SAFETY DATA SHEET

Enviro Paraquat

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Product Name: Enviro Paraquat
Other identifier: Paraquat 200 g/l SL
Pesticide Classification: Herbicide

Restrictions on use:
This remedy is restricted due to acute toxicity. this remedy may only be sold to and used by a registered pest control operator, or by someone under the supervision of a registered pest control operator, and only for those uses covered by the pest control operator's scope of registration, and only as directed on this label.

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

Registration Holder
Enviro Crop Protection (Pty) Ltd
Co. Reg. No.: CK2007/027855/07
44 Kerk Street, Lichtenburg
North West, South Africa 2740

Telephone: +27 12 006 0063
Fax: 086 541 7948
Website: www.envirobiochem.co.za

24 Hr Emergency Number: Spillage: 0861 000 366

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

2. HAZARD IDENTIFICATION

UN GHS, Regulation EC 1272/2008 [EU-GHS/CLP] EU & SANS 10234:2008		
Hazard classes	**Hazard categories**	**Hazard statements**
Acute Toxicity, Oral	Category 4	H302
Acute Toxicity, Dermal	Category 3	H311
Acute Toxicity, Inhalation	Category 2	H330
Skin Corrosion/Irritation	Category 2	H315
Serious Eye Damage/Irritation	Category 2	H319
Specific target organ toxicity – Single	Category 3	H336
Specific target organ toxicity – Repeated	Category 1	H372
Aquatic Toxicity Acute	Category 1	H400
Aquatic Toxicity Chronic	Category 1	H410

The most important adverse effects:
The most important adverse physiochemical effects: None Known.
The most important adverse human health effects: Fatal if inhaled. Harmful if swallowed. Causes serious eye and skin irritation. Causes damage to organs.

Label elements:

Signal word: Danger

Hazard statements:
H302: Harmful if swallowed.
H311: Toxic in contact with skin.
H330: Fatal if inhaled.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
H372: Causes damage to organs.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statements:
P260: Do not breathe dust/fume/gas/mist/ vapours/spray.
P264+P265: Wash hands thoroughly after handling. Do not touch eyes.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves.
P284: [In case of inadequate ventilation] wear respiratory protection.
P301+P317: IF SWALLOWED: Get medical help.
P302+P352: IF ON SKIN: Wash with plenty water.
P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P316: Get emergency medical help immediately.
P321: Specific treatment (see first aid instruction on this label)
P333 + P317: If skin irritation or rash occurs: Get medical help.
P337+P317: If eye irritation persists: Get medical help. If skin irritation or rash occurs: Get medical help.
P362+P364: Take off contaminated clothing and wash it before reuse.
P391: Collect spillage.
P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
P405: Store locked up.
P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances/ Mixture: Mixture

Composition:

Chemical Name	CAS	Conc. (m/m%)	Classification EC 1272/2008
Paraquat dichloride	1910-42-5	27.6	Acute Toxicity, Oral, Category 3, H301 Acute Toxicity, Dermal, Category 3, H311 Acute Toxicity, Inhalation, Category 2, H330 Skin Irritation, Category 2, H315 Serious Eye Damage/Irritation, Category 2, H319 Specific target organ toxicity – Single: Category 3, H336 Specific target organ toxicity – Repeated: Category 1, H372 Aquatic Toxicity, Acute, Category 1, H400

			Aquatic Toxicity, Chronic, Category 1, H410
Geronol MP900-W	85117-50-6 9016-45-9	<15	Acute Toxicity, Oral, Category 4, H302 Skin Irritation, Category 2, H315 Eye Irritation, Category 2, H319 Aquatic Toxicity, Acute: Category 3, H402 Aquatic Toxicity, Chronic, Category 2, H 411
Emetic PP796	27277-00-5	<0.1	Acute Toxicity, Oral, Category 3, H301 Acute Toxicity, dermal: Category 4, H311 Aquatic Toxicity, Acute: Category 3, H402 Aquatic Toxicity, Chronic, Category 3, H412
Emetic PP796	3844-45-9	<0.1	Acute Toxicity, oral: Category 4, H302 Acute Toxicity, dermal: Category 4, H312 Skin Irritation, Category 2, H315 Eye Irritation, Category 2, H319 Aquatic Toxicity, Chronic, Category 3, H412

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

4. FIRST AID MEASURES

Remove the victim from the area of exposure. Wash off remaining material with plenty of water. In the event of any complaints or symptoms, avoid further exposure and consult a doctor / poison control centre.

Inhalation: Remove person from contaminated area to fresh air and assist breathing as needed. Seek medical attention if irritation persists / person feels unwell. Seek medical attention if you feel unwell after inhalation.

Skin: Remove contaminated clothing and shoes. Gently wipe off excess chemical. Wash skin gently and thoroughly with water and non-abrasive soap. Obtain medical attention if irritation persists / person feels unwell.

