1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Dimetric® Charged**
EPA Reg. No.: 71368-125-1381
Product Type: **HERBICIDE**
Company Name: Winfield Solutions, LLC
P.O. Box 64589
St. Paul, MN 55164-0589

Telephone Numbers: **For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident,**
Call CHEMTREC Day or Night: 1-800-424-9300
For Medical Emergencies Only, Call 1-877-424-7452

This product is an EPA FIFRA registered pesticide. Some classifications on this SDS are not exactly the same as on the FIFRA label. Certain sections are superseded by federal law governed by EPA for a registered pesticide. Please see Section 15. REGULATORY INFORMATION for explanation.

2. HAZARDS IDENTIFICATION

HEALTH HAZARDS:

Acute toxicity, inhalation	Category 4
Skin Sensitization	Category 1
Reproductive Toxicity	Category 2

ENVIRONMENTAL HAZARDS:

Hazardous to aquatic environment, acute	Category 1
Hazardous to aquatic environment, chronic	Category 1

SIGNAL WORD:
WARNING

HAZARD STATEMENTS:
Harmful if inhaled. May cause an allergic skin reaction. Suspected of damaging fertility or the unborn child. Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS

Avoid breathing mists, vapors or spray. Use only outdoors or in a well-ventilated area.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves. Avoid release to the environment.

If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center if you feel unwell. See product label and Section 4 for emergency medical advice/attention.

If on skin: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice or attention. Wash contaminated clothing before reuse.

If exposed or concerned: Get medical advice or attention.

Store locked up.

Collect spillage.

Dispose of contents in accordance with local, state, and federal regulations

3. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENTS	CAS NO.	% BY WEIGHT
Metribuzin	21087-64-9	32.0 – 34.0
Flumioxazin	103361-09-7	7.0 – 8.0
Other Ingredients	Trade Secret	Trade Secret

4. FIRST AID MEASURES

If in Eyes: Hold eye open and rinse slowly and gently with water. Remove contact lenses, if present, then continue rinsing eye. Get medical attention if irritation occurs or persists.
If Inhaled: Move person to fresh air. If symptoms develop, get medical advice.
If Swallowed: 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 symptoms develop, get medical advice.
If on Skin or Clothing: Take off contaminated clothing. Rinse skin with plenty of water. If irritation or rash occurs, get medical advice.
Most Important symptoms/effects, acute and delayed: May cause slight skin and eye irritation. Causes allergic skin reaction (sensitization.) Repeated exposure may damage fertility or the unborn child.
Indication of Immediate medical attention and special treatment if needed, if necessary: Immediate medical attention should not be required.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Use extinguishing media suitable for surrounding materials. Dry chemical, carbon dioxide, foam, water spray or fog.
Special Fire Fighting Procedures: Firefighters should wear NIOSH approved self-contained breathing apparatus and full fire-fighting turn out gear. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later.
Unusual Fire and Explosion Hazards: If water is used to fight fire, contain runoff, using dikes to prevent contamination of water supplies. Dispose of fire control water later.
Hazardous Decomposition Materials (Under Fire Conditions): May produce gases such as oxides of carbon and nitrogen.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.
Environmental Precautions: Prevent material from entering public sewer systems or any waterways. Do not flush to drain. Large spills to soil or similar surfaces may necessitate removal of topsoil. The affected area should be removed and placed in an appropriate container for disposal.
Methods for Containment: Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.
Methods for Cleanup and Disposal: Avoid creation of dusty conditions. Scrape up and place in appropriate closed container. Wash entire spill area with a detergent slurry, absorb and sweep into container for disposal. Decontaminate tools and equipment following cleanup. See Section 13: DISPOSAL CONSIDERATIONS for more information.
Other Information: Large spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies.

7. HANDLING AND STORAGE

HANDLING: Do not get in eyes or on clothing or skin. Users should wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Remove clothing/Personal Protective Equipment (PPE) immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove Personal Protective Equipment (PPE) immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

STORAGE: Do not contaminate water, food, or feed by storage or disposal.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls:
Where engineering controls are indicated by specific use conditions or a potential for excessive exposure, use local exhaust ventilation at the point of generation.
Eye/Face Protection: Not normally required. To avoid contact with eyes, wear chemical goggles or shielded safety glasses. An emergency eyewash or water supply should be readily accessible to the work area.
Skin Protection: To avoid contact with skin, wear long pants, long-sleeved shirt, socks and shoes. An emergency shower or water supply should be readily accessible to the work area.
Respiratory Protection: Not normally required. If vapors or mists exceed acceptable levels, wear NIOSH approved air-purifying respirator with cartridges/canisters approved for use against pesticides.
General Hygiene Considerations: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material: 1) do not store, use and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored; 2) wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.
Exposure Guidelines:

