

MATERIAL SAFETY DATA SHEET

DIQUASH Landscape and Aquatic Herbicide

MSDS DATE: 12/30/09

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: DIQUASH Landscape and Aquatic Herbicide
SYNONYMS: Diquat dibromide 37.3% SL
EPA REGISTRATION NO.: 83529-12

MANUFACTURER: Sharda USA LLC
ADDRESS: 7460 Lancaster Pike, Suite 9
 Hockessin, DE 19707

PHONE: (302) 234-2780
FAX: (302) 234-7570
EMAIL: shardain@vsnl.com
WEBSITE: www.shardaintl.com

EMERGENCY PHONE: 1(800) 222-1222
CHEMTREC PHONE: 1(800) 424-9300

CHEMICAL NAME: [6,7-dibromide(1,2-a:1-c)pyrazinedium dibromide)
CHEMICAL FAMILY: Bipyridilium (dipyridilium) herbicide
CHEMICAL FORMULA: C₁₂H₁₂Br₂N₂
PRODUCT USE: For use as an herbicide.
PREPARED BY: Sharda USA LLC

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT: Diquat dibromide

<u>CAS NO.</u>	<u>% WT</u>	<u>% VOL</u>	<u>SARA 313 REPORTABLE</u>
85-00-7	37.3	37.3	yes
	<u>ppm</u>	<u>mg/m3</u>	
OSHA PEL-TWA:	N/A	N/A	
OSHA PEL STEL :	N/A	N/A	
OSHA PEL CEILING:	N/A	N/A	
ACGIH TLV-TWA:	N/A	0.5 (inhalation)	0.1 (respiration)
ACGIH TLV STEL:	N/A	N/A	
ACGIH TLV CEILING:	N/A	N/A	

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: May cause eye irritation. Harmful if inhaled, swallowed or absorbed through the skin.
ROUTES OF ENTRY: Ingestion, Dermal, Absorption, Inhalation

POTENTIAL HEALTH EFFECTS

EYES: Mild Irritant

SKIN: Practically Non-Toxic

INGESTION: Slight toxicity

INHALATION: Slight toxicity

ACUTE HEALTH HAZARDS: Toxic by inhalation. Irritating to eyes and skin. Harmful if swallowed.

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CARCINOGENICITY - None

OSHA:

ACGIH:

NTP:

IARC:

OTHER:

SECTION 4: FIRST AID MEASURES

FIRST AID	
If swallowed:	<ul style="list-style-type: none"> Call a poison control center or doctor immediately for treatment advice. Have person sip a 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.
If on skin:	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 a poison control center or doctor for further treatment advice.
If in eyes:	<ul style="list-style-type: none"> Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatments advice.
HOT LINE NUMBER	
<p>Notes to Physician: To be effective, treatment for ingestion of the product must begin IMMEDIATELY. Treatment consist of binding the active ingredient 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.</p> <p>Have a product container or label with you when calling a poison control center or doctor, or going for treatment. For 24-hour medical emergency assistance (human or animal) call 1-800-222-1222. For chemical emergency assistance (spill, leak, fire, or accident) call ChemTrec at 1-800-424-9300.</p>	

SECTION 5: FIRE-FIGHTING MEASURES

This product is non-flammable and non-explosive.

FLAMMABLE LIMITS IN AIR, UPPER: Not applicable
(% BY VOLUME) LOWER: Not applicable

FLASH POINT: Not applicable

AUTOIGNITION TEMPERATURE: Not applicable

FLAMMABILITY: Not applicable

EXTINGUISHING MEDIA: Foam, dry chemical, carbon dioxide.

SPECIAL FIRE FIGHTING PROCEDURES: This product may form flammable and explosive hydrogen gas when in contact with aluminum. Evacuate area and fight fire upwind from a safe distance to avoid hazardous vapors and decomposition products. Prevent use of contaminated buildings, area, and equipment until decontaminated. Foam and/or dry chemicals are preferred to minimize environmental contamination. If water is used, dike and collect water to prevent run off. Wear self-contained breathing apparatus and full fire fighting turn-out gear (Bunker gear).

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce irritating and possibly toxic gases.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: 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. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

SECTION 6 NOTES:

Small Spill: Absorb small spills with sand, vermiculite or other inert absorbent. Place contaminated material in appropriate container for disposal. Scrub area with hard water detergent. Pick up wash liquid with additional absorbent and place into appropriate container for disposal.

Large Spill: Dike large spills using absorbent or impervious material such as clay or sand. Recover and contain as much free liquid as possible for reuse. Allow absorbed material to solidify and scrape up for disposal. Pick up wash liquid with additional absorbent and place in a disposable container. After removal, flush contaminated area thoroughly with water. This material should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE: This product reacts with aluminum to produce flammable hydrogen gas. Do not mix 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.

OTHER PRECAUTIONS: Do not contaminate water, food, or feed by storage or disposal.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Refer to product label.

The following recommendations for exposure controls/personal protection are intended for the manufacture, formulation, packaging and use of this product. For commercial applications and/or on-farm applications consult the product label.

EYE PROTECTION: Protective goggles or full face shield.

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.

SKIN PROTECTION: Long-sleeved shirt, long pants, shoes plus socks. Chemical resistant footwear and overalls. Chemical-resistant gloves such as barrier laminate, butyl rubber, nitrile, neoprene rubber, polyvinyl chloride (PVC), or Viton. For overhead exposure, wear chemical resistant headgear.

