

# AC PISTON 250

## AXICHEM Pty Ltd

Chemwatch: 4884-13

Version No: 5.1

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

Chemwatch Hazard Alert Code: 4

Issue Date: 20/08/2021

Print Date: 11/08/2022

L.GHS.AUS.EN

### SECTION 1 Identification of the substance / mixture and of the company / undertaking

#### Product Identifier

Product name	AC PISTON 250
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC
Chemical formula	Not Applicable
Other means of identification	Not Available

#### Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Herbicide for the control of a wide range of grasses and broadleaf weeds. Use according to manufacturer's directions.
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#### Details of the supplier of the safety data sheet

Registered company name	AXICHEM Pty Ltd
Address	9 Palings Court Nerang QLD 4211 Australia
Telephone	07 5596 1736
Fax	Not Available
Website	<a href="http://www.axichem.com.au">www.axichem.com.au</a>
Email	<a href="mailto:msds@axichem.com.au">msds@axichem.com.au</a>

#### Emergency telephone number

Association / Organisation	CHEMWATCH EMERGENCY RESPONSE
Emergency telephone numbers	+61 1800 951 288
Other emergency telephone numbers	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

### SECTION 2 Hazards identification

#### Classification of the substance or mixture

Poisons Schedule	S7
Classification <sup>[1]</sup>	Acute Toxicity (Oral) Category 4, Acute Toxicity (Dermal) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2A, Acute Toxicity (Inhalation) Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Specific Target