

MATERIAL SAFETY DATA SHEET

Spectra Pacific (Australia) Pty Ltd

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SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **Spectra Paraquat 250 Herbicide**

Full Product Name: Spectra Paraquat 250 Herbicide
Other Names: Paraquat dichloride.
Use: A liquid 'knockdown' herbicide.
Company: Spectra Pacific (Australia) Pty Ltd
Address: 1/14 Palmer Place, Murarrie Qld 4172
ACN/ABN: 089 133 095
Telephone Number: 07 3907 0744 **Fax Number:** 07 3890 4663
Emergency Contact : 1800 033 111

SECTION 2 HAZARDS IDENTIFICATION

Classified as hazardous according to criteria of ASCC.
Classified as a Dangerous Good according to the ADG Code

Risk Phrases: R24/25 Toxic in contact with skin and if swallowed.
R26 Very toxic by inhalation.
R36/37/38 Irritating to eyes, respiratory system and skin.
R48/25 Toxic: danger of serious damage to health by prolonged exposure if swallowed.

Safety Phrases: S1/2 Keep locked-up and out of the reach of children.
S13 Keep away from food, drink and animal feeding stuffs.
S20/2 1 When using, do not eat, drink or smoke.
S23 Do not breathe spray.
S35 This material and its container must be disposed of in a safe way.
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 label where possible).

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients:

CHEMICAL	CAS NUMBER	PROPORTION
Paraquat (present as the dichloride salt)	1910-42-5	250 g/L
Dye	-	<1% w/w
Odouriser (stenching agent)	-	< 1% w/w
Other ingredients (including water) determined not to be hazardous		1 - 10%

SECTION 4 FIRST AID MEASURES

FIRST AID

RAPID TREATMENT IS ESSENTIAL. OBTAIN IMMEDIATE MEDICAL ATTENTION.

- Ingestion:** Go to a doctor or hospital IMMEDIATELY. If possible phone ahead to alert to the situation so treatment is not delayed on arrival. If more than 15 minutes from a hospital induce vomiting, if this has not already occurred, by tickling back of throat with a clean, blunt instrument (eg spoon handle). DO NOT delay the start of treatment.
- Eye contact:** Immediately hold eyes open and flood with copious quantities of clean water for at least 20 minutes. Eyelids to be held open. Remove clothing if contaminated and wash skin. Urgently seek medical assistance. Transport to hospital or medical centre. If splashed with the concentrate, patients should be reviewed after 24 hours. Referral to an ophthalmologist should be considered.
- Skin contact:** Immediately take off all contaminated clothing. Wash skin immediately with water followed by soap and water. If skin is damaged, the paraquat can be absorbed through the skin. Seek medical advice. Contaminated clothing should be laundered before reuse.
- Inhalation:** Remove from exposure. If vapour has been inhaled, lie patient down comfortably and keep warm. Monitor closely and seek medical attention if effects persist. (Vapour consists of stanching agent rather than paraquat). If spray mist has been inhaled, immediately seek medical attention. Monitor patient closely and apply resuscitation or oxygen if available. (Spray mist contains paraquat).

Advice to Doctor: Rapid treatment is essential. Refer to "Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment" (2003 or later edition) - available at most major treatment hospitals and Poisons Information Centres.

Treatment: 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 or via gastric tube, together with a suitable purgative (200 mL of an aqueous solution of mannitol). Repeat administration of absorbent plus purgative until absorbent is seen in stools. This should normally take between 4 and 6 hours after the start of treatment.

Do not use supplemental oxygen.

With the possibility of late onset conjunctival ulceration it is advised that patients with paraquat eye injuries are reviewed the day after first presentation. At the review, consideration should be given to treating the eyes with a local antibiotic preparation to prevent secondary infection. Local treatment with a suitable steroid will aid resolution of granulation tissue. Corneal oedema, which may persist for up to 3 - 4 weeks, may cause blurring of vision.

