley, Florida (*Richardia scabra*)
Rocket, London (*Sisymbrium irio*)
Smartweed, PA (*Polygonum pensylvanicum*)
Speedwell (*Veronica* spp.)
Spurge, Prostrate (*Euphorbia humistrata*)
Star of Bethlehem (*Ornithogalum umbellatum*)
Violet, Wild (*Viola pratensis*)
Woodsorrel, Creeping (*Oxalis corniculata*)



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Cinquefoil (*Potentilla* spp.)
Copperleaf (*Ascalypha* spp.)
Dandelion (*Taraxacum officinale*)
Dollarweed (*Hydrocotyl umbellata*)
Evening Primrose (*Oenothera biennis*)
Filaree (*Erodium* spp.)
Garlic, Wild (*Allium vineale*)
Ground Ivy (*Glechoma hederacea*)
Henbit (*Lamium amplexicaule*)
Knotweed, Prostrate (*Polygonum aviculare*)
Lambsquarters, Common (*Chenopodium album*)
Lespedeza, Common (*Lespedeza striata*)
Onion, Wild (*Allium canadense*)
Pigweed, Redroot (*Amaranthus retroflexus*)
Pigweed, Rumble (*Amaranthus albus*)
Plantain, Buckhorn (*Plantago lanceolata*)
Purslane, Common (*Portulaca oleracea*)
Red weed (*Melochia corchorifolia*)
Shepherd's Purse (*Capsella bursa pastons*)
Sorrel, Red (*Rumex acetosella*)
Spurge, Annual (*Euphorbia* spp.)
Spurge, Spotted (*Euphorbia maculata*)
Velvetleaf (*Abutilon theophrasti*)
Violet, Johnny-jump-up (*Viola rafeinesquii*)
Woodsorrel, Yellow (*Oxalis stricta*)

Grassy Weeds:

Goosegrass (*Eleusine indica*)

Sedges:

Kyllinga, False Green (*Kyllinga gracillima*)
Nutsedge, Yellow (*Cyperus esculentus*)
Sedge, Globe (*Cyperus glubulosus*)
Sedge, Texas (*Cyperus polystachyos*)
Kyllinga, Green (*Kyllinga brevifolia*)
Nutsedge, Purple (*Cyperus rotundus*)*
Sedge, Cylindrical (*Cyperus retrorsus*)
Sedge, Surinam (*Cyperus surinamensis*)

*NOTE: Split applications give optimum control of purple nutsedge. When actively growing purple nutsedge is evident, apply as indicated below:

Cool season grasses: 2 - 4 fl. oz. **Sulfentrazone 4L Select** per acre first application, followed by second application of 4 -6 fl. oz. per acre (do not exceed 8 fl. oz. total on cool season grasses)

Warm season grasses: 6 - 8 fl. oz. **Sulfentrazone 4L Select** per acre first application, followed by second application of 4-6 fl. oz. per acre (do not exceed 12 fl. oz. total on warm season grasses)

Observe maximum rate per acre based on SELECT variety, as indicated above.

Allow 35 days between applications.



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APPLICATION INSTRUCTIONS

Apply amount of **Sulfentrazone 4L Select** indicated above to turfgrass to control or suppress indicated weeds.

Best control is achieved with grassy weeds when applied with grasses are actively growing and small (pre tiller stage). Application rates lower than 12 fl. oz./ acre will control grasses for 60 days.

Optimum control of broadleaf weeds will occur if application is made shortly after weed emergence.

Applications to sprigged, overseeded or reseeded areas: turfgrasses can be sprigged, overseeded or reseeded after **Sulfentrazone 4L Select** applications. Best results are obtained from waiting at least 1 month after **Sulfentrazone 4L Select** application before sprigging, overseeding or reseeding. If slight plant response can be tolerated, overseeding of Bermudagrass with perennial ryegrass can be done between 2 to 4 weeks after **Sulfentrazone 4L Select** application.

Observing proper fertilization, irrigation and soil cultivating practices, and using mechanical or power seeding equipment will give optimum overseeding or reseeding results.

Optimum weed control is obtained with thorough spray coverage.

