



SAFETY DATA SHEET

SDS ID: 74530-61

1. PRODUCT AND COMPANY IDENTIFICATION

Product name:	VERDURE-X-HERBICIDE
Product use / type:	Herbicide
EPA Registration No.:	74530-61
Chemical name / Synonym / active ingredient(s):	Diquat dibromide; 6,7-dihydrodipyrido(1,2-a:2',1-c)pyrazinediium dibromide
Manufacturer / Registrant:	Helm Agro US, Inc. 401 E. Jackson St., Suite 1400 Tampa, FL 33602
Manufacturer's Telephone:	813-621-8846
Email:	info@helmagro.com
Chemical emergencies:	1-800-424-9300 (Chemtrec)

2. HAZARDS IDENTIFICATION

This chemical is considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200).

Classification

Serious Eye Damage / Eye Irritation	Category 2A
Skin Corrosion / Irritation	Category 2
Acute Oral	Category 4
Acute Inhalation	Category 3
Skin Sensitization	Category 1
Specific Target Organ Toxicity – Single Exposure	Category 3
Specific Target Organ Toxicity – Repeated Exposure	Category 1

EMERGENCY OVERVIEW

Signal Word: **DANGER**

Pictograms:



Appearance: Reddish-brown

Physical state: Liquid

Odor: Faint bromide-like

Hazard Statements:

- Toxic if inhaled.
- Harmful if swallowed.
- Causes serious eye irritation.
- Causes skin irritation.
- May cause an allergic skin reaction.
- May cause respiratory irritation.

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- Causes damage to organs through prolonged or repeated exposure.

Precautionary Statements:

- Wash face, hands and any exposed skin thoroughly after handling.
- Do not eat, drink or smoke when using this product.
- Avoid breathing fumes, mists, vapors or spray.
- Use only outdoors or in well-ventilated areas.
- Wear protective gloves, clothing, eye and face protection.
- Contaminated work clothing should not be allowed out of the workplace.
- IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs get medical advice. Take off contaminated clothing and wash before reuse.
- IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing. Call a poison control center, doctor or 911. Specific treatment see label.
- IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Refer to specific treatment on label and in notes to physician in section 4 of safety data sheet.
- IF IN EYES: Rinse cautiously for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation persists get medical attention.
- Call a POISON CENTER or get medical attention if you feel unwell.
- Store locked up in a cool well-ventilated place. Keep container tightly closed.
- Dispose of contents and container in accordance with local and national regulations at an approved waste disposal plant.

Other Information / Potential Hazards:

Very toxic to aquatic life with long lasting effects.

Do not mix or store in aluminum containers or systems having aluminum fittings.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	Weight %
Diquat dibromide; 6,7-dihydrodipyrido(1,2-a:2',1'-c)pyrazinediium dibromide	85-00-7	37.3
Other ingredients	-	62.7

Values are not product specifications.

4. FIRST AID MEASURES

If on skin or clothing:	<ul style="list-style-type: none">• Remove contaminated clothing and shoes.• Rinse skin with plenty of water for 15-20 minutes.• Call a poison control center or for further treatment advice.
If inhaled:	<ul style="list-style-type: none">• Move person to fresh air.• If person is not breathing, call 911 or get medical help. Give artificial respiration, preferably mouth-to-mouth with the aid of a pocket mask equipped with a one-way valve.• Call a poison control center or doctor for further treatment advice.
If in Eyes:	<ul style="list-style-type: none">• Hold eye open and rinse gently with water for 15-20 minutes.

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	<ul style="list-style-type: none">• Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye.• Call a poison control center or doctor for treatment advice.
If swallowed:	<ul style="list-style-type: none">• Call a poison control center or doctor immediately for treatment advice.• Have person sip glass of water if 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.
Note to Physician:	To be effective, treatment for diquat poisoning must begin IMMEDIATELY. Treatment consists of binding diquat in the gut with suspension of activated charcoal or bentonite clay, administration of cathartics to enhance elimination, and removal of diquat from the blood by charcoal hemoperfusion or continuous hemodialysis.
Note to first-aid:	Have the product label or this Safety Data Sheet with you when calling a poison control center or doctor, or going for treatment.

