

# Material Safety Data Sheet

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## 1. Identification of the substance/preparation and company/undertaking

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### Product

Trade Name: AGRIGUARD DIQUAT

Recommended Uses: Agricultural/Horticultural Herbicide and Desiccant

### Company

Manufacturer / Supplier: Agriguard Ltd  
Address: Unit 3, Block B, Tally House, Broomfield Business Park  
Malahide  
Co. Dublin  
Ireland  
Telephone Number: +353-1-8462044  
Fax Number: +353-1-8462489  
e-mail: info@agriguard.ie  
Emergency Telephone No.: 0870-600-6266 [UK National Poisons Control  
Information Service (NPIS) Centre]  
01-8379964/66 (Poisons Information Centre, Beaumont  
Hospital, Beaumont, Dublin 9, Ireland)

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## 2. Composition/Information on Ingredients

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Component	CAS Registry No.	EINECS ELINCS No.	Conc. g/l	R phrase*	Symbol
Diquat dibromide 6,7-dihydrodipyrido[1,2- $\alpha$ :2'1'-c]pyrazinediylum dihydroxide (IUPAC)	85-00-7	201-579-4	374'	R22, R26, R36/37/38, R43, R48/25, R50/53	T+, N

' Equivalent to 200g/l diquat ion

\* Reference section 16

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## 3. Hazards Identification

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Harmful if swallowed.

Toxic: danger of serious damage to health by prolonged exposure if swallowed.

Irritating to eyes, respiratory system and skin.

Corrosive.

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

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## 4. First Aid Measures

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- Skin Contact:** Remove contaminated clothing. Wash the affected area immediately with water followed by soap and water. Seek medical attention immediately.
- Eye Contact:** Rinse out with plenty of water for 15 minutes with the eyelid held wide open. Seek medical attention immediately.
- Inhalation:** Remove the patient to fresh air. Provide oxygen/artificial respiration where necessary and seek medical aid immediately.
- Ingestion:** Do not induce vomiting. Obtain immediate medical attention.
- Further Information:** Guide to doctor: Give stomach washout and test urine and gastric aspirate for diquat. Purge gastrointestinal tract immediately with 15% suspension of fullers earth and 200ml of 20% manitol in water. Give intravenous fluids only.

For further advice on treatment contact:  
The UK National Poisons Control Information Service (NPIS)  
Centre (Emergency Telephone No.: 0870-600-6266) or  
The Poisons Information Centre, Beaumont Hospital, Beaumont,  
Dublin 9, Ireland (Telephone 01-8379964/66).

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## 5. Fire-fighting Measures

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- Suitable extinguishing media:** Water fog, carbon dioxide, foams or dry powder.
- Extinguishing media which must not be used for safety reasons:** Avoid the use of water jet.
- Special protective equipment for fire-fighting:** Wear self contained breathing apparatus and protective clothing.
- Special exposure hazards:** May give off toxic fumes if heated to decomposition
- Other Information:** Contain fire-fighting water with sand or some such bunding material.

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## 6. Accidental Release Measures

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### Personal precautionary measures:

Wear the personal protective equipment outlined in section 8 below. Rapid decontamination of spillages is essential.

### Environmental-protection measures:

Keep the area isolated and do not allow contamination to enter drains or waterways. Spillage or uncontrolled discharges into watercourses must be alerted to the National Rivers Authority. If the product has entered a watercourse or sewer, or grossly contaminated soil or vegetation in a public place, advise police.

### Procedures for cleaning/absorption:

Contain/absorb the spillage with a suitable inert absorbent material or sand which should then be transferred to secure containers and sent for disposal. Wash the spillage area with water.

### Further Information:

Check for local or site procedures in force

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## 7. Handling and Storage

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**Handling:** Wash face and hands before eating, drinking or smoking. Do not breathe spray. Avoid contact with skin and eyes. When using do not eat, drink or smoke.

**Storage:** Store in a cool area in the original containers, access should only be for authorised persons. Store in a well-ventilated area designated for pesticides. Keep away from food drink and animal feeding stuffs. Keep out of the reach of children. Protect from frost.

