

**Solera ATO, LLC**  
**Material Safety Data Sheet**

**Solera Diquat Landscape & Aquatic Herbicide**

Revision Date: 03/12/2009

Page 1 of 5

**SECTION 1. CHEMICAL PRODUCT AND COMPANY INFORMATION**

**Product Name:** **Solera Diquat Landscape & Aquatic Herbicide**  
**Chemical Name:** [6,7-dihydrodipyrido(1,2-a:2',1'-c)pyrazinediium dibromide]  
(active ingredient)  
**EPA Registration No.** **82542-14-84237**  
Solerat ATO, LLC  
7364 E. Red Hawk St.  
Mesa, Arizona 85207  
USA

FOR MEDICAL EMERGENCIES, CONTACT the National Poison Information Center 1-800-858-7378

FOR CHEMICAL EMERGENCY: Spill, leak, fire, exposure, or accident, call CHEMTREC 1-800-424-9300

**SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS**

| <b>Hazardous Component Name</b> | <b>CAS-No.</b> | <b>Average % by Weight</b> |
|---------------------------------|----------------|----------------------------|
| Diquat dibromide                | 85-00-7        | 37.3                       |

**SECTION 3. HAZARDS IDENTIFICATION**

*NOTE: Please refer to Section 11 for detailed toxicological information.*

**Health and Environmental**

Toxic by inhalation. Irritating to eyes and skin. Harmful if swallowed.

**Hazardous Decomposition Products**

Flammable hydrogen gas may be formed on contact with aluminum. See "Conditions to Avoid", Section 10. May decompose at high temperatures forming toxic gases.

**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 4. FIRST AID MEASURES**

|                  |  |
|------------------|--|
| <b>General</b>   | When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.   |
| <b>Eye</b>       | 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 physician or poison control center immediately.  |
| <b>Skin</b>      | Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.  |
| <b>Ingestion</b> | Call a physician or poison control center immediately. Drink one or two glasses of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or physician. Never give anything by mouth to an unconscious person. Do not leave victim unattended. |

**Inhalation** Move 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 physician or poison control center immediately.

**Notes to Physician**

To be effective, treatment for ingestion of the product must be 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 5. FIRE FIGHTING MEASURES**

**Flash point** Not Applicable

**Flammable Limits (% in Air)** Not Applicable

**Autoignition Temperature** Not Applicable

**Flammability** Not Applicable

**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.

**In Case of Fire**

Use dry chemical, foam or CO<sub>2</sub> 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 6. ACCIDENTAL RELEASE MEASURES**

**In Case of Spill or Leak**

Control the spill at its source. Contain the spill to prevent from spreading or contaminated 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 placed in a disposal container, seal container and arrange for disposition.

## **SECTION 7. 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 well-ventilated, secure area out of 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 8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

THE FOLLOWING RECOMMENDATIONS FOR EXPOSURE CONTROL/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.

|                        |  |
|------------------------|--|
| <b>Eye Protection</b>  | Use splash-proof goggles if needed to prevent liquid from getting into the eyes.   |
| <b>Ingestion</b>       | Prevent eating, drinking, tobacco usage and cosmetic application in areas where there is a potential for exposure the material.  |
| <b>Skin Protection</b> | Wash thoroughly with soap and water after handling.  |
| <b>Inhalation</b>      | 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. |

## **SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

|                         |  |
|-------------------------|--|
| <b>Appearance</b>       | Dark brown liquid                                |
| <b>Odor</b>             | Odorless   |
| <b>pH</b>               | 4 - 6  |
| <b>Specific Gravity</b> | 1.20g/mL at 20 °C                                |
| <b>Melting Point</b>    | Not Applicable                                   |
| <b>Water solubility</b> | 718,000 mg/L @20°C and pH 7.2 (Diquat dibromide) |
| <b>Vapor Pressure</b>   | <10(-8) mmHg@25°C (Diquat dibromide)             |

## **SECTION 10. STABILITY AND REACTIVITY**

|                                 |   |
|---------------------------------|---|
| <b>Conditions to Avoid</b>      | 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. |
| <b>Hazardous Polymerization</b> | Will not occur  |
| <b>Chemical Stability</b>       | Stable under normal conditions.   |
| <b>Materials to Avoid</b>       | Strong alkalis and anionic wetting agents (e.g., alkyl and alkylaryl sulfonates). Corrosive to aluminum.  |
| <b>Hazardous Decomposition</b>  | Flammable hydrogen gas may be formed on contact with aluminum. See "Conditions to Avoid", Section 10. May decompose at high temperatures forming toxic gases.   |

