

MATERIAL SAFETY DATA SHEET

Emergency Phone: CHEMTREC 800-424-9300

Effective Date: April 1, 2014

Replaces MSDS of November 1, 2011

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: WILLOWOOD CLETHODIM 2EC

CHEMICAL NAME: Clethodim

CHEMICAL FAMILY: Cyclohexanedione oxime Herbicide

EPA REGISTRATION NUMBER: 87290-11

COMPANY IDENTIFICATION:

Willowood, LLC

1600 NW Garden Valley Blvd., Suite 120

Roseburg, Oregon 97471

Tel: 877-679-9963

24/7 Health Emergencies: Call 800-858-7378 (National Pesticide Information Center)

2. COMPOSITION, INFORMATION OF INGREDIENTS:

Components

CHEMICAL NAME	CAS NUMBER	EINECS #	%
Clethodim	99129-21-2	201-360-5	26.4
Petroleum distillate	64742-94-5	265-149-8	>65
Trimethylbenzene	95-63-6	202-436-5	2-3
Naphthalene	91-20-3	202-049-5	1-2
Surfactant mixture	Proprietary	Proprietary	Balance

3. HAZARDS IDENTIFICATION SUMMARY:

NOTE: Please refer to Section 11 for detailed toxicological information.

EMERGENCY OVERVIEW: CAUTION! The product is an eye irritant and may cause corneal injury. The product is an environmentally hazardous substance. The product may be harmful if swallowed or inhaled. This herbicide is toxic to aquatic organisms. Avoid breathing the spray mist.

PHYSICAL STATE: Suspended concentrate liquid.

APPEARANCE: Amber

ROUTE OF EXPOSURE: Inhalation, Skin contact, Skin Absorption, Eye Contact.

IMMEDIATE EFFECTS:

Eye: Cause substantial but temporary eye injury. Do not get in eyes.

Skin: Harmful if absorbed through the skin. May cause slight irritation. May cause sensitization by skin contact. Avoid contact with skin and clothing.

Ingestion: Harmful if swallowed. Do not take internally.

Inhalation: Harmful if inhaled. Avoid breathing the spray mist.

CHRONIC OR DELAYED LONG-TERM: ACGIH, NTP, IARC or OSHA does not list this product as a carcinogen.

Medical Conditions Aggravated by Exposure: May cause upper respiratory irritation, dermatitis to the skin and sensitive eyes.

4. FIRST AID MEASURES:

GENERAL: Have the product container or label with you when calling a poison control center or doctor or going for treatment.

INHALATION: Move the exposed person to fresh air free from risk of further exposure. If the person is not breathing call 9-1-1, then apply rescue breathing and seek medical attention as soon as possible.

EYE CONTACT: Flush with clean, lukewarm water raising upper and lower eyelids at low pressure for 15 minutes. Remove contact lenses, if present, after the first five minutes and continue to rinse the eyes. Seek medical attention if no relief.

SKIN CONTACT: Rinse area with clean water for 15-20 minutes. Call poison control center or doctor for treatment advice.

INGESTION: Call a poison control center or doctor immediately for treatment advice. DO NOT INDUCE VOMITING. Lower the head when person is vomiting to minimize entry into throat and lungs.

NOTE to Physician: There is no specific antidote. Use appropriate supportive and symptomatic treatment as indicated by the patient's condition.

5. FIRE FIGHTING MEASURES:

FLASH POINT: Greater than 141.6 °F (60.7 °C).

FIRE AND EXPLOSION HAZARDS: Combustible

SUITABLE EXTINGUISHING MEDIA: Use dry chemicals, carbon dioxide and foam.

FIRE FIGHTING INSTRUCTIONS: Keep out of smoke. Fight fire from upwind position. Cool closed containers exposed to fire with water spray. Dike area to prevent runoff and contamination of water sources. Equipment or materials involved in pesticide fires may become contaminated.

