

FARM-AG INTERNATIONAL (Pty) Ltd

P.O. Box 1523, Durban 4000

Head Office : 61 Marshall Dr., Old Mill Industrial Park, Mount Edgecombe **South Africa**

Registration Number: 2005/011761/07

Tel + 27 31 003 3486 • Fax + 27 31 502 5825

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Substance: Diquat bromide
Product Name: FARM AG DIQUAT 200 SL
Product Use: Herbicide
Creation Date: November 2014
Revision Date: September 17

24 Hr Emergency Number: 082 771 2712**In case of poisoning:**

Poison Information Centre: 082 446 8946
 Tygerberg Hospital: (021) 931 6129
 Poison Emergency Enquiries (021) 689 5227

In case of Spillage:

HAZMAT: 0800 147 112

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

Common Name: Diquat bromide
Chemical Name: 1,1'-ethylene-2,2'-bipyridyldiylum dibromide (IUPAC)
CAS No.: 85-00-7
Chemical Family: Bipyridylum
Chemical formula: C₁₂H₁₂Br₂N₂ (Mol. Wt. : 344.1).

Use: Herbicide for the control of aquatic weeds as well as annual weeds and grasses. Non-selective contact herbicide and desiccant, absorbed by the foliage, with some translocation in the xylem.

Formulation: diquat ion (bypiridyl): 200 g/l
 (as dibromide salt: 373,5 g/l)
 Soluble Liquid.

Hazardous ingredients of toxicological concern:

<u>Inert:</u>	<u>CAS no:</u>	<u>concern:</u>	<u>% present:</u>
diquat dibromide	85-00-7	toxic	± 37 %
Water		none	< 80 %

SYMBOLS: T, Xi**RISK-PHRASE(S):** R22, R36/38**SECTION 3 - HAZARD IDENTIFICATION****Toxicity class:** WHO (a.i.): II (cation); EPA (formulation): II (a.i.)**Likely routes of exposure:****Toxic.** Ingestion, inhalation, eye contact and skin contact.**Eye contact:**

Moderate irritant. Severe damage may be caused by apparently trivial contact and may be delayed.

Skin contact:

Moderate irritant.

Ingestion:

Moderately toxic by ingestion.

Inhalation:

Toxic by inhalation. However, unlikely to be hazardous. Exposure to spray mist may cause nose bleeding and soreness of mouth and throat.

SECTION 4 - FIRST AID MEASURES AND PRECAUTIONS**Eye contact:**

Flush eyes with lukewarm, gently flowing water for at least 15 minutes or until the product is removed, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. If irritation, redness or burning sensations develop, get medical attention immediately.

Skin contact:

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Remove contaminated clothing, shoes and leather goods immediately. Wash contaminated areas with soap and water. Emergency personnel should wear gloves and avoid contamination. If irritation persists, get medical attention immediately.

Inhalation:

Remove from exposure area to fresh air immediately. Keep affected person warm and at rest. Get medical attention immediately.

Ingestion:

Do not induce vomiting. Wash mouth with water. Seek medical advice immediately.

Advice to Physician:

Rapid treatment is essential. Wash out stomach and test urine for presence of diquat. Give up to 1 litre of 15 % aqueous suspension of Fuller's Earth, orally or via gastric tube, together with suitable purgative (e.g. 200 ml of aqueous solution of mannitol or magnesium sulphate). Repeat administration of absorbent plus purgative until absorbent is seen in stools. This should normally take between 4 to 6 hours after start of treatment. If there is severe mouth ulceration, give nothing by mouth until patient's condition has improved. Give intravenous fluids only.

SECTION 5 - FIRE-FIGHTING MEASURES

Fire hazard:

Product is non combustible. Does not burn. However, following evaporation of aqueous component, residual material may burn, forming toxic fumes.

Flash point:

Does not burn.

Hazardous decomposition products:

Fire decomposition products from this product may form toxic and corrosive mixtures.

Extinguishing agents:

Extinguish fires with carbon dioxide, dry chemical powder, or alcohol-resistant foam. Water spray can be used for cooling of unaffected stock. Contain water used for fire fighting for later disposal. Do not get water inside the containers. Runoff to sewers could be corrosive and/or toxic and could cause pollution.

