



SAFETY DATA SHEET

Version 1

1. IDENTIFICATION

Product identifier

Product Name DIQUAT 4SL

Other means of identification

Product Code 85678-94

Synonyms None

Registration Number(s) 85678-94

Recommended use of the chemical and restrictions on use

Recommended Use Herbicide

Uses advised against No information available

Details of the supplier of the safety data sheet

Manufacturer Address

RedEagle International LLC
5143 S. Lakeland Drive, Suite 4
Lakeland, FL 33813
www.redeagleinternational.com

Emergency telephone number

Company Phone Number (863) 682-6698

Emergency Telephone CHEMTREC: 800-424-9300

CHEMTREC: 703-527-3887

POISON CONTROL CENTER: 800-222-1222

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

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

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Dusts/Mists)	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1

Label elements

Emergency Overview

Danger

Hazard statements

Harmful if swallowed
Toxic if inhaled
Causes skin irritation
Causes serious eye irritation
May cause an allergic skin reaction
May cause respiratory irritation
Causes damage to organs through prolonged or repeated exposure



Appearance viscous

Physical state liquid

Odor Slight

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Do not eat, drink or smoke when using this product
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear respiratory protection
Contaminated work clothing should not be allowed out of the workplace
Avoid release to the environment

Precautionary Statements - Response

Get medical advice/attention if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of soap and water
Take off contaminated clothing and wash before reuse
If skin irritation or rash occurs: Get medical advice/attention
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Immediately call a POISON CENTER or doctor/physician
Call a POISON CENTER or doctor/physician if you feel unwell
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Collect spillage

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

Very toxic to aquatic life with long lasting effects.

Unknown acute toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable

Mixture

Chemical Name	CAS No	Weight-%
Other ingredients	Proprietary	62.7
Diquat dibromide	85-00-7	37.3

If CAS number is "proprietary", the specific chemical identity and percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of first aid measures

General advice	Call a poison control center or doctor for treatment advice. Have the product containers or label with you when calling a poison control center or doctor, or going for treatment.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Call a poison control center or doctor for treatment advice.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Remove contaminated clothing and shoes. Wash contaminated clothing before reuse. Call a poison control center or doctor for treatment advice.
Inhalation	Move victim to fresh air. Administer oxygen if breathing is difficult. If breathing is irregular or stopped, administer artificial respiration. Call a physician or poison control center immediately.
Ingestion	If swallowed, call a poison control center or physician immediately. Drink 1 or 2 glasses of water. Rinse mouth. Never give anything by mouth to an unconscious person. Do not induce vomiting without medical advice.
Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. Use personal protection recommended in Section 8.

Most important symptoms and effects, both acute and delayed

Symptoms	May cause redness and tearing of the eyes. May cause skin irritation. Coughing and/ or wheezing.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	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 continuous hemodialysis.
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If in eyes, treat symptomatically. Symptoms may develop gradually. Severe damage may be caused by apparently trivial contact and healing may be delayed. Medical supervision should be continued until healing is complete.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Dry chemical, CO₂, water spray or regular foam. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Hazardous combustion products Carbon oxides. Hydrogen halides. Nitrogen oxides (NOx).

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective gloves/protective clothing and eye/face protection. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and inhalation of vapors. Ensure adequate ventilation, especially in confined areas.

For emergency responders Use personal protection recommended in Section 8. Ventilate the area.

Environmental precautions

Environmental precautions Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Dike far ahead of spill; use dry sand to contain the flow of material.

Methods for cleaning up Prevent product from entering drains. Take up with sand or other non-combustible absorbent material and place into containers for later disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Wash thoroughly after handling. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray. Use with local exhaust ventilation.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep away from food, drink and animal feeding stuffs. Keep in properly labeled containers.

Incompatible materials Strong oxidizing agents. Strong reducing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH REL/IDLH
Diquat dibromide 85-00-7	TWA: 0.5 mg/m ³ inhalable fraction TWA: 0.1 mg/m ³ respirable fraction Skin*	TWA: 0.5 mg/m ³ (vacated)	TWA: 0.5 mg/m ³

Legend

Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Skin - Skin Absorber

NIOSH REL/IDLH Recommended Exposure Limit/Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering Controls	Showers Eyewash stations Ventilation systems.
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Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear suitable protective clothing. Wear protective butyl rubber gloves. Protective shoes or boots.
Respiratory protection	Ensure adequate ventilation, especially in confined areas. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations	When using do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Wash hands thoroughly after handling. Keep away from food, drink and animal feeding stuffs.
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9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state	liquid	Odor	Slight
Appearance	viscous	Odor threshold	No information available
Color	dark brown		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	5.078	solution (1 %)
Melting point / freezing point	No information available	
Boiling point / boiling range	No information available	
Flash point	> 100 °C / 212 °F	Tag Closed Cup
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	~17 mmHg	@ 25 °C
Vapor density	No information available	
Relative density	1.19 g/mL	
Water solubility	Miscible in water	
Solubility in other solvents	No information available	

Partition coefficient	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available
Kinematic viscosity	No information available
Dynamic viscosity	No information available
Explosive properties	Not an explosive
Oxidizing properties	Not applicable

Other Information

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available
Bulk density	10.08 lb/gal

10. STABILITY AND REACTIVITY

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

Elevated Temperature. Storage near to reactive materials.

