

# Material Safety Data Sheet

## SECTION 1: IDENTIFICATION OF THE CHEMICAL PRODUCT

**Product Name:** QUASH DUO 250 HERBICIDE

**Product Type:** Group L Herbicide/ Active ingredients are bipyridylium derivatives.

**Product Use:** For the control of a wide range of grasses and broadleaf weeds.

## SECTION 2 : HAZARD IDENTIFICATION

### Statement of Hazardous Nature:

This product is classified as: Hazardous according to the criteria of NOHSC Australia.

**Dangerous Good according to the Australian Dangerous Goods (ADG) Code.**

**Risk Phrases:** R41, R43, R23/24/25, R37/38, R48/25, R50/53. Risk of serious damage to eyes. May cause sensitisation by skin contact. Toxic by inhalation, in contact with skin, and if swallowed. Irritating to respiratory system and skin. Toxic: danger of serious damage to health by prolonged exposure if swallowed. Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

**Safety Phrases:** S20, S23, S28, S38, S45, S60, S61, S1/2, S24/25, S36/37/39. When using, do not eat or drink. Do not breathe vapour or spray mist. After contact with skin, wash immediately with plenty of soap and water. In case of insufficient ventilation, wear suitable respiratory equipment. In case of accident or if you feel unwell, contact a doctor or Poisons Information Centre immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/Safety Data Sheets. Keep locked up and out of reach of children. Avoid contact with skin and eyes. Wear suitable protective clothing, gloves and eye/face protection.

**ADG Classification:** Class 6.1 (BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC)

**SUSDP Classification:** S7

**UN Number:** 3016

## SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS	Proportion (%)
Paraquat dichloride	1910-42-5	135g/L
Diquat dibromide	85-00-7	115g/L
Other non-hazardous ingredients	-	5-10
Water	7732-18-5	to 100%

**Product name:** Quash Duo 250 Herbicide

**Issued:** June 2011; Revision June 2016

**Poisons Information Centre: 13 1126 from anywhere in Australia**

## SECTION 4: FIRST AID MEASURES

Call The Poisons Information Centre if you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

**Inhalation:** If inhalation occurs, contact a Poisons Information Centre. Urgent hospital treatment is likely to be needed. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

**Skin Contact:** Flush contaminated area with lukewarm, gently flowing water for at least 20-30 minutes, by the clock. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting (show paramedics this MSDS and take their advice). Under running water, remove contaminated clothing, shoes and leather goods (eg watchbands and belts). If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately.

**Eye Contact:** Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 20 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. Obtain medical attention immediately. Take special care if exposed person is wearing contact lenses.

**Ingestion:** If swallowed, do NOT induce vomiting; rinse mouth thoroughly with water and contact a Poisons Information Centre, or call a doctor at once. Give activated charcoal if instructed.

**Advice to Doctor:** Rapid treatment for Paraquat poisoning is essential. Evacuation of the stomach and stomach washout should be carried out as quickly as possible. A booklet entitled 'Paraquat Poisoning, a practical guide to diagnosis, first aid and hospital treatment' (prepared by Syngenta) or 'The Treatment of Paraquat Poisoning: a guide for doctors' (prepared by ORICA Australia) is available at major hospitals or Poisons Information Centres, or contact the emergency number at the end of this MSDS which can supply or email or fax immediately.

**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 (200ml of an aqueous solution of mannitol). A 7% suspension of bentonite in 10% glycerol in water should be used if Fuller's Earth is unavailable. Repeat administration of absorbent plus purgative until absorbent is seen in the stools. This should normally take between 4 and 6 hours after the start of treatment.

Do not use supplemental oxygen.

## SECTION 5: FIRE FIGHTING MEASURES

**Fire and Explosion Hazards:** There is no risk of an explosion from this product under normal circumstances if it is involved in a fire.

This product is likely to decompose only after heating to dryness, followed by further strong heating. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

**Fire Fighting:** When fighting fires involving significant quantities of this product, no special equipment is believed to be necessary.

**Extinguishing Media:** Not Combustible. Use extinguishing media suited to burning materials. Water fog or fine spray is the preferred medium for large fires. Ensure that no spillage enters drains or water courses.

**Flash point:** Does not burn.  
**Upper Flammability Limit:** Does not burn.  
**Lower Flammability Limit:** Does not burn.  
**Autoignition temperature:** Not applicable - does not burn.  
**Flammability Class:** Does not burn.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Wear full protective chemically resistant clothing including eye/face protection, gauntlets and self contained breathing apparatus. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include rubber, PVC. Eye/face protective equipment should include a full face shield. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. It should be fitted with a type G cartridge, suitable for agricultural chemicals.

