

MATERIAL SAFETY DATA SHEET

Phoenix Environmental Care, LLC
P.O. Box 370
Valdosta, GA 31603-0370

General Information No. 229-245-8845
In Case of Emergency, Call
PROSAR: 888-875-1724
CHEMTREC: 800-424-9300

I. PRODUCT IDENTIFICATION

Product Name: RedWing
Active Ingredient: Diquat dibromide (37.3%)
Chemical Name: [6, 7-dihydrodipyrido (1, 2-a: 2', 1'-c) pyrazinedium dibromide]

II. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS number	% by Wt.	OSHA PEL	ACGIH TLV	NTP/IARC/OSHA Carcinogen	Other
Diquat dibromide	85-00-7	37.3	Not established	0.5 mg/m ³ TWA (inhalable); 0.1mg/m ³ TWA (respirable), skin	No	0.5 mg/m ³ TWA (0.5 total, 0.08 respirable)

III. HAZARDS IDENTIFICATION

Symptoms of Acute Exposure: May cause eye irritation. Harmful if inhaled, swallowed or absorbed through the skin.

Hazardous Decomposition Product: Flammable hydrogen gas may be formed on contact with aluminum. See Conditions to Avoid, Section X. Can decompose at high temperatures forming toxic gases.

Unusual Fire, Explosion and Reactivity Hazards: This product may form flammable and explosive hydrogen gas when in contact with aluminum. During a fire irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

NFPA Hazard Rating	HMIS hazard ratings
Health 2	Health 2
Flammability 1	Flammability 1
Instability 0	Reactivity 0

0 Minimal
1 Slight
2 Moderate
3 Serious
4 Extreme

IV. FIRST AID MEASURES

If in Eyes:	Hold eye open and rinse slowly and gently with water for 15-20 minutes. 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:	Immediately call a poison control center or doctor for treatment advice. Do not induce vomiting unless told to do so by the poison control center or doctor. Have person sip a glass of water if able to swallow. Do not give anything by mouth to an unconscious person.
If on Skin or Clothing:	Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
If Inhaled:	Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control center or doctor for further treatment advice.
Note to Physician:	To be effective treatment for diquat poisoning must begin IMMEDIATELY. Treatment consists of binding diquat in the gut with suspensions of activated charcoal or bentonite clay, administration of cathartics to enhance elimination, and removal of diquat from the blood by charcoal hemoperfusion or continues hemodialysis.

Medical condition likely to be aggravated by exposure.

V. FIRE FIGHTING MEASURES

Flash point (test method):	Not Applicable
Autoignition Temperature:	Not Applicable
Flammable Limits (LFL-UFL):	Not Applicable
Fire Fighting Instructions:	Use dry chemical foam or CO ₂ extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate non-essential personnel from the area to prevent human exposure to fire, smoke, fumes, or product of combustion. Prevent use of contaminated building, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.
Unusual Fire, Explosion, and Reactivity Hazards:	This product may form flammable and explosive hydrogen gas when in contact with aluminum. During a fire irritating and possibly toxic gases may be generated by thermal decomposition or combustion.

VI. ACCIDENTAL RELEASE MEASURES

In case of spill or leak: Control the spill at its source. Contain the spill to prevent from spreading or contaminating soil or from entering sewage and drainage system or any body of water. Clean up spills immediately observing precaution outlined in Section VIII. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial product such as *Tide®*, *Joy®*, *Spic and Span®*). Pick up wash liquid with additional absorbent and place into compatible disposal container. Once all material is cleaned up and placed in disposal container, seal container and arrange for disposition.

VII. HANDLING AND STORAGE

This product reacts with aluminum to produce flammable hydrogen gas. Do not mix or store in containers or system made of aluminum or having aluminum fittings.

Store the material in a well ventilated, secure area out of reach of children and domestic animals. Do not store food, beverages or tobacco product in the storage area. Prevent eating, drinking, tobacco use, and cosmetic application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and after handling.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingestion	Prevent eating, drinking tobacco usage application in areas where there is a potential for exposure to the material. Wash thoroughly with soap and water after handling.
Eye contact	Where eye contact is likely use chemical splash goggles. Facilities storing or utilizing this material should be equipped with an eye wash facility and a safety shower.
Skin contact	Where contact is likely wear chemical resistant gloves(such as barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, natural rubber, polyvinyl chloride[PVC] or Viton), coveralls, socks and chemical-resistant footwear. For overhead exposure wear chemical resistant headgear.
Inhalation	A respirator is not normally required when handling this substance. Use effective engineering control to comply with occupational exposure limits. In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

IX. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark brown liquid
Odor:	Odorless
Melting point:	Not Applicable
Boiling point:	Not Available
Specific Gravity/ Density:	1.20g/mL @ 68° F (20° C)
pH:	4-6
Solubility in Water:	718,000 mg/L @ 68° F (20° C) and pH 7.2
Vapor pressure:	<10 (-8) mmHg @ 77° F (25° C)

X. STABILITY AND REACTIVITY

Chemical Stability:	Stable under normal use and storage conditions.
Conditions to Avoid:	Concentrate should not be stored in aluminum containers. Spray solution should not be mixed, stored, or applied in container other than plastic, plastic-lined steel, stainless steel, or fiberglass.
Hazardous Decomposition Products:	Flammable hydrogen gas may be formed on contact with aluminum. Can decompose at high temperatures forming toxic gases.
Incompatibility with Other Materials:	Strong alkalis and anionic wetting agents (e.g. alkyl and alkylaryl sulfonates). Corrosive to aluminum.
Polymerization:	Will not occur.