	OSHA		ACGIH		
Component	**TWA**	**STEL**	**TWA**	**STEL**	**Unit**
Metribuzin	NE	NE	NE	NE	
Flumioxazin	NE	NE	NE	NE	

NE = Not Established

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Opaque off-white liquid
Odor:	Moderately bitter
Odor threshold:	No data available
pH:	7.8 (1% dispersion)
Melting point/freezing point:	No data available
Initial boiling point and boiling range	No data available
Flash point:	No data available
Evaporation rate:	No data available
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Relative density:	1.06 g/cm^3 (8.85 lbs/gal)
Solubility(ies):	Readily disperses in water
Partition coefficient: n-octanol/water:	No data available
Autoignition temperature:	No data available
Decomposition temperature:	No data available
Viscosity:	290 cPs @ 24° C; 332 cPs @ 39° C (50 RPM, Brookfield)

Note: Physical data are typical values, but may vary from sample to sample. A typical value should not be construed as a guaranteed analysis or as a specification.

10. STABILITY AND REACTIVITY

Reactivity: Do not mix or allow contact with oxidizing agents. Hazardous chemical reaction may occur.
Chemical Stability: This material is stable under normal handling and storage conditions.
Possibility of Hazardous Reactions: Will not occur
Conditions to Avoid: Excessive heat.
Incompatible Materials: Oxidizing agents: bases and acids.
Hazardous Decomposition Products: Under fire conditions may produce gases such as oxides of carbon, and nitrogen.

11. TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Dermal, inhalation
Symptoms of Exposure:
Eye Contact: Mildly irritating based on toxicity studies.
Skin Contact: Minimally toxic and slightly irritating based on toxicity studies. May cause allergic skin reaction (sensitization.)
Ingestion: Slightly toxic if ingested based on toxicity studies.
Inhalation: Low inhalation toxicity based on toxicity studies.
Delayed, immediate and chronic effects of exposure:
Toxicological Data:
Data from laboratory studies conducted on this product are summarized below:

Oral: Rat LD_{50}: >2,000 mg/kg (females)
Dermal: Rat LD_{50}: >2,000 mg/kg
Inhalation: Rat 4-hr LC_{50}: >2.05 mg/L (No mortalities at the highest dose tested)
Eye Irritation: Rabbit: Minimally irritating (MMTS = 6.0)
Skin Irritation: Rabbit: Non- irritating (PDII = 0)
Skin Sensitization (LLNA method): Considered to be a contact dermal sensitizer in mice following repeated skin exposure.
Subchronic (Target Organ) Effects: Repeated overexposure to metribuzin may cause effects to body weight gains, cholesterol levels, liver and thyroid. Compound related effects of flumioxazin noted in rats following subchronic exposures at high dose levels were hematotoxicity including anemia, and increases in liver, spleen, heart, kidney and thyroid weights. In dogs, the effects produced at high dose levels included a slight prolongation in activated partial thromboplastin time, increased cholesterol and phospholipid, elevated alkaline phosphatase, increased liver weights and histological changes in the liver. The lowest no-observable-effect-level (NOEL) in subchronic studies was 30 ppm in the three-month toxicity study in rats.
Carcinogenicity / Chronic Health Effects: Prolonged overexposure to metribuzin may affect liver, kidney, thyroid and blood chemistry. Metribuzin did not cause cancer in laboratory animal studies. Repeated exposures to flumioxazin in animals have produced anemia and other blood formation changes, organ weight changes and changes in blood chemistry. Flumioxazin did not produce cancer in life-time feeding studies in laboratory animals.
Reproductive Toxicity: There was no evidence of reproductive toxicity in a 2-generation reproductive study in rats treated with metribuzin. Offspring at the highest dose exhibited reduced body weight gains starting at day 14 lactation, an age correlating with the consumption of treated diets. Reproductive effects were observed in rats exposed to flumioxazin.
Developmental Toxicity: In animal studies, metribuzin did not cause birth defects in animals; other effects were seen in the fetus only at doses which caused toxic effects to the mother. Birth defects were produced in the offspring of female rats exposed to flumioxazin. No effects were observed in rabbits.
Genotoxicity: The metribuzin mutagenicity studies, taken collectively, demonstrate that metribuzin is not genotoxic or mutagenic. Flumioxazin does not present a genetic hazard.

