HEXTAR GROUP OF COMPANIES

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Material Safety Data Sheet

SECTION 1: IDENTIFICATION OF THE CHEMICAL PRODUCT

Product Name: **QUASH 250 HERBICIDE**

Product Type: Group L herbicide/ Bipyridilium compound in a aqueous formulation

Product Use: For the control of a wide range of grasses and broadleaf weeds as per Directions For Use.

SECTION 2 : HAZARDS IDENTIFICATION

Hazard Classification: HAZARDOUS SUBSTANCE. DANGEROUS GOODS.
Hazard classification according to the criteria of ASCC Australia.
Dangerous good classification according to the Australia Dangerous Goods Code (ADG) .

Risk Phrase(s)
R24/25 Toxic in contact with skin and if swallowed. R26 Very toxic by inhalation. R37/38 Irritating to respiratory system and skin. R41 Risk of serious damage to eyes. R48/25 Toxic: danger of serious damage to health by prolonged exposure if swallowed.

Safety Phrase(s) S1/2 Keep locked up and out of reach of children. S23 Do not breathe gas/fumes/vapour/spray. S28 After contact with skin, wash immediately with plenty of water. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection. S38 If insufficient ventilation, wear suitable respiratory equipment.

Other Information
Poisons Schedule: S7 (DANGEROUS POISON)
ADG Classification: Class 6.1 (Bipyridilium pesticide HAZARDOUS SUBSTANCE, LIQUID, TOXIC)
UN Number: 3016

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS	Proportion %
Paraquat *present as Paraquat Dichloride*	1910-42-5	25
Inerts – surfactants	-	10 – 20
Water	-	To balance

SECTION 4: FIRST AID MEASURES

OBTAIN IMMEDIATE MEDICAL ATTENTION. URGENCY IS ESSENTIAL

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** and is available at all times. Have this MSDS and product label with you when you call.

Ingestion: RAPID TREATMENT IS ESSENTIAL IN CASE OF PARAQUAT POISONING.
If swallowed do NOT induce vomiting; seek medical advice immediately and present this MSDS and label. Make every effort to prevent vomit from entering the lungs by careful placement of the patient. The above first aid instructions are mandated by the Commonwealth Department of Health and Aged Care via the National Drugs and Poisons Schedule. These instructions are suitable for ingestion of spray solution and small amounts of concentrate; however, if SUBSTANTIAL AMOUNTS of the concentrate have been swallowed (more than about 5ml) AND if medical assistance is more than 30 minutes away, the induction of vomiting should be CONSIDERED, preferably based on MEDICAL ADVICE if a physician can be contacted by phone. All care must be taken to prevent vomit from being inhaled. Do not give anything by mouth to a semi-conscious or unconscious person. Immediately transfer patient to nearest hospital or medical centre, warning by telephone of the estimated time of arrival so that the start of treatment is not delayed.

Inhalation: Remove patient from exposure, keep warm at rest. Obtain medical attention urgently if patient is unwell. This product contains a stenching agent which in itself may be offensive and is included to prevent accidental ingestion. This stenching agent may cause headaches and nausea to some people when inhaled. The presence of this offensive smell in the air does not necessarily indicate the presence of paraquat.

Skin Contact: Contact of the concentrate with abraded skin or skin with cuts must be avoided. Wash affected areas thoroughly with soap and running water. Remove contaminated clothing and launder before re-use. Seek medical advice, but only after the exposed skin has been thoroughly washed and rinsed with running water.

Eye Contact: If in eyes, hold eyelids open and wash with copious amounts of fresh running water for at least 15 minutes. Seek medical advice immediately.

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 involved in a fire. Fire decomposition products from this product are likely to be irritating if inhaled and may emit oxides of carbon, nitrogen and hydrogen chloride. Appropriate PPE to be worn.

Extinguishing Media: Not Combustible. Use extinguishing media suited to burning materials ie. foam, dry powder, carbon dioxide or water spray.

Fire Fighting: When fighting fires involving significant quantities of this product, wear a splash suit complete with **self contained breathing apparatus**.

Special Protective Equipment for fire fighters: Breathable air apparatus must be worn when fighting a fire in which this product is involved.

Hazchem Code: 2X

SECTION 6: ACCIDENTAL RELEASE MEASURES

In the event of an accidental spill, control spill at source and prevent spillage from entering drains or water courses. Wear full protective clothing (PPE) including full face respirator with appropriate Ag. Chem. cartridge e.g. 'G' for this product. All skin areas should be covered. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is large or if absorbent material is not available create a earthen barrier to stop material spreading and going into drains or waterways. Sweep up and pump recoverable product into labelled containers for salvage, and dispose of promptly at approved site. On site disposal is not acceptable.
Decontaminate emergency personnel with soap and water before leaving the emergency area.