XI. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity:	Oral LD ₅₀ (rat, female): 886 mg/kg body weight; Slightly toxic
Acute Dermal Toxicity:	Dermal LD ₅₀ (rat): > 5,050 mg/kg; Practically non-toxic
Acute Inhalation Toxicity:	Inhalation LC ₅₀ (rat): 0.62 mg/L air- 4 hours; Slightly toxic
Eye Irritant:	Mild irritant (rabbit)
Skin Irritation:	Slight irritant (rabbit)
Sensitization:	Not a sensitizer (guinea pig)
Chronic/ Subchronic Toxicity Studies:	Slight weight decrease and cataracts seen in dog at 12.5 mg/ion/kg/d. No evidence for neurotoxic effects in rats dosed up to 400 ppm ion in the diet for 13 weeks.
Carcinogenicity:	No evidence of carcinogenicity in the rat mouse studies.
Other Toxicity Information:	None.
Mutagenic Data:	No evidence of mutagenic effects during in vivo and in vitro assays.
Target Organs	
Active Ingredient:	Eye, Kidney
Inert Ingredient:	Not Applicable

XII. ECOLOGICAL INFORMATION

Summary of Effects:	This material is slightly toxic to fish. Toxic to invertebrates and birds. Practically non-toxic to bees.
Eco Acute Toxicity:	Bees LC ₅₀ /EC ₅₀ 47-100 µg/bee Invertebrates (water flea) LC ₅₀ /EC ₅₀ 0.77-1.19ppm Fish (Rainbow Trout) LC ₅₀ /EC ₅₀ 14.8ppm Fish (Sunfish Bluegill) LC ₅₀ /EC ₅₀ 13.9ppm Birds 8 day dietary(Bobwhite Quail) LC ₅₀ /EC ₅₀ 106ppm Birds 8 day dietary-(Mallard duck) LC ₅₀ /EC ₅₀ 980ppm Birds (Mallard Duck) LD50 Oral 60.6 mg/kg Green Algae 4-day EC50 9.4 ppb
Eco Chronic Toxicity:	Diquat dibromide Invertebrate (Water Flea) 21-day LOEC 0.17 ppm Bird (Mallard Duck) Reproduction LOEL 25 ppm Fish (Fathead Minnow) 34-day LOEC 1.5 ppm
Environmental fate:	This information presented here is for the active ingredient, diquat dibromide. Stable in soil and water. Immobile in soil. Sinks in water (after 24 h).

XIII. DISPOSAL CONSIDERATIONS

Disposal:	Do not reuse product container. Dispose of product, container waste, container, and residue according to local, state, and federal health and environmental regulations.
Characteristic Waste:	Not applicable
Listed Waste:	Not applicable

XIV. TRANSPORT INFORMATION

Ground – NAFTA:

DOT Proper Shipping Name:	Corrosive liquid, N.O.S. (diquat dibromide)
DOT Hazard Class or Division:	Class 8
DOT UN/NA Number:	UN 1760
DOT Packing Group:	PG III
Marine Pollutant:	Not listed

B/L freight classification: Herbicide, NOI (NMC Class 60)

Water Transport -International

Proper Shipping Name:	Corrosive liquid, N.O.S. (diquat dibromide)
Hazard class or division:	Class 8
Identification Number:	UN 1760
Packing group:	PG III

Air transport –International

Proper shipping name:	Corrosive liquid, N.O.S. (diquat dibromide)
Hazard class or division:	Class 8
Identification number:	UN1760
Packing group:	PG III
Packing instruction:	Passenger –818, Cargo 820
Packaging Limitation:	Inner packages over 5 liters and single packages over 60 liters cannot be shipped by cargo aircraft. Inner packages over 2.5 liters and outer packages over 5 liters cannot be shipped by passenger aircraft.

Comment: In accordance with 49 CFR 173.154, this product may be classed as a limited quantities material. It conforms to 171.8 and may be renamed as a consumer commodity and therefore is able to be shipped as an ORM-D.

XV. REGULATORY INFORMATION

EPCRA SARCA Title III Classification

Section 311/312 Hazard Classes	Acute Health Hazard; Chronic health hazard
Section 313 Toxic Chemical	Not Applicable
California Proposition 65	None
CERCLA /SAPRA 302 Reportable Quantity	Report product spills \geq 268 gal (based on diquat [RQ=1000 lbs] content in the formulation).

RCRA Hazardous Waste Classification

(40 CFR 261)	Not Applicable
TSCA status	Exempt from TSCA, subject to FIFRA

XVI. OTHER INFORMATION

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