TANK MIXES AND ADJUVANTS

Tank mixing with other pesticides registered for use on turfgrass can extend the weed control range and enhance efficacy of **Sulfentrazone 4L Select** for both preemergence and post-emergence control. Read and follow the label of each tank mix product used for precautionary statements, directions for use, rates and timings, and other restrictions. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.

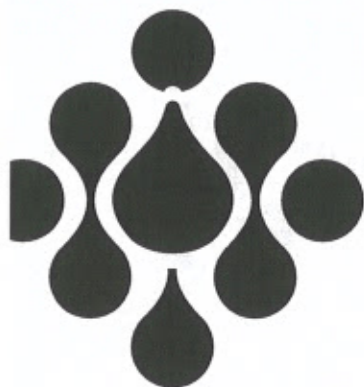
Use of adjuvants or surfactants with **Sulfentrazone 4L Select** can cause short-term discoloration of some turf species. Summit does not advise use of **Sulfentrazone 4L Select** with surfactants or adjuvants.

PRECAUTIONS:

- Temporary undesirable effects can be caused by the use of surfactants with **Sulfentrazone 4L Select**. Perform an on-site evaluation of surfactants for effects to turfgrasses and mixture compatibility prior to use.
- Use of **Sulfentrazone 4L Select** with surfactants is not advised unless surfactant/sulfentrazone combinations have previously proven to be safe to a particular turf variety.
- Use of **Sulfentrazone 4L Select** mixed with or applied within 7 days of herbicides containing the active ingredient trinexapac-ethyl can result in temporary turfgrass discoloration. Applying **Sulfentrazone 4L Select** and trinexapac-ethyl herbicides 7 or more days apart decreases possibility of discoloration.

RESTRICTIONS:

- Establish sod production areas for three (3) months before initial treatment with **Sulfentrazone 4L Select**.
- Do not apply more than 0.375 lbs. sulfentrazone (12.0 fl. oz. product) per acre per 12 month period. The 12-month period starts at the point of first application.
- Pre-harvest interval is 3 months
- Do not apply to ornamental beds or landscape ornamental plants.
- Do not feed forage or allow grazing of turf treated with **Sulfentrazone 4L Select**.
- Do not apply **Sulfentrazone 4L Select** to tees or putting greens on golf courses.



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NON-CROP USES

For use in Railroad, Highway, Roadside, Pipeline and Utility Rights of Way, Industrial Areas, Fence Rows, and Other Listed Non-Crop Sites.

Apply **Sulfentrazone 4L Select** to control susceptible weeds, maintain bare ground and complete vegetation control, and for residual control of germinating weeds in noncropland.

When applied as indicated on this label, the following weeds will be controlled with **Sulfentrazone 4L Select**:

Beggarweed, Florida (*Desmodium tortuosum*)
Chickweed, common (*Stellaria media*)
Crabgrass species (*Digitaria spp.*)
Daisy, American (*Coreopsis grandiflora*)
Dayflower, Virginia (*Commelina virginica*)
Fixweed (*Descurainia sophia*)
Groundcherry, clammy (seedling) (*Physalis heterophylla*)
Jimsonweed (*Datura stramonium*)
ALS/Triazine resistant Kochia (*Kochia scoparia*)
Lettuce, wild (*Lactuca virosa*)
Milkweed, honeyvine (*Ampelamus albidus*)
Morningglory species (*Ipomoea spp.*)
Nightshade species (*Solanum spp.*)
Palmer amaranth (*Amaranthus palmeri*)
Pigweed, redroot (*Amaranthus retroflexus*)
Thistle, Russian (*Salsola iberica*)
Waterhemp, common (*Amaranthus rudis*)
Carpetweed (*Mollugo verticillata*)
Copperleaf Hophornbeam (*Acalypha ostryifolia*)
Croton, tropic (*Croton glandulosus*)
Dayflower, common (*Commelina communis*)
Dock, curly (*Rumex crispus*)
Galinsoga, hairy (*Galinsoga ciliata*)
Groundcherry, cutleaf (*Physalis angulata*)
Kochia (*Kochia scoparia*)
Lambsquarters, common (*Chenopodium album*)
Mallow, common (*Malva neglecta*)
Mexicanweed (*Caperonia castanifolia*)
Mustard species (*Brassica spp.*)
Nutsedge species (*Cyperus spp.*)
Pigweed, smooth (*Amaranthus hybridus*)
Texasweed (*Caperonia paustrus*)
Waterhemp, tall (*Amaranthus tuberculatus*)

See Listed Weed Species section of this label for information on additional weeds.

