

MATERIAL SAFETY DATA SHEET

Emergency Phone: CHEMTREC 800-424-9300

Effective Date: February 1, 2013

New

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Willowood Mepi Chlor 4.2%
CHEMICAL NAME: (N, N-dimethylpiperidinium chloride)
CHEMICAL FAMILY: Quaternary Ammonium Plant Growth Regulator
PRODUCT CODE: EPA Reg. No. 87290-30

COMPANY IDENTIFICATION:

Willowood Mepiquat Chloride, 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

| Name | CAS - No. | EINECS # | Average % by Weight |
|-------------------|------------|-----------|------------------------|
| Mepiquat Chloride | 24307-26-4 | 246-147-6 | 4.2% |
| NE | | | 95.8% |

3. HAZARDS IDENTIFICATION SUMMARY:

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

EMERGENCY OVERVIEW: Mepi Chlor 4.2% is a non-hazardous, non-dangerous chemical. It is not regulated for shipment by ground, air, or water.

There is no evidence that Mepi Chlor 4.2% is teratogenic, mutagenic, or a human carcinogen. Mepiquat Chloride is has no or very low toxicity to fish, bees, birds, and animals. There are no recorded cases of human poisoning from Mepiquat Chloride.

PHYSICAL STATE: Liquid.

APPEARANCE: Pink to orange liquid.

ROUTE OF EXPOSURE: Inhalation, Ingestion, Skin Contact, Skin Absorption, or Eye Contact.

IMMEDIATE EFFECTS:

Eye: Can cause slight eye irritation. Do not get in eyes.

Skin: Avoid contact with skin and clothing.

Skin Irritation: Unlikely to cause prolonged irritation or sensitization by skin contact.

Ingestion: May be harmful if swallowed. Do not take internally.

Inhalation: May be harmful if inhaled. Avoid breathing mist or aerosol.

CHRONIC OR DELAYED LONG-TERM: There is no evidence Mepi Chlor 4.2% is a human mutagen, teratogen, or carcinogen.

Medical Conditions Aggravated by Exposure: May cause upper respiratory irritation, or temporary irritation to the 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 any symptoms persist, 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: Remove any contaminated clothing. Rinse area with clean water for 15-20 minutes. Call poison control center or doctor for treatment advice.

INGESTION: Have the affected person drink glasses of water if they are able to swallow. DO NOT INDUCE VOMITING. Lower the head if the exposed person is vomiting to minimize entry into throat and lungs. Call a poison control center or doctor immediately for treatment advice.

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: Will not flash.

AUTOIGNITION TEMPERATURE: This product is not flammable and not combustible.

FIRE AND EXPLOSION HAZARDS: During a fire, thermal decomposition of Mepi Chlor 4.2% can produce irritating and toxic gases, including hydrogen chloride, nitrogen oxides, and carbon oxides.

SUITABLE EXTINGUISHING MEDIA: Use water spray, dry chemicals, carbon dioxide, or foam.

FIRE FIGHTING INSTRUCTIONS: Wear encapsulated suit and NIOSH-approved self-contained breathing apparatus while fighting a fire where this product is burning. Keep out of smoke. Fight fire from an upwind position. Cool closed containers exposed to fire with water spray. Dike the 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 creating an aerosol or mist. Absorb spilled material with an inert absorbent such as vermiculite. Collect and 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: Avoid allowing material to enter streams, sewers, or other waterways. Mepi Chlor 4.2% is of low toxicity to fish and other aquatic organisms.

7. HANDLING AND STORAGE:

STORAGE TEMPERATURE: Keep containers tightly closed. Avoid temperatures above 38 °C (100 °F) or below 0°C (32 °F). Store in a cool, dry, 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. Remove and wash PPE as soon as possible after handling product. Wash thoroughly after use, and before eating, drinking, chewing gum, or using tobacco.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION:

EYE PROTECTION: Use approved safety glasses, goggles, or face shield when there is potential for dust exposure to cause irritation 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 a NIOSH-approved respirator if the airborne conditions result in a mist or aerosol forming. A respirator is not normally required for routine handling of Mepi Chlor 4.2%.

OCCUPATIONAL EXPOSURE LIMITS: None.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM: Liquid.

COLOR: Pinkish to orange.

ODOR: Slight sweet/musty odor.