Eyes: Flush eyes with clean water. Lift eyelids to facilitate irrigation. If present, remove contact lenses and continue rinsing. Seek medical attention if irritation persists.

Ingestion: Seek medical advice immediately. Rinse mouth thoroughly. If large amounts of herbicide have been ingested, and if the patient is fully alert, induce emesis with Syrup of Ipecac, followed by several glasses of water. Dosage for adults and children over 12 years: 30 ml; dosage for children under 12 years: 15 ml. When vomiting has stopped, give activated charcoal. If the amount of ingested herbicides was small, if effective emesis has already occurred, or if treatment is delayed, administer the activated charcoal and sorbitol by mouth. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt, or waistband. Get emergency medical help immediately.

Anticipated acute effects: Fatal if inhaled. Harmful if swallowed. Causes serious eye and skin irritation. Toxic in contact with skin. May cause drowsiness or dizziness.

Anticipated delayed effects: Causes damage to organs.

Most important symptoms/effects: None known.

Advice to physician: Treat symptomatically and supportively. No specific antidote known.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Use carbon dioxide, dry powder, or alcohol-resistant foam for small fires and water spray can be used for larger fires or cooling of unaffected stock but avoid the accumulation of polluted run-off from the site. Use as little water as possible.

Unsuitable Extinguishing Media: High volume water jet. Use a water jet only to cool heated containers.

Specific hazards: Fires generate poisonous and corrosive fumes containing carbon oxides, nitrogen oxides and hydrochloric acid. Fine dust dispersed in air (particularly in confined spaces) may ignite if exposed to high temperature ignition source. These conditions are unlikely to occur in normal, outdoor use of this product. Hazardous decomposition products in case of fire: Refer to Section 10: Stability and Reactivity.

Special Fire Fighting Procedures: Remove spectators from surrounding area. Isolate the fire area and evacuate all personnel downwind of the fire. Fight fire from maximum distance and use unmanned hose holder or monitor nozzles. Keep upwind. Avoid inhaling hazardous vapours and fumes from burning materials. Remove container from fire area if possible and without risk. Do not use high volume water jet, due to contamination risk. Do not scatter the burning material. Water can be used to cool unaffected containers but must be contained for later disposal. Contain fire control agents for later disposal. Avoid pollution of waterways by run-off from the site.

Personal protective equipment: Wear NIOSH/MSHA approved self-contained breathing apparatus and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions: Avoid contact with eyes and skin. Do not breathe in spray mist or dust. Ventilate area of spill, especially in contained areas.

Protective equipment: Fire fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear. Use an approved/certified respirator or equivalent Avoid contact with eyes and skin. Do not breathe in fumes. Refer to section 8 for recommended personal protective equipment. Evacuate unnecessary personnel.

Emergency procedures: Alert firefighting personnel, evacuate unprotected personnel and animals.

Environmental Precautions: Prevent spilled product from entering sewers, waterways or ground water. This product is classified as very toxic to aquatic organisms with long-term adverse effects in the aquatic environment. Any spillages or uncontrolled discharges into watercourses should be reported immediately to the police and the Department of Water/Environmental Affairs.

Methods and Materials for Containment: Contain spilled product by diking area with sand or earth. Absorb with materials such as sand, earth, vermiculite, or diatomaceous earth. Collect in suitable and properly labelled containers.

Methods and Materials for Clean-up: Contain spilled product by picking up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal. Do not create a powder cloud by using a brush or compressed air. Label containers with the contents and dispose of according to local regulations. Do not place spilled material back in original container. Do not re-use spilled material. To decontaminate the spill area, tools and equipment, wash with water and suitable detergent. Collect washings and add to the drums already collected. Do not flush spilled material or washings into drains or waterways. See section 13 for disposal considerations.

7. HANDLING AND STORAGE

Handling:

Precautions for safe handling: Avoid contact with skin, eyes, and clothing. Do not breathe dust or spray mist. Ensure adequate ventilation during handling and use. Do not handle broken packages without protective equipment. Immediately clean up spills that occur during handling. Keep containers closed when not in use. In the case of contact with the product refer to First Aid Measures – Section 4.

General occupational hygiene: Handle in accordance with good industrial hygiene and safety practice. Handle in accordance with good industrial hygiene and safety practice. Wash hands before eating, drinking, chewing gum, smoking, using the toilet or applying cosmetics. Worker should shower at the end of each workday. Wash all clothing before it is re-used.

Storage:

Conditions for safe storage: Keep under lock and key and out of reach of unauthorised persons, children and animals. Store in its original, labelled container, tightly closed, in an isolated, dry, cool and well- ventilated area. Avoid excess heat. Not to be stored next to foodstuffs, feed and water supplies. Avoid cross contamination with other pesticides and fertilisers.