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Because of the toxicity of this product, special personal care should be taken in any cleanup operation. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. Refer to product label for specific instructions. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. Full details regarding disposal of used containers, spillage and unused material may be found on the label. If there is any conflict between this MSDS and the label, instructions on the label prevail. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

## SECTION 7: HANDLING AND STORAGE

**Handling:** Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

**Storage:** This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in a cool, well ventilated area. Check containers periodically for leaks. Containers should be kept closed in order to minimise contamination. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. If you keep more than 10000kg or L of Dangerous Goods of Packaging Group III, you may be required to license the premises or notify your Dangerous Goods authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

**Flammability:** Not flammable.

## SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Exposure standards:

There are no assigned values for this specific product; however, exposure standards for the active ingredients are stated as below.

Exposure limits for Paraquat have been set at 0.1mg/m<sup>3</sup> (TWA).

Exposure limits for Diquat dibromide have been set at 0.5mg/m<sup>3</sup> (TWA).

The ADI for Paraquat is set at 0.004mg/kg/day. The corresponding NOEL is set at 0.45mg/kg/day. The ADI for Diquat is set at 0.002mg/kg/day. The corresponding NOEL is set at 0.2mg/kg/day. ADI means Acceptable Daily Intake and NOEL means No-observable-effect-level. Values taken from the Australian ADI List, September 2010.

**Engineering Control:** No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

### Personal Protective Equipment:

Australian Standards regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**

**Eye Protection:** Protective glasses or goggles should be worn when this product is being used. Failure to protect your eyes may cause them harm. Emergency eye wash facilities are also recommended in an area close to where this product is being used.

**Skin Protection:** It is essential that all skin areas are adequately covered by impermeable gloves, overalls, hair covering, apron and face shield. See below for suitable material types.

**Protective Material Types:** We suggest that protective clothing be made from the following materials: PVC, rubber.

**Respirator:** Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Safety deluge showers should, if practical, be provided near to where this product is being used.

**Inhalation:** Where there is a risk of exposure to this product, we recommend that you use a respirator. It should be fitted with a type G cartridge, suitable for agricultural chemicals.

Eyebaths or eyewash stations and safety deluge showers should be provided near to where this product is being used.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**Physical Description & colour:** Dark blue liquid.

**Odour:** Characteristic obnoxious pyridine odour.

**Boiling Point:** Approximately 100°C at 100kPa.

**Freezing/Melting Point:** Approximately 0°C.

**Volatiles:** Water component.

**Vapour Pressure:** 2.37 kPa at 20°C (water vapour pressure).

**Vapour Density:** No data.

**Specific Gravity:** 1.152

**Water Solubility:** Completely soluble in water.

**pH:** In the region 5.0-7.0 (1% solution in water)

**Odour Threshold:** No data.

**Evaporation Rate:** No data.

**Autoignition temp:** Not applicable - does not burn.

**Partition coefficient (octanol/water):** No data.

## SECTION 10: STABILITY AND REACTIVITY

**Stability:** Stable under normal conditions of storage and use as described on the label and in section 7. Paraquat and diquat are inactivated by adsorption onto clay.

**Reactivity:** This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

**Conditions to Avoid:** Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.

**Incompatibilities:** Strong acids, strong bases, strong oxidising agents. Paraquat and diquat are highly corrosive to most metals, e.g. aluminium, zinc and iron.

**Fire Decomposition:** This product is likely to decompose only after heating to dryness, followed by further strong heating. Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas. Hydrogen chloride gas, other compounds of chlorine. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

## SECTION 11: TOXICOLOGICAL INFORMATION

### Toxicity:

Paraquat Dichloride: LD50 Oral, Rat 157mg/kg      LD50 Oral, Mouse = 104mg/kg  
LD50 Oral, Guinea Pig = 22-42mg/kg              LD50 Oral, Dog = 25-50mg/kg  
LD50 Dermal, Rat = 236-500mg/kg

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.

Ingestion studies in animals have shown that repeated doses of Diquat produce cataracts in test animals (dog, rat). These effects have not been seen in occupationally exposed humans.

## SECTION 12: ECOLOGICAL INFORMATION

Very toxic to aquatic organisms, may cause long term adverse effects in the aquatic environment.