Application can be made to non-crop use sites including:

- Railroad Rights-of-Way - including railroad yards, railroad crossings and railroad bridge abutments
- Highway, Roadside, Pipeline and Utility Rights-Of-Way - including, guardrails, road shoulders, electric utility substations, pipeline pumping stations, around electric transmission towers, around distribution line poles and other areas where complete vegetation control is needed
- Industrial Areas, Fence Rows and Other Non-Crop Sites - including production facilities, tank farms, storage areas, parking areas, lumber yards, airports, military installations, along fence rows and similar non crop sites



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<p>Application Rates</p> <p>Apply 8 - 12 fl. oz. / acre</p> <p>Use higher rates:</p> <ul style="list-style-type: none">• To extend length of control• On soils with fine soil textures• On soils with more than 2% organic matter <p>Do not use on soils with less than 1% organic matter (sandy soils)</p>	<p>Important</p> <ul style="list-style-type: none">• Do not apply more than 0.375 lbs. sulfentrazone (12.0 fl. oz. product) per acre per 12-month period. The 12-month period starts at the point of first application• Do not apply more than 12.0 fl. oz. product per acre per single application.• Do not use on soils with less than 1 % organic matter (sandy soils)• Applications by helicopter can only be made to railroad rights of way
<p>Application Instructions</p> <p>Apply Sulfentrazone 4L Select as a broadcast treatment at rates indicated, in enough water to obtain good coverage and to make at least 10 gallons finished spray per acre.</p> <p>In order to assure appropriate amounts of moisture for activation of product, best results will be obtained if Sulfentrazone 4L Select is applied in early spring, late summer or fall.</p> <p>Make application with a boom and nozzle sprayer or boomless application system. Make application at spray pressure of 25 psi or below, unless the manufacturer specifies otherwise. Achieve best possible spray delivery and coverage, with minimum amounts of fine spray droplets by utilizing properly chosen and adjusted nozzles, spray tips, and screens.</p> <p>Applications only to railroad rights of way can be made by helicopter.</p>	
<p>Tank Mixes</p> <p>Tank mix Sulfentrazone 4L Select with burndown herbicides (such as 2,4-D, dicamba, diquat, glyphosate, glyphosate trimesium, etc.). Read and follow the label of each tank mix product used for precautionary statements, directions for use, rates and timings, and other restrictions. It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.</p> <p>Adjuvants recommended for tank mix partner can be used.</p>	



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STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal. Do not use or store around the home.

PESTICIDE STORAGE: Store product in original container only, away from other pesticides, fertilizer, food or feed. Store in a cool, dry place and avoid excess heat.

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

CONTAINER HANDLING: Non-Refillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: (For containers greater than 5 gallons). Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Repeat this procedure two more times.

(For containers 5 gallons or less): 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. Triple rinse (or equivalent). Then offer for recycling if available, or reconditioning, or puncture and dispose of in a sanitary landfill, or incineration, or, if allowed by state and local authorities, by burning. If burned, stay out of smoke.

CONTAINER HANDLING: Refillable container. Refill this container with pesticide only. Do not reuse this container for any other purpose. Cleaning the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller. To clean the container before final disposal, empty the remaining contents into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times. Then offer for recycling if available or reconditioning if appropriate or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Steps to be taken in case material is released or spilled:

In case of release or spill, isolate area and keep unprotected persons or animals away from area. Dike and contain the spill with inert material (sand, earth, cat litter or commercial clay, etc.) and transfer liquid and solid diking material to separate containers for disposal. Remove contaminated clothing and wash affected skin areas with soap and water. Wash clothing before re-use. Keep the spill out of all sewers and open bodies of water.

