

## SAFETY DATA SHEET

### Section 1: IDENTIFICATION OF THE MATERIAL AND SUPPLIER

<b>Product Name:</b>	<b>SPRAY.SEED® 250 Herbicide</b>
<b>Other Names:</b>	<b>Proper shipping name:</b> Bipyridilium Pesticides Liquid, N.O.S. (Paraquat and Diquat)
	<b>Product code:</b> A12984C / A12984E
<b>Recommended Use:</b>	Herbicide for the control of a wide range of grasses and broadleaf weeds
<b>Company Details:</b>	<b>Syngenta Australia Pty Ltd</b> ABN 33 002 933 717
<b>Address:</b>	<b>Level 1, 2-4 Lyonpark Road</b> <b>MACQUARIE PARK NSW 2113</b> <b>AUSTRALIA</b>
<b>Telephone Number:</b>	<b>(02) 8876 8444</b>
<b>Emergency Telephone Number:</b>	<b>24 hours - 1800 033 111</b>

### Section 2: HAZARDS IDENTIFICATION

<b>Hazard Classification:</b>	Classified as a hazardous chemical according to the Australian criteria for the classification of chemicals
<b>Risk Phrases:</b>	R24/25 Toxic in contact with skin and if swallowed. R26 Very toxic by inhalation R43 May cause sensitisation by skin contact. R48/25 Toxic: danger of serious damage to health by prolonged exposure if swallowed.
<b>Safety Phrases:</b>	—

### Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

SUBSTANCE		
<b>Chemical Identity of Pure Substance:</b>	Paraquat dichloride	Diquat dibromide
<b>Synonym:</b>	PP148	PP901
<b>CAS Number:</b>	1910-42-5	85-00-7

MIXTURE		
Chemical Identity of Ingredients	CAS No	Proportion (%w/v)
Paraquat dichloride	1910-42-5	11.5
Diquat dibromide	85-00-7	9.8
Other ingredients determined not to be hazardous	-	to 100

## Section 4: FIRST AID MEASURES

<b>Description of Necessary First Aid Measures:</b>	<p>In case of poisoning by any exposure route get to a doctor or hospital quickly. Phone Poisons Information Centre on 131 126. Have the product label or SDS with you when calling or going for treatment.</p> <p><b>Ingestion:</b>        <b>SPEED IS ESSENTIAL.</b> Get to a doctor or hospital immediately. DO NOT induce vomiting. If available, give an adsorbent such as activated charcoal, bentonite or Fullers Earth.</p> <p><b>Eye contact:</b>     Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Seek medical attention immediately.</p> <p><b>Skin contact:</b>    Remove contaminated clothing immediately. Wash affected areas thoroughly with plenty of water. If irritation persists, seek medical advice. Wash contaminated clothing before re-use.</p> <p><b>Inhalation:</b>        Move person to fresh air. If breathing is irregular or stopped, administer artificial respiration. Keep patient warm and at rest. Call a physician or Poisons Information Centre immediately.</p>
<b>Poisoning Symptoms:</b>	<p>Symptoms include inflammation of mouth, throat and oesophagus, gastrointestinal discomfort and diarrhoea.</p> <p><i>Mild poisoning</i> occurs at &lt; 20 mg paraquat ion/kg body weight and the effects are vomiting and diarrhoea.</p> <p><i>Moderate to severe poisoning</i> 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.</p> <p><i>Lethal poisoning</i> occurs at &gt; 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.</p>
<b>Medical Advice:</b>	<p>Refer to the booklet "Paraquat Poisoning. A Practical Guide to Diagnosis, First Aid and Hospital Treatment." available from <a href="http://www.syngenta.com">www.syngenta.com</a>.</p> <p>Administer either activated charcoal (100 g for adults or 2 g/kg body weight for children) or Fuller's Earth (15% solution, 1 litre for adults or 15 mL/kg body weight in children). NOTE: the use of gastric lavage without administration of an absorbent has not shown any clinical benefit. Do not use supplemental oxygen.</p> <p>Eye splashes from concentrated material should be treated by an eye specialist after initial treatment. With the possibility of late onset corneal ulceration it is advised that patients with paraquat eye injuries are reviewed by an eye specialist the day after first presentation.</p>

## Section 5: FIRE FIGHTING MEASURES

<b>Suitable Extinguishing Media:</b>	<i>Small fires</i> Use water fog or fine water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Do not use a solid water stream as it may scatter and spread fire. <i>Large fires</i> Use alcohol-resistant foam. Do not use a solid water stream as it may scatter and spread fire.
<b>Hazards from Combustion Products:</b>	Not combustible, however, following evaporation of aqueous component residual material may burn. On burning will emit toxic fumes. DO NOT allow run-off from fire fighting to enter drains or water courses.
<b>Special Protective Precautions and Equipment for Fire Fighters:</b>	In the event of fire, wear full protective clothing and self-contained breathing apparatus.
<b>Hazchem Code:</b>	2X

