



Sewer Sciences, Inc. RAZORROOTER® II

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MATERIAL SAFETY DATA SHEET

SECTION I: GENERAL INFORMATION

Product Name: RAZORROOTER® II

EPA Signal Word: Warning

Active Ingredient (%): Diquat Dibromide (37.3%) CAS No.: 85-00-7

Chemical Name: [6,7-dihydrodipyrido(1,2-a:2',1'-c)pyrazinediium dibromide]

Chemical Class: Bipyridilium (dipyridilium) contact herbicide

EPA Registration Number: 64898-8

Emergency Telephone Number: **Transportation (24 Hours) CHEMTREC: 800-424-9300**
Outside the United States call 202-483-7616 (collect calls accepted.)

Manufacturer: Sewer Sciences, Inc.
1020 Hiawatha Blvd., West
Syracuse, NY 13204
315-472-4781

Current Revision: 01/25/2012

SECTION II: HAZARDS IDENTIFICATION

Health and Environmental Toxic if inhaled. Harmful if swallowed. Causes mild eye and skin irritation.

Hazardous Decomposition Products Flammable hydrogen gas may be formed on contact with aluminum. See "Conditions to Avoid", Section 10.

Physical Properties Appearance: Dark brown liquid
Odor: Odorless

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.

SECTION III: COMPOSITION INFORMATION ON INGREDIENTS

Material	OSHA PEL	ACGIH TLV	Other	NTP/IARC/OSHA Carcinogen
Diquat dibromide (37.3%)	Not Established	0.5 mg/m ³ TWA	0.5 mg/m ³ TWA** (0.5 total; 0.08 respirable)	No

** recommended by NIOSH

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.



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SECTION IV: FIRST AID MEASURES

FOR 24-HOUR EMERGENCY MEDICAL ASSISTANCE CALL PROSAR 1-800-391-2584

Have the product container, label or Material Safety Data Sheet with you when calling Prosar, a poison control center or doctor or going for treatment.

- Ingestion:** If swallowed, Call Prosar (800-391-2584), a poison control center or doctor immediately for treatment advice. Have the person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so after contacting Prosar (800-391-2584) or by a poison control center or doctor. Do not give anything by mouth to an unconscious person.
- Eye Contact:** If in eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after 5 minutes, then continue rinsing eye. Call Prosar (800-391-2584), a poison control center or doctor for treatment advice.
- Skin Contact:** If on skin or clothing: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call Prosar (800-391-2584), a poison control center or doctor for treatment advice.
- Inhalation:** If inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call Prosar (800-391-2584), a poison control center or doctor for further treatment advice.
- Notes to Physician** To be effective, treatment for ingestion of the product must begin IMMEDIATELY. Treatment consists of binding the active ingredient, 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 continuous hemodialysis.

Medical Conditions Likely to be Aggravated by Exposure: None known

SECTION V: FIRE FIGHTING MEASURES

Fire and Explosion:	Flash point (Test Method)	Not Applicable	
	Flammable Limits (% in Air)	Lower: Not Applicable	Upper: Not Applicable
	Autoignition Temperature:	Not Applicable	
	Flammability:	Not Applicable	

Unusual Fire and 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.

In Case of Fire

Use dry chemical, foam or CO₂ extinguishing media. Wear full protective clothing and self-contained breathing apparatus. Evacuate nonessential personnel from the area to prevent human exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area, and equipment until decontaminated. Water runoff can cause environmental damage. If water is used to fight fire, dike and collect runoff.

SECTION 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 systems, or any body of water. Clean up spills immediately, observing precautions outlined in Section 8. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent (e.g. commercial products 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 place in a disposal container, seal container, and arrange for disposition.



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SECTION VII: HANDLING AND STORAGE

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

Store the material in a well-ventilated, secure area out of the reach of children and domestic animals. Do not store food, beverages or tobacco products 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 water after handling.

SECTION VIII: EXPOSURE CONTROLS/PERSONAL PROTECTION

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROLS/PERSONAL PROTECTION ARE INTENDED FOR THE MANUFACTURE, FORMULATION AND PACKAGING OF THIS PRODUCT.

FOR COMMERCIAL APPLICATIONS CONSULT THE PRODUCT LABEL.

Ingestion:	Prevent eating, drinking, tobacco usage and cosmetic 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.
Skin Contact:	Where contact is likely, wear chemical-resistant gloves (such as barrier laminate, nitrile rubber, or butyl rubber, neoprene rubber, natural rubber, polyvinyl chloride [PVC] or Viton), coveralls, socks and chemical-resistant footwear.
Inhalation:	A respirator is not normally required when handling this substance. Use effective engineering controls to comply with occupational exposure limits. In case of emergency spills, use a NIOSH approved respirator with any N, R, P or HE filter.

