

MATERIAL SAFETY DATA SHEET

SECTION I. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Winfield Solutions, LLC

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For fire, spill, and/or leak emergencies, contact CHEMTREC, 24 HRS: (800) 424-9300

For medical emergencies, call (877)424-7452 [US]

PRODUCT NAME: SECTION 2EC HERBICIDE

EPA REG. NO. 1381-204

CHEMICAL NAME: [(E)-2(1-(((3-chloro-2-propenyl)oxy)imino)propyl)-5-(2-(ethylthio)propyl)-3-hydroxy-2-cyclohexen-1-one]

SECTION 2 – COMPOSITION, INFORMATION OF INGREDIENTS

COMPONENT	PERCENTAGE	CAS NUMBER	OSHA PEL	ACIGH TLV
CLETHODIM* [(E)-2(1-(((3-chloro-2-propenyl)oxy)imino) propyl)-5-(2-(ethylthio) propyl) -3-hydroxy-2- cyclohexen-1-one]	25-27	99129-21-2		
INERT INGREDIENTS**	73-75			

*Active Ingredient

**Inert ingredients, which are maintained as trade secrets, are any substance other than an active ingredient contained in this product. Some of these may be hazardous, but their identity is withheld because they are considered trade secrets. The hazards associated with the inert ingredients are addressed in this document.

SECTION 3 – HAZARDS IDENTIFICATION SUMMARY

(As defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200)

EMERGENCY OVERVIEW:

WARNING:

- Causes eye irritation.
- Harmful if swallowed or inhaled.
- Aspiration hazard.
- Do not get in eyes, on skin, or on clothing

- Combustible
- Avoid breathing vapors or spray mist.
- Keep out of reach of children.

POTENTIAL HEALTH HAZARDS:

Acute Toxicity (Primary Routes of Exposure) Signs and Symptoms of Systemic Effects: Signs of toxicity

in test animals exposed to lethal or near-lethal oral doses included lethargy, ataxia, irregular breathing, lacrimation and loose stools. Inhalation of this product may cause nasal and respiratory irritation, central nervous system effects including dizziness, weakness, fatigue, nausea, headache and possible unconsciousness, and even death. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

EYE: Based on an evaluation of the ingredients and/or similar products, this product is expected to cause prolonged and/or significant eye irritation. The degree of injury will depend on the amount and duration of the contact and the speed and thoroughness of the first aid treatment. The expected adverse effects resulting from an exposure may include redness, swelling and pain which could last for an extended period of time. .

SKIN: Based on an evaluation of the ingredients and/or similar products, this product is expected to cause moderate skin irritation. The degree of injury will depend on the amount and duration of the contact and the speed and thoroughness of the first aid treatment. The expected adverse health effects may include redness and swelling. Based on an evaluation of the ingredients and/or similar products, this product is expected to be minimally toxic when absorbed through the skin. The degree of injury will depend on the amount of material absorbed and the speed and thoroughness of the first aid treatment. The expected adverse systemic health effects resulting from an exposure are described above.

INHALATION: Exposure to very high concentrations may result in respiratory irritation. Signs and symptoms may include nasal discharge, sore throat, coughing and difficulty in breathing. Based on an evaluation of the ingredients and/or similar products, this product is expected to be minimally toxic when inhaled. The degree of injury will depend on the amount of material inhaled and the speed and thoroughness of the first aid treatment. The expected adverse systemic health effects are described above.

INGESTATION: Ingestion of this product may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Because of the low viscosity of this product, it can directly enter the lungs if it is swallowed (this is called aspiration). This can occur during the act of swallowing or when vomiting. Once in the lungs, the substance is very difficult to remove and can cause severe injury to the lungs and death.

Based on an evaluation of the ingredients and/or similar products, this product is expected to be slightly toxic when ingested. The degree of injury will depend on the amount of material ingested and the speed and thoroughness of the first aid treatment. The expected adverse systemic health effects resulting from an exposure are described above.

POTENTIAL PHYSICAL HAZARDS:

Chronic Toxicity (Including Cancer): Increased liver weights and anemia have been observed in animals exposed to Clethodim Technical. Clethodim Technical was not carcinogenic to animals.

Teratology (Birth Defects) Information: Clethodim Technical produced developmental toxicity only at maternally toxic dose levels. It is not expected to present a hazard under normal use conditions.

Reproduction Information: No reproductive toxicity was observed in animals exposed to Clethodim Technical.

Potentially Aggravated Condition: Individuals with preexisting diseases of the liver, red blood cell or central nervous system may have increased susceptibility to the toxicity of excessive exposures. These potential health hazards are based on review of data from similar products.