LIMITATION OF WARRANTY AND LIABILITY

IMPORTANT: READ BEFORE USE: Read the entire Directions for Use, Conditions of Warranties and Limitations of Liability before using this product. If these terms and conditions are not acceptable, return the unopened product container at once. By using, this product, user or buyer accepts the following Disclaimer of Warranties and Limitations of Liability.

CONDITIONS: The directions for use of this product are believed to be adequate and must be followed carefully. However, it is impossible to eliminate all risks associated with the use of this product. Ineffectiveness, injury, and other unintended consequences may result because of such factors as manner of use or application (including misuse), the presence of other materials, weather conditions, and other unknown factors, all of which are beyond the control of Prime Source, LLC. All such risks shall be assumed by the user or buyer.

DISCLAIMER OF WARRANTIES: To the extent consistent with applicable law, Prime Source, LLC makes no other warranties, express or implied, of merchantability or of fitness for a particular purpose or otherwise, that extend beyond statements on this label.

LIMITATIONS OF LIABILITY: To the extent consistent with applicable law, neither Prime Source, LLC, the manufacturer, nor the Seller shall be liable for any indirect, special, incidental or consequential damages resulting from the use, handling, application, storage, or disposal of this product. To the extent consistent with applicable law, the exclusive remedy of the user or buyer for any and all losses, injuries or damages resulting from the use, handling, application, or storage of this product, whether in contract, warranty, tort, negligence, strict liability or otherwise, shall not exceed the purchase price paid.



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IPRODIONE 2F SELECT™

SAFETY DATA SHEET

1. IDENTIFICATION

Product Identifier

Product Name Iprodione 2F Select

Registration Number(s) Reg. No. 89442-28

Recommended use of the chemical and restrictions on use

Recommended Use EPA registered insecticide.

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

Albaugh, LLC
1525 NE 36th Street
Ankeny, IA 50021

Emergency Telephone Number

Emergency Telephone (24 hr) For fire, spill and/or leak contact INFOTRAC:
1-800-535-5053 (North America) 1-352-323-3500 (International)
For medical emergencies and health/safety inquiries, contact PROSAR:
1-877-250-9291

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This chemical is a product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-EPA registered chemicals. Please see Section 15 for additional EPA information.

Appearance Opaque liquid

Physical State Liquid

Odor Slight

Classification

Acute toxicity - Inhalation (Vapors)

Category 3

Carcinogenicity

Category 1A

Signal Word

Danger

Hazard Statements

Toxic if inhaled May
cause cancer





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Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood Use
personal protective equipment as required
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

Precautionary Statements - Response

If exposed or concerned: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing Call
a POISON CENTER or doctor/physician

Precautionary Statements - Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other Hazards

Toxic to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Petroleum distillates, solvent-refined light paraffinic	64741-89-5	31.23-33.17
3-(3,5-Dichlorophenyl)-2,4-dioxo-N-isopropylimidazolidine-1-carboxamide	36734-19-7	23.1-24.5

If Chemical Name/CAS No is "proprietary" and/or Weight-% is listed as a range, the specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. FIRST-AID MEASURES

First Aid Measures

General Advice

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

Eye Contact

Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Call a poison control center or doctor for treatment advice.

Skin Contact

Take off contaminated clothing. Wash off immediately with plenty of water for at least 15 minutes. Call a poison control center or doctor for treatment advice.

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Give oxygen if breathing is difficult. If breathing has stopped, call 911, give artificial respiration. Seek medical advice.



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Ingestion Do not induce vomiting, unless directed by medical personnel. Get immediate medical attention. If conscious, give 1 glass of water to dilute. Never give anything by mouth to an unconscious person.

Most important symptoms and effects

Symptoms Nausea, vomiting, abdominal cramps, and loss of coordination. Possible aspiration hazard.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Foam. Carbon dioxide (CO₂). Dry chemical. Water spray (fog).

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical

Product is toxic by inhalation.

Hazardous Combustion Products Toxic gases may be formed by fire. Nitrogen oxides (NO_x). Carbon oxides.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Evacuate area of unprotected personnel. Remain upwind of fire to avoid hazardous vapors and decomposition products. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Wear protective clothing as described in Section 8 of this safety data sheet. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

Environmental Precautions Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. See Section 13: DISPOSAL CONSIDERATIONS.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so. Dike far ahead of spill; use dry sand to contain the flow of material.