Incompatible materials

Strong oxidizing agents. Strong reducing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Nitrogen oxides (NOx). Carbon oxides. Hydrogen halides.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information	Acute Oral LD50 (rat): 1030 mg/kg Acute Dermal LD50 (rabbit): > 5000 mg/kg Eye Irritation (rabbit): Irritant. Skin Irritation (rabbit): Moderate irritant. Inhalation LC50 (rat): 0.97 mg/L (4 HR) Skin Sensitization (guinea pig): Possible sensitizer
Inhalation	Toxic by inhalation. May cause irritation.
Eye contact	Irritating to eyes.
Skin contact	Irritating to skin. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.
Ingestion	Harmful if swallowed.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Diquat dibromide 85-00-7	= 120 mg/kg (Rat) = 214 mg/kg (Rat)	= 433 mg/kg (Rat)	-

Information on toxicological effects

Symptoms May cause an allergic skin reaction. May cause skin irritation. May cause redness and tearing of the eyes. Coughing and/ or wheezing.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization May cause sensitization by skin contact.
Germ cell mutagenicity Based on available data, the classification criteria are not met.
Carcinogenicity Based on available data, the classification criteria are not met.
Reproductive toxicity Based on available data, the classification criteria are not met.
STOT - single exposure Respiratory system.
STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.
Chronic toxicity Prolonged or repeated exposure increases the risk. Possible risk of irreversible effects. Avoid repeated exposure. May cause adverse effects on the bone marrow and blood-forming system. May cause adverse liver effects.
Target Organ Effects Central nervous system, kidney, liver, blood, Eyes, Respiratory system, Skin.
Aspiration hazard Based on available data, the classification criteria are not met.

Numerical measures of toxicity - Product Information

The following values are calculated based on chapter 3.1 of the GHS document

Refer to product information above.

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Very toxic to aquatic life with long lasting effects. This product is toxic to fish. Drift or runoff from treated areas may be hazardous to aquatic organisms and non-target plants. 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 contaminate water when cleaning equipment or disposing of equipment washwaters.

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Diquat dibromide 85-00-7	96-hr EC50 (Selenastrum capricornutum) = 0.011 mg/L	96-hr LC50 (Rainbow Trout) = 21 mg/L 96-hr LC50 (Mirror Carp) = 67 mg/L	48-hr EC50 (Daphnia magna) = 1.2 mg/L

Persistence and degradability

Not readily biodegradable. Typical half-life is 1000 d. Diquat dibromide is highly persistent due to strong bonding to clay and unavailability to microbes. Diquat dibromide in soil is not taken up by plants, so any crop can be seeded after application. Diquat dibromide is immobile in soil.

Bioaccumulation

Not likely to bioaccumulate.

Chemical Name	Partition coefficient
Diquat dibromide 85-00-7	-4.6

Other adverse effects

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)

13. DISPOSAL CONSIDERATIONS**Waste treatment methods****Disposal of wastes**

Pesticide wastes may be acutely hazardous. Improper disposal is a violation of federal law. Disposal should be in accordance with applicable regional, national and local laws and regulations. Contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance on proper disposal of waste product.

Contaminated packaging Disposal should be in accordance with applicable regional, national and local laws and regulations. Consult product label for additional information. Do not reuse container.

14. TRANSPORT INFORMATION

<u>DOT</u>	Not Regulated (Single Container < RQ)
	This product is regulated by US DOT when shipped in single containers with a net weight of 2680 LBS or greater. The transportation information for these containers is provided below.
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Hazard Class	9
Packing Group	III
Reportable Quantity (RQ)	RQ
Special Provisions	8, 146, 173, 335, IB3, T4, TP1, TP29
Description	RQ, UN3082, Environmentally hazardous substance, liquid, n.o.s. (Diquat dibromide), 9, III;
Emergency Response Guide Number	171
<u>TDG</u>	Not regulated
<u>IATA</u>	
UN/ID no	UN3082
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Hazard Class	9
Packing Group	III
ERG Code	9L
Special Provisions	A97, A158, A197
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Diquat dibromide), 9, III
<u>IMDG</u>	
UN/ID no	UN3082
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.
Hazard Class	9
Packing Group	III
EmS-No	F-A, S-F
Special Provisions	274, 335
Description	UN3082, Environmentally hazardous substance, liquid, n.o.s. (Diquat dibromide), 9, III; Marine Pollutant

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

85678-94 - DIQUAT 4SL

KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Diquat dibromide 85-00-7	-	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Diquat dibromide 85-00-7	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Diquat dibromide 85-00-7	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number 85678-94

EPA Statement

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:

Difference between SDS and EPA Pesticide label

WARNING: Causes skin irritation. Harmful if swallowed. Harmful if inhaled. DO NOT get on skin or on clothing. Avoid breathing (dust, vapor, or spray mist). 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. Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

NFPA	Health hazards 3	Flammability 0	Instability 0	Physical and Chemical Properties -
HMIS	Health hazards 3*	Flammability 0	Physical hazards 0	Personal protection X
<i>Chronic Hazard Star Legend</i>		<i>* = Chronic Health Hazard</i>		

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.