## Section 6: ACCIDENTAL RELEASE MEASURES

<b>Emergency Procedures:</b>	In case of spillage it is important to take all steps necessary to <ul style="list-style-type: none"><li>• Avoid eye and skin contact</li><li>• Avoid contamination of waterways</li></ul>
<b>Methods and Materials for Containment and Clean Up:</b>	<b>Procedure for spill</b> <ol style="list-style-type: none"><li>(1) Keep all bystanders away</li><li>(2) Wear full length clothing and PVC gloves</li><li>(3) Reposition any leaking containers so as to minimise further leakage</li><li>(4) Dam and absorb spill with an absorbent material (eg sand or soil)</li><li>(5) Shovel the absorbed spill into drums</li><li>(6) Disposal of the absorbed material will depend upon the extent of the spill<ul style="list-style-type: none"><li>• For quantities up to 50 L of product bury in a secure landfill site</li><li>• For quantities greater than 50 L seek advice from the manufacturer (use emergency contact number below) before attempting disposal. Contain in a secure location until disposal method is established</li></ul></li><li>(7) Decontaminate spill area with detergent and water and rinse with the smallest volume of water practicable</li></ol>

## Section 7: HANDLING AND STORAGE

<b>Precautions for Safe Handling:</b>	<p><b>MANUFACTURE, PACKAGING AND TRANSPORT:</b>                  Avoid skin and eye contact and the inhalation of vapour and mist. Wear overalls, face shield or goggles, 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.</p> <p>If inhalation risk of vapour or spray exists wear organic vapour respirator meeting the requirements of Standards Australia.</p> <p><b>PREPARATION AND USE OF PRODUCT:</b>                  Very dangerous, particularly the concentrate. Product is poisonous if absorbed by skin contact, inhaled or swallowed. Will irritate the eyes, nose, throat and skin. Attacks eyes. Protect eyes while using. Avoid contact with eyes, skin and clothing. <b>DO NOT</b> inhale spray mist. When opening the container, preparing product for use and using the prepared spray, wear:</p> <ul style="list-style-type: none"> <li>• cotton overalls buttoned to the neck and wrist</li> <li>• a washable hat</li> <li>• elbow-length PVC gloves</li> <li>• face shield or goggles</li> <li>• half facepiece respirator or disposable respirator</li> </ul> <p>If clothing becomes contaminated with product, or wet with spray, remove contaminated clothing immediately. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. Avoid contact with spray mist. <b>DO NOT</b> 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, respirator and if rubber wash with detergent and warm water, face shield or goggles and contaminated clothing.</p>
<b>Conditions for Safe Storage:</b>	<p>Store in the closed, original container in a dry, cool, well ventilated locked room or a place away from children, animals, food, feedstuffs, seed and fertilisers. <b>DO NOT</b> store for prolonged periods in direct sunlight.</p>

## Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

### ALWAYS READ AND FOLLOW THE LABEL INSTRUCTIONS AND WARNINGS

	<i>Component</i>	<i>Exposure limit</i>	<i>Value type</i>
<b>National Exposure Standards:</b>	Diquat dibromide	0.5 mg/m <sup>3</sup>	8h TWA
	Paraquat dichloride (respirable sizes)	0.1 mg/m <sup>3</sup>	8h TWA
<b>Syngenta Exposure Standards:</b>	Diquat dibromide	1 mg/m <sup>3</sup>	STEL
	Paraquat dichloride (respirable dust) (total dust)	0.08	8h TWA
		0.5 mg/m <sup>3</sup>	8h TWA
	Emetic	0.02 mg/m <sup>3</sup>	8h TWA
<b>Biological Limit Values:</b>	No biological limits allocated		

