

MATERIAL SAFETY DATA SHEET

Emergency Phone: Chemtrec 800-424-9300

Effective Date: June 24, 2014

Replaces MSDS of May 21, 2014

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Willowood Glufosinate 280SL

CHEMICAL NAME: Glufosinate Ammonium

CHEMICAL FAMILY: Phosphinic Acid Herbicide

IUPAC CHEMICAL NAME: 2-amino-4-(hydroxymethylphosphinyl)butyric acid-
monoammonium salt

COMPANY IDENTIFICATION:

Willowood, LLC

1600 NW Garden Valley Blvd., Suite 120

Roseburg, Oregon, 97471

Telephone: 877-679-9963

EPA REGISTRATION NUMBER: 87290-41

Warning - May be fatal if absorbed through the skin. May cause substantial, but temporary, eye injury. Harmful if swallowed. Restricted to professional users.

2. HAZARDS IDENTIFICATION

HAZARDS TO HUMANS AND DOMESTIC ANIMALS: Avoid contact with skin or clothing. Can be fatal if absorbed through the skin. May cause skin or eye irritation. Harmful if swallowed.

ENVIRONMENTAL HAZARDS: This product is toxic to aquatic invertebrates and wildlife. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Components

Name	CAS No.	EINECS No.	Average % By Weight
Glufosinate Ammonium	77182-82-2	278-636-5	24.5%
N/A			75.5%
Total			100.0%

4. FIRST AID

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact the National Pesticides Information Center (NPIC) at 1-800-858-7378 seven days a week, 6:30 am to 4:30 pm Pacific Time or your poison control center at 1-800-222-1222.

IF ON SKIN OR CLOTHING: Call a poison control center or doctor for treatment advice. Take off contaminated clothing. Rinse skin immediately with water for 15-20 minutes.

IF IN THE EYES: Hold the eyelids open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, and then continue rinsing the eyes. Call a poison control center or doctor for treatment advice.

IF SWALLOWED: Call a poison control center or doctor immediately for treatment advice. Have the exposed person sip a glass of water if he or she is conscious and is able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything by mouth to an unconscious person.

IF INHALED: Move the exposed person to fresh air. If the person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth. Call a poison control center or doctor for further treatment advice.

NOTE TO PHYSICIAN: Vomiting may cause suffocation. Treat symptomatically and give supportive therapy. There is no specific antidote.

5. FIRE-FIGHTING MEASURES

Flash Point: $\geq 200^{\circ}\text{F}$ (93°C)

Fire and Explosion Hazards: Thermal decomposition can produce oxides of nitrogen, sulfur, and carbon. Pesticide particulates may become airborne in a fire.

Means of Extinction: Use foam, dry chemical, carbon dioxide, or water spray.

Fire Fighting Instructions: Evacuate area and fight fire upwind a safe distance to avoid hazardous vapors and decomposition products. Use as little water as possible and use spray or fog and avoid heavy hose streams to prevent runoff. Dike and collect water used to fight fire to prevent environmental damage due to runoff. Foam or dry chemical extinguishing systems are preferred to prevent environmental damage due to runoff.

Firefighting Equipment: Wear a self-contained breathing apparatus with full face piece.

Hazardous Combustion Products: Oxides of nitrogen, sulfur, and carbon.

6. ACCIDENTAL RELEASE MEASURES

Clean up spills immediately observing the precautions in Section 8 of this MSDS. Isolate the hazard area and keep unnecessary and unprotected personnel from entering. Prevent material from contaminating soil or from entering sewage and drainage systems and bodies of water. Transfer liquids and solid diking materials to separate suitable containers for recovery or disposal.

7. HANDLING AND STORAGE

Do not get on skin, in the eyes, or on clothing. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, or using tobacco. Remove and wash contaminated clothing before reuse.

Keep from freezing. Store above 32°F (0°C) and below 120°F (49°C .) Store in a cool, dry place and in such a manner as to prevent cross contamination with other pesticides, fertilizers, water, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

Avoid exposure to direct sunlight.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower.

PROTECTIVE CLOTHING: Wear chemically resistant gloves (e.g. nitrile, butyl, or neoprene.) Wear a long-sleeved shirt, long pants and socks and shoes. Wear goggles or a face shield.