SECTION IX: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark Brown Liquid	
Odor:	Odorless	
Melting Point:	Not Applicable	
Boiling Point:	Not Available	
Specific Gravity/Density:	1.202 g/mL @ 68°F (20°C)	
pH:	4 - 6	
Solubility in H ₂ O:	Diquat Dibromide	718,000 mg/l @ 68°F (20°C) and pH 7.2
Vapor Pressure:	Diquat Dibromide	<10(-8) mmHg @ 77°F (25°C)

SECTION X: STABILITY AND REACTIVITY

Stability:	Stable under normal use and storage conditions.
Hazardous Polymerization:	Will not occur.
Conditions to Avoid:	Concentrate should not be stored in aluminum containers. Spray solutions should not be mixed, stored or applied in containers other than plastic, plastic-lined steel, stainless steel or fiberglass.
Materials to Avoid:	Strong alkalis and anionic wetting agents (e.g., alkyl and alkylaryl sulfonates). Corrosive to aluminum.
Hazardous Decomposition Products:	Flammable hydrogen gas may be formed on contact with aluminum. See "Conditions to Avoid", Section 10.



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SECTION XI: TOXICOLOGICAL INFORMATION

Acute Toxicity/Irritation Studies (Finished Product)

Ingestion	Oral (LD50 Female Rat) :	886 mg/kg body weight
Dermal:	Dermal (LD50 Rabbit) :	> 5050 mg/kg body weight
Inhalation:	Inhalation (LC50 Rat) :	0.62 mg/l air – 4 hours
Eye Contact:	Mildly Irritating (Rabbit)	
Skin Contact:	Slightly Irritating (Rabbit)	
Skin Sensitization:	Not a Sensitizer (Guinea Pig)	

Reproductive/Developmental Effects

Diquat Dibromide:	Mutagenicity:	No evidence in in vivo assays
Development Toxicity:	In rabbit studies a small percentage of fetuses had minor defects at 3 and 10 mg ion/kg/d.	

Chronic/Subchronic Toxicity Studies

Diquat Dibromide:	Kidney weight decreases and cataracts seen in dogs at 12.5 mg ion/kg/d. No evidence for neurotoxic effects in rats dosed up to 400 ppm ion in diet for 13 weeks
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Carcinogenicity Diquat Dibromide: No evidence of carcinogenicity in rat and mouse studies.

Other Toxicity Information None

Toxicity of Other Components Not Applicable

Target Organs	Active Ingredients	Diquat Dibromide	Eye, kidney
	Inert Ingredients	Not Applicable	

SECTION XII: ECOLOGICAL INFORMATION

Ecotoxicity Effects	Diquat Dibromide	Fish (Rainbow Trout) 96- hour LC50 14.83 ppm Invertebrate (Water Flea) Daphnia Magna 48-hour EC50 0.77 ppm Green Algae 4-day EC50 9.4 ppb Bird (Mallard Duck) 14-day LD50 Oral 60.6 mg/kg
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Environmental Fate	Diquat dibromide	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)
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SECTION XIII: DISPOSAL CONSIDERATIONS

Disposal: Do not reuse product containers. Dispose of product containers, waste containers, and residues according to local, state, and federal health and environmental regulations.

Characteristic Waste: Not Applicable

Listed Waste: Not Applicable



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SECTION XIV. TRANSPORTATION INFORMATION

DOT Classification Ground Transport – NAFTA
Proper Shipping Name: Corrosive Liquid, N.O.S. (Diquat Dibromide)
Hazard Class: Class 8
Identification Number: UN 1760
Packing Group: PG III

Comments Water Transport Not Applicable

 Air Transport
Proper Shipping Name: Corrosive Liquid, N.O.S. (Diquat Dibromide)
Hazard Class or Division: Class 8
Identification Number: UN 1760
Packing Group: PG III

SECTION XV: REGULATORY INFORMATION

EPCRA SARA Title III Classification
Section 311/312 Hazard Classes: Acute Health Hazard
Section 313 Toxic Chemicals: Not Applicable

California Proposition 65 None

CERCLA/SARA 302 Reportable Quantity (RQ)
Report product spills \geq 268 gal. (based on diquat [RQ = 1,000 lbs.] content in the formulation)

RCRA Hazardous Waste Classification (40 CFR 261)
Not Applicable

TSCA Status Exempt from TSCA, subject to FIFRA

SECTION: XVI OTHER INFORMATION

NFPA Hazard Ratings		HMIS Hazard Ratings		
Health:	2	Health:	2	0 Minimal
Flammability:	1	Flammability:	1	1 Slight
Instability:	0	Reactivity:	0	2 Moderate
				3 Serious
				4 Extreme

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