<b>Engineering Controls:</b>	No special requirements. Product is used outdoors. Containment and/or segregation is the most reliable technical protection measure if exposure cannot be eliminated. In the workplace – ensure ventilation is adequate to maintain air concentrations of components below quoted Exposure Standards. Avoid generating and inhaling mists Where necessary, seek additional occupational hygiene advice. Keep containers closed when not in use.
<b>Personal Protective Equipment:</b>	<p><b>MANUFACTURE, PACKAGING AND TRANSPORT:</b>                  Avoid skin and eye contact and the inhalation of vapour and mist. Wear overalls, face shield or goggles, 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 Standards Australia.</p> <p><b>PREPARATION AND USE OF PRODUCT:</b>                  Very dangerous, particularly the concentrate. Product is poisonous if absorbed by skin contact, inhaled or swallowed. Will irritate the eyes, nose, throat and skin. Attacks eyes. Protect eyes while using. Avoid contact with eyes, skin and clothing. <b>DO NOT</b> inhale spray mist. When opening the container, preparing product for use and using the prepared spray, wear:</p> <ul style="list-style-type: none"> <li>• cotton overalls buttoned to the neck and wrist</li> <li>• a washable hat</li> <li>• elbow-length PVC gloves</li> <li>• face shield or goggles</li> <li>• half facepiece respirator or disposable respirator</li> </ul> <p>If clothing becomes contaminated with product, or wet with spray, remove contaminated clothing immediately. If product on skin, immediately wash area with soap and water. If product in eyes, wash it out immediately with water. Avoid contact with spray mist. <b>DO NOT</b> 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, respirator and if rubber wash with detergent and warm water, face shield or goggles and contaminated clothing.</p>

**Section 9: PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Dark green/blue liquid	<b>Boiling / Melting Point:</b>	Approx. 100°C
<b>Odour:</b>	Characteristic of pyridine base	<b>Freezing Point:</b>	Not available
<b>pH:</b>	5 - 6	<b>Solubility:</b>	Soluble in water
<b>Vapour Pressure:</b>	Not available	<b>Specific Gravity:</b>	1.16 g/cm <sup>3</sup> at 20°C
<b>Vapour Density:</b>	Not available		

<b>Flash Point:</b>	Not applicable	<b>Explosive Properties:</b>	Not available
<b>Upper and Lower Flammable (Explosive) Limits in Air:</b>	Not applicable	<b>Oxidising Properties:</b>	Not available
<b>Ignition Temperature:</b>	Not applicable	<b>Combustibility:</b>	Not combustible
		<b>Corrosiveness:</b>	Corrosive

## Section 10: STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Corrosive in contact with metals
<b>Conditions to Avoid:</b>	Corrosive in contact with metals
<b>Incompatible Materials:</b>	Diquat reacts to zinc and potassium permanganate and is corrosive to aluminium, mild steel, iron
<b>Hazardous Decomposition Products:</b>	Following evaporation of aqueous component, combustion or thermal decomposition will evolve toxic and irritant vapours
<b>Hazardous Reactions:</b>	Corrosive in contact with metals

## Section 11: TOXICOLOGICAL INFORMATION

<b>Health Effects from Likely Routes of Exposure:</b>		
<b>Acute:</b>	<b>Oral toxicity:</b>	<b>TOXIC</b> Tests on rats indicate this product is toxic following single doses of active ingredient. (Paraquat dichloride LD <sub>50</sub> = 93.4 mg/kg) (Diquat dibromide LD <sub>50</sub> = 214 mg/kg)
	<b>Dermal toxicity:</b>	<b>LOW TOXICITY</b> Tests on rats indicate this product has a low toxicity following skin contact with active ingredient. (Paraquat dichloride LD <sub>50</sub> > 2,000 mg/kg) (Diquat dibromide LD <sub>50</sub> > 2,000 mg/kg)
	<b>Inhalation:</b>	<b>VERY TOXIC</b> Tests on rats indicate this product is very toxic due to inhalation of active ingredient. However, it is unlikely to be hazardous by inhalation because of low vapour pressure at ambient temperature. Nose bleeding and soreness of the throat may result from spray mist or dust trapped on the nasal mucosa. (Paraquat dichloride LC <sub>50</sub> (4h) = 0.5 – 1.5 µg/L)
	<b>Skin irritation:</b>	<b>IRRITANT</b>
	<b>Eye irritation:</b>	<b>IRRITANT</b>
	<b>Sensitisation:</b>	<b>SENSITISER</b>
<b>Chronic:</b>	<p><b>Paraquat technical</b> has been extensively tested on laboratory mammals and in test-tube systems. No evidence was obtained of mutagenic, carcinogenic or teratogenic effects. Ocular effects (cataracts) have been reported following long term oral exposure of laboratory animals.</p> <p><b>Diquat dibromide technical</b> has been extensively tested on laboratory mammals and in test-tube systems. No evidence was obtained of mutagenic, carcinogenic, teratogenic or reproductive effects. Ocular effects (cataracts) have been reported following long term oral exposure of laboratory animals.</p>	

