MATERIAL SAFETY DATA SHEET

Emergency Phone: CHEMTREC 800-424-9300 **Effective Date: March 15, 2013**

Reason for Issue: Minor edits

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Willowood Paraquat 3SL
CHEMICAL NAME: (1,1′-dimethyl-4,4′-bipyridilium dichloride)
CHEMICAL FAMILY: Quaternary Ammonium Chloride Herbicide
PRODUCT CODE: EPA Reg. No. 87290-35

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

Name	CAS - No.	EINECS #	Average % by Weight
Paraquat Dichloride	1910-42-5	217-615-7	43.2%
NE			56.8%

3. HAZARDS IDENTIFICATION SUMMARY:

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

EMERGENCY OVERVIEW: Danger – Poison. May be fatal if inhaled or ingested. Wear an OSHA approved respirator, and do not breathe spray or mist. Paraquat 3SL may cause irreversible eye damage. Wear OSHA approved protective eyewear. Harmful if absorbed through the skin. Do not get on clothing or skin. Remove any contaminated clothing and wash the clothing before re-use. Wash hands thoroughly before eating, drinking, chewing gum, or using tobacco. Paraquat 3SL can cause irreversible damage to target organs such as the lungs, heart, kidneys, and liver.

There is no evidence that Paraquat 3SL is teratogenic, mutagenic, or a human carcinogen at levels below those required for acute toxicity. Paraquat 3SL is of high acute toxicity to fish. It is of low to moderate acute toxicity to birds, mammals, and most other wildlife. It is also of low to moderate toxicity to honeybees.

PHYSICAL STATE: Liquid.

CHEMICAL AND PHYSICAL HAZARD: Paraquat 3SL is moderately corrosive to metals. Do not store in aluminum containers and do not use with equipment that has aluminum parts in contact with Paraquat 3SL.

APPEARANCE: Dark green with a strong, pungent quaternary amine odor coupled with unpleasant odor from valeric acid added as an emetic.

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

IMMEDIATE EFFECTS:

Eye: Can cause serious and irreversible eye damage. Do not get in eyes.

Skin: Avoid contact with skin and clothing. Can cause severe skin irritation by skin contact, and can be highly toxic when absorbed through the skin.

Ingestion: Harmful if swallowed. Do not ingest Paraquat 3SL. Acute toxicity is high.

Inhalation: Paraquat 3SL has a low vapor pressure, so risk of inhalation is normally low. Avoid breathing of mist or aerosol.

CHRONIC OR DELAYED LONG-TERM: There is no evidence Paraquat Dichloride is a human mutagen, teratogen, or carcinogen at levels below those required for acute toxicity.

Medical Conditions Aggravated by Exposure: May cause upper respiratory irritation, and irreversible damage 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. Seek medical attention immediately.

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: Immediate medical attention is vital. Call a poison control center or medical doctor immediately for treatment advice. If the affected person is conscious and able to swallow, have the affected person ingest an absorbent, such as bentonite clay or activated charcoal and also drink several glasses of water. DO NOT INDUCE VOMITING unless advised to do so by a medical doctor or a poison control center. Lower the head if the exposed 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: The Flash Point of Paraquat 3SL 43.2% is > 212 °F. (100 °C.)

AUTOIGNITION TEMPERATURE: The Autoignition Temperature of Paraquat 3SL is > 1000 °F. (600 °C.)

FIRE AND EXPLOSION HAZARDS: During a fire, thermal decomposition of Paraquat 3SL can produce irritating and toxic gases, including chlorine, hydrogen chloride, nitrogen oxides, carbon oxides, ammonia, and possibly a small amount of phosgene.

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

FIRE FIGHTING INSTRUCTIONS: Wear encapsulated suit and NIOSH-approved self-contained breathing apparatus while fighting a fire involving Paraquat 3SL. Keep out of the smoke. Fight the 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 the 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 spilled material in suitable, closed containers for proper 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 Paraquat 3SL to enter streams, sewers, or other waterways. Paraquat 3SL is highly toxic to most fish and other aquatic organisms, and moderately toxic to many birds, mammals, and other wildlife.

7. HANDLING AND STORAGE:

STORAGE TEMPERATURE: Keep in original containers with the containers tightly closed. Avoid temperatures above 100 °F. (38 °C.) or below 32 °F. (0 °C.) Store Paraquat 3SL in a cool, dry, well-ventilated area. Keep in a secure storage area that is inaccessible to children or animals.

SPECIAL SENSITIVITY: Avoid any contact with skin and eyes. Wear PPE per Section 8.

HANDLING AND STORAGE PRECAUTIONS: Avoid breathing the mist. Remove and wash PPE as soon as possible after handling Paraquat 3SL. Wash thoroughly after use, and before eating, drinking, chewing gum, or using tobacco.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION:

EYE PROTECTION: Use NIOSH-approved (ANSI Z-87) protective eye wear when there is any possibility of exposing the eyes to Paraquat 3SL mist or spray.

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 strongly recommended for handling of Paraquat 3SL

OCCUPATIONAL EXPOSURE LIMITS: None established.

