



Material Safety Data Sheet

PCP0781
MASTERLINE DIQUAT

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Id: PCP0781

Product Name: MASTERLINE DIQUAT

Synonyms: None

Chemical Family: None Known

Application: Herbicide.

Distributed By:

Univar Canada Ltd.
9800 Van Horne Way
Richmond, BC
V6X 1W5

Prepared By: The Environment, Health and Safety Department of Univar Canada Ltd.

Preparation date of MSDS: 28/May/2015

Telephone number of preparer: 1-866-686-4827

24-Hour Emergency Telephone Number (CANUTEC): (613) 996-6666

2. HAZARDS IDENTIFICATION

Potential Acute Health Effects:

Eye Contact: Causes eye irritation. This material may irritate human eyes following contact and could cause prolonged (weeks) impairment of vision. The degree of injury will depend on the amount of material that gets into the eye and the speed and thoroughness of the first aid treatment. Symptoms may include pain, tearing, swelling, redness, and blurred vision.

Skin Contact: Causes skin irritation. This material is classified as "slightly toxic" by dermal absorption. The degree of injury will depend on the amount absorbed. Because diquat is an ionized compound, it has a slow rate of absorption through intact skin. Prolonged or repeated contact may result in skin damage, thus allowing more of the chemical to be absorbed. This could result in systemic poisoning as evidenced by injury to internal organs, primarily the kidneys. Short contact periods with human skin are not usually associated with skin irritation; repeated and/or prolonged contact can result in skin irritation. Repeated and/or prolonged contact may cause dermatitis.

Inhalation: Harmful if inhaled. This substance is considered slightly toxic by inhalation. The degree of injury will depend on the airborne concentration and duration of exposure. Diquat is a water-soluble salt which has no measurable vapour pressure. Therefore, inhalation hazard from diquat vapour is minimal. If the concentrate is spilled and allowed to stand, it can dry to a highly irritating dust. Symptoms of inhalation overexposure may include headache, nose bleed, sore throat and coughing.

Ingestion: Harmful if swallowed. Irritation of the mouth, pharynx, esophagus and stomach can develop following ingestion of this product. The degree of injury will depend on the amount absorbed from the gut. Symptoms following ingestion of diquat concentrate may initially include nausea, vomiting, abdominal pain and severe irritation of the mouth, throat and esophagus. These can be followed by kidney failure and other internal organ involvement.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Percentage (W/W)	LD50s and LC50s Route & Species:
Diquat Dibromide 85-00-7	10-30	Not available.

Note: Remainder of the ingredients are inert.

4. FIRST AID MEASURES

Eye Contact: Hold eyes 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 eyes. Call a poison control center or doctor for treatment advice. Eye wash fountain should be located in immediate work area.

Skin Contact: Take off contaminated clothing. Wash skin with soap and plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice. Wash clothing before reuse. Shoes and other leather items which cannot be decontaminated should be disposed of properly. Safety shower should be located in immediate work area.

Inhalation: Remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, get immediate medical attention.

Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

Notes to Physician: Treatment based on sound judgment of physician and individual reactions of patient. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention. To be effective, treatment for ingestion of the product must begin IMMEDIATELY. If swallowed, give stomach a wash-out and test urine and gastric aspirate for diquat. If positive, give up to 1 litre of adsorbent suspension (e.g., activated charcoal, bentonite clay, etc.) mixed with a purgative (MgSO₄, Na₂SO₄ or mannitol). Repeat administration of adsorbent suspension every 2 hrs for first 24 hrs and every 4 hrs for the next 24 hrs, plus purgatives as required. Maintain and monitor electrolyte and fluid status daily. Consider haemodialysis or haemoperfusion using charcoal column. If in eyes, treat symptomatically, using antibiotics and steroids as necessary. First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection).

5. FIRE FIGHTING MEASURES

Flash Point: None.

Flash Point Method: Not applicable.

Autoignition Temperature: Not available.

Flammable Limits in Air (%): Not Available.

Extinguishing Media: Use DRY chemicals, CO₂, alcohol foam or water spray.

Special Exposure Hazards: Isolate and restrict area access. Use water spray to cool fire-exposed containers and structures. Emits toxic fumes under fire conditions. Contaminated buildings, areas and equipment must not be used until they are properly decontaminated. Contain fire control water for later disposal. Water runoff can cause environmental damage.

Hazardous Decomposition/Combustion Materials (under fire conditions): Decomposition products can include and are not limited to: Carbon monoxide. Carbon dioxide. Acrid smoke and irritating fumes. Flammable hydrogen gas may be formed on contact with aluminum.