Incompatible substances and mixtures: Refer to product label.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits:

No information available.

Engineering Controls: It is essential to provide adequate ventilation. The measures appropriate for a particular worksite depend on how this material is used and on the extent of exposure. Local Exhaust: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OELs or other specified exposure limits. Local exhaust ventilation is preferred. Ensure that control systems are properly designed and maintained. Comply with occupational safety, environmental, fire, and other applicable regulations.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Regular cleaning of equipment, work area and clothing. Keep working clothes separately. Contaminated work clothing should not be allowed out of the workplace. Wash hands and face before breaks and immediately after handling the product. When using do not eat, drink, or smoke. Keep away from food, drink, and animal feed. Remove and wash all contaminated protective equipment before re-use. Remove clothing/PPE immediately if material gets inside. Wash thoroughly and put on clean clothing. Dispose of rinse water in accordance with local and national legislation.

Personal Protective Equipment:

Respiratory Protection: For most well-ventilated conditions, no respiratory protection should be needed. If used in a poorly ventilated area (airborne concentrations exceed exposure limits), use a NIOSH approved air-purifying respirator.

Hand Protection: The use of chemically protective gloves is recommended to prevent against skin contact. Examples of preferred glove barrier materials include Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, Polyvinyl alcohol, Polyvinyl chloride.

Eye Protection: The use of chemical safety goggles is recommended to prevent against eye contact. Contact lenses are not protective eye devices.

Skin and Body Protection: Employee must wear appropriate protective clothing; boots, hat and equipment to prevent repeated or prolonged skin contact with this substance.

Emergency eyewash: 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.

Environmental exposure controls: Prevent product from entry into sewers and water courses.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid
Colour	Strong; pungent; obnoxious
Odour	No data available
Odour threshold	No data available
pH	4.0-7.0
Melting point / freezing point (° C)	No data available
Boiling point (° C)	No data available
Flash point (° C)	No data available
Evaporation rate	No data available
Flammability	Non flammable
Upper /lower flammability limits	No data available
Vapour pressure	No data available
Vapour density	No data available
Relative density (25°C)	1.08 g/L
Water solubility (g/l) at 20°C	No data available
Partition coefficient: n-octanol/water partition coefficient	No data available
Auto-ignition temperature (° C)	No data available
Decomposition temperature (° C)	No data available
Viscosity, dynamic (mPa s)	No data available

Explosive properties	No data available
Oxidising properties	No data available

10. STABILITY AND REACTIVITY

Chemical Stability: The product is stable for two years at ambient temperature and pressure, under normal storage and handling conditions. Avoid storage under extreme temperatures and conditions. Store below 50 °Preferably below 30 °C, and not for prolonged periods in direct sunlight.

Reactivity: No dangerous reaction known under conditions of normal use.

Possibility of Hazardous Reactions: No dangerous reaction known under conditions of normal use.

Conditions to Avoid: Stable in acidic and neutral solution. Decomposed by alkali and in the presence of U.V. light. Compound inactivated by adsorption onto inert clay.

Incompatible Materials: The product is incompatible with strong oxidising agents.

Hazardous Decomposition Products: Combustion products of dry material: Carbon dioxide, carbon monoxide, chlorine, hydrogen chloride; possible trace amounts of phosgene, nitrogen oxides, ammonia and other toxic and noxious fumes.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Calculated according to GHS:

Acute Oral LD_{50} (rat): 332.8 mg/kg

Acute Dermal LD_{50} (rat): 956 mg/kg

Acute Inhalation LC_{50} (rat, 4 hr): 0.16 mg/ℓ air.

Skin Irritation: Causes skin irritation.

Eye Damage/Irritation: Causes serious eye irritation.

Skin Sensitization: Not classified.

Respiratory Sensitization: Not classified.

Reproductive cell mutagenicity: Not classified.

Carcinogenicity: Not classified.

Reproductive toxicity: Not classified.

Specific target organ toxicity – single exposure: May cause drowsiness or dizziness.

Specific target organ toxicity – repeated exposure: Causes damage to organs.

Aspiration hazard: Not classified.

Chronic Effects (other targets e.g. developmental): Not classified

12. ECOLOGICAL INFORMATION

The product is classified as a marine pollutant.

ECOTOXICITY DATA:

Active ingredient: Paraquat CAS No. 1910-42-5

Fish

LC_{50} (96 hr)	18.6 mg paraquat ion/ℓ (rainbow trout)

Daphnia

EC_{50} (48 hr)	4.4 mg paraquat ion/ ℓ

Algae

E_bC_{50} (96h)	0.075 mg paraquat ion/ ℓ (green algae)

Birds

Acute oral LD_{50}	127 mg paraquat ion/ kg (bobwhite quail); 54 mg paraquat ion/ kg (mallard ducks)
Dietary LC_{50} 8 days	711 mg paraquat ion/ kg (bobwhite quail); 2932 mg paraquat ion/ kg (mallard ducks)

Bees

Toxicity to bees LD_{50} (oral)	No information available.
Toxicity to bees LD_{50} (contact)	No information available.