Methods for Clean-Up Absorb with inert material and then place in suitable container for chemical waste. Rinse area thoroughly. Absorb rinsate with appropriate absorbent and transfer this material to a properly labeled container for disposal.



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7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Use personal protection recommended in Section 8. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash face, hands, and any exposed skin thoroughly after handling. Open and handle container with care. Avoid spilling. Do not contaminate water, food or feed by storage, disposal or by cleaning equipment. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing vapors or mists. Use only outdoors or in a well-ventilated area.

Conditions for safe storage, including any incompatibilities

Storage Conditions

Keep container tightly closed and store in a cool, dry and well-ventilated place. Store locked up. Keep out of the reach of children. Store at ambient conditions. Keep/store only in original container.

Packaging Materials

Do not reuse container.

Incompatible Materials

10% potassium permanganate solution.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

The following information is given as general guidance

Appropriate engineering controls

Engineering Controls

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION, PACKAGING AND USE OF THIS PRODUCT. FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS OF END USE PRODUCTS CONTAINING THIS MATERIAL, CONSULT THE SDS OR PRODUCT LABEL FOR THE END USE PRODUCT.

Individual protection measures, such as personal protective equipment

Eye/Face Protection

Use splash goggles or face shield when contact may occur.

Skin and Body Protection

Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Viton or other impervious gloves are required. Long sleeve shirt, trousers, and safety shoes.

Respiratory Protection

Ensure adequate ventilation, especially in confined areas. Wear an appropriate NIOSH/MSHA approved respirator if ventilation is inadequate.

General Hygiene Considerations

Handle in accordance with good industrial hygiene and safety practice. Wash face, hands and any exposed skin thoroughly after handling.



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9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Odor	Slight
Appearance	Opaque liquid	Odor Threshold	Not determined
Color	Opaque		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	4.61	
Melting Point/Freezing Point	Not determined	
Boiling Point/Boiling Range	Not determined	
Flash Point	Not applicable	
Evaporation Rate	Not determined	
Flammability (Solid, Gas)	Liquid-not applicable	
Upper Flammability Limits	Not determined	
Lower Flammability Limit	Not determined	
Vapor Pressure	Not determined	
Vapor Density	Not determined	
Specific Gravity	Not determined	
Water Solubility	Not determined	
Solubility in other solvents	Not determined	
Partition Coefficient	Not determined	
Auto-ignition Temperature	Not determined	
Decomposition Temperature	Not determined	
Kinematic Viscosity	Not determined	
Dynamic Viscosity	358.783 @ 20°C; 154.071 @ 40°C	
	cSt	
Explosive Properties	Not determined	
Oxidizing Properties	Not determined	
Density	1.002 g/ml	

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical Stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to Avoid

See Sec. 7 Handling & Storage.

Incompatible Materials

10% potassium permanganate solution.

Hazardous Decomposition Products

Toxic gases may be formed by fire. Nitrogen oxides (NOx). Carbon monoxide.



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11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Eye Contact	Avoid contact with eyes.
Skin Contact	Avoid contact with skin.
Inhalation	Toxic if inhaled.
Ingestion	Do not ingest.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Petroleum distillates, solvent-refined light paraffinic 64741-89-5	> 5000 mg/kg (Rat)	> 5 g/kg (Rabbit)	= 2.18 mg/L (Rat) 4 h
3-(3,5-Dichlorophenyl)-2,4-dioxo-N-isopropylimidazolidine-1-carboxamide 36734-19-7	= 2981 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 3300 mg/m ³ (Rat) 4 h > 5.16 mg/L (Rat) 4 h

Information on physical, chemical and toxicological effects

Symptoms	Please see section 4 of this SDS for symptoms.
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Delayed and immediate effects as well as chronic effects from short and long-term exposure

Carcinogenicity	May cause cancer.
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Chemical Name	ACGIH	IARC	NTP	OSHA
Petroleum distillates, solvent-refined light paraffinic 64741-89-5	A2	Group 1		X

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

Numerical measures of toxicity

Not determined



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12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life with long lasting effects. This chemical can contaminate surface water through aerial and ground spray applications. Under some conditions, it may also have a high potential for runoff into surface water after application. These include poorly draining or wet soils with readily visible slopes toward adjacent surface waters, frequently flooded areas, areas overlaying extremely shallow ground water, areas within in-field canals or ditches that drain to the surface water, areas not separated from adjacent surface waters with vegetated filter strips, and areas overlaying tile drainage systems that drain to surface water. This pesticide is toxic to invertebrates. Do not apply directly to water or to areas where surface water is present or to intertidal areas below the mean high-water mark. Drift and runoff may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment washwater or rinsate.