## **SECTION 11. TOXICOLOGICAL INFORMATION**

### **Acute Toxicity/Irritation Studies (Finished Product)**

|                           |  |
|---------------------------|--|
| <b>Ingestion</b>          | Rat (Female): LD50: = 886 mg/kg body weight<br>Slightly Toxicity |
| <b>Dermal</b>             | Rat: LD50: >5,050 mg/kg body weight<br>Practically Non-Toxic     |
| <b>Inhalation</b>         | Rat: LC50: = 0.62 mg/L air – 4 hours                             |
| <b>Eye Contact</b>        | Mildly Irritating (Rabbit)                                       |
| <b>Skin Contact</b>       | Slightly Irritating (Rabbit)                                     |
| <b>Skin Sensitization</b> | Not a Sensitizer (Guinea Pig)                                    |

**Reproductive & Developmental Effects**

Diquat dibromide:

Mutagenicity: No evidence in in vivo assays.

Developmental Toxicity: In rabbit studies a small percentage of fetuses had minor defects at 3 and 10 mg ion/kg/d.

**Chronic/Sub-Chronic 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 the diet for 13 weeks.

**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 12. ECOLOGICAL INFORMATION**

**Summary of Effects**

Diquat dibromide:

Very toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

**Eco-Acute Toxicity**

Diquat dibromide:

Fish (Rainbow Trout) 96-hour LC50 14.83ppm

Fish (Bluegill Sunfish) 96-hour LC50 13.9ppm

Bird (Mallard Duck) LD50 Oral 60.6 mg/kg

Bird (Bobwhite Quail) 8-day dietary LC50 2932

Bird (Mallard Duck) 8-day dietary LC50 . 5000ppm

Bee (Contact) LD50 100ug/bee

Invertebrate (Water Flea) 48-hour EC50 0.77ppm

Green Alaea 4-day EC50 9.4ppb

**Eco-Chronic Toxicity**

Diquat dibromide:

Invertebrate (Water Flea) 21-day LOEC 0.17ppm

Bird (Mallard Duck) Reproduction LOEL 25ppm

Fish (Fathead Minnow) 34-day LOEC 1.5ppm

**Environmental Fate**

Diquat dibromide:

The information presented here is for the active ingredient, diquat dibromide.

Stable in soil water. Immobile in soil. Sinks in water (after 24 hr).

## **SECTION 13. DISPOSAL CONSIDERATIONS**

### **General Disposal Guidance**

Do not contaminate water, food, or feed by disposal. Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

### **Container Disposal**

Triple rinse containers. Puncture container to avoid re-use. Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning. If burned, stay out of smoke.

## **SECTION 14. TRANSPORT INFORMATION**

### **DOT CLASSIFICATION:**

Corrosive Liquid, N.O.S. (Diquat Dibromide),8,UN1760,PGIII

### **IMDG CLASSIFICATION:**

Corrosive Liquid, N.O.S. (Diquat Dibromide),8,UN1760,PGIII

### **B/L FREIGHT CLASSIFICATION:**

Herbicides, NOI (NMC Class 60)

## **SECTION 15. REGULATORY INFORMATION**

### **EPCRA SARA Title III Classification**

|                                 |  |
|---------------------------------|--|
| Section 311/312 Hazard Classes: | Acute Health Hazard<br>Chronic Health Hazard |
| Section 313 Toxic Chemicals:    | Not Applicable                               |

### **California Proposition 65**

None

### **CERCLA/SARA 302 Reportable Quantity (RQ)**

Report product spills >= 268 gal.(based on diquat [RQ=1,000lbs] content in the formulation)

### **RCRA Hazardous Waste Classification (40 CFR 261)**

Not Applicable

### **TSCA Status**

Exempt from TSCA, subject to FIFRA

## **SECTION 16. OTHER INFORMATION**

### **NFPA 704 (National Fire Protection Association):**

Health - 2 Flammability - 1 Reactivity - 0 Others - none

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

This information is provided in good faith but without express or implied warranty. The customer assumes all responsibility for safety and use not in accordance with label instructions.