6. ACCIDENTAL RELEASE MEASURES:

PERSONAL PRECAUTIONS: Wear PPE per section 8. Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

METHODS FOR CLEANING UP: Avoid breathing the mist. Absorb the spilled material with inert absorbent such as vermiculite. Keep in suitable, closed containers for disposal. Clean contaminated floors and objects thoroughly with water and detergents, observing environmental regulations.

HANDLING AND STORAGE PRECAUTIONS: Use normal safety procedures and good personal hygiene. Wash thoroughly after use and before eating, drinking, chewing gum, or using tobacco.

ADDITIONAL ADVICE: Do not allow material to enter streams, sewers, or other waterways.

7. HANDLING AND STORAGE:

STORAGE TEMPERATURE: Keep containers tightly closed. Avoid high temperatures. Keep in cool dry area above freezing 32 °F (0°C) and below 100 °F (38°C). Store in a cool well-ventilated area.

SPECIAL SENSITIVITY: Avoid contact with skin and eyes; wear PPE per section 8.

HANDLING AND STORAGE PRECAUTIONS: Avoid breathing the mist. Use normal safety procedures and good personal hygiene. Wash thoroughly after use and before eating, drinking, chewing gum, or using tobacco.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION:

EYE PROTECTION: Wear safety glasses or goggles. There is potential for mist exposure to cause injury to the eyes.

SKIN PROTECTION: Wear chemically resistant gloves (e.g. nitrile, butyl or neoprene.) Wear a long sleeved shirt, long pants, shoes, and socks.

RESPIRATORY PROTECTION: Wear an OSHA approved respirator if the airborne conditions result in a mist forming.

OCCUPATIONAL EXPOSURE LIMITS: Naphthalene OSHA TWA PEL 10 ppm, and trimethyl benzene 25 ppm

ENGINEERING CONTROLS: Provide adequate ventilation when product is used. An eyewash and shower should be provided in mixing and loading areas.

9. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM: Suspended viscous liquid.

COLOR: Amber.

ODOR: Slight odor.

pH: 4.35

SOLUBILITY IN WATER: Disperses.

SPECIFIC GRAVITY (water=1): 0.9648 @
68 °F (20 °C.)

10. STABILITY AND REACTIVITY:

STABILITY: This product is stable material under normal conditions of storage and handling. Avoid high temperatures and freezing.

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBLES: Avoid strong oxidizing agents, such as chlorates and nitrates.

DECOMPOSITION PRODUCTS: Product will burn and the products of complete combustion are oxides of carbon and nitrogen, and chlorides.

11. TOXICOLOGICAL INFORMATION:

The significant routes of exposure are eyes, ingestion and inhalation.

Oral LD₅₀ (rat) = > 2000 mg/kg Dermal LD₅₀ (rabbit) = >5000 mg/kg LC₅₀ (rat) = >2.09mg/L (4-hr test)

Clethodim was not considered carcinogenic in animal studies.

12. ECOLOGICAL INFORMATION:

Product is toxic to estuarine and marine invertebrates. Do not allow product to get in waterways. The product is slightly toxic to birds.

Product may leach through soil into ground under certain conditions.

13. DISPOSAL CONSIDERATIONS:

WASTE DISPOSAL METHOD: This material is a suspended liquid, wear an OSHA approved respirator and other required PPE to dispose of the material according to label instructions for pesticide and container disposal. Dispose of in accordance with all local, state, and federal regulations.

14. TRANSPORT INFORMATION:

DOT SHIPPING DESCRIPTION: Containers < 119 gallons – Not Regulated
Containers > 119 gallons – UN 1993 (Combustible liquid, N.O.S. - Petroleum Distillates, Naphthalene), PG III, RQ (naphthalene)

DOT HAZARD CLASS: Combustible liquid

IDENTIFICATION NUMBER: UN1993

DOT PACKING GROUP: PG III

DOT PRIMARY/SECONDARY LABEL: N/A

DOT PRIMARY/SECONDARY PLACARD: Combustible (> 119 gallons)

DOT EMERGENCY RESPONSE GUIDE #: 128

IATA (air) SHIPPING NAME: UN 1993 (Combustible liquid, N.O.S. - Petroleum Distillates, Naphthalene), PG III. Not DG and not regulated by IATA for shipment by air.