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## 8. Exposure Controls/Personal Protection

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### Occupational exposure limits:

LTEL (8h TWA), 0.5mg/m<sup>3</sup>

STEL (15 min) 1 mg/m<sup>3</sup>

### Engineering measures to reduce exposure:

Ensure adequate ventilation especially in confined areas.

### Personal protective equipment:

Eye protection: Wear safety goggles conforming to BS 2092.

Hand protection: Wear nitrile gloves or chemical resistant PVC

Respiratory protection: If the ventilation is not adequate wear an approved respirator for pesticides.

Skin and body protection: Wear PVC or chemical resistant disposable overalls and PVC boots.

### Industrial Hygiene:

Do not breathe spray mist. Immediately change contaminated clothing, dispose of if decontamination is not feasible. Keep the work area clean and wash hands before finishing work. When using do not eat, drink or smoke.

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## 9. Physical and Chemical Properties

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<b>Appearance:</b>	Liquid
<b>Colour:</b>	Dark red-brown
<b>Odour:</b>	Odourless
<b>pH:</b>	4 – 5.5
<b>Melting Point/Melting point range:</b>	Not available
<b>Boiling Point/Boiling Point range:</b>	~100 <sup>o</sup> C
<b>Flash Point:</b>	Non-combustible
<b>Flammability</b>	Not combustible
<b>Autoflammability</b>	Not applicable
<b>Explosive properties:</b> Lower limit Upper limit	None
<b>Oxidising properties</b>	Non-oxidising
<b>Vapour Pressure:</b>	Not determined
<b>Relative density:</b>	1.2 g/ml @ 20 <sup>o</sup> C
<b>Solubility</b> Water solubility Fat solubility	Miscible Not available
<b>Partition coefficient</b> n-octanol/water	Not available
<b>Other Data:</b>	A non-combustible liquid

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## 10. Stability and Reactivity

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<b>Stability:</b>	Stable under normal storage conditions.
<b>Conditions to avoid:</b>	Protect from frost.
<b>Materials to avoid:</b>	Corrosive to zinc, aluminium and mild steel. Strong alkalis and anionic wetting agents (eg alkyl and alkylaryl sulphonates)
<b>Hazardous decomposition products:</b>	Combustion or thermal decomposition will evolve toxic and irritant vapours.

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## 11. Toxicological Information

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This health hazard assessment is based on information available for the active ingredient.

**Acute toxicity:**

LD<sub>50</sub> (oral, rat) >231 mgs/kg

LD<sub>50</sub> (skin, rat) > 2000 mgs/kg

**Sensitisation:** Does not cause sensitisation on laboratory animals

**Further toxicological information**

After inhalation: Can cause nose bleeding if inhaled

After skin contact: Irritant to rabbit skin

After eye contact: Irritant to rabbit eyes

After swallowing: Toxic

Carcinogenicity: No evidence of carcinogenicity in rat and mouse studies

Genotoxicity: No evidence of genotoxicity

Reproductive toxicity: No evidence of teratogenicity

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## 12. Ecological Information

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Data is based on active ingredient data

**Mobility:** Immobile in soil

**Persistence and Degradability:** Highly persistent DT50 1000 days  
Photochemical degradation occurs on plant surfaces.

**Bioaccumulative potential:** Diquat dibromide is inactivated on contact with soil. It is not residual i.e. it does not leave any trace of herbicide on or in plants, soil or water.

**Aquatic toxicity:** Bluegill sunfish LC<sub>50</sub> (96hr): 0.039mg/l  
Trout LC<sub>50</sub> (96hr): 3mg/l  
Daphnia LC<sub>50</sub> (48hr): 0.013 – 0.064mg/l

**Other toxicity:** Bobwhite quail LD<sub>50</sub> (96hr): 39mg/kg  
Bobwhite quail LC<sub>50</sub> (5 days): 544mg/kg  
Mallard ducks LC<sub>50</sub> (5 days): 692mg/kg  
Toxic to bees.