## Section 12: ECOLOGICAL INFORMATION

<b>Ecotoxicity:</b>	<p><i>Toxicity to fish:</i></p> <p><i>Toxicity to daphnia and other aquatic invertebrates:</i></p> <p><i>Toxicity to algae:</i></p>	<p><b>Slightly toxic to fish</b>  <u>Paraquat dichloride</u>  <i>Oncorhynchus mykiss</i> (rainbow trout):                      LC<sub>50</sub> = 55 mg/L, 96 h</p> <p><u>Diquat dibromide</u>  <i>Oncorhynchus mykiss</i> (rainbow trout):                      LC<sub>50</sub> = 21 mg/L, 96 h (static)</p> <p><b>Slightly toxic to aquatic invertebrates</b>  <u>Paraquat dichloride</u>  <i>Daphnia magna</i> (Water flea):                      EC<sub>50</sub> = 11 mg/L, 48 h</p> <p><b>Highly toxic to algae</b>  <u>Paraquat dichloride</u>  <i>Pseudokirchneriella subcapitata</i> (green algae):                      EC<sub>50</sub> = 0.60 mg/L, 72 h</p> <p><u>Diquat dibromide</u>  <i>Pseudokirchneriella subcapitata</i> (green algae):                      EC<sub>50</sub> = 0.34 mg/L, 72 h</p>
<b>Persistence and Degradability:</b>	Paraquat and diquat are persistent in soil and water	
<b>Mobility</b>	Paraquat and diquat are both immobile in soil	
<b>Environmental Fate (Exposure):</b>	Paraquat and diquat are both rapidly absorbed and deactivated by soil. There is no mobility in soil or into ground water. There is evidence of photodegradation in water and plants.	
<b>Bioaccumulative Potential:</b>	Paraquat does not bioaccumulate Diquat dibromide has low potential to bioaccumulate	

## Section 13: DISPOSAL CONSIDERATIONS

<b>Disposal Methods and Containers:</b>	<p><b>Non-returnable container:</b>                      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 not available bury the containers below 500 mm in a disposal pit specifically set up for this purpose clear of waterways, desirable vegetation and tree roots. Empty containers and product should not be burnt.</p> <p><b>Returnable container:</b>                      Empty contents fully into application equipment. Close all valves and return to point of supply for refill or storage.</p>
<b>Special Precautions for Landfill or Incineration:</b>	Not applicable

### Section 14: TRANSPORT INFORMATION

<b>LAND TRANSPORT</b>			
ADG			
<b>UN Number:</b>	3016	<b>Packing Group:</b>	III
<b>UN Proper Shipping Name:</b>	Bipyridilium Pesticides Liquid, N.O.S. (Paraquat and Diquat)	<b>Special Precautions for User:</b>	None allocated
<b>Class:</b>	6.1	<b>Hazchem Code:</b>	2X
<b>Subsidiary Risk:</b>	None allocated		

<b>SEA TRANSPORT</b>			
IMDG			
<b>UN Number:</b>	3016	<b>Subsidiary Risk:</b>	None allocated
<b>UN Proper Shipping Name:</b>	Bipyridilium Pesticides Liquid, N.O.S. (Paraquat and Diquat)	<b>Packing Group:</b>	III
<b>Class:</b>	6.1	<b>Marine Pollutant:</b>	

<b>AIR TRANSPORT</b>			
IATA - DGR			
<b>UN Number:</b>	3016	<b>Subsidiary Risk:</b>	None allocated
<b>UN Proper Shipping Name:</b>	Bipyridilium Pesticides Liquid, N.O.S. (Paraquat and Diquat)	<b>Packing Group:</b>	III
<b>Class:</b>	6.1		

### Section 15: REGULATORY INFORMATION

<b>APVMA Product Number:</b>	46516
<b>Poisons Schedule (SUSDP):</b>	7

## Section 16: OTHER INFORMATION

**Date of preparation or last revision:** February 2014

**Source of Data:** The information provided in this SDS is sourced from Syngenta internal studies which have been conducted according to Regulatory requirements including OECD and CIPAC Guidelines and EC Directives. A comprehensive package of toxicological and environmental data for the active ingredients of this product has been submitted to the government health and environment authorities and has been evaluated by expert toxicologists and environmental scientists.

**Note:** This product is a registered agricultural chemical and must, therefore, be used in accordance with the container label directions

**CONTACT POINT:** Regulatory Manager, Syngenta Australia Pty Ltd  
(02) 8876 8444

**24 HOURS EMERGENCY CONTACT: 1800 033 111**

This Material Safety Data Sheet 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 SDS 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.

### DISCLAIMER

This product complies with the specifications in its statutory registration. Implied terms and warranties are excluded. Syngenta's liability for breach of the express or any non-excludable implied warranty is limited to product replacement or purchase price refund. The purchaser must determine suitability for intended purpose and take all proper precautions in the handling, storage and use of the product including those on the label and/or safety data sheet failing which Syngenta shall have no liability.

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