IMO (water) SHIPPING NAME: UN1993 (Combustible liquid, N.O.S. - Petroleum Distillates, Naphthalene), PG III (Clethodim Marine Pollutant.) Not DG and not regulated for shipment by ocean.

15. REGULATORY INFORMATION:

OSHA STATUS: None.

TSCA STATUS: None.

CERCLA REPORTABLE QUANTITY: None.

CALIFORNIA PROPOSITION 65: Benzene.

RCRA STATUS: Not regulated under RCRA

SARA 311/312 HAZARD NOTIFICATION/REPORTING

IMMEDIATE Y **FIRE** Y **SUDDEN RELEASE OF PRESSURE** N

DELAYED Y **REACTIVE** N

SARA TITLE III: None.

SECTION 302 EXTREMELY HAZARDOUS: None.

SECTION 311/312 HAZARD CATEGORIES: None.

SECTION 313 TOXIC CHEMICALS: None.

RIGHT TO KNOW; Naphthalene and benzene are listed in California, Illinois, Massachusetts, New Jersey, Pennsylvania and Rhode Island.

16. OTHER INFORMATION:

National Fire Protection Association (NFPA)

Hazardous Materials Identification System (HMIS)

NFPA		HMIS	
	0 Least		
2 Health	1 Slight	2	Health
2 Flammability	2 Moderate	2	Flammability
1 Instability	3 High	1	Reactivity
	4 Severe	H	PPE

RISK PHRASES: R10, Flammable; R20, Harmful by inhalation; R21, Harmful in contact with skin; R22, harmful if swallowed; R36, Irritating to eyes; R51, Toxic to aquatic organisms; and R67, Vapors may cause drowsiness and dizziness.

SAFETY PHRASES: S2, keep out of reach of children; S9, Keep container in a well-ventilated place; S23, Do not breathe vapors; S24, Avoid contact with skin; S25, Avoid contact with eye; S36, Wear suitable protective clothing; S37, Wear suitable gloves; S38, In case of insufficient ventilation, wear suitable respiratory equipment; S39, Wear eye/face protection; and S62, If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label.

REASON FOR ISSUE: New International ANSI Z400 format.

APPROVAL DATE: 04/01/2014

PREPARED BY: Jack Firkins

ABBREVIATIONS

ACGIH	American Conference of Governmental Industrial Hygienists
AICS	Australian Inventory of Chemical Substances
CAS#	Chemical Abstract Service Number
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
°C	Celsius temperature scale
CI	China
DSL	Canada Domestic Substances List
ECL	Korean Existing Chemicals List
EEC	European Economic Commission
ENCS	Japanese existing Chemical List
EINECS #	European Inventory of Existing Chemical Substance Number
EU	European Union
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
(Israel)	2001 proposed list of chemical substances to be regulated under Israel Hazardous Substances Law and Regulations List of 1993

IARC	International Agency for Research on Cancer
MAC	Netherlands
MAK	Germany
MITI	Ministry of International Trade and Industry
NA	Not Applicable
ND	Not Determined
NE	Not Established
NIOSH	National Institute of Occupational Safety and Health
NPIC	National Pesticide Information Center
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Act
PICCS	Philippines
PPE	Personal Protective Equipment
Prop	Proprietary
SARA	Superfund Amendments and Reauthorization Act
SWISS	Giftliste 1 and Inventory of Notified New Substances
TSCA	Toxic Substances Control Act
(Taiwan)	List of Toxic Chemical Substances regulated under Taiwan Toxic Chemical Substances Control Act of November 26, 1986
UK	United Kingdom
USA	United States of America

Disclaimer

This information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Willowood, LLC be liable for any claims, losses or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, how so ever arising, even if company has been advised of the possibility of such damages.