Worms

LC_{50} (14d)	>1000 mg paraquat ion/ kg soil (Earthworms)

Biodegradability: Paraquat exhibits a dual degradation profile depending on its interaction with soil particles. Once adsorbed to soil or sediment, it becomes strongly bound and is extremely persistent, with reported DT_{50} values ranging from 7 to 20 years. In contrast, when unadsorbed, paraquat is readily degraded by soil microorganisms, with a DT_{50} of less than one week. This suggests that while the free form is biologically degradable, adsorption significantly reduces its availability for microbial breakdown, leading to long-term environmental persistence in soils.

Bioaccumulation: Paraquat has a very low potential for bioaccumulation, as indicated by its Log Kow of –4.5, reflecting strong water solubility and virtually no affinity for lipid-rich tissues.

Mobility: The compound demonstrates extremely low mobility in soil, due to its very high Koc values ranging from 8,000 to 40,000,000 ml/g. This indicates rapid and irreversible adsorption to soil particles, effectively immobilizing the molecule and preventing leaching into groundwater. As a result, paraquat is considered non-mobile under typical environmental conditions, with a negligible risk of groundwater contamination.

Additional information: Avoid release to the environment.

13. DISPOSAL CONSIDERATION

Pesticide Disposal: Open dumping or burning of this pesticide is prohibited. Waste resulting from the use of this product cannot be reused or re-processed. Never pour untreated waste or surplus product into public sewers or where there is any danger of run-off or seepage into water systems. Do not contaminate rivers, dams or any other water sources with the product or used containers. Comply with local legislation applying to waste disposal. The product may be taken to a registered waste disposal site or incineration plant.

Package Product Wastes: Emptied containers retain vapour and product residues. Observe all labelled safeguards until container is cleaned, reconditioned or destroyed. Thereafter, rinse the container three times with a volume of water equal to a minimum of one third of that of the container. Puncture the triple rinsed container and dispose of via an approved collector or recycler (www.croplife.co.za). Do not bury, burn or donate the container to any other parties that may use it as a container for food or beverages.

Ecology - waste materials: Avoid release to the environment.

14. TRANSPORT INFORMATION

UN Number	3082

Road Transport ADR/IRD:

Class:	9
Packaging group:	III
UN proper Shipping Name:	Environmentally Hazardous, Liquid, N.O.S (Paraquat 200 g/l).

Maritime Transport IMDG/IMO:

Class:	9
Packaging group:	III
UN proper Shipping Name:	Environmentally Hazardous, Liquid, N.O.S (Paraquat 200 g/l).

Marine Pollutant (Y/N): Yes

Air Transport IATA/ICAO:

Class:	9
Packaging group:	III
UN proper Shipping Name:	Environmentally Hazardous, Liquid, N.O.S (Paraquat 200 g/l).

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation for the mixture:

Relevant information regarding authorization: Occupational Health and Safety Act 1993. Regulation for Hazardous Chemical Agents, 2021. UN Recommendations on the Transport of Dangerous Goods Model Regulations Rev. 21 (2019), Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Rev 8, 2019.

Relevant information regarding restrictions: None.

EU regulation: Regulation EC1272/2008 (EU-GHS/CLP)

Other national regulations: National Road Traffic Act, 1996 (ACT NO. 93 of 1996). SANS 10228:2012- The identification and classification of dangerous goods for transport by road and rail modes. National Environmental Management Waste Act 59 of 2008.Act 36 of 1947 of the Republic of South Africa. This product is registered under 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

Chemical Safety Assessment carried out? No

16. OTHER INFORMATION

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

Other hazard statements, abbreviations and explanations:
H302: Harmful if swallowed.
H311: Toxic in contact with skin.
H330: Fatal if inhaled.
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H336: May cause drowsiness or dizziness.
H372: Causes damage to organs.
H400: Very toxic to aquatic life.
H410: Very toxic to aquatic life with long lasting effects.

IATA: International Air Transport Association.
IBC: International Bulk Chemical.
ICAO: International Civil Aviation Organization.
IMDG: International Maritime Dangerous Goods
IMO: International Maritime Organization.
LD50 value: The median lethal dose or the amount of a toxic agent that is sufficient to kill 50 percent of a population within a certain period of time.
OEL/RL: Occupational exposure limit-recommended limit.
TWA: Time-weighted average – The average exposure over a specified period, usually a nominal eight hours.
ST/STEL: Short-term exposure limits.

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.

END OF DOCUMENT

Compiled: /
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For detailed information on revisions, contact the registration holder.