Component Information

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Petroleum distillates, solvent-refined light paraffinic 64741-89-5		5000: 96 h Oncorhynchus mykiss mg/L LC50		1000: 48 h Daphnia magna mg/L EC50
3-(3,5-Dichlorophenyl)-2,4-dioxo-N-isopropylimidazolidine-1-carboxamide 36734-19-7	1.9: 120 h Pseudokirchneriella subcapitata mg/L EC50	4.1: 96 h Oncorhynchus mykiss mg/L LC50 flow-through	EC50 > 10.4 mg/L 16 h	0.25: 48 h Daphnia magna mg/L EC50 0.34 - 0.39: 48 h Daphnia magna mg/L EC50 Flow through 0.31 - 0.61: 48 h Daphnia magna mg/L EC50 Static

Persistence/Degradability

Not determined.

Bioaccumulation

Not determined.

Mobility

Chemical Name	Partition Coefficient
3-(3,5-Dichlorophenyl)-2,4-dioxo-N-isopropylimidazolidine-1-carboxamide 36734-19-7	3

Other Adverse Effects

Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes

Pesticide wastes are toxic. 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 of the nearest EPA Regional Office for guidance.

Contaminated Packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.



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14. TRANSPORT INFORMATION

Note	Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.
DOT	Not regulated
IATA	Not regulated
IMDG	
Marine Pollutant	This material may meet the definition of a marine pollutant

15. REGULATORY INFORMATION

International Inventories

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS	AICS
Petroleum distillates, solvent-refined light paraffinic	Present	X		Present		Present	X	Present	X	X
3-(3,5-Dichlorophenyl)-2,4-dioxo-N-isopropylimidazolidine-1-carboxamide				Present			X	Present		X

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

SARA 313

Not determined

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.



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Chemical Name	California Proposition 65
3-(3,5-Dichlorophenyl)-2,4-dioxo-N-isopropylimidazolidine-1-carboxamide - 36734-19-7	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Petroleum distillates, solvent-refined light paraffinic 64741-89-5		X	

EPA Pesticide Registration Number Reg. No. 89442-28

EPA Statement

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. Following is the hazard information as required on the pesticide label:

EPA Pesticide Label

Signal Word: Caution

Harmful if swallowed, absorbed through skin, or inhaled. Avoid contact with skin, eyes, or clothing. Avoid breathing spray mist.

Difference between SDS and EPA pesticide label

	EPA	OSHA
Signal Word	Caution	Danger
Acute toxicity - Oral	Harmful if swallowed	N/A
Acute toxicity - Dermal	Harmful if absorbed through skin	N/A
Acute toxicity - Inhalation (Gases)	Harmful if inhaled	Harmful if inhaled
Carcinogenicity	N/A	May cause cancer

16. OTHER INFORMATION

NEPA

Health Hazards

0

Flammability

1

Instability

0

Special Hazards

Not determined

HMIS

Health Hazards

0

Flammability

1

Physical Hazards

0

Personal Protection

Not determined

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

REVISED DATE: January 2021 ALB

End of Safety Data Sheet

SAFETY DATA SHEET

Quinclorac 1.5L

1. IDENTIFICATION

Product name: **Quinclorac 1.5L**
Product type: Herbicide
EPA Registration No.: 53883-336
Chemical name of active ingredient(s): Quinclorac: 3,7-dichloro-8-quinolinecarboxylic acid
Manufacturer/Registrant: Control Solutions, Inc.
5903 Genoa-Red Bluff
Pasadena, TX 77507

