

# MATERIAL SAFETY DATA SHEET



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**Emergency Contact:**  
**1800 033 111**

## SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

**Product Name: eChem Paraquat 250 herbicide**

**Full Product Name:** eChem Paraquat 250 Herbicide.  
**Other Names:** Paraquat dichloride. Group L Herbicide.  
**Use:** A liquid agricultural 'knockdown' herbicide.  
**Company:** eChem (Australia) Pty Ltd  
**Address:** Level 4, Lantos Place, 80 Stamford Rd, Indooroopilly, Qld, 4068.  
**ACN/ABN:** 089 133 095  
**Telephone Number:** 1300 781 649 **Fax Number:** 1300 781 650  
**Emergency Contact :** 1800 033 111

## SECTION 2 HAZARDS IDENTIFICATION

**Classified as hazardous according to criteria of Safe Work Australia.  
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 of if you feel unwell, seek medical advice immediately (show label where possible).

## SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

**Ingredients:**

<b>CHEMICAL</b>	<b>CAS NUMBER</b>	<b>PROPORTION</b>
Paraquat	1910-42-5	250 g/L
Odouriser (stencing agent)	-	< 1%
Other ingredients (including water) determined not to be hazardous		Balance

**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 must wear full protective equipment and self-contained breathing apparatus 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 and avoid contamination of waterways and drains.

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

**SECTION 6 ACCIDENTAL RELEASE MEASURES (Continued)**

Wear protective equipment to prevent skin/eye contamination. In the case of spillage, contain and absorb spilled material with absorbent material such as sand, clay, cat litter or material such as vermiculite. Vacuum, shovel or pump spilled material into an approved container and dispose of waste as indicated in section 13 or according to the Australian Standard 2507 - Storage and Handling of Pesticides and in compliance with relevant Local, State or Territory government regulations. Keep out animals and unprotected persons.

**SECTION 7 HANDLING AND STORAGE**

**Precautions for Safe Handling:** Very dangerous, particularly the concentrate. Product is poisonous if swallowed. Will irritate the nose, throat and skin. Attacks the eyes, protect the eyes while using. 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. If product on skin, immediately wash area with soap and water. If clothing becomes contaminated with product remove clothing immediately. If product in eyes, wash it out immediately with water. Avoid contact with spray mist. DO NOT inhale spray mist. After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and water. After each day's use, wash gloves and face shield or goggles and contaminated clothing

**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 dry, cool, well-ventilated locked room or place away from children, animals, food, feedstuffs, seed and fertilisers. DO NOT store for prolonged periods in direct sunlight. DO NOT repack or use container for any other purpose. No smoking, eating or drinking should be allowed where material is used or stored.

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION****Exposure Guidelines:**

The following Exposure guideline has been established for this product by Safe Work Australia.

Atmospheric Contaminant	Exposure Standard (TWA)	STEL (mg/m <sup>3</sup> )
Paraquat dichloride (respirable sizes)	0.1 mg/m <sup>3</sup>	Not set

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. Some people who are extremely sensitive to the product may develop nose bleeds when handling the concentrate. If possible, these people should not handle the material; if they must, provide effective local ventilation.

**Personal Protective equipment (PPE):**

When opening the container and preparing product for use wear elbow length PVC gloves and face shield or goggles. When there is a risk of exposure to spray mist wear waterproof footwear and waterproof protective clothing, impervious gauntlet length gloves (rubber or PVC), goggles and a face mask and 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 which complies with the requirements of AS1716 (Standard Association of Australia). Further advice on safety equipment should be obtained from a safety equipment manufacturer.

After use and before eating, drinking or smoking wash hands, arms and face thoroughly with soap and water. After each day's use wash gloves, goggles, contaminated clothing and respirator.

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance:** Clear blue coloured liquid.  
**Odour:** Obnoxious odour.  
**Boiling point:** No specific data (~ 100°C).

**SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES (Continued)**

<b>Freezing point:</b>	No data available.
<b>Specific Gravity:</b>	Approximately 1.1 at 20°C.
<b>Solubility in Water:</b>	Soluble in water.
<b>pH:</b>	slightly acidic.
<b>Flammability:</b>	Not flammable.
<b>Flash Point:</b>	Not applicable – not flammable.
<b>Vapour pressure:</b>	No data.
<b>Corrosive hazard:</b>	Paraquat is highly corrosive to most metals eg. Aluminium, zinc, iron..
<b>Explosive properties:</b>	Not explosive.
<b>Oxidizing properties:</b>	Not an oxidiser.
<b>Poison Schedule:</b>	S7

**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:** Paraquat is highly corrosive to most metals eg. Aluminium, zinc, iron.

**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:** Keep away from strong oxidizing agents. Polymerisation is unlikely.

**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. Acute LD<sub>50</sub> (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.

**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.

**SECTION 11 TOXICOLOGICAL INFORMATION (Continued)**

**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. LD<sub>50</sub> (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.

LC<sub>50</sub> = 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 LC<sub>50</sub> (rainbow trout) is 55 mg/L (static). The 96 hr LC<sub>50</sub> (brown trout) is 2.5 - 13 mg/L. LC<sub>50</sub> 72 hours for green algae is 0.34 mg/L. Paraquat is highly toxic to birds. The oral LD<sub>50</sub> for hens is 262 - 380 mg/kg; Mallard duck LD<sub>50</sub> = 199 mg/kg; Bobwhite quail LD<sub>50</sub> = 175 mg/kg. Not toxic to bees. LD<sub>50</sub> = 36 µg/bee.

**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.

Keep domestic pets and poultry away from treated areas. This formulation should not be applied on or near water which is used for livestock watering. Do not contaminate dams, waterways or sewers with this product or the containers which have held this product.

**SECTION 13 DISPOSAL CONSIDERATIONS**

**Spills and Disposal:** Persons involved in cleanup require complete 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 an approved waste management facility is not available bury the empty packaging 500 mm below the surface in a disposal pit specifically marked and set up for this purpose clear of waterways, desirable vegetation and tree roots, in compliance with relevant Local, State or Territory government regulations.

**SECTION 13 DISPOSAL CONSIDERATIONS (Continued)**

DO NOT burn empty containers or product.

**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 BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC. Packaging Group III. Class 6.1. Hazchem 2XE. Hazard Identification number (HIN) 60.

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 Medicines and Poisons (SUSMP), this product is a schedule 7 poison.

This product is registered under the Agricultural and Veterinary Chemicals Code Act 1994. Product Registration No. 66548.

This product is classified as a Hazardous Substance under the criteria of Safe Work Australia. T<sup>+</sup>: Very Toxic.

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

*Requirements concerning special training:*

Check State or Territory regulations that require people who use pesticides in their job or business to have training in the application of the materials.

**SECTION 16 OTHER INFORMATION**

Issue Date: 26 November 2013. Valid for 5 years (Revised with new address and correct an error).

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).

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.

STEL: Short Term Exposure Limits.

TWA: The Time Weighted Average airborne concentration over an eight-hour working day, for a five day working week over an entire working life.

Safe Work Australia: Formally known as Australian Safety & Compensation Council (ASCC) which was formally known as the National Occupational Health & Safety Commission (NOHSC)).

References

1. "Search Hazardous Substances". HSIS Safe Work Australia website. (2013).
2. "Approved Criteria for Classifying Hazardous Substances" 3<sup>rd</sup> 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*