After spill, wash area preventing runoff from entering drains or waterways. If significant quantity enters drains, advise emergency services and EPA.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling: For use and handling by licensed chemical control operators or Chem. Cert accredited primary producers only.
Do not work in spray mist. Do not continue to use if skin irritation or nose bleed occurs. This may be caused by exposure to spray mist as the result of incorrect use of equipment or adverse climatic conditions. Stop and review handling and spraying procedures after washing and rinsing PPE and exposed skin. If symptoms persist seek medical advice as per first aid above. See first aid above, re stenching agent included in product which may itself cause medical issues in some people and require extra PPE to be worn.

Conditions for Safe Storage Store in the closed, original container in a cool, well ventilated area. Do not store for prolonged periods in direct sunlight. Store in a locked enclosure. To be handled by licensed chemical control operators or Chem. Cert accredited primary producers only.

Other Information Always read the label and any attached leaflet before use **and have this MSDS available when using/handling product.**

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

No exposure standard for this product has been set, however, an exposure standard has been set for paraquat (respirable sizes) at 0.1 mg/m3.

Engineering Controls
No special requirements. Ensure workplace is well ventilated. 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 and wear appropriate PPE. Continuous odour may suggest a leak or spill.

Respiratory Protection
Do not inhale spray mist If exposure to vapour, spray or dusts from dried product is expected, wear a high efficiency particulate respirator covering nose and mouth. See first aid re stenching agent.

Personal Protective Equipment (PPE)
When opening the container, preparing spray and using the prepared spray wear cotton overalls buttoned to the neck and wrist and a washable hat, elbow-length PVC gloves and 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 (Standards Association of Australia) fitted with a type G cartridge suitable for Agricultural Chemicals. Avoid contacting vegetation wet with spray, but if necessary to do so, wear waterproof footwear and waterproof protective clothing and gloves.
Hygiene Measures After use and before eating, drinking or smoking, wash hands, arms and face thoroughly with soap and running water. After each day's use, wash contaminated clothing and safety equipment.

Requirements Concerning Special Training
Regulations require that people who handle and use pesticides in their job or business must have training in the application of the materials such as this i.e. Chem. Cert accredited training and certification.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical Description & colour: Green liquid.
Odour: obnoxious odour
Boiling Point: approx 100 C
Vapour Pressure: <1 x 10-2 mPa (25°C, paraquat dichloride).
Specific Gravity: 1.1 @ 25° C
Water Solubility: Soluble
pH: 5 - 6.5
Volatility: No data.
Octanol/Water Partition Coefficient K_{ow} Log P is -4.5 (20°C)

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability: Paraquat is inactivated by adsorption onto clay.
Reactivity: This product is unlikely to react or decompose under normal storage conditions.
Conditions to Avoid: Direct sunlight and lack of ventilation

Incompatibilities: Paraquat is highly corrosive to most metals, e.g. aluminium, zinc and iron.
Hazardous Reactions: Keep away from strong oxidising agents.

SECTION 11: TOXICOLOGICAL INFORMATION

Information profile for Paraquat is available at http://extoxnet.orst.edu/pips/ghindex.html

Acute Effects

Inhalation 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. If the concentrate is allowed to dry out, solid paraquat dust can be created. Paraquat dust is highly toxic (TLV 0.1mg/m3) and should not be handled without full respiratory protection. 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 to some people when inhaled. The presence of this offensive smell in the air does not necessarily indicate the presence of paraquat.
Acute Toxicity – Inhalation LC50 (rat) (4hr) 0.5-1.5 µg/l for paraquat dichloride

Ingestion TREATMENT OF PARAQUAT POISONING MUST COMMENCE RAPIDLY AS POSSIBLE.

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. Kidney and liver damage may appear 1-3 days after exposure. Can cause death by 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.
Acute Toxicity - Oral LD50 (rat) 129 - 157 mg/kg for paraquat dichloride LD50 (guinea pig) 30 - 58 mg/kg

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. Damaged skin removes the barrier and paraquat may be absorbed with effects as outlined above under ingestion.

Skin Irritation The product is a skin irritant.
Skin Sensitisation Product is not a skin sensitiser.
Acute Toxicity - Dermal
LD50 (rat) 911 mg/kg for paraquat dichloride
LD50 (rabbit) 240 mg/kg for paraquat ion
May cause temporary damage to nails and delay in the healing of cuts and wounds.

Eye Eye irritation may be delayed. May lead to ulceration of corneal and conjunctival epithelium giving rise to secondary infection. Although healing may be slow, the injury is superficial and with proper medical care will be complete, even in severe cases.
Eye Irritation The product is an eye irritant.

Chronic Effects

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Reproductive Toxicity Data indicates no reproductive effects.
Carcinogenicity Data indicates no carcinogenic effects.