SECTION 4 – FIRST AID MEASURES

IF SWALLOWED: Give 1 or 2 glasses of water or milk to drink and telephone for medical advice. DO NOT make person vomit unless directed to do so by medical personnel. If medical advice cannot be obtained, then take the person and product container to the nearest medical emergency treatment center or hospital.

IF IN EYES: Flush eyes immediately with plenty of fresh water. Remove contact lenses if worn. No additional first aid should be necessary. However, if irritation persists, see a doctor.

IF INHALED: If any signs or symptoms as described in this document occur, move the person to fresh air. If any of these effects continue, see a doctor.

IF ON SKIN: Remove contaminated clothing. Wash skin thoroughly with soap and water. See a doctor if any signs or symptoms described in this document occur. Discard contaminated non- waterproof shoes and boots. Wash contaminated clothing.

NOTE TO PHYSICIAN: This product contains light hydrocarbon liquid and an aspiration hazard may exist.

SECTION 5 – FIRE FIGHTING MEASURES

FLASHPOINT (method): 144 F (CLOSED CUP)

FLAMMABLE LIMITS (LFL-UFL): Lower: NDA Upper: NDA.

NFPA RATINGS: Health 2; Flammability 2; Reactivity 1; Special NDA (Least-0,

Slight-1, Moderate-2, High-3, Extreme-4). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association, NFPA.

EXTINGUISHING MEDIA: CO₂, alcohol-type foam, dry chemical, foam, water fog.

FIRE FIGHTING INSTRUCTIONS: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with explosive violence. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 85F. Products of combustion from fires involving this material may be toxic. Avoid breathing smoke and mists. Avoid personnel and equipment contact with fallout and runoff. Minimize the amount of water used for fire fighting. Do not enter any enclosed area without full protective equipment, including self-contained breathing equipment. Contain and isolate runoff and debris for proper disposal. Decontaminate personal protective equipment and fire fighting equipment before reuse. Read the entire document.

HAZARDOUS COMBUSTION PRODUCTS: Normal combustion forms carbon dioxide, water vapor and may produce oxides of nitrogen, sulfur, and toxic chlorine compounds. Incomplete combustion can produce carbon monoxide.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

EMERGENCY TELEPHONE NUMBERS: (800) 424-9300 (CHEMTREC, transportation & spills)

OBSERVE PRECAUTIONS IN SECTION 8 – EXPOSURE CONTROLS,

PERSONAL PROTECTION: Stop the source of the spill if safe to do so. Contain the spill to prevent further contamination of the soil, surface water, or ground water.

FOR SPILLS ON LAND:

CONTAINMENT: Avoid runoff into storm sewers and ditches which lead to waterways. Contain spilled liquids with dry sorbents.

CLEANUP: Clean up spill immediately. Absorb spill with inert material (such as dry sand or earth), then place in a chemical waste container. Wash area with soap and water. Pick up wash liquid with additional absorbent and place in a disposable container.

FOR SPILLS IN WATER:

CONTAINMENT: This material forms an emulsion in water. Stop or reduce contamination of any water. Isolate contaminated water.

CLEANUP: Remove contaminated water for removal or treatment.

SECTION 7 – HANDLING AND STORAGE

DO NOT USE OR STORE near flame, sparks, or hot surfaces. USE ONLY IN WELL VENTILATED AREA. Keep container closed. DO NOT weld, heat or drill

container. Replace cap or bung. Emptied container still contains hazardous or explosive vapor or liquid. Before entry into confined spaces that may have contained hazardous material, determine concentrations and take appropriate measures for personal protection. Material presents a hazard that may require personal protective equipment for entry. **KEEP OUT OF REACH OF CHILDREN!**

SECTION 8 – EXPOSURE CONTROLS, PERSONAL PROTECTION

PERSONAL PROTECTIVE EQUIPMENT (For Manufacturing Personnel):

EYE PROTECTION – Do not get this material in your eyes. Eye contact can be avoided by wearing protective eyewear.

SKIN PROTECTION – Avoid contact with skin or clothing. Skin contact should be minimized by wearing protective clothing including gloves.

RESPIRATOR – This material may be a respiratory irritant and, unless ventilation is adequate, the use of approved respiratory protection is recommended.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES PHYSICAL

DESCRIPTION: Amber liquid.

ODOR: NDA

MOLECULAR WEIGHT: 359.9

MOLECULAR FORMULA: C₁₇H₂₆ClNO₃S

SPECIFIC GRAVITY: 0.97 g/ml @ 20c

pH: 4.1 as 5% emulsion.

