

PARAQUAT 200

SAFETY DATA SHEET

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: PARAQUAT 200
Pesticide Classification: Herbicide
UN No.: 3016

Supplier

Enviro Bio-Chem (Pty) Ltd
Co. Reg. No.: 2013/194774/07
44 Kerk Street, Lichtenburg
North West, South Africa 2740

Registration Holder

Erintrade CC t/a RT Chemicals
Co. Reg. No.: CK2001/036403/23
44 Kerk Street, Lichtenburg
North West, South Africa 2740

Telephone: +27 87 231 7261
Fax: 086 541 7948
Website: www.envirobiochem.co.za

24 Hr Emergency Number: Bateleur: +27 83 123 3911

In case of Poisoning:

Poison Information Centre: +27 82 446 8946
Tygerberg Hospital: (+27 21) 931 6129
Poison Emergency Enquiries: (+27 21) 689 5227

Common Name: Paraquat ion 200 g/l (276 g/l as dichloride salt) SL
Chemical Name: 1,1 – dimethyl – 4,4 – bipyridinium (IUPAC)
Empirical Formula: C₁₂H₁₄N₂
CAS No.: 4685-14-7
RSA Reg. No.: L7650 Act/Wet No. 36 of/van 1947
Namibia Reg. No.: N-AR1461

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredient Name</u>	<u>Concentration</u>
Paraquat ion (bipyridyl)	≥ 200 g/l (276 g/l as dichloride salt)

3. HAZARD IDENTIFICATION

Hazard Class: WHO Class Ib -Highly hazardous.

Main Hazard: Highly toxic by ingestion or inhalation.

Flammability: Non-flammable

Chemical Hazard: Following evaporation of aqueous component, residual material may burn, forming toxic fumes.

Biological Hazard: Paraquat is highly persistent in the soil environment and highly toxic to aquatic organisms.

4. FIRST AID MEASURES AND PRECAUTIONS

If poisoning is suspected, do not wait for symptoms to develop. Contact a physician, the nearest hospital, or the nearest Poison Control Centre.

Symptoms of Human Poisoning: Early signs of paraquat ingestion poisoning are vomiting and painful mucous membranes in mouth and throat. In severe cases of poisoning diarrhoea follows and kidney and liver damage may develop 1 to 3 days after exposure. Lung damage can be observed after about 3 days and may lead to death. Exposure to spray mist may cause nose bleeding and soreness of mouth and throat.

First Aid Measures:

Skin Contact: Remove contaminated clothing, shoes and leather goods immediately. Wash contaminated areas with soap and water. If skin is damaged, the paraquat can be absorbed through the skin. Emergency personnel should wear gloves and avoid contamination. If irritation persists, get medical attention immediately.

Eye Contact: Flush eyes with lukewarm, gently flowing water for at least 20 minutes or until the product is removed, while holding the eyelids 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.

Ingestion: Do not induce vomiting. Wash mouth with water and give water to drink. Seek medical attention immediately.

Inhalation: Remove from exposure area to fresh air immediately. Keep affected person warm and at rest. Get medical attention immediately. Do not administer supplement oxygen.

Advice to Physician: Rapid treatment is essential.

Antidote: Wash out stomach and test urine and gastric aspirate (if clear) for presence of paraquat. Give up to 1 litre of 15% aqueous suspension of Fuller's Earth, orally via gastric tube, together with suitable purgative (200 ml of aqueous solution of mannitol). 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. Do not administer supplement oxygen.

5. FIRE FIGHTING MEASURES

Flammability: Non-flammable

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 firefighting for later disposal. Do not get water inside the containers. Runoff to sewers could be corrosive and/or toxic and could cause pollution.

Firefighting: 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. Consider evacuation of downwind area if material is leaking. Fire may produce a combination of irritating, corrosive and toxic gases or other products of combustion. Firefighters and other that may be exposed should wear full protective clothing and self-contained breathing apparatus.

Special Hazards: Product is non-combustive. Does not burn. However, following evaporation of aqueous component, residual material may burn, forming toxic fumes.

6. ACCIDENTAL RELEASE MEASURES (SPILLAGE)

Personal Precautions: Avoid contact with skin and eyes. Do not breathe in mist of fumes. For personal protective equipment see Section 8 of this document.

Environmental Precautions: Do not allow product to enter drains or watercourses. Spillage or uncontrolled discharges into water courses (or public waters) must be report immediately to the Department of Water/Environmental Affairs.

Spills: Do not flush with water. Eliminate all ignition sources (smoking, flares, sparks or flames) in the immediate area. Earth all equipment used when handling the product. Do not touch or walk through spilled material. Stop leak if it can be done without risk. Absorb or cover with dry earth, sand or another suitable non-combustible absorbent. Transfer the product waste to labelled containers. In situations where product comes into contact with water, contain contaminated water for later disposal according to Section 13. Do not flush spilled material into drains. Keep spectators away.

7. HANDLING AND STORAGE REQUIREMENTS

Handling: Toxic if swallowed. Avoid contact with eyes and skin and avoid 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 product gets inside. Then wash skin thoroughly using 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 main 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, galvanized iron 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 an isolate, dry, cool and well-ventilated area. Not to be stored next to foodstuffs and water supplies. Local regulations should be complied with.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Acceptable Daily Intake ADI: 0.004 mg/kg/day (paraquat ion) and 0.002 mg/kg (parquet dichloride).

