

MAGLIONE™

DESICCANT 240

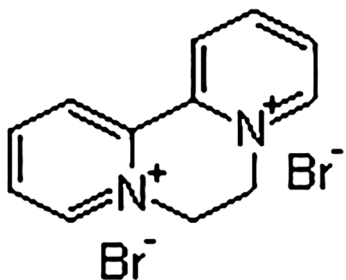
MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION OF THE CHEMICAL PRODUCT AND COMPANY

Company: Avesta CropScience Inc.
Street address: Suite 2900, Bentall 5, 550 Burrard Street, Vancouver, BC, V6C 0A3
Product name: Maglione Desiccant 240
Emergency telephone number: 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formulation Type: Soluble concentrate
Active Ingredients: Diquat dibromide
Chemical Abstracts name: 6,7-dihydrodipyrido[1,2-a:2',1'-c]pyrazinediium dibromide
IUPAC name: 1,1'-ethylene-2,2'-bipyridyldiylilium dibromide
Chemical Family: Heterocyclic cationic herbicides—bipyridilium quaternary ammonium salts
CAS NO. 85-00-7
Molecular Formula: C₁₂H₁₂Br₂N₂
Molecular Weight: 344.1
Structural Formula:



Other ingredients determined not to be hazardous

INGREDIENT	CAS NO	PROPORTION
Diquat ion (calculated as dibromide)	2764-72-9 (85-00-7)	240 g/L Min (448.3 g/L)
Inerts	Not available	Up to 1L

3. HAZARDS IDENTIFICATION

Emergency overview: Caution! Keep out of reach of children. Harmful if swallowed. Irritant.

Routes of entry: Ingestion, inhalation, skin contact.

Health hazards: May be fatal if absorbed through skin. Harmful if inhaled. Harmful if swallowed. Causes eye irritation. Causes skin irritation. Avoid breathing spray mist. Avoid contact with eyes or clothing. Do not feed forage from treated crops to livestock. Keep livestock and pets out of treated fields and crop areas.

Environmental hazards: This herbicide is toxic to aquatic invertebrates. Do not apply directly to water, or 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 wash waters.

4. FIRST AID MEASURES

General: Have the product container, label or Material Safety Data Sheet with you when going for treatment. Tell the person contacted the complete product name, and the type and amount of exposure. Describe any symptoms and follow the advice given.

If swallowed: Call a physician or 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 inhaled: Move person to fresh air. If person is not breathing, call an ambulance, then give artificial respiration, preferably mouth to mouth if possible. Call a poison control center or doctor for further treatment advice.

If on skin or clothing: Wash with plenty of soap and water. Get medical attention if irritation persists.

If in eyes: Hold eye open and rinse slowly and gently with water for 15 to 20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center for treatment advice.

Note to physician: There is no specific antidote if this product is ingested. Treat symptomatically.

5. FIRE FIGHTING MEASURES

Flash point: NA

Flammable limits: Not determined.

Fire and explosion hazards: Not a fire or explosion hazard.

Extinguishing media: Water fog, alcohol foam, carbon dioxide, dry chemical, halogenated agents.

Fire fighting instruction: Evacuate nonessential personnel to prevent exposure to fire, smoke, fumes or products of combustion. Prevent use of contaminated buildings, area and equipment until decontaminated. Dike and collect any runoff to prevent entry to drains or water bodies.

Firefighting equipment: Self-contained breathing apparatus and full bunker gear.

Hazardous combustion products: Thermal decomposition may result in irritating and possibly toxic gasses.

6. ACCIDENT 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. Cover entire spill with absorbing material and place into compatible disposal container. Scrub area with hard water detergent. 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.

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 a 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.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: Handle only with adequate ventilation. Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower.

Personal protective equipment (PPE): Chemical-resistant gloves, chemical resistant footwear plus socks, protective eyewear, coveralls over short-sleeved shirt and short pants or coveralls over

long-sleeved shirt and long pants. Chemical-resistant headgear from overhead exposure. Chemical-resistant apron when cleaning equipment, mixing or loading. Face shield when mixing or loading.

User safety recommendations: Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. Do not reuse them. Follow the manufacturer's instructions for cleaning and maintaining personal protective equipment. If no such instructions for washables exist, use detergent and hot water. Keep and wash personal protective equipment separately from other laundry.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Dark brown clear liquid.

Solubility: Readily soluble in water.

pH: 6-8.

Density: 1.23g/ml at 20°C.

10. STABILITY AND REACTIVITY

Chemical stability: Stable under normal conditions.

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.

Hazardous decomposition products: Flammable hydrogen gas may be formed on contact with aluminum. May decompose at high temperatures forming toxic gases.

Incompatible materials: Strong alkalis and anionic wetting agents (such as alkyl and alkylaryl sulfonates). Corrosive to aluminum.

11. TOXICOLOGICAL INFORMATION

The following information is for the active ingredient, diquat dibromide.

Acute toxicity:

Oral: LD₅₀ 408 mg/kg (rat), 234 mg/kg (mice).

Dermal: LD₅₀ >793 mg/kg (rat).