Fire fighting:

Keep upwind. Remove container from fire area if possible. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Contain fire control agents for later disposal. Use a recommended extinguishing agent for the type of surrounding fire. Avoid inhaling hazardous vapours. Keep upwind. Consider evacuation of downwind area if material is leaking.

Personal protective equipment:

Fire may produce a combination of irritating, corrosive and toxic gases or other products of combustion. Fire-fighters and others that may be exposed should wear full protective clothing and self-contained breathing apparatus.

SECTION 6 - ACCIDENTAL RELEASE MEASURES (SPILLAGE)

Personal precautions:

Avoid contact with skin and eyes. Do not breathe in mist or fumes. **Personal protective equipment:**

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment.

Respirator:

An approved respirator suitable for protection from vapours and mists of pesticides is required. Limitations of respirator use specified by the approving agency and the manufacturer must be observed.

Clothing:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent skin contact with the substance.

Gloves:

Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

Eye protection:

The use of full face protection e.g face shield or goggles is recommended.

Environmental precautions:

Do not allow entering drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) to be reported immediately to the Police and to the Department of Water/Environmental Affairs.

Occupational spill:

Do not flush with water. Do not touch or walk through spilled material. Stop leak if you can do so without risk.

Absorb or cover with dry earth or sand or other suitable non-combustible absorbent, and transfer to labelled containers.

In situations where product comes in contact with water, contain contaminated water for later disposal. Do not flush spilled material into drains. Keep spectators away.

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SECTION 7 - HANDLING AND STORAGE REQUIREMENTS

Handling:

Toxic if swallowed. Avoid contact with eyes and skin, and inhalation of mist and vapour. Use with adequate ventilation. Wash hands before eating, drinking, chewing gum, smoking, or using the toilet. Operators should change and wash clothing daily. Remove clothing immediately if the insecticide gets inside. Then wash skin thoroughly using a non-abrasive soap and put on clean clothing. Do not apply directly to areas where surface water is present, or to intertidal areas below the mean high water mark. Water used to clean equipment must be disposed of correctly to avoid contamination.

Storage:

Stable for up to 2 years when stored under dry normal warehouse conditions. Avoid mild steel, zinc and aluminium. The product must be kept under lock and key. Keep out of reach of unauthorized persons, children and animals. Store in its original labelled container in isolated, dry, cool and well-ventilated area. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

SECTION 8 - EXPOSURE CONTROL/PERSONAL PROTECTION

It is essential to provide adequate ventilation. The measures appropriate for a particular work site depend on how this material is used and on the extent of exposure. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

Personal protective equipment:

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment.

Respirator:

When handling the product and when preparing the spray mixture, wear a face shield or mask. It is usually safe to use the product without respirator. If the product is used in dusty or confined conditions or when in spillage and fire conditions, a respirator suitable for protection from dusts and mists of pesticides is adequate.

Clothing:

Employee must wear appropriate protective (impervious) clothing and equipment to prevent skin contact with the substance.

Gloves:

Employee must wear appropriate synthetic protective gloves to prevent contact with this substance.

Eye & Face protection:

The use of full face protection e.g face shield is recommended.

Emergency eye wash: Where there is any possibility that an employee's eyes may be exposed to this substance, the employer should provide an eye wash fountain or appropriate alternative within the immediate work area for emergency use.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Water soluble, dark red-brown liquid.
Odour:	Odourless.
Flash point:	Does not flash. Not flammable.
Explosive properties:	Not explosive.
Oxidizing properties:	No oxidizing properties.
Specific gravity:	1.171 g/ml.
Boiling point:	Approximately 100 °C aqueous solution.
pH:	4.6
Solubility in water:	Soluble in water.

SECTION 10 - STABILITY AND REACTIVITY

Stability:

Stable for up to 2 years in original container, properly closed and under normal storage conditions.

Corrosiveness:

Highly corrosive to most metals e.g., zinc, mild steel and aluminium.

Incompatibility:

Incompatible with strong bases, strong acids and oxidizing agents.

Hazardous decomposition products:

Combustion or thermal decomposition will evolve toxic and irritant vapours.