SECTION 5 FIRE FIGHTING MEASURES

Extinguishing media: Not combustible. Extinguish fire using carbon dioxide, foam or dry agent. If not available, use waterfog or fine water spray but ensure all runoff is contained. Contain all runoff.

Hazards from combustion products: Not combustible as formulated, but residue left after evaporation of water may burn. Fumes are toxic. Firefighters to wear self-contained breathing apparatus and suitable protective clothing if risk to of exposure to vapour or smoke.

Precautions for fire-fighters and special protective equipment: Isolate fire area. Evacuate downwind residents. Wear full protective clothing and self contained breathing apparatus. Do not breathe smoke or vapours generated.

SECTION 6 ACCIDENTIAL RELEASE MEASURES

Emergency procedures / Material and methods for containment and cleanup procedures:

In case of spillage it is important to take all steps necessary to:

- Avoid eye and skin contact.
- Avoid contamination of waterways and drains.

Keep all bystanders away. Wear full length clothing and PVC gloves to prevent skin and eye contamination. Re-position any leaking containers so as to minimise further leakage.

SECTION 6 ACCIDENTIAL RELEASE MEASURES (Continued)

Wear protective equipment to prevent skin and eye contamination. In the case of spillage, contain and absorb spilled material with absorbent material such as sand, clay or cat litter and dispose of waste as indicated below or according to the Australian Standard 2507 - Storage and Handling of Pesticides. Wear prescribed protective clothing and equipment. Keep out animals and unprotected persons.

SECTION 7 HANDLING AND STORAGE

Precautions for Safe Handling: No smoking, eating or drinking should be allowed where material is used or stored. When opening the container, preparing the spray and using the prepared spray wear elbow length PVC gloves, and face shield or goggles. After handling and before eating, drinking or smoking wash hands, arms and face thoroughly with soap and water.

Conditions for Safe Storage: KEEP OUT OF REACH OF CHILDREN. This product is a Schedule 7 Poison (S7) and must be stored, transported and sold in accordance with the relevant Health Department regulations. This product is classified as a Dangerous Good.

Store in the closed, original container in a well ventilated locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. Do not store for prolonged periods in direct sunlight.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines:

Exposure standards are as follows:

Chemical	TWA ^a ppm	TWA ^a ppm	Comments
Paraquat (respirable sizes)	-	0.1	-
Emetic	-	0.02	-
Pyridine base	1	5	Can be absorbed by skin

a = TWA - Time-weight Average

Biological Limit Values:

No biological limit allocated.

Engineering controls:

Use in ventilated areas adequate to keep exposure below the TWA. Keep containers closed when not in use.

Personal Protective equipment (PPE):

Manufacture, Packaging and Transport: Avoid skin and eye contact and the inhalation of vapour and mist. Wear overalls, face shield, elbow-length impervious gloves, splash apron and rubber boots. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

If inhalation risk of vapour or spray exists wear organic vapour respirator meeting the requirements of AS/NZ 1715 and AS/NZ 1716.

Preparation and Use of Product: Avoid contact with eyes, skin and clothing. When opening the container and preparing product for use wear elbow-length PVC gloves and face shield or goggles. Do not work in spray mist. When there is a risk of exposure to spray mist wear a face mask or respirator covering nose and mouth and capable of filtering spray droplets. A high efficiency type particulate respirator is recommended, but in any event use a respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash contaminated clothing, gloves and face shield or goggles. Avoid contacting vegetation wet with spray, but if necessary to do so, wear waterproof footwear and waterproof protective clothing and gloves.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark blue liquid.
Odour:	Offensive odour (warning stench - pyridine).
Boiling point:	No data available.
Freezing point:	No data available.
Specific Gravity:	1.1 at 20°C.
Solubility in Water:	Soluble in water.
pH:	Slightly acidic.
Flammability:	Not flammable.
Corrosive hazard:	Not corrosive.
Flashpoint (°C) :	Not flammable.
Poisons Schedule:	S7.
UN Number:	3016.
Proper Shipping Name:	PESTICIDE, BIPYRIDIUM LIQUID, TOXIC, contains paraquat.
Dangerous Goods Class:	6.
Packaging Group:	III.
Hazchem:	2X.