Special Protective Equipment: Fire fighters should wear full protective clothing, including self-contained breathing equipment.

NFPA RATINGS FOR THIS PRODUCT ARE: Not Available.

HMIS RATINGS FOR THIS PRODUCT ARE: Not Available.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures: Wear appropriate protective equipment.

Environmental Precautionary Measures: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. Consult local authorities.

6. ACCIDENTAL RELEASE MEASURES

Procedure for Clean Up: Ventilate area. Stop leak only if safe to do so. Clean up spills immediately. Isolate hazard area and restrict access. Absorb with an inert dry material and place in an appropriate waste disposal container. Avoid direct contact with material. Clean up residual material by washing area with water and detergent. Collect the residues for proper disposal. On soils, small amounts will naturally decompose. For large amounts, skim off the upper contaminated layer and collect for disposal. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements. Deactivating Chemicals: Bentonite, Fuller's Earth, Activated Charcoal.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Do not breathe product vapor or mist. Do not ingest. 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. Wash thoroughly after handling. Handle carefully, avoid smoking, drinking or eating on use. Wear adequate protective clothing. If the concentrate is spilled and allowed to stand, it can dry to a highly irritating dust. Launder contaminated clothing prior to reuse. Work clothes should be washed separately at the end of each work day. Keep the containers closed when not in use. Protect product, wash or rinse water, and contaminated materials from uncontrolled release into the environment, or from access by animals, birds or unauthorized people.

Storage: Store in a cool, dry, well ventilated area, away from heat and ignition sources. Store in original container. Keep containers tightly closed. Do not exceed sealed containers to temperatures above 40 °C. Herbicides should be shipped or stored separately from other pesticides to avoid cross-contamination. Rotate stock. Do not store below 0°C. Do not freeze.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls:

Local exhaust ventilation as necessary to maintain exposures to within applicable limits.

Respiratory Protection: Not normally required if good ventilation is maintained. Avoid breathing mists or vapors. If exposure exceeds occupational exposure limits, use an appropriate NIOSH approved respirator. In case of spill or leak resulting in unknown concentration, use a NIOSH approved supplied air respirator. Air purifying respirators should be equipped with NIOSH approved organic cartridges and R95 or P95 filters.

Gloves:

Appropriate chemical resistant gloves should be worn. Nitrile gloves. Butyl rubber gloves.

Skin Protection: Skin contact should be prevented through the use of suitable protective clothing, gloves and footwear, selected for conditions of use and exposure potential. Consideration must be given both to durability as well as permeation resistance.

Eyes: Chemical splash goggles.

Other Personal Protection Data: Ensure that eyewash stations and safety showers are proximal to the work-station location. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Users of pesticides should always refer to the product label for personal protective equipment requirements.

Ingredients	Exposure Limit - ACGIH	Exposure Limit - OSHA	Immediately Dangerous to Life or Health - IDLH
Diquat Dibromide	0.5 mg/m ³ TLV-TWA 0.1 mg/m ³ TLV-TWA	0.5 mg/m ³ TWA	Not Available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: Dark brown.

Odor: Not available.

pH 4 - 8

Specific Gravity: Not Available.

Boiling Point: 102.7°C /216.86°F

Freezing/Melting Point: Not Available.

Vapor Pressure: Not Available.

Vapor Density: Not Available.

% Volatile by Volume: Not Available.

Evaporation Rate: Not Available.

Solubility: Not Available.

VOCs: Not Available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Viscosity: Not Available.

Molecular Weight: Not Available.

Other: Not Available.

10. STABILITY AND REACTIVITY

Chemical Stability: Stable.

Hazardous Polymerization: Will not occur.

Conditions to Avoid: High temperatures and aluminum. Contact with certain metals produces hydrogen gas. Concentrate should not be stored in aluminum containers. 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. 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. Anionic wetting agents (e.g., alkyl and alkylaryl sulfonates). Aluminum.

Hazardous Decomposition Products: Flammable hydrogen gas.

Additional Information:

Corrosive to aluminum.

11. TOXICOLOGICAL INFORMATION

Principle Routes of Exposure

Ingestion: Harmful if swallowed. Irritation of the mouth, pharynx, esophagus and stomach can develop following ingestion of this product. The degree of injury will depend on the amount absorbed from the gut. Symptoms following ingestion of diquat concentrate may initially include nausea, vomiting, abdominal pain and severe irritation of the mouth, throat and esophagus. These can be followed by kidney failure and other internal organ involvement.