Other Information The Australian Acceptable Daily Intake (ADI) for paraquat (as cation) for a human is 0.004 mg/kg/day, set for the public for daily, lifetime exposure. This is based on the NOEL of 0.45 mg/kg/day, the level determined to show no effects during long term exposure for the most sensitive indicators and the most sensitive species. (Ref: Comm. Dept. of Health and Ageing, 'ADI List', TGA, September 2005).

SECTION 12: ECOLOGICAL INFORMATION Known Harmful Effects on the Environment

Persistence / Degradability Paraquat is rapidly absorbed and inactivated by contact with soil. There is evidence of photodegradation in air.

Other Precautions 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.

Environ. Protection Spray drift should be avoided, read the label for more information. This formulation should not be applied on or near water which is used for irrigation purposes.

Acute Toxicity - Fish LC50 (96 hr) for brown trout is 2.5-13 mg/l for paraquat dichloride LC50 (96 hr) for mirror carp is 135 mg/l

Acute Toxicity - Daphnia
EC50 (48 hr) for daphnia is 6.1 mg/l for paraquat dichloride.

Acute Toxicity - Other Organisms
The following data is for the active ingredient, paraquat dichloride.
LD50 for mallard duck is 199 mg/kg
LD50 for bobwhite quail is 175 mg/kg
Bees: Not toxic to bees. LD50 36 µg/bee.

SECTION 13: DISPOSAL CONSIDERATIONS

Product Disposal On site disposal of the concentrated product is not acceptable. Ideally, the product should be used for its intended purpose. If there is a need to dispose of the product, approach local authorities who hold periodic collections of unwanted chemicals (ChemCollect).

Container Disposal Do not use this container for any other purpose. Triple rinse containers, add rinsate to the spray tank, then offer the container for recycling/reconditioning, or puncture top, sides and bottom and dispose of in landfill in accordance with local regulations.

drumMUSTER is the national program for the collection and recycling of empty, cleaned, non returnable crop production and on-farm animal health chemical containers.

If the label on your container carries the drumMuster symbol, triple rinse the container, ring your local Council, and offer the container for collection in the program. Returnable containers: empty contents fully into application equipment. Replace cap, close all valves and return to the point of supply for refill or storage. If no landfill is available, bury the containers below 500mm 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.

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

SECTION 14: TRANSPORT INFORMATION

U.N. Number 3016
Proper Shipping Name BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC - (Contains Paraquat)
DG Class 6.1
Hazchem Code 2X
Packaging Method 3.8.6.1
Packing Group III
Storage and Transport Considered dangerous for transport by the Australian Code for the Transport of Dangerous Goods by Road and Rail.
EPG Number 6B1
IERG Number 34
UN Number (Sea Transport) 3016
IMO Class/Packing Group Class 6.1; Packing Group III
IMO Proper Shipping Name BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, N.O.S.

(contains paraquat) Goods are Fire Risk Substances), 5.2 (Organic Peroxides where the Miscellaneous Dangerous Goods are Fire Risk Substances).

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), 4.1 (Flammable Solids), 4.2 (Spontaneously Combustible Substances), 4.3 (Dangerous When Wet Substances), 5.1 (Oxidising Agents except where the Miscellaneous Dangerous Goods are Fire Risk Substances), 5.2 (Organic Peroxides except where the Miscellaneous Dangerous Goods are Fire Risk Substances), 6 (Toxic Substances), 7 (Radioactive Substances), 8 (Corrosive Substances), Foodstuffs and foodstuff empties

Also refer to *EMERGENCY PROCEDURE GUIDE – TRANSPORT* EPG/ERG 6B5 for this product

HAZARD	IDENTIFICATION	
Class Symbol	**Trade Name:**	**Quash 250 Herbicide**
Primary  **6.1** **TOXIC**	**Shipping Name:**	**BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC, N.O.S. (CONTAINS PARAQUAT DICHLORIDE)**
	UN Number:	**3016**
	HAZCHEM :	**2X**
	Physical Description:	**Dark green liquid with bad odour**
	Company : **(product registrant)**	**Hextar Chemicals Pty Ltd** 28 Tillotson Terrace, Armadale, VIC 3143 Tel : 04 0214 9346

SECTION 15: REGULATORY INFORMATION

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

ADG Classification: Class 6.1 (Bipyridilium pesticide HAZARDOUS SUBSTANCE, LIQUID, TOXIC)
UN Number: 3016

AICS (Australia): All of the components in this product are listed on the Australian Inventory of Chemical Substances.

APVMA Registration Number: 63617

SECTION 16: OTHER INFORMATION

The following publication as referred to in First Aid is available by email or hard copy from the contact below:

PARAQUAT POISONING **a practical guide to diagnosis, first aid and hospital treatment**

This MSDS contains only safety-related information sourced from the public domain and analytical results on 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 firefighters
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)