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: Product is considered stable in ambient conditions for a period of at least 2 years after manufacture.

Conditions to avoid: Do not store for prolonged periods in direct sunlight.

Incompatible materials: Metal containers especially zinc, aluminium.

Hazardous decomposition products: Should not decompose unless heated further after reaching complete dryness. May then produce carbon monoxide, nitrogen oxides, hydrogen cyanide and/or hydrogen chloride.

Hazardous reactions: No particular reactions to avoid.

SECTION 11 TOXICOLOGICAL INFORMATION

No specific data is available for this product as no toxicity tests have been conducted on this product. Information presented is our best judgement based on similar products and/or individual components. As with all products for which limited data is available, caution must be exercised through the use of protective equipment and handling procedures to minimise exposure.

Potential Health Effects:

ACUTE EFFECTS

Swallowed: CAN KILL IF INGESTED. LD₅₀ (paraquat) 150 mg/kg (rat), ~ 30 mg/kg man. About 10 mL of product may be lethal. Kidney and liver damage may occur after 2-3 days. Lung fibrosis after 1-3 weeks may cause death. Higher doses may cause multi-organ failure and death within 2-3 days.

The immediate effects of poisoning depend on the dose of paraquat absorbed into the blood. Mild poisoning occurs at < 20 mg paraquat ion/kg body weight and the effects are vomiting and diarrhoea. Moderate to severe poisoning occurs at 20 - 30 mg paraquat ion/kg body weight and the effects are vomiting, abdominal discomfort, soreness and inflammation of the mouth, throat and oesophagus, difficulty in swallowing and, later, diarrhoea. Ulceration of the lips, mouth, throat and intestine may follow within 24 - 48 hours. Kidney and liver damage may appear 1 - 3 days after exposure. Can cause death by a delayed proliferating fibrosis of the lung within 1 - 3 weeks.

Lethal poisoning occurs at > 30 mg paraquat ion/kg body weight and the effects are nausea and vomiting, and can cause death by multi-organ failure and circulatory collapse within 48 hours.

SECTION 11 TOXICOLOGICAL INFORMATION (Continued)

- Eye:** Eye irritation may be delayed. May lead to ulceration of corneal and conjunctival epithelium giving rise to secondary infection. Loss of corneal and conjunctival epithelium and even mild iritis can occur with the risk of secondary infection and consequent residual corneal scarring. Corneal oedema may persist for up to 3-4 weeks with blurring of vision.
- Skin:** Contact with skin will result in moderate irritation. Can cause inflammation and in severe cases blistering of the skin. Contamination of the nails may cause white spots or in severe cases cracking and loss of the nail. Normal growth follows without delay. Intact skin is a very effective barrier to paraquat. Broken skin removes the barrier and paraquat may be absorbed with effects as outlined above under "Swallowed". Modelling predicted for intact human skin and diluted solutions that systemic toxicity would be unlikely, but the risk increased significantly with damaged skin or concentrated solutions. LD₅₀ (rat) > 2000 mg/kg (paraquat dichloride).
- Inhaled:** Highly toxic if inhaled. However, unlikely to be hazardous by inhalation because of low vapour pressure of the material at ambient temperature. Nose bleeding and soreness of the throat may result from spray mist or dust trapped on the nasal mucosa. Irritating to the respiratory system. Pulmonary oedema may occur up to 48 hours after exposure and could prove fatal.
- This product contains a stenching agent to give an offensive smell. This has been done to reduce the likelihood of accidental ingestion. This stenching agent may cause headaches and nausea in some people when inhaled. The presence of this offensive smell in the air does not necessarily indicate the presence of paraquat.
- LC₅₀ = 0.5 - 1.5 µg/L/4hrs (paraquat dichloride).