Engineering Controls: It is essential to provide adequate ventilation. The measures appropriate for a particular work site depends 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 application regulations.

Personal Protective Equipment:

Clothing: Long-sleeved shirt, long pants, shoes plus socks, protective waterproof (impermeable) gloves. Employee must wear appropriate protective clothing and equipment to prevent prolonged skin contact with this product. Clothing soaked with product solution should be promptly removed and laundered before re-use.

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

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

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.

Other Protection: Do not eat, drink or smoke while handling this product. Prevent contamination of food, feeds, drinking water and eating utensils. After using this product wash hands and face before eating. Take extreme care to avoid drift. Wash accurately (preferably a shower) after a work shift. Wash hands during breaks and at the end of the work with soap and water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Clear, dark greenish brown liquid.

Odour: Strong pungent odour.

Flash Point: Charring at 300 °C.

Explosive Properties: Not explosive.

Solubility: Completely soluble in water.

Oxidising Properties: No oxidising properties.

Specific Gravity: 1.074 ±0.005 g/cm³ at 20 °C.

Boiling Point: 101 °C

Decomposition Temperature: 300 °C

10. STABILITY AND REACTIVITY

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

Conditions to Avoid: Corrosive to iron.

Incompatible Materials: Incompatible with strong bases, strong acids and oxidising agents.

Decomposition Products: Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen, oxides of nitrogen, hydrogen chloride gas, chlorides and water may form.

11. TOXICOLOGICAL INFORMATION

Acute toxicity based on the formulation (calculated) toxicity.

Acute Oral LD₅₀ (rat): 200 to 220 mg/kg body weight. Highly toxic by ingestion. Immediate effects depend on the dose of paraquat absorbed into the blood.

Acute Dermal LD₅₀ (rabbit): 230 to 250 mg/kg body weight.

Acute Inhalation LC₅₀ (rat, 4 hr): Highly toxic by inhalation. However, unlikely to be hazardous as paraquat is not volatile.

Skin Irritation (rabbit): Moderate irritant. Damaged skin will increase rate of absorption of paraquat.

Eye Irritation (rabbit): Serious irritation. The concentrate can lead to serious eye damage, may be delayed.

Skin Sensitization (guinea pig): May be a skin sensitizer.

Chronic Dietary Study: No data available.

Carcinogenicity: Evidence regarding carcinogenic effects of paraquat is inconclusive.

Mutagenicity: No data available.

Teratogenicity: Evidence suggests that paraquat does not cause birth defects at doses which might reasonably be encountered.

Reproductive Hazard: Paraquat is unlikely to cause reproductive effects in humans at expected exposure levels.

12. ECOLOGICAL INFORMATION

Aquatic Toxicity Fish LC₅₀ (96 hr): 32 mg/l (rainbow trout); 2.5 to 13 mg/l (brown trout). Moderately toxic to fish.

Aquatic Toxicity Daphnia EC₅₀ (48 hr): 6.1 mg/l

Aquatic Toxicity Algae EC₅₀ (5 days): At high levels, paraquat inhibits the photosynthesis of some algae.

Avian Toxicity LD₅₀ (9 days): 4 048 mg/kg (mallard duck); 970 mg/kg (Japanese quail). Practically non-toxic to birds.

Bee Toxicity LD₅₀: Non-toxic to bees.

Biodegradability: Paraquat is highly persistent in the soil environment, with reported half-lives of greater than 1 000 days. Ultraviolet light, sunlight and soil micro-organisms can degrade paraquat to products less toxic than parent compound. The strong affinity for adsorption by soil particles may limit the bioavailability of paraquat to plants, earthworms and micro-organisms. Paraquat dichloride decomposes when exposed to light after application to maize, tomato and bean plants. Small amounts to residues were found in potatoes however, no residue detected after boiling of potatoes.

Bio-accumulation: No data available.

Mobility: Paraquat is not significantly mobile in most soils. Paraquat will be bound to suspended or precipitated sediment in aquatic environment and may even be more persistent than on land due to limited availability of oxygen. Half-lives vary from 13 hours to 23 weeks.

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 re-used 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 tanks and allow to drain for at least 30 second 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. Dispose of containers as hazardous waste via a licensed disposal contractor to an approved landfill. Do not re-use the empty container for any other purposes.

14. TRANSPORT INFORMATION

UN N.: 3016

Hazard Class: 6.1

Packing Group: III

Proper Shipping Name: Bipyridilium Pesticide; Liquid; Toxic (contains Paraquat ion).

15. REGULATORY INFORMATION

Risk Phrases: R24/25- Toxic in contact with skin and if swallowed.

R36/37/38- Irritating to eyes, respiratory system and skin.

R41- Risk of serious damage to eyes.

Safety Phrases: S1/2- Keep locked up and out of reach of children.

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

S24/25- Avoid contact with skin and eyes.

S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.

S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

National Legislation: This product is registered under Act 36 of 1947 of the Republic of South Africa. It is a violation of South African law to use this product in any manner inconsistent with its approved labelling. Read and follow all label directions.

16. OTHER INFORMATION

Note: Read and understand all the information on the product label before using the product.

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 and 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.

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