

SECTION 1 – IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Chemical Nature:	Aquatic herbicide containing Diaquat.		
Trade Name:	AQ200 AQUATIC HERBICIDE		
SUPPLIER:	Aquatic Technologies		
ADDRESS:	41 Yazaki Way Carrum Downs VIC 3201, Australia		
TELEPHONE	+61 3 9071 2442	APVMA Code:	81984/104562
Substance:	Liquid	Product Use:	Aquatic Herbicide
This version issued:	July 2024	Up for revision:	July 2029
In case of Emergency:	13 11 26 – Poisons Information Centre		

SECTION 2 – HAZARDS IDENTIFICATION

Classification of the substance or mixture	
<ul style="list-style-type: none"> This product is classified as HAZARDOUS according to the criteria of SWA This product is a DANGEROUS GOOD according to Australian Dangerous Goods (ADG) Code This product is a DANGEROUS GOOD according to the criteria of IATA and IMDG/IMSBC The product is classified as DANGEROUS according to the criteria of GHS 	
GHS – GLOBALLY HARMONISED SYSTEM	
GHS Classification	Skin corrosion/irritation category 1A to 1C Sensitisation – skin category 1, 1A, 1B Acute toxicity – inhalation category 3 Specific target organ toxicity (repeated exposure) category 1
GHS Pictogram	
GHS Signal Word	DANGER
Hazard Statement(s)	
H314:	Causes severe skin burns and eye damage
H317:	May cause an allergic skin reaction
H331:	Toxic if inhaled
H372:	Causes damage to organs through prolonged or repeated exposure
H413:	May cause long lasting harmful effects to aquatic life
General	
P101:	If medical advice is needed, have product container or label at hand
P102:	Keep out of reach of children
P103:	Read label before use
Prevention	
P260+P271:	Do not breathe in dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area
P262:	Do not get in eyes, on skin, or on clothing
P264+P280:	Wash hands thoroughly after use. Wear protective gloves, protective clothing and eye or face protection
P270:	Do not eat, drink or smoke when using this product
P272:	Contaminated work clothing should not be allowed out of the workplace
P273:	Avoid release to the environment
P280+P284:	Wear protective gloves, protective clothing and eye or face protection. Wear respiratory protection
Response	
P301+P330+P331:	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting

P304+P340+P311+P321:	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician. Specific treatment (see ... on this label)
P302+P352+ P312:	IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTRE or doctor/physician if you feel unwell
P363:	Wash contaminated clothing before reuse
P305+P351+P338:	IF IN EYES: rinse cautiously with water for several minutes. Remove contact lenses if present and if easy to do
Storage	
P403+P233+P405:	Store in a well-ventilated place. Keep container tightly closed. Store locked up
Disposal	
P501:	Dispose of contents/container in accordance with local regulations
EMERGENCY OVERVIEW	
Colour:	Dark blue-green
Odour:	Strong stench
Physical Description:	Liquid
Major Health Hazards:	Diquat dibromide (concentrate) is toxic by ingestion and harmful in contact with skin. Irritating to eyes, and mildly irritating to skin. Ingestion of sufficient doses may cause severe irritation of the mouth, throat, esophagus, and stomach, followed by nausea, vomiting, diarrhea, severe dehydration, and alterations in body fluid balances, gastrointestinal discomfort, chest pain, diarrhea, kidney failure, and toxic liver damage. Skin absorption of high doses may cause symptoms similar to those that occur following ingestion. May cause serious damage to health by prolonged exposure, causes burns, may cause serious damage to eyes, harmful by inhalation and if swallowed, irritating to eyes, respiratory system and skin, possible skin sensitiser.
Potential Health Effects	
Inhalation Short Term Exposure:	Significant inhalation exposure is considered to be unlikely. Available data shows that this product is very toxic, but symptoms are not available. In addition product is an inhalation irritant. Symptoms may include headache, irritation of nose and throat and increased secretion of mucous in the nose and throat. Other symptoms may also become evident, but they should disappear after exposure has ceased.
Skin Contact Short Term Exposure:	Classified as a potential sensitiser by skin contact. Exposure to a skin sensitiser, once sensitisation has occurred, may manifest itself as skin rash or inflammation, and in some individuals this reaction can be severe. In addition product is a skin irritant. Symptoms may include itchiness and reddening of contacted skin. Other symptoms may also become evident, but all should disappear once exposure has ceased.
Eye Contact Short Term Exposure:	Exposure via eyes is considered to be unlikely. This product is an eye irritant. Symptoms may include stinging and reddening of eyes and watering which may become copious. Other symptoms may also become evident. If exposure is brief, symptoms should disappear once exposure has ceased. However, lengthy exposure or delayed treatment may cause permanent damage.
Ingestion Short Term Exposure:	Significant oral exposure is considered to be unlikely. Available data shows that this product is harmful, but symptoms are not available. However, this product is corrosive to the gastrointestinal tract. Capable of causing moderate to severe burns with ulceration. Can penetrate to deeper layers of skin, resulting in third degree burns. Corrosion will continue until product is removed or neutralised. Severity depends on concentration and duration of exposure.
Carcinogen Status:	SWA: No significant ingredient is classified as carcinogenic by SWA NTP: No significant ingredient is classified as carcinogenic by NTP IARC: No significant ingredient is classified as carcinogenic by IARC