SOLUBILITY IN WATER: Very Soluble.

DENSITY OF LIQUID (water=1): 1.01 g/cm³ @ 25 °C.

FLASH POINT: N/A.

pH IN WATER: Neutral to slightly acidic.

10. STABILITY AND REACTIVITY:

STABILITY: This product is a stable material under normal conditions of storage and handling. Avoid temperatures above 38 °C (100 °F).

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBLES: Avoid contact with strong oxidizing agents.

DECOMPOSITION PRODUCTS: Products of thermal decomposition and/or combustion can include hydrogen chloride, and oxides of nitrogen, and carbon.

11. TOXICOLOGICAL INFORMATION:

Acute oral LD₅₀ (rat) > 5000 mg/kg
Dermal LD₅₀ (rat) = > 2,000 mg/kg
Inhalation LC₅₀ (rat) = > 20 mg/L/4hour

The EPA has classified Mepiquat Chloride as not likely to cause cancer in humans. It is not listed as a human carcinogen by IARC, NTP, OSHA, or AVGIH.

There is no evidence that Mepiquat Chloride is mutagenic or teratogenic at doses below 150 mg/kg/day.

In rabbit studies, Mepiquat Chloride did not cause skin or eye irritation or skin sensitization.

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

12. ECOLOGICAL INFORMATION:

Acute oral LD₅₀ (bobwhite quail, mallard duck) > 2,000 mg/L
(This indicates that Mepi Chlor 4.2% is of very low toxicity to bird species.)

96-hour LC₅₀ (rainbow trout) = 4,300 mg/L.

96-hour LC₅₀ (daphnia magna) = 69 mg/L.

72-hour EC₅₀ (algae) = 1,000 mg/L.

(This indicates that Mepi Chlor 4.2% is of low toxicity to fish and other aquatic organisms.)

Mepi Chlor 4.2% is of low toxicity to honeybees.

Avoid allowing Mepi Chlor 4.2% to get into any waterways.

13. DISPOSAL CONSIDERATIONS:

WASTE DISPOSAL METHOD: Mepi Chlor 4.2% is a pinkish to orange liquid. Wear a dust respirator or NIOSH-approved self-contained breathing apparatus and other required PPE while disposing of Mepi Chlor 4.2% if there is a risk of exposure to mist or aerosol. Dispose of in accordance with label instructions and in accordance with all local, state, and federal regulations.

14. TRANSPORT INFORMATION:

US DOT (ground) SHIPPING NAME: Mepi Chlor 4.2% is not hazardous and is not regulated for ground shipment

IATA (air) SHIPPING NAME: Mepi Chlor 4.2% is not hazardous and is not regulated for air shipment

IMO (water) SHIPPING NAME: Mepi Chlor 4.2% is not hazardous, is not classified as a Marine Pollutant, and is not regulated for Marine shipment.

15. REGULATORY INFORMATION:

OSHA STATUS: OSHA does list Mepi Chlor 4.2% as an acute hazardous material.

TSCA STATUS: None

CERCLA REPORTABLE QUANTITY: None

CALIFORNIA PROPOSITION 65: None.

RCRA STATUS: None.

SARA 302/311/312 HAZARD NOTIFICATION/REPORTING

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

DELAYED N **REACTIVE** N

SARA TITLE III: Acute health hazard: No; Chronic Health Hazard: No.

SECTION 302 EXTREMELY HAZARDOUS: None.

SECTION 311/312 HAZARD CATEGORIES: None

SECTION 313 TOXIC CHEMICALS: None.

RIGHT TO KNOW: None

16. OTHER INFORMATION:

National Fire Protection Association (NFPA)

Hazardous Materials Identification System (HMIS)

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

RISK PHRASES: R21, Harmful in contact with skin; R36, Irritating to eyes; and R51, Toxic to aquatic organisms.

SAFETY PHRASES: S2, Keep out of reach of children; S9, Keep container in a well-ventilated place; 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; S61, Avoid release to the environment; and S62, If swallowed, do not induce vomiting; seek medical advice immediately and show the product container or label.

REASON FOR ISSUE: New.

APPROVAL DATE: 2/1/2013

PREPARED BY: Jack Firkins

ABBREVIATIONS

- ACGIH American Conference of Governmental Industrial Hygienists
- ACS 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

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