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

9. PHYSICAL AND CHEMICAL PROPERTIES:

PHYSICAL FORM: Liquid.
COLOR: Dark green.
SOLUBILITY IN WATER: Very Soluble.
FLASH POINT: >100 °C.
DENSITY OF LIQUID (water=1): 1.13 g/cm^3 @ 25 °C.
pH IN WATER: 4.0-5.0.
ODOR: Strong, pungent, quaternary amine odor, plus unpleasant odor from valeric acid emetic.

10. STABILITY AND REACTIVITY:

STABILITY: This product is a stable material under normal conditions of storage and handling. Store at temperatures above 32 °F. (0 °C.) and below 100 °F. (38 °C.)

HAZARDOUS POLYMERIZATION: Will not occur.

INCOMPATIBLES: Avoid contact with strong oxidizing agents.

DECOMPOSITION PRODUCTS: Thermal decomposition of Paraquat 3SL can produce irritating and toxic gases, including chlorine, **h**ydrogen chloride, nitrogen oxides, carbon oxides, ammonia, and possibly a small amount of phosgene.

11. TOXICOLOGICAL INFORMATION:

Acute oral $LD_{50\ (rat)}$ = 280 mg/kg
Dermal $LD_{50\ (rat)}$ > 2,000 mg/kg
Inhalation $LC_{50\ (rat)}$ = 0.0006 mg/L/4hour

Paraquat 3SL is not listed as a human carcinogen by IARC, NTP, OSHA, or AVGIH.

There is no evidence that Paraquat 3SL is mutagenic or teratogenic at doses below 150 mg/kg/day.

In rabbit studies, Paraquat 3SL caused slight to moderate skin and/or eye irritation but there was no evidence it is a skin sensitizer.

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

12. ECOLOGICAL INFORMATION:

Bobwhite quail LD_{50} = 175 mg/kg
Mallard duck LD_{50} = 199 mg/kg
(This indicates that Paraquat 3SL is of low toxicity to bird species.)

96-hour $LC_{50\ (rainbow\ trout)}$ = 26 mg/L.
48-hour $LC_{50\ (daphnia\ magna)}$ = 6.0 mg/L.
72-hour $EC_{50\ (algae)}$ = 1,000 mg/L.
(This indicates that Paraquat 3SL is of high toxicity to fish and most other aquatic species.)

Paraquat 3SL is of low to moderate toxicity to honeybees.

Prevent Paraquat 3SL from getting into any waterways.

13. DISPOSAL CONSIDERATIONS:

WASTE DISPOSAL METHOD: Paraquat 3SL is a pungent green liquid. Wear a NIOSH-approved self-contained breathing apparatus and other required PPE while collecting and disposing of Paraquat 3SL Dispose of waste Paraquat 3SL in accordance with label instructions and in accordance with all local, state, and federal regulations. Follow container label instructions for recycling or disposing of empty Paraquat 3SL containers.

14. TRANSPORT INFORMATION:

US DOT (ground) SHIPPING NAME: (Paraquat Dichloride) UN 2922, Corrosive Liquid, Toxic, N.O.S; D. G. Class 8 (6.1); PG III.

IATA (air) SHIPPING NAME: (Paraquat Dichloride) UN 2922, Corrosive Liquid, Toxic, N.O.S; D. G. Class 8 (6.1); PG III.

IMO (water) SHIPPING NAME: (Paraquat Dichloride) UN 2922, Corrosive Liquid, Toxic, N.O.S; D. G. Class 8 (6.1); PG III.

15. REGULATORY INFORMATION:

OSHA STATUS: OSHA does list Paraquat 3SL as an acute hazardous material.

TSCA STATUS: Paraquat 3SL is exempt from TSCA, and is subject to FIFRA

CERCLA REPORTABLE QUANTITY: Paraquat Dichloride, 10 lb.

CALIFORNIA PROPOSITION 65: N/A

RCRA STATUS: It is the responsibility of the user to determine at the time whether any Paraquat 3SL being disposed of should be classified as a hazardous waste.

SARA 302/311/312 HAZARD NOTIFICATION/REPORTING:

- **SARA** Section 302/304: **EXTREMELY HAZARDOUS** - Paraquat Dichloride ï Reportable Quantity 10 pounds (2.4 gallons)
- **SARA** Section 311/312: - Acute Health hazard; Chronic Health Hazard
- **SARA** Section 313 chemicals ï Paraquat Dichloride 43.2%, CAS # 1910-42-5

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

DELAYED N **REACTIVE** N

RIGHT TO KNOW: Paraquat Dichloride is listed in MA, NJ, PA, IL, and RI

HAZARDOUS SUBSTANCES LIST: Listed on the MN Hazardous Substances List

16. OTHER INFORMATION:

National Fire Protection Association (NFPA)

Hazardous Materials Identification System (HMIS)

NFPA		HMIS	
	0 Least		
2 Health	1 Slight	2	Health
1 Flammability	2 Moderate	1	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: Minor edits.

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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

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