SECTION 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredients:	CAS Number:	Conc.%	TWA (mg/m³)	STEL (mg/m³)
Diquat as diquat dibromide	2764-72-9	200g/L	0.5	not set
Other non-hazardous ingredients		Various <10	not set	not set
NOTE:	This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non-hazardous ingredients are also possible. The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.			

SECTION 4 – FIRST AID MEASURES

Scheduled Poisons: Poisons Information Centre in each Australian State capital city or in Christchurch, New Zealand can provide additional assistance for scheduled poisons. (Phone Australia 131126 or New Zealand 0800 764 766).

First Aid Facilities: Ensure there is access to eye washes and safety showers.

Inhalation: If symptoms of poisoning become evident, contact a Poisons Information Centre, or call a doctor at once. 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 edema can be delayed up to 48 hours after exposure.

Skin Contact: If poisoning occurs, contact a Poisons Information Centre, or call a doctor at once. Quickly and gently, blot or brush away excess chemical. Wash gently and thoroughly with water (use non-abrasive soap if necessary) for 20 minutes or until product is removed. Under running water, remove contaminated clothing, shoes and leather goods (e.g. watchbands and belts). Completely decontaminate clothing, shoes and leather goods before reuse or discard. If irritation persists, repeat flushing and obtain medical advice.

Eye Contact: Quickly and gently blot or brush away product. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water until the product is removed or until a few minutes after irritation has ceased, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain medical advice if irritation becomes painful or lasts more than a few minutes.

Ingestion: If swallowed, rinse mouth thoroughly with water and contact a Poisons Information Centre. Urgent hospital treatment is likely to be needed. Give activated charcoal if instructed.

Advice to Doctor: Ensure label is on hand. Treat symptomatically. All treatments should be based on observed signs and symptoms of distress of the patient. Poisons Information Centre in each Australian State capital city or in Christchurch, New Zealand can provide additional assistance for scheduled poisons.

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
Extinguishing Media:	Water fog or fine spray is the preferred medium for large fires. Try to contain spills, minimise spillage entering drains or water courses.
Fire Fighting:	If a significant quantity of this product is involved in a fire, call the fire brigade. There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is liquid-tight chemical protective clothing and breathing apparatus.
Flash point:	Does not burn

SECTION 6 – ACCIDENTAL RELEASE MEASURES

Emergency Procedures:	<ul style="list-style-type: none">• Evacuate the spill area• Barricade the area, not including authorized personnel• Immediately call the Fire Brigade• Wear full protective, chemically resistant clothing including eye/face protection, gauntlets and self-contained breathing apparatus• 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 corrosiveness 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• 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 SDS 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 class of poison. Store in a cool, well ventilated area. Check containers periodically for corrosion and 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 "Materials to avoid" 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 licensing authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION


The following Australian Standards will provide general advice regarding safety clothing and equipment:





Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Occupational Protective Clothing: **AS/NZS 4501** set 2008, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

Control Parameters

SWA Exposure Limits:	The ADI for Diquat is set at 0.002mg/kg/day. The corresponding NOEL is set at 0.25mg/kg/day. ADI means Acceptable Daily Intake; NOEL means No-observable-effect-level. Data from Australian ADI List, June 2013. 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.
Ventilation:	No special ventilation requirements are normally necessary for this product. However make sure that the work environment remains clean and that vapours and mists are minimised.