### Paraquat Dichloride:

Birds: LD50 hen: 262-380mg/kg                      LD50 bobwhite quail: 981mg/kg  
LD50 Japanese quail: 970mg/kg                  LD50 mallard duck: 4048mg/kg  
Fish: LC50 rainbow trout: 32mg/L                LC50 brown trout: 2.15-13mg/L

### Environmental fate:

Animals: In rats, following oral administration, 76-90% of the dose was excreted in the faeces, and 11-20% in urine.

Plants: On plant surfaces, photochemical degradation occurs. Degradation products which have been isolated include 1-methyl-4-carboxypyridinium chloride and methylamine hydrochloride.

Soil/ environment: Clays and organic materials rapidly and strongly absorb paraquat, resulting in complete deactivation. Typical strong absorption capacities vary from 20-3000mg/kg soil depending on clay or organic material content. Desorption requires digestion with 12N sulfuric acid for several hours.

## SECTION 13: DISPOSAL CONSIDERATIONS

Instructions for the disposal of this product and its containers are listed on the product label.

For collection of unwanted rural chemicals, contact ChemClear ®1800 008 182 [www.chemclear.com.au](http://www.chemclear.com.au) and for help with the disposal of empty drums, contact DrumMuster® [www.drummuster.com.au](http://www.drummuster.com.au) for local and State contacts.

## SECTION 14: TRANSPORT INFORMATION

**ADG Code:** 3016, BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC

**Hazchem Code:** 2X

**Special Provisions:** SP61, SP109, SP274

**Dangerous Goods Class:** Class 6.1, Toxic Substances.

**Packaging Group:** III

**Packaging Method:** 3.8.6

Class 6 Toxic Substances shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 3 (Flammable Liquids where the Flammable Liquid is nitromethane), 5.1 (Oxidising Agents where the Toxic Substances are Fire Risk Substances), 5.2 (Organic Peroxides where the Toxic Substances are Fire Risk Substances), 8 (Corrosive Substances where the Toxic Substances are cyanides and the Corrosives are acids), Foodstuffs and foodstuff empties. They may however be loaded in the same vehicle or packed in the same freight container with Classes, 2.1 (Flammable Gases), 2.2 (Non-Flammable, Non-Toxic Gases), 2.3 (Toxic Gases), 3 (Flammable liquids, except where the flammable liquid is nitromethane), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents except where the Toxic Substances are Fire Risk Substances), 5.2 (Organic Peroxides except where the Toxic Substances are Fire Risk Substances), 7 (Radioactive Substances), 8 (Corrosive Substances except where the Toxic Substances are cyanides and the Corrosives are acids), 9 (Miscellaneous Dangerous Goods)

## SECTION 15: REGULATORY INFORMATION

**SUSDP: Schedule 7;** DANGEROUS POISON, KEEP OUT OF REACH OF CHILDREN, READ SAFETY DIRECTIONS BEFORE OPENING OR USING, CAN KILL IF SWALLOWED, DO NOT PUT IN DRINK BOTTLES, KEEP LOCKED UP

**ADG Classification:** 3016, BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC

**AICS (Australia):** All of the significant ingredients in this formulation are compliant with NICNAS regulations. The following ingredients: Paraquat and Diquat are mentioned in the SUSDP.

**APVMA Registration Number:** 65688

## SECTION 16: OTHER INFORMATION

**This MSDS contains only safety-related information sourced from the public domain and analytical results on this product:**

**Acronyms:**

**ADG Code** Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition

**AICS** Australian Inventory of Chemical Substances

**CAS number** Chemical Abstracts Service Registry Number

**Hazchem Number** Emergency action code of numbers and letters that provide information for fire fighters

**IARC** International Agency for Research on Cancer

**ASCC** Office of the Australian Safety and Compensation Council

**NTP** National Toxicology Program (USA)

**R-Phrase** Risk Phrase

**SUSDP** Standard for the Uniform Scheduling of Drugs & Poisons

**UN Number** United Nations Number

**Police and Fire Brigade: Dial 000** **Poisons Information Centre (13 1126)**

**Emergency contact: 04 0214 9346 (24 hours)**

Information contained in this Material Safety Data Sheet is provided in good faith and is believed to be correct at the date hereof. However, it is expected that individuals receiving the information will exercise independent judgement in determining its appropriateness for a particular purpose. Hextar Pty Ltd makes no representation whatsoever as to the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability whatsoever, whether with respect to negligence or otherwise, and no responsibility as permitted by law for any loss or damage arising from or connection with the supply or use of the information in this Material Safety Data Sheet.