VAPOR PRESSURE: NA

EVAPORATION RATE: NDA

SOLUBILITY: Soluble in hydrocarbon solvents.

MELTING POINT: NA (Liquid at room temperature)

BOILING POINT: NDA

SECTION 10 – STABILITY AND REACTIVITY

CHEMICAL STABILITY: Unstable at extreme pH's, temperatures and upon exposure to UV light.

INCOMPATIBILITY WITH OTHER MATERIALS: May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

HAZARDOUS DECOMPOSITION PRODUCTS: NDA

HAZARDOUS POLYMERIZATION: Polymerization will not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION**ACUTE TOXICITY:**

Oral LD50 (rat)	No product toxicology data available.
Dermal LD50 (rabbit)	No product toxicology data available.
Inhalation LC50 (rat)	No product toxicology data available.
Eye Irritation (rabbit)	No product toxicology data available.
Skin Irritation (rabbit)	No product toxicology data available.
Sensitization (guinea pig)	No product toxicology data available.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

CARCINOGEN STATUS: In chronic studies with Clethodim Technical in the mouse, rat, and dog, decreased body weights, increased liver size (increased liver weights and hypertrophy) and anemia (decreased hemoglobin, hematocrit, or erythrocyte counts) have been noted. No treatment related increases in neoplasms were observed in any study.

MUTAGENIC DATA: Clethodim Technical was negative in the following genotoxicity assays: microbial reverse mutation (Ames Assay), in vitro chromosome aberration assay in Chinese Hamster Ovary Cells, in vivo chromosome aberration assay in Rat Bone Marrow Cells and in vivo Unscheduled DNA Synthesis Assay. Clethodim Technical does not present a genetic hazard to intact animal systems.

SECTION 12 – ECOLOGICAL INFORMATION**ENVIRONMENTAL SUMMARY:**

FISH TOXICITY: Clethodim Technical is only slightly toxic to freshwater fish and practically nontoxic to daphnia.

Rainbow trout 96 hour LC50 = 67 mg/L

Bluegill Sunfish 96 hour LC50 = 120 mg/L

Daphnia magna 48-hour LC50 greater than 120 mg/L

AVIAN TOXICITY: The acute toxicity of Clethodim Technical to birds is very low.

Oral LD50, Bobwhite quail – greater than 2 g/kg

Dietary LD50, Mallard duck – greater than 6000 ppm

No reproductive effects were observed in mallard ducks exposed to 1000 ppm of Clethodim Technical. In Bobwhite quail, a slight decrease in viability of embryos of eggs from females exposed to 1000 ppm was observed. A NOEL was established at 300 ppm for this study.

BEE TOXICITY: Clethodim Technical was found to be nontoxic to adult worker bees at the highest dose tested, 100 micrograms/bee.

SECTION 13 – DISPOSAL CONSIDERATIONS

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

SECTION 14 – TRANSPORT INFORMATION

DOT SHIPPING DESCRIPTION:

Bulk (Capacity greater than 119 gallons): NA1993, Compounds, weed killing, liquid (trimethylbenzene, naphthalene), Combustible liquid, III

Packages (Greater than 177 gallons): NA1993, Compounds, weed killing, liquid (trimethylbenzene, naphthalene), Combustible liquid, III, RQ (naphthalene)

DOT HAZARD CLASS: NA

UN NUMBER: NA

DOT PACKING GROUP: NA

DOT PRIMARY/SECONDARY LABEL: NA

DOT PRIMARY/SECONDARY PLACARD: NA

DOT EMERGENCY RESPONSE GUIDE #: NA

SECTION 15 – REGULATORY INFORMATION

FIFRA: All pesticides are governed under the Federal Insecticide, Fungicide, and Rodenticide Act. The regulatory information presented below is pertinent only when this product is handled outside of the normal use and application as a pesticide.

OSHA HAZARD COMMUNICATION: See Section 2.

CERCLA REPORTABLE QUANTITY: 179.7 lb

SECTION 16 – OTHER INFORMATION

DISCLAIMER: The information presented herein is based on available data from reliable sources and is correct to the best of Winfield Solutions, LLC's knowledge. Winfield Solutions, LLC makes no warranty, express or implied, regarding the accuracy of the data or the results obtained from the use of this product. Nothing herein may be construed as recommending any practice or any product in violation of any law or regulations. The user is solely responsible for determining the suitability of any material or product for a specific purpose and for adopting any appropriate safety precautions. We disclaim all liability for injury

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TODAY'S DATE: 03/14/08

REPLACES DATE: 09/14/07