PERSONAL PROTECTION EQUIPMENT (PPE)

Eye Protection:	 Eye protection such as protective glasses or goggles is recommended when this product is being used. Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them. Emergency eye wash facilities to be in close proximities of work area are also recommended.
------------------------	--

Skin Protection:	  	Overalls, apron, work boots and elbow length gloves are recommended for handling the concentrated product (as per AS/NZS 2161, or as recommended by supplier) to handle in quantity, cleaning up spills, decanting, etc. Make sure all skin areas are covered.
Protective Material Types:		PVC
Respirator:		If there is a significant chance that vapours or mists are likely to build up in the area where this product is being used, 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 and Colour:	Dark blue-green/brown liquid
Odour:	Strong stench
Boiling Point:	100°C at 100kPa
Freezing / Melting Point:	~0°C
Volatiles:	Water component
Vapour Pressure:	2.37 kPa at 20°C (water vapour pressure)
Vapour Density:	Not available
Specific Gravity:	~1.10
Water Solubility:	Completely soluble in water
pH:	Not available
Coeff Oil/Water Distribution:	Not available
Evaporation Rate:	Not available
Odour Threshold:	Not available
Autoignition temp:	Not applicable – does not burn

SECTION 10 – STABILITY AND REACTIVITY

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:	This product should be kept in a cool place, preferably below 30°C. Store in the closed original container in a dry, cool, well-ventilated area out of direct sunlight.
Incompatibilities:	No particular Incompatibilities.
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. Water. Bromine compounds. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death
Polymerisation:	This product is unlikely to undergo polymerisation processes

SECTION 11 – TOXICOLOGICAL INFORMATION

Toxicity	
Acute Toxicity:	Test animals (rats, mice, guinea pigs, rabbits, dogs, cows, and hens) given lethal doses of Diquat dibromide showed a delayed pattern of illness, with onset approximately 24 hours following dosing, subsequent lethargy, pupil dilation, respiratory distress, weight loss, weakness and finally death over the course of 2 to 14 days after dosing. There have been reports of workers who have had softening and colour changes in one or more fingernails after contact with concentrated Diquat dibromide solutions. In some instances, the nail was shed, and did not grow in again. Several cases of severe eye injury in humans have occurred after accidental splashing. In each case, initial irritation was mild, but after several days, serious burns and sometimes scarring of the cornea developed. Direct or excessive inhalation of Diquat dibromide spray mist or dust may result in oral or nasal irritation, nosebleeds, headache, sore throat, coughing, and symptoms similar to those from ingestion of Diquat.
Chronic Toxicity:	Chronic effects of Diquat dibromide are similar to those of paraquat. Cataracts occurred in rats and dogs given 2.5 mg/kg/day and 5 mg/kg/day of Diquat dibromide, respectively. Cataracts increased in proportion to the dose given in test animals (cats and dogs). Chronic exposure is necessary to produce these effects.

	Rats fed dietary doses of 2.5 mg/kg/day over 2 years did not exhibit signs of toxicity other than reduced food intake and decreased growth. In another study using rats, oral doses of 4 mg/kg/day over 2 years produced no behavioural or other changes in general condition. At this dose level no evidence of change in the kidneys, liver, or myocardium (heart muscle) were seen. This dosage (but not 2 mg/kg/day) caused changes in lung tissues. Repeated or prolonged dermal contact may cause inflammation of the skin, and, at high doses, systemic effects in other parts of the body. These may include damage to the kidneys. Chronic exposure may damage skin, which may increase the permeability of the skin to foreign compounds.
Reproductive Effects:	Diquat dibromide generally did not reduce fertility when tested in experimental animals. Based on the available evidence it is unlikely that Diquat dibromide will cause reproductive effects in humans under normal circumstances.
Teratogenic Effects:	No deformities were found in the unborn offspring of pregnant rats that were injected intraperitoneally with 0.5 mg/kg/day of Diquat daily during organogenesis, the stage of fetal development in which organs are formed. It is unlikely that Diquat dibromide will cause teratogenic effects in humans under normal circumstances.
Mutagenic Effects:	There is no evidence that Diquat dibromide causes permanent changes in genetic material.
Carcinogenic Effects:	Based on the evidence, it appears that Diquat dibromide is not carcinogenic.
Organ Toxicity:	In animals, Diquat dibromide may affect the gastrointestinal tract, eyes, kidneys or liver, and the lungs.
Fate in Human and Animals:	Absorption of Diquat dibromide from the gut into the bloodstream is low. Oral doses are mainly metabolized within the intestines, with metabolites being excreted in the faeces. Rat studies showed only a small percentage of the applied oral dose (6%) was absorbed into the bloodstream and then excreted in the urine.