Inhalation: LC₅₀ Extreme exposure to spray droplets may cause nose bleeding.

Irritant properties:

Skin: mildly irritant (rabbit).

Eye: slightly irritant (rabbit).

Allergenic and sensitizing effects:

Not considered to be a skin sensitizer (Guinea pig).

Chronic toxicity: Chronic effects of diquat dibromide are similar to those of paraquat. Cataracts, a clouding of the eyes which interferes with light entering the eye, occurred in rats and dogs given 2.5 mg/kg/day and 5 mg/kg/day of diquat dibromide, respectively. Other effects on the eye (hemorrhage, retinal detachment) may occur at higher dosages. Rats fed dietary doses of 2.5 mg/kg/day over 2 years did not exhibit signs of toxicity other than reduced food intake and decreased growth. In another study using rats, oral doses of 4 mg/kg/day over 2 years produced no behavioral or other changes in general condition. At this dose level no evidence of

change in the kidneys, liver, or myocardium (heart muscle) were seen. Repeated or prolonged dermal contact may cause inflammation of the skin, and, at high doses, systemic effects in other parts of the body. These may include damage to the kidneys.

Carcinogenicity: An 80-week feeding study showed that dietary doses of 15 mg/kg/day of diquat did not cause tumors in rats. Likewise, dietary levels of 36 mg/kg/day for 2 years did not induce tumors in rats. Based on the evidence, it appears that diquat dibromide is not carcinogenic.

Genetic effects/Mutagenicity: There is no evidence that diquat dibromide causes permanent changes in genetic material. For example, no mutagenic effects were seen in mice given oral doses of 10 mg/kg/day for 5 days.

Reproductive effects: Diquat dibromide generally did not reduce fertility when tested in experimental animals.

Teratogenic effects: Offspring of pregnant rats given a fatal injected dose of 14 mg/kg of diquat dibromide showed evidence of skeletal defects of the collar bone, as well as little or no ear bone formation upon examination. It is unlikely that diquat dibromide will cause teratogenic effects in humans under normal circumstances.

Target organ effects: In animals, diquat dibromide may affect the gastrointestinal tract, eyes, kidneys or liver, and the lungs.

12. ECOLOGICAL INFORMATION

The following information is for the active ingredient, diquat dibromide.

Ecotoxicity:

Birds	Moderately toxic to birds. Acute oral LD ₅₀ : for mallard ducks 155, partridges 295 mg/kg.
Fish	Slightly toxic to fish. LC ₅₀ (96 h): for rainbow trout 39, mirror carp 125 mg/l. Chronic NOEC (21 days): for <i>Pimephales promelas</i> 0.12 mg/l
Daphnia	EC ₅₀ (48 h): 2.2 µg/l. Chronic NOEC (21 days): 0.16 mg/l.
Algae	EC ₅₀ : 21 µg/l (<i>Chlorella</i>). Chronic NOEC (96 hour): 6.8 µg/l.
Bees	LD ₅₀ (oral): 22 µg/bee. LD ₅₀ (contact): 100µg/bee.
Earthworm:	LC ₅₀ (14 days): 243 mg/kg.

Persistence and degradability: Diquat dibromide is highly persistent in soil, with reported field half-lives of greater than 1000 days. When diquat dibromide is applied to open water, it disappears rapidly because it binds to suspended particles in the water. Diquat dibromide's half-life is less than 48 hours in the water column, and may be on the order of 160 days in sediments due to its low bioavailability.

Bioaccumulative potential: There is little or no bioconcentration of diquat dibromide in fish.

Mobility in soil: Diquat dibromide is very well sorbed by soil organic matter and clay. Although it is water soluble, its capacity for strong adsorption to soil particles suggest that it will not easily leach through the soil, be taken up by plants or soil microbes, or broken down by sunlight (photochemical degradation). Field and laboratory tests show that diquat usually remains in the top inch of soil for long periods of time after it is applied.

13. DISPOSAL CONSIDERATION

Do not contaminate water, food or feed by disposal.

Pesticide disposal: Open dumping is prohibited. Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. Disposal should be in accordance with local, state or national legislation.

Container disposal: Empty container retains product residue. Observe all hazard precautions. Do not distribute or make available, furnish or reuse empty container except for storage and shipment of original product. Remove all product residue from container and puncture or otherwise destroy empty container before disposal.

14. TRANSPORT INFORMATION

UN Number: 3016

UN Proper shipping name: BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC

Transport hazard class: 6.1

Packing group: III

15. REGULATORY INFORMATION

Hazard symbols:

Xn Harmful

Risk phrases:

R22 Harmful if swallowed.

Safety phrases:

S2 Keep out of the reach of children.

S13 Keep away from food, drink and animal feeding stuffs.

S20/21 When using, do not eat, drink or smoke.

S36/27 Wear suitable protective clothing and gloves.

S46 If swallowed, seek medical advice immediately and show the container or label.

16. OTHER INFORMATION

This MSDS summarizes our best knowledge of the health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of the how the product will be handled and used in the workplace including in conjunction with other products.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made the user should contact the company.