5. FIRE-FIGHTING MEASURES

Flammable properties:	Non-flammable.
Extinguishing media	Water spray, alcohol resistant foam, CO ₂ , dry chemical.
Unsuitable extinguishing media:	High pressure water streams.
Firefighting measures:	Evacuate area. Use extinguishing media appropriate for surrounding fire. Keep fire-exposed containers cool with water spray. Do not allow contaminated firefighting water and spillage to enter sewers, drains and waterways. Contain run-off water with temporary dike. Prevent use of contaminated buildings, area and equipment until decontamination.
Protective equipment and precautions for firefighters:	Wear full protective firefighting gear including self-contained breathing apparatus pressure demand (MSHA/NIOSH approved or equivalent).
Hazardous decomposition products:	Oxides of: carbon, bromine and nitrogen. May release irritating and toxic vapors due to thermal decomposition.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Wear protective gloves / clothing and eye protection. Refer to section 8 for personal protective equipment. Avoid contact with eyes, skin and clothing. Ensure adequate ventilation. Isolate area and deny entry by unnecessary people. Clean spill immediately.
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- Environmental precautions:** Prevent spillage from contaminating soil or entering waterways, sewers, drains and confined areas.
- Methods for containment:** Contain spill with inert material (e.g. sand, silica gel, universal binder). Clean spills immediately.
- Methods for cleanup:** Control spill at its source. Soak up entire area with inert absorbent material and sweep or shovel into properly labeled container for disposal. Wash area thoroughly with hard water and detergent. Soak up wash water with additional absorbent and place in disposal container. Seal container and arrange for waste disposal.

7. HANDLING AND STORAGE

- Precautions for safe handling:** Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Do not eat, drink, or smoke when using this product. Do not breathe vapors or spray mists.
- Precautions for safe storage:** Store and handle in accordance with all current regulations and standards. Keep in original tightly closed container. Store in a cool, dry place. Store in a well-ventilated area. Keep away from incompatible materials. Store in plastic-lined steel, stainless steel, fiberglass or corrosion-resistant containers.
- Incompatible storage situations:** Separate pesticides during storage to prevent cross-contamination of other pesticides, fertilizers, food, and feed. Do not mix or store in aluminum containers or systems having aluminum fittings. Store at temperatures above freezing.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Guidelines:

	NIOSH	ACGIH	OSHA
Diquat dibromide (85-00-7)	0.5 mg/ m3	0.5 mg/m3 TLV-TWA inhalable fraction	Not established.

The following recommendations for exposure controls and personal protection are intended for the manufacture, formulation and packaging of this material. Commercial applicators and/or on-farm applications should refer to the product label for personal protection equipment.

- Engineering controls:** Ensure adequate ventilation, especially in confined areas. Provide emergency eye wash and/or quick drench shower in the work area.
- Personal protective equipment**

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Eye / face protection:	Wear chemical-tight goggles. If splashing is likely wear a full face shield.
Body / skin protection:	Long sleeved shirt, long pants, shoes plus socks. A chemical resistant apron is recommended.
Hand protection:	Wear chemical resistant gloves / hand protection.
Respiratory protection:	If handling without sufficient ventilation, wear a mist filtering NIOSH approved respirator with N, R, P or HE organic filters.
Industrial hygiene recommendations:	Wash hands thoroughly before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and clean PPE immediately after handling this product. Keep and wash PPE separately from other laundry. Follow manufacturer's recommendations for cleaning and maintaining PPE.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Appearance:	Reddish-brown
Odor:	Faint, bromide-like
pH:	4.19 (1% solution in water)
Boiling point:	No information available
Flash point:	Non-flammable
Relative density:	1.2 g/ml at 20°C (68°F)
Water solubility:	Miscible
Vapor pressure	Negligible, < 1 x 10 ⁻⁸ kPa at 25°C (77°F)
Viscosity:	1.6 centistokes @ 20°C (68°F)
Log pow:	-4.6 at 20°C (68°F) Diquat dibromide

10. STABILITY AND REACTIVITY

Reactivity / chemical stability:	Stable under normal temperature and conditions.
Conditions / Materials to avoid:	Product should not be allowed in contact with metals. Keep away from heat, sparks and flame. Oxidizing agents. Corrosive to metals.
Hazardous decomposition products:	Oxides of carbon, oxides of nitrogen, bromine, ammonia and other noxious fumes. Flammable hydrogen gas may be formed on contact with aluminum.
Hazardous reactions:	Not expected under normal conditions of handling and use.