Long Term Exposure:

Studies in animals have shown that repeated doses of paraquat do not produce carcinogenic nor teratogenic effects or adverse reproductive effects. The dietary no effect level in the rat was 25 ppm of paraquat over 2 years. The AOI (Acceptable Daily Intake) for humans (paraquat cation) is 0.004 mg/kg/day.

SECTION 12 ECOLOGICAL INFORMATION

Environmental Toxicology: No data is available on this product. The active ingredient, paraquat is toxic to aquatic organisms. 96hr LC₅₀ (rainbow trout) is 55 mg/L (static). The 96 hr LC₅₀ (brown trout) is 2.5 - 13 mg/L. LC₅₀ 72 hours for green algae is 0.34 mg/L. Paraquat is highly toxic to birds. The oral LD₅₀ for hens is 262 - 380 mg/kg.

Environmental Fate: Paraquat is rapidly absorbed and deactivated by soil. There is no mobility in soil or ground water. There is evidence of photodegradation in water and plants.

SECTION 13 DISPOSAL CONSIDERATIONS

Spills and Disposal: Persons involved in cleanup require adequate eye and skin protection - see section 8. In case of spillage, contain and absorb spilled material with absorbent material such as clay, sand or cat litter and dispose of waste as indicated below or in accordance to the Australian Standard 2507- Storage and Handling of Pesticides. Keep out animals and unprotected persons. Keep material out of streams and sewers. Vacuum, shovel or pump waste into an approved drum. To decontaminate spill area, tools and equipment, wash with detergent and water and add the solution to the drums of wastes already collected and label contents. Dispose of drummed wastes, including decontamination solution in accordance with the requirements of Local or State Waste Management Authorities.

Disposal of empty containers: Triple or preferably pressure rinse containers before disposal. Add rinsings to spray tank. Do not dispose of undiluted chemicals on-site. If recycling, replace cap and return clean containers to recycler or designated collection point. If not recycling, break, crush, or puncture and bury empty containers in a local authority landfill. If no landfill is available, bury the containers below 500 mm in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.

SECTION 14 TRANSPORT INFORMATION

Road & Rail Transport: This product is classified as a Dangerous Goods under the Australian Code for the Transport of Dangerous Goods by Road and Rail. UN 3016, Class 6, Packing Group III, Proper Shipping Name BIPYRIDILIUM PESTICIDES LIQUID, TOXIC, N.O.S. (contains paraquat). Hazchem 2X. This product is a Schedule 7 Poison (S7) and must be stored, transported and sold in accordance with the relevant Health Department regulations.

SECTION 15 REGULATORY INFORMATION

Under the Standard for Uniform Scheduling of Drugs and Poisons (SUSDP), this product is a schedule 7 poison.

This product is registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 63521.

This product is classified as a Hazardous Substance under the criteria of NOHSC Australia. T: Toxic, Xi: Irritant.

This product is classified as a Dangerous Good according to the ADG Code (7th Ed).

SECTION 16 OTHER INFORMATION

Issue Date: 5 February 2009. (First issue).

Key to abbreviations and acronyms used in this MSDS:

ADG Code	Australian Dangerous Goods Code (for the transport of dangerous goods by Road and Rail).
ASCC	Australian Safety & Compensation Council (formally known as the National Occupational Health & Safety Commission (NOHSC)).
Carcinogen	An agent which is responsible for the formation of a cancer.
Genotoxic	Capable of causing damage to genetic material, such as DNA.
NOHSC	National Occupational Health and Safety Commission.
PPE	Personal protective equipment.
Teratogen	An agent capable of causing abnormalities in a developing foetus.
TWA	The Time Weighted Average airborne concentration over an eight-hour working day, for a five day working week over an entire working life.

References

1. "Search Hazardous Substances". Australian Safety and Compensation Council website. (2009).
2. "Approved Criteria for Classifying Hazardous Substances" 3rd Ed. NOHSC Australia. [NOHSC:1008 (2004)]. October 2004.

This MSDS summarises 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 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 this company.

End MSDS