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## 13. Disposal Considerations

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**Waste from residues/unused products:**

Dispose of product concentrate and diluted product according to the 'Code of Practice for the Safe Use of Pesticides on Farms and Holdings' available from HMSO. In accordance with local and national regulations. Do not allow material to contaminate ground water system. Do not contaminate surface water.

**Contaminated packaging:**

Wash out container thoroughly, empty washings into spray tank and dispose of safely. Do not contaminate ponds, waterways or ditches with chemical or used container. Do not re-use empty containers.

**Further information:**

Contact the Local Council Authority for advice on the disposal of pesticide waste, or ask an approved waste disposal contractor.

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## 14. Transport Information

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**UN proper shipping name:** Corrosive liquid, n.o.s (contains diquat as dibromide salt)  
**UN Number** 1760

### Road/Railway

**Proper shipping name:** Corrosive liquid, n.o.s (contains diquat as dibromide salt)  
**UN Number** 1760  
**Class:** 8  
**Packaging group:** III  
**Hazard Identification No.:** 80

### Inland waterways

**Proper shipping name:** Corrosive liquid, n.o.s (contains diquat as dibromide salt)  
**UN Number** 1760  
**Class:** 8  
**Item:** 66  
**Letter:** c  
**Hazard Identification No.:** 80

### Sea

**Proper shipping name:** Corrosive liquid, n.o.s (contains diquat as dibromide salt)  
**UN Number** 1760  
**Class:** 8  
**Packaging group:** III  
**Marine pollutant:** No

### Air

**Proper shipping name:** Corrosive liquid, n.o.s (contains diquat as dibromide salt)  
**UN Number** 1760  
**Class:** 8  
**Packaging group:** III

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## 15. Regulatory Information

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Classification in accordance with The Chemicals (Hazard Information and Packaging for Supply) Regulations 2002: CHIP 3.

### Hazardous components which must be listed on the label:

Diquat (as the dibromide salt)

<b>Symbol(s):</b>	<b>T N</b>	<b>Toxic Dangerous for the environment</b>
<b>R phrases:</b>	R22 R36/37/38 R48/25  R50/53	Harmful if swallowed Irritating to eyes, respiratory system and skin Toxic: danger of serious damage to health by prolonged exposure if swallowed. Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
<b>S phrases:</b>	S2 S13  S20/21 S35  S36/37/38 S45  S57	Keep out of the reach of children Keep away from food, drink and animal feeding stuffs When using do not eat, drink or smoke This material and its container must be disposed in a safe way Irritating to eyes, respiratory system and skin In case of accident or if you feel unwell, seek medical advice immediately (show label where possible) Use appropriate container to avoid environmental contamination

**Designated name:** AGRIGUARD DIQUAT (contains diquat dibromide 374g/l)

This product is covered by the Control of Pesticides Regulations, 1986, and is labelled accordingly (MAPP 10836).

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## 16. Other Information

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### Health and Environmental Hazards

Text of R phrases mentioned in Section 2

<b>R phrases:</b>	R22	Harmful if swallowed
	R26	Very toxic by inhalation
	R36/37/38	Irritating to eyes, respiratory system and skin
	R43	May cause sensitisation by skin contact
	R48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed
	R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

**Recommended Uses:** Agricultural/Horticultural Herbicide and Desiccant

**Recommended Restrictions:** Refer to statutory conditions on approved product label

### Further information:

**Date of First Issue:** 29<sup>th</sup> April 2003

**First Revision Date:** 6<sup>th</sup> November 2003

**Disclaimer:** The information contained in this MSDS is designed to give general health and safety guidance on the storage and transport of the substance/preparation to which it relates. Requirements arising from a Risk Assessment of the substance/preparation in a particular working environment should take precedence over any of the guidance contained in this MSDS where there is a difference in the information given. The information contained in this MSDS is accurate at the date of publication and will be updated as and when appropriate. Liability will not be accepted for any injury, loss or damage resulting from any failure to take account of information or advice contained in this MSDS.

Compiled in accordance with EC Directive 91/155/EEC and subsequent amendments EC Directives 93/112/EEC and 2001/58/EC.