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.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow manufacturer's instructions for cleaning and maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

WORK HYGIENIC PRACTICES: Wear protective eyewear. Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove and wash contaminated clothing before reuse.

EXPOSURE GUIDELINES: Refer to Section 2.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Dark brown liquid

ODOR: Non-specific

PHYSICAL STATE: Liquid

pH AS SUPPLIED: 4-6

BOILING POINT: N/A

MELTING POINT: N/A

VAPOR PRESSURE (mmHg): <10 (-8) mmHg @ 77 OF (25 O C)

SPECIFIC GRAVITY (H2O = 1): 1.20g/ml @ 68 F (20 C)

SOLUBILITY IN WATER: 164.2 mg/L @ 20 deg C

SECTION 10: STABILITY AND REACTIVITY

STABLE
X

UNSTABLE

STABILITY: Stable at normal temperature and pressure.

CONDITIONS TO AVOID (STABILITY): Concentrate should not be stored in aluminum containers. Spray solution should not mixed, stored, or applied in container other than plastic, plastic-lined steel stainless steel or fiberglass.

INCOMPATIBILITY (MATERIAL TO AVOID): Strong alkalis and anionic wetting agents (e.g. alkyl and alkylaryl sulfonated) Corrosive to aluminum.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Flammable hydrogen gas may be formed on contact with aluminum. See "condition to avoid". Can decompose at high temperatures forming toxic gases.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:

Oral LD₅₀ (rat) 886 mg/Kg
 Dermal LD₅₀ (rat) >5050 mg/Kg
 Inhalation LC₅₀ (rat) >0.62 mg/L (4-hr)
 Eye Contact: Mildly irritating (Rabbit)
 Skin Contact: Slightly irritating (Rabbit)
 Skin Sensitization: Not a Sensitizer (Guinea Pig)

Reproductive/Developmental Effects:	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	Kindly weight decrease and cataracts seen in dog at 12.5 mg/ion/kg/d. No evidence for neurotoxic effects in rats dosed up to 400ppm ion the diet for 13 weeks.
Carcinogenicity	No evidence of carcinogenicity in the rat mouse studies
Other toxicity information	None
Toxicity of other components	Not applicable
Target organs	
Active ingredient (Diquat dibromide)	Eye, kidney
Inert ingredient	Not applicable

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SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: This product is slightly toxic to fish. Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance contact your State Water Board or Regional Office of the EPA.

Summary of effects:	This material is slightly toxic to fish. Toxic to invertebrates and birds. Practically non-toxic to bees.
Eco Acute Toxicity:	Bees LC50/EC50 47-100 ug/bee Invertebrates (water flea) LC50/EC 50 0.77-1.19ppm Fish (trout) LC50/EC50 14.8ppm Fish (bluegill) LC50/EC50 13.9ppm Birds (8 day dietary-Bobwhite Quail LC50/EC50 106ppm Birds (8 day dietary-Mallard duck) LC50/EC50) 980ppm
Eco Chronic Toxicity:	Not available
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).

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Product disposal – Pesticide wastes may be acutely hazardous. Improper disposal is a violation of federal law. Pesticide, mixtures, or equipment rinse water that cannot be chemically reprocessed must be disposed of according to applicable federal, state or local regulations. Contact your State Pesticide or Environmental Control Agency or the Hazardous Waste representative at the nearest EPA Regional office for guidance.

Container disposal – Dispose of product containers, waste containers, and residues according to label instructions and local, state, and federal health and environmental regulations.

RCRA HAZARD CLASS: Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION – Ground transport-NAFTA

PROPER SHIPPING NAME:	Corrosive Liquid N.O.S. (diquat dibromide)
HAZARD CLASS:	8
ID NUMBER:	UN 1760
PACKING GROUP:	PG III
LABEL STATEMENT:	B/L Freight Classification – Herbicides, NOI (NMC Class 60)

WATER TRANSPORTATION – International

PROPER SHIPPING NAME:	Corrosive Liquid, N.O.S. (diquat dibromide)
HAZARD CLASS:	8
ID NUMBER:	UN 1760
PACKING GROUP:	PG III

AIR TRANSPORTATION – International

PROPER SHIPPING NAME:	Corrosive Liquid N.O.S. (diquat dibromide)
HAZARD CLASS:	8
ID NUMBER:	UN 1760
PACKING GROUP:	PG III
LABEL STATEMENTS:	Passenger – 818, Cargo – 820
PACKAGING LIMITATIONS:	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.

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SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA (TOXIC SUBSTANCE CONTROL ACT): The ingredients of this product are listed on the TSCA inventory or are exempt.

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT):

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

302: Report product spills>=268 gal. (Based on Diquat [RQ=1,000 lbs] content in the formulation)

311/312 HAZARD CATEGORIES: Acute health hazard
Chronic health hazard

313 REPORTABLE INGREDIENTS: Not Applicable

CA PROPOSITION 65: None

SECTION 16: OTHER INFORMATION

OTHER INFORMATION:

HAZARD RATINGS	NFPA	HMIS			
HEALTH:	2	2	0		MINIMAL
FLAMMABILITY:	1	1	1		SLIGHT
REACTIVITY:	0	0	2		MODERATE
			3		HIGH
			4		SEVERE

PREPARATION INFORMATION: MSDS DATE 12-21-09
REVISION DATE 12-31-09

DISCLAIMER: This product is a registered agricultural chemical and must therefore be used in accordance with the container label directions. The information contained herein is given in good faith and is believed to be correct, but no warrant, express or implied is made. Consult Sharda USA LLC for further information.