GENERAL: Wash thoroughly with soap and water after handling. Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing and PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Liquid

COLOR: Dyed – May be blue or red

ODOR: Slightly pungent odor

FLASH POINT: $\geq 200^{\circ}\text{F}$ (93°C)

pH: 6.5 - 7.5

DENSITY: 1.15 g/cm^3

SOLUBILITY IN WATER: Solubility $\geq 1.0\text{ g/L}$

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Freezing temperatures and contact with ignition sources. Temperatures above 120°F (49°C .) Exposure to sunlight.

CHEMICAL STABILITY: Stable under normal use and storage conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may yield oxides of nitrogen, phosphorus, and carbon.

INCOMPATIBILITY WITH OTHER MATERIALS: Oxidizing agents.

POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY - Oral LD_{50} (female rat): $> 300\text{ mg/kg}$

ACUTE DERMAL TOXICITY - Dermal LD_{50} (male rat): $> 1,400\text{ mg/kg}$

ACUTE INHALATION TOXICITY - Inhalation LC_{50} (rat) : $> 2.0\text{ mg/L}$ (4-hour)

EYE IRRITANT - Rabbit – Moderate to Severe irritation.

SKIN IRRITATION - Rabbit – Slight irritation

SENSITIZATION - Guinea Pig – Sensitizing

CARCINOGENICITY:

- **ACGIH:** Not listed

- **IARC:** Not listed

- **NTP:** Not listed

- **OSHA:** Not listed

- **EPA** – No evidence of carcinogenicity has been found in extensive rat and mice feeding studies

MUTAGENIC DATA: No evidence of mutagenic effects during *in vivo* and *in vitro* assays.

ADDITIONAL DATA: Not known to cause reproductive or birth defects in rats at normal exposure levels.

12. ECOLOGICAL INFORMATION

Glufosinate 280SL is highly toxic to aquatic plants and to some aquatic invertebrates but only slightly toxic to fish. It is relatively nontoxic to animals, birds, and honeybees. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Runoff from treated areas may be hazardous to aquatic organisms in neighboring areas. Do not contaminate water when disposing of equipment wash water.

AQUATIC TOXICITY

Rainbow Trout (LC₅₀): ≥ 700 mg/L (96 hour)

Water Flea (Daphnia magna (EC₅₀): ≥ 500 mg/L (48 hour)

Desmodesmus (EC₅₀): ≥ 35 mg/L (72 hour)

Glufosinate 280SL is slightly toxic to fish and moderately toxic to aquatic invertebrates.

AVIAN TOXICITY

Bobwhite Quail (LD₅₀): > 5,000 mg/kg

Mallard Duck (LC₅₀): > 5,620 mg/kg

Glufosinate 280SL is practically non-toxic to birds.

Glufosinate 280SL is practically non-toxic to mammals and insects

Avoid using in locations or under conditions where runoff or drift could expose water bodies to Glufosinate 280SL contamination.

13. DISPOSAL CONSIDERATIONS

Do not contaminate water, food, or feed by disposal.

PESTICIDE DISPOSAL: Pesticide wastes are toxic. Improper disposal of excess pesticide spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

CONTAINER DISPOSAL: Non-refillable container. Do not reuse or refill Glufosinate 280SL containers. Triple rinse the container promptly after emptying it. Recycling of empty containers is recommended. Refer to the product label for specific instructions.

14. TRANSPORT INFORMATION

US DOT (ground) SHIPPING NAME: UN Number 2902, DG Class 6.1, Packing Group III.

IATA (air) SHIPPING NAME: UN Number 2902, DG Class 6.1, Packing Group III.

IMO (water) SHIPPING NAME: UN Number 2902, DG Class 6.1, Packing Group III.

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.

SARA Title III – Section 302 Extremely Hazardous Substances - None

SARA Title III – Section 311/312 Hazard Categories - None

SARA Title III – Section 312 Threshold Planning Quantity- None

SARA Title III – Section 313 Reportable Ingredients - None

CERCLA – None

CALIFORNIA PROP 65 STATUS – None

16. OTHER INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by CPR.

National Fire Protection Association (NFPA) Hazardous Materials Identification System (HMIS)

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

RISK PHRASES: R20, Harmful by inhalation; R21, Harmful in contact with skin; R22, harmful if swallowed; R36, Irritating to eyes; R51, Toxic to aquatic organisms.

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: May be dyed blue or red

APPROVAL DATE: June 24, 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

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