For fire, spill, and/or leak emergencies,
contact Chemtrec: Phone: 1-800-424-9300
For medical emergencies and health
and safety inquiries, contact Safety
Call: Phone: 1-866-897-8050
Poison Control Center Phone: 1-800-222-1222

2. HAZARDS IDENTIFICATIONS

OSHA HCS CLASSIFICATION (29 CFR 1910.1200)

Acute Toxicity:

	Acute oral	Acute dermal	Acute inhalation	Eye irritation	Skin irritation	Skin Sensitization
Category	NC	NC	4	2B	2	NC

NC: Not classified

SIGNAL WORD: WARNING

HAZARD STATEMENTS:

- Harmful if inhaled
- Cause eye irritation
- Cause skin irritation

PICTOGRAM:



PRECAUTIONARY STATEMENTS:

- Avoid breathing mist, vapors and spray. Use only outdoors or in a well-ventilated area. If inhaled: remove a person to fresh air and keep comfortable for breathing. Call a poison center or a doctor if you feel unwell.
- Wash hand thoroughly after handling. Wear eye protection or face protection. If in eyes: rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: get medical advice.
- Wash hand thoroughly after handling. Wear protective gloves. If on skin: wash with plenty of water. If skin/irritation occurs: Get medical advice. Take off contaminated clothing and wash it before reuse.

Contact Safety Call® International for emergency medical treatment at (866) 897-8050.

SAFETY DATA SHEET

Quinclorac 1.5L

3. COMPOSITION/INFORMATION ON INGREDIENTS

COMMON NAME	CAS NO.	%	OSHA PEL	ACGIH TLV	OTHER	NTP/IARC/OSHA (Carcinogen)
Dimethylamine salt of Quinclorac	84087-01-4	17.79	NE	NE	NE	NA

NE=Not established; NA=Not applicable.

4. FIRST AID MEASURES

FIRST AID	
IF SWALLOWED:	<ul style="list-style-type: none"> • Call a poison control center 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 center or doctor. • Do not give anything by mouth to an unconscious person.
IF ON SKIN OR CLOTHING	<ul style="list-style-type: none"> • Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 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 15-20 minutes. • Remove contact lenses, if present, after the first 5 minutes, then continuing 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. For information on this product, contact the National Pesticide Information Center, 1-800-858-7378, Monday-Friday, 7:30 AM-3:30 PM PST. You may also contact the National Poison Control Center, 1-800-222-1222, day or night, for emergency medical treatment information or SafetyCall® at (866) 897-8050. **FOR CHEMICAL EMERGENCY:** Spill, leak, fire, exposure, or accident call CHEMTREC 1-800-424-9300.

5. FIRE FIGHTING MEASURES

FLASH POINT: Not available

FLAMMABLE LIMITS: Not available.

EXTINGUISHING MEDIA: Water spray, CO₂, foam, dry chemical.

UNUSUAL FIRE, EXPLOSION HAZARDS: Hydrogen chloride, oxides of nitrogen and carbon. Traces of the substances/groups of substances mentioned can be released in case of fire.

FIRE-FIGHTING PROCEDURES: Wear full protective clothing and self-contained breathing apparatus and turn-out gear. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area and equipment until decontaminated. Water runoff can cause environmental damage.

HAZARDOUS DECOMPOSITION PRODUCTS: Product can decompose if heated to form toxic gases.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS/LEAKS: Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Extinguish sources of ignition nearby and downwind. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment. Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

CLEANUP: Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. Spilled substance/product should be recovered and applied to label rates whenever possible. If application of spilled substance/product is not possible, then spills should be contained, solidified, and placed in suitable containers for disposal. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

SAFETY DATA SHEET

Quinclorac 1.5L

7. HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN IN HANDLING: Do not contaminate water, food, or feed by storage or disposal or cleaning of equipment. Carefully open containers and after partial use close container tightly. Avoid contact with skin, eyes or clothing. Avoid breathing spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

PRECAUTIONS TO BE TAKEN IN STORAGE: Do not store box under dampness or high humidity. Store in cool, dry area away from children and domestic animals.

STORAGE TEMPERATURE (MIN/MAX): Normal ambient temperatures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

FOR COMMERCIAL APPLICATIONS AND/OR ON-FARM APPLICATIONS CONSULT THE PRODUCT LABEL.