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SECTION 11 - TOXICOLOGICAL INFORMATION**Acute oral LD₅₀:***Technical diquat ion:* Rat: 383 mg/kg (male); 464 mg/kg (female)*Technical diquat dibromide:* Rat: 408 mg/kg

Formulation – calculated: 1143 mg/kg

Acute dermal LD₅₀:*Technical diquat ion:* Rat: 681 mg/kg (male); 1000 mg/kg (female)*Technical diquat dibromide:* Rabbit: 250 - 400 mg/kg

Formulation – calculated: 714 - 1143 mg/kg

Inhalation: If inhaled, may cause nose bleeding.**Acute skin irritation:** Moderate irritant.**Acute eye irritation:** Moderate irritant. May cause damage.**Skin sensitization:** Not a skin sensitizer.**ADI:** 0.002 mg caution/kg b.w.**TWA diquat dibromide:** 0.5 mg/m³ (8 hour)**SECTION 12 - ECOLOGICAL INFORMATION**

Rapidly degraded by soil micro-organisms. DT₅₀ of unadsorbed diquat is <1 week. Diquat is strongly bound in soil and increases persistence. Strongly bound and inactivated by soil and aquatic sediments and does not leach into groundwater; K_d >10 000.

ECOTOXICOLOGY (diquat dibromide):**Birds: Moderately toxic to birds.**LD₅₀ Partridges: 295 mg/kg

Mallard ducks: 155 mg/kg

Fish: Slightly to moderately toxic to aquatic life.LC₅₀ (96 hours) Rainbow trout: 39 mg/ℓ

Mirror carp: 125 mg/ℓ

Daphnia: LC₅₀ (48 hours): 2,2 µg/ℓ**Bees: Non toxic to bees.**LD₅₀ (120 hours): oral: 22 µg/ℓ**Algae:**EC₅₀ (96 hours): *Pseudokirchneriella subcapitata* 19 µg/ℓ**Earthworms:** LC₅₀ (14 days): 243 mg/kg

Unlikely to be hazardous to aquatic life.

Harmful to livestock.

SECTION 13 - DISPOSAL CONSIDERATION**Pesticide disposal:**

Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product that cannot be reused or reprocessed should be disposed of in a landfill approved for pesticide disposal. Do not contaminate rivers, dams or any other water sources with the product or used containers.

Package product wastes:

Emptied containers retain vapour and product residues. Observe all labelled safeguards. TRIPLE RINSE empty containers in the following manner: Invert the empty container over the spray or mixing tank and allow to drain for at least 30 seconds after the flow has slowed down to a drip. Thereafter, rinse the container three times with a volume of water equal to a minimum of 10 % of that of the container. Add the rinsings to the contents of the spray tank before destroying the container.

Destroy the emptied containers by perforation and flattening. Bury in an approved dump site. Do not re-use the empty container for any other purpose.

SECTION 14 - TRANSPORT INFORMATION**UN NUMBER:** 1760**Road Transport ADR/IRD:**

Class: 8

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Packaging group:

III

Shipping name:

Corrosive liquid, N.O.S. (contains diquat as dibromide salt 37 % m/v)

SECTION 15 - REGULATORY INFORMATION

Symbol:

T, Xi

Indication of danger:

Toxic, Irritant

Risk phrase(s):

R 22 Harmful if swallowed.

R 36/38 Irritating to eyes and skin.

Safety phrases:

S 1/2 Keep locked up and out of reach children.

S 13 Keep away from food, drink and animal feeding stuff.

S 20/21 When using do not eat, drink or smoke.

S 37/39 Wear suitable gloves and eye/face protection.

S 46 If swallowed, seek medical advice immediately and show this container or label.

SECTION 16 - OTHER INFORMATION

Packing and Labelling

Packed in 5, 10, 20 & 25 litre fluorinated plastic containers and labelled according to the South African regulations and guidelines.

Disclaimer:

The information on this sheet is not a specification; it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage use of the product. It is not applicable to unusual or non-standard uses of the product nor where instructions or recommendations are not followed.

All information is given in good faith but without guarantee in respect of accuracy, and no responsibility is accepted for errors and omissions or the consequence thereof.