11. TOXICOLOGICAL INFORMATION

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Product Toxicology:

Acute oral LD50:	Rat LD ₅₀ : 1030 mg/kg
Acute dermal LD50:	Rat LD ₅₀ : >5000 mg/kg
Acute inhalation LC50:	Rat 4-hr LC ₅₀ : 0.97 mg/L
Eye irritation:	Mild eye irritation
Skin irritation:	Moderate skin irritation
Sensitization:	Moderate contact sensitizer.
Carcinogenicity:	No component of this product present at 0.1% or greater is listed by IARC, OSHA, NIOSH or NTP.
Target organs:	Lungs, Liver, Kidneys

12. ECOLOGICAL INFORMATION

Environmental Hazards:	Very toxic to aquatic life with long lasting effects.
<u>Component Ecotoxicity:</u>	
Diquat dibromide (85-00-7)	
Fish:	LC ₅₀ <i>Lepomis macrochirus</i> : 13.9 ppm LC ₅₀ <i>Oncorhynchus mykiss</i> : 14.8 ppm
Invertebrate:	EC ₅₀ <i>Daphnia magna</i> : 0.77 – 1.19 ppm
Avian:	LC ₅₀ Bobwhite quail: 106 ppm LC ₅₀ Mallard duck: 980 ppm

13. DISPOSAL CONSIDERATIONS

Product disposal:	Wastes resulting from the use of this product that cannot be used or chemically reprocessed must be disposed of at a facility approved for pesticide disposal in accordance with applicable Federal, State or local procedures. Do not allow pesticide or rinse waters to enter or run off into storm drains, drainage ditches, gutters or surface waters.
Container disposal:	Emptied container contains product residue. Observe all labeled safeguards until container is destroyed or disposed. Clean container by triple rinsing promptly after emptying.

14. TRANSPORT INFORMATION

U.S. DOT:	UN1760, Corrosive liquids, n.o.s. (Diquat dibromide), 8, PG III See Section 15 for reportable quantity (RQ).
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15. REGULATORY INFORMATION

U.S. Federal Regulations:

This chemical is a pesticide product registered by the Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. Following is the hazard information as required on the pesticide label:

Signal word: WARNING

EPA Registration No.: 74530-61

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Harmful if inhaled. Harmful if swallowed. Causes moderate eye irritation. Do not breathe spray mist. Avoid contact with eyes, skin, or clothing. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Environmental Hazards

This pesticide is toxic to aquatic invertebrates.

TSCA:

All components of this product are listed on or are exempt from listing on the TSCA chemical inventory.

CLEAN WATER ACT:

Diquat dibromide; RQ=1000 pounds

SARA 311/312:

Acute health; Chronic health

CERCLA:

Diquat dibromide; RQ=1000 pounds

U.S. State Regulations:

State Right-to-Know Regulations:

Component	CAS No.	NY	LA	MA	MN	NJ	PA
Diquat dibromide	85-00-7	X	X	X	X	X	X

California Proposition 65: No components listed .

16. OTHER INFORMATION

NFPA Ratings:	Health	Fire	Instability
	3	0	0

Revision No.:

4.0

Revision Date:

08-December-2017

Revision Note:

SDS sections changed: 7.

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; GHS - Global Harmonized System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Association; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PPE - Personal Protective Equipment; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REL - Recommended Exposure Limit; RQ - Reportable Quantity; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Other information / Disclaimer

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SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE, except that the product shall conform to contracted specifications, and that the product does not infringe any valid United States or Canadian patent. No claim of any kind shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

End of Safety Data Sheet