HAND PROTECTION: Chemical-resistant gloves such as butyl rubber > 14 mils, natural rubber > 14 mils, neoprene rubber > 14 mils, or nitrile rubber > 14 mils.

SKIN PROTECTION: Long-sleeve shirt, long pants, shoes plus socks.

EYE PROTECTION: Wear goggles or face shield.

RESPIRATOR REQUIREMENTS: For most conditions, no respiratory protection required. However, if handling without sufficient ventilation, use NIOSH approved air-purifying respirator with any N, P or R95 class filter and an organic vapor cartridge.

ADDITIONAL PROTECTIVE MEASURES:

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. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them.

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 3.

ENGINEERING CONTROLS: Refer to product label. Provide local exhaust ventilation. Minimize airborne concentrations.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Off-white liquid

ODOR: No appreciable odor

pH: 4.0

FLASH POINT: Will not flash

DENSITY: 1.129 g/ml (9.42 lbs/gal)

VAPOR PRESSURE (technical): $< 1 \times 10^{-7}$ mmHg@20°C

WATER SOLUBILITY (technical): 65 ppm

SAFETY DATA SHEET

Quinclorac 1.5L

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID: Avoid exposure to high moisture conditions for prolonged periods.

HAZARDOUS DECOMPOSITION PRODUCTS: Product can decompose if heated to form toxic gases.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY/IRRITATION STUDIES: (Data based on a similar formulation)

Acute Oral LD₅₀ (Rat): > 3,500 mg/kg
Acute Dermal LD₅₀ (Rabbit): > 2,000 mg/kg
Acute Inhalation LC₅₀ (Rat): > 2.0 mg/L/4 hr
Eye Irritation: Mildly irritating
Skin Irritation: Slightly irritating
Dermal Sensitization: Not a skin sensitizer

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known.

CHRONIC/SUBCHRONIC TOXICITY:

Quinclorac: Prolonged overexposure may cause effects to liver and kidneys.

REPRODUCTIVE TOXICITY:

Quinclorac: The results of animal studies gave no indication of a fertility impairing effect.

DEVELOPMENTAL EFFECTS:

Quinclorac: No indications of a developmental toxic/teratogenic effect were seen in animal studies.

MUTAGENICITY:

Quinclorac: No evidence of mutagenic effects during in vivo or in vitro studies.

CARCINOGENICITY:

Quinclorac: In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS: This chemical has properties and characteristics associated with chemicals detected in groundwater. The use of this chemical where soils are permeably, particularly where the water table is shallow, may result in groundwater contamination.

Keep out of lakes, ponds, and streams. 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 rinsate.

Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

ECOTOXICITY (Quinclorac Technical):

Rainbow trout LC₅₀ (96-h): > 100 mg/L
Bluegill LC₅₀ (96-h): > 100 mg/L
Daphnia magna EC₅₀ (48-h): 29.8 mg/L
Bobwhite quail LD₅₀ (oral): 2,000 mg/kg
Green algae EC₅₀ (96-h): >100 mg/l

BEE TOXICITY: Non-toxic

ENVIRONMENTAL FATE: Not readily biodegradable.

SAFETY DATA SHEET

Quinclorac 1.5L

13. DISPOSAL CONSIDERATIONS

PESTICIDE DISPOSAL: Pesticide, spray mixture or rinse water that cannot be used according to label instructions must be disposed of at or by 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:

Not Regulated.

15. REGULATORY INFORMATION

FIFRA INFORMATION:

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 for safety data sheet, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label.

CAUTION Harmful if swallowed.

SARA TITLE III CLASSIFICATION:

Section 302: Not applicable.
Section 311/312: Acute health hazard (immediate)
Chronic health hazard (delayed)
Section 313: Not applicable

CA PROPOSITION 65: Not applicable

CERCLA RQ: Not applicable

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

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

MSDS DATE: Revised 7-19-2013. Supersedes version dated 4-16-2013. Changes made to section 4 and 9.

The information and recommendations contained herein are based upon data believed to be correct. However, no warranty of any kind, expressed or implied, is made with respect to the information contained herein.