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Additional Information: Not a skin sensitizer in animals. Target Organs: Active Ingredient, Diquat dibromide: Eye, kidney. Diquat dibromide: Kidney weight decreases and cataracts seen in dogs at 12.5 mg/kg/day. No evidence for neurotoxic effects in rats dosed up to 400 ppm in the diet for 13 weeks. The acute toxicity test results reported in Section 11, for the finished product take into account any acute hazards related to the "other components" in the formulation.

Acute Test of Product:

Acute Oral LD50: 886 mg/kg for female (Rat)

Acute Dermal LD50: ≥ 4000 mg/kg for male and female (Rat)

Acute Inhalation LC50: Not Available.

Carcinogenicity:

Ingredients	IARC - Carcinogens	ACGIH - Carcinogens
Diquat Dibromide	Not listed.	A4

Carcinogenicity Comment: Diquat dibromide: No evidence of carcinogenicity in rat and mouse studies.

Reproductive Toxicity/ Teratogenicity/ Embryotoxicity/ Mutagenicity: Diquat dibromide:
Mutagenicity: No evidence with in vivo assays.
Development Toxicity: In rabbit studies a small percentage of fetuses had minor defects at 3 and 10 mg/kg/day.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:

Ingredients	Ecotoxicity - Fish Species Data	Acute Crustaceans Toxicity:	Ecotoxicity - Freshwater Algae Data
Diquat Dibromide	Not Available.	Not Available.	Not Available.

Other Information: Based on active ingredient

Eco-Acute Toxicity

Acute toxicity to birds: Acute oral LD50 for mallard ducks 155, partridges 295 mg/kg.

Acute toxicity to fish: LC50 (96 h) for rainbow trout 39, mirror carp 125 mg/l.

Acute toxicity to daphnia: LC50 (48 h) 2.2g/l.

Acute toxicity to algae: EC50 (96 h) 21g/l.

Acute toxicity to bees: LD50 (oral, 120 h) 22g/bee.

Acute toxicity to worms: LC50 (14 d) 243mg/kg.

Eco-Chronic Toxicity

Diquat dibromide:

Invertebrates (Water Flea) 21-Day NOEC 50.0 ppm

Fish (Fathead) Early Life Stage NOEC 0.12 ppm

Environmental Fate

The active ingredient, diquat dibromide, has a low bioaccumulation potential, low mobility and high persistence in soil, but is non-persistent in water. Hydrolysis and evaporation are not significant. photolysis is significant on vegetation. Under field conditions, diquat dibromide is almost immediately bound to soil or vegetation. Tightly bound residues are not biologically available, so the herbicide is deactivated on soil, and bound residues are resistant to microbial degradation. The soil dissipation half-life exceeds 3 years. Dissipation half-life in water is 1-2 days as the material is bound to sediment and deactivated.

For Reglone, the bulk material sinks in water (after 24 h).

13. DISPOSAL CONSIDERATIONS

Disposal of Waste Method: Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations. See product label for disposal and recycling instructions.

Contaminated Packaging: Empty containers should be recycled or disposed of through an approved waste management facility.

14. TRANSPORT INFORMATION

DOT (U.S.):

DOT Shipping Name: CORROSIVE LIQUID, N.O.S. (DIQUAT BROMIDE)

DOT Hazardous Class 8

DOT UN Number: UN1760

DOT Packing Group: III

DOT Reportable Quantity (lbs): Not Available.

Note: No additional remark.

Marine Pollutant: No.

TDG (Canada):

TDG Shipping Name: CORROSIVE LIQUID, N.O.S. (DIQUAT BROMIDE)

Hazard Class: 8

UN Number: UN1760

Packing Group: III

Note: No additional remark.

Marine Pollutant: No.

15. REGULATORY INFORMATION

U.S. TSCA Inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt.

Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL), the Non-Domestic Substances List (NDSL) or exempt.

U.S. Regulatory Rules

Ingredients	CERCLA/SARA - Section 302:	SARA (311, 312) Hazard Class:	CERCLA/SARA - Section 313:
Diquat Dibromide	Not Listed.	Listed	Not Listed.

California Proposition 65: Not Listed.

MA Right to Know List: Listed.

New Jersey Right-to-Know List: Listed.

Pennsylvania Right to Know List: Listed.

Additional Notes: Registration No. 31837 Pest Control Products Act.

WHMIS Hazardous Class:

WHMIS EXEMPT.

16. OTHER INFORMATION

Additional Information:

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

Disclaimer:

NOTICE TO READER:

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Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a Product Specification Sheet and/or a Certificate of Analysis. These can be obtained from your local Univar Sales Office.

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