Assessment Carcinogenicity: None listed with ACGIH, IARC, NTP or OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicity:
Data from laboratory studies conducted on Metribuzin:

96-hour LC_{50} RainbowTrout:	2.3 mg/L	48-hour EC_{50} Daphnia Magna :	4.5 mg/L
96-hour LC_{50} Bluegill Sunfish:	> 21 mg/L	96-hour EC_{50} Marine shrimp:	48.3 mg/L
96-house LC_{50} Goldfish:	> 10 mg/L	Bobwhite Quail Oral LD_{50}	>2,250 mg/kg

Data from laboratory studies conducted on Flumioxazin:

96-hour LC_{50} RainbowTrout:	2.3 mg/L	Bobwhite Quail Oral LD_{50}	>2,250 mg/kg
96-hour LC_{50} Bluegill Sunfish:	> 21 mg/L	Bobwhite Quail 8-day Dietary LC_{50}:	>5,620 ppm
48-hour EC_{50} Daphnia Magna :	> 5.5 mg/L	Mallard Duck Oral LD_{50}	>2,250 mg/kg
96-hour LC_{50} Sheepshead Minnow:	> 4.7 mg/L	Mallard Duck 8-day Dietary LC_{50}:	>5,620 ppm
96-hour LC_{50} Mysid Shrimp:	0.23 mg/L		
Acute Contact LC_{50} Honeybee:	105 µg/bee		

Environmental Fate: Based on available data, the primary routes of degradation of metribuzin and its primary degradates are microbial metabolism and photolytic degradation on soil. These compounds will be available for leaching to ground water and runoff to surface water in many use conditions because they are not volatile. Once in ground water, metribuzin is expected to persist due to its stability to hydrolysis and the lack of light penetration. Conversely, residues of metribuzin are not likely to persist in clear, well-mixed, shallow surface water with good light penetration since parent metribuzin degrades rapidly by aqueous photolysis. Flumioxazin degrades rapidly in water and soil. Dissipation occurs by a combination of hydrolysis and microbial oxidation. Although flumioxazin dissipates rapidly, discrete intermediates do not accumulate and the ultimate environmental products are incorporated into soil organic matter and carbon dioxide. Based on column leaching studies and the short aerobic soil half-life, the potential for flumioxazin or its degradation products to leach in field agricultural soils is low. The low use rate and rapid soil dissipation results in low carryover potential to rotational crops.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Improper disposal of excess pesticide is a violation of Federal law.

Container Handling and Disposal:

Nonrefillable Containers 5 gallons or less: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. Triple rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke.

Nonrefillable Containers larger than 5 gallons: Nonrefillable container. Do not reuse or refill this container. Offer for recycling if available. If recycling or reconditioning not available, puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or, if allowed by State and local authorities, by burning. If burned stay out of smoke. Triple rinse or pressure rinse container (or equivalent) promptly after emptying.

Triple rinse as follows: 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. Turn the container over onto its other 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.

Pressure rinse as follows: Empty the remaining contents into application equipment or a mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container, and rinse at about 40 psi for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable Containers larger than 5 gallons: 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 from this container into application equipment or a mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for two minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

14. TRANSPORTATION INFORMATION

DOT

< 119 Gallons per completed package:
Not regulated by DOT unless shipped by water. See IMO / IMDG description.

≥ 119 Gallons per completed package:
UN 3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Metribuzin, Flumioxazin), 9, III, Marine Pollutant

IMO / IMDG
UN 3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Metribuzin, Flumioxazin), 9, III, Marine Pollutant

IATA
UN 3082 Environmentally Hazardous Substance, Liquid, N.O.S. (Metribuzin, Flumioxazin), 9, III, Marine Pollutant

15. REGULATORY INFORMATION

EPA FIFRA INFORMATION

This chemical is a pesticide product registered by the United States 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 (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

CAUTION. Harmful if absorbed through skin or if swallowed. Avoid contact with skin, eyes and clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

U.S. FEDERAL REGULATIONS

TSCA Inventory: This product is exempted from TSCA because it is solely for FIFRA regulated use.

SARA Hazard Notification/Reporting:
Hazard Categories Under Criteria of SARA Title III Rules (40 CFR Part 370): None

Section 313 Toxic Chemical(s):
None

Reportable Quantity (RQ) under U.S. CERCLA:
None

RCRA Waste Code:
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.

State Information:
Other state regulations may apply. Check individual state requirements.

California Proposition 65: Not Listed.

16. OTHER INFORMATION

National Fire Protection Association (NFPA) Hazard Rating:
Rating for this product: Health: 2 **Flammability:** 0 **Reactivity:** 0
Hazards Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

This Safety Data Sheet (SDS) serves different purposes than and DOES NOT REPLACE OR MODIFY THE EPA-ACCEPTED 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.

Use, storage and disposal of pesticide products are regulated by the EPA under the authority of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) through the product labeling, and all necessary and

appropriate precautionary, use, storage, and disposal information is set forth on that labeling. It is a violation of Federal law to use a pesticide product in any manner not prescribed on the EPA-accepted label.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Winfield Solutions, LLC makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its suitability for their purposes prior to use. In no event will Winfield Solutions, LLC be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS AND ALL SUCH WARRANTIES ARE HEREBY SPECIFICALLY DISCLAIMED.

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