SECTION 12 – ECOLOGICAL INFORMATION

Effects on birds:	Diquat dibromide ranges from slightly to moderately toxic to birds. The reported acute oral LD ₅₀ in young male mallards is 564 mg/kg. The oral LD ₅₀ for Diquat dibromide is 200 to 400 mg/kg in hens. The 5-day dietary LC ₅₀ is about 1300 ppm in Japanese quail.
Effects on aquatic organisms:	Diquat dibromide is moderately to practically nontoxic to fish and aquatic invertebrates. There is little or no bioconcentration of Diquat dibromide in fish.
Effects on other organisms:	Diquat dibromide is not toxic to honey bees. Since Diquat dibromide is a nonselective herbicide, it may present a danger to non-target plant species.
Breakdown in soil and groundwater:	Diquat dibromide is highly persistent, with reported field half-lives of greater than 1000 days. It is very well absorbed by soil organic matter and clay. Although it is water soluble, its capacity for strong adsorption to soil particles suggest that it will not easily leach through the soil, be taken up by plants or soil microbes, or broken down by sunlight (photochemical degradation).
Breakdown in water:	Studies on the erosion of Diquat-treated soils near bodies of water indicate that Diquat dibromide stays bound to soil particles, remaining biologically inactive in surface waters, such as lakes, rivers, and ponds. When Diquat dibromide is applied to open water, it disappears rapidly because it binds to suspended particles in the water. Diquat dibromide's half-life is less than 48 hours in the water column, and may be on the order of 160 days in sediments due to its low bioavailability.
Breakdown in vegetation:	Diquat dibromide is rapidly absorbed into the leaves of plants, but usually kills the plant tissues necessary for translocation too quickly to allow movement to other parts of the plant. The herbicide interferes with cell respiration, the process by which plants produce energy.

SECTION 13 – DISPOSAL CONSIDERATIONS

Product and Packaging Disposal: Special help is available for the disposal of Agricultural Chemicals. The product label will give general advice regarding disposal of small quantities, and how to cleanse containers. However, for help with the collection of unwanted rural chemicals, contact ChemClear 1800 008 182 <http://www.chemclear.com.au/> and for help with the disposal of empty drums, contact DrumMuster <http://www.drummuster.com.au/> where you will find contact details for your area.

SECTION 14 – TRANSPORT INFORMATION**UN Number:** 3016, BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC (contains Diquat)**Hazchem Code:** 2X**Special Provisions:** 61, 274**Limited quantities:** ADG 7 specifies a Limited Quantity value of 100 ml for this class of product.**Dangerous Goods Class:** Class 6.1, Toxic Substances.**Packaging Group:** II**Packaging Method:** P001, IBC02

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**Labeling Details**

GHS Classification	Skin corrosion/irritation category 1A to 1C Sensitisation – skin category 1, 1A, 1B Acute toxicity – inhalation category 3 Specific target organ toxicity (repeated exposure) category 1
SUSMP	Diquat is mentioned
AICS	All ingredients present on AICS are compliant with NICNAS regulations

SECTION 16 – OTHER INFORMATION**This SDS contains only safety-related information. For other data see product literature****Date of Last Revision**

AT355 – October 2018

Acronyms

ADG CODE	Australian Code for the Transport of Dangerous Goods by Road and Rail (7 th edition)
AIC S	Australian Inventory of Chemical Substances
SWA	Safe Work Australia, formerly ASCC and NOHSC
CAS number	Chemical Abstracts Service Registry Number
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
Hazchem Code	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
HSIS	Hazardous Substances Information System
IARC	International Agency for Research on Cancer
NICNAS	The National Industrial Chemicals Notification and Assessment Scheme
NOHSC	National Occupation Health and Safety Commission
NTP	National Toxicology Program (USA)
STEL	Short term exposure limit
SUSMP	Standard for the Uniform Scheduling of Medicines & Poisons
TWA	Time weighted average
UN Number	United Nations Number

THIS SDS 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 MUST REVIEW THIS SDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE. IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This SDS is prepared in accord with the SWA document "Preparation of Safety Data Sheets for Hazardous Chemicals - Code of Practice" (Feb 2016)

Copyright © Aquatic Technologies, December 2019

<http://www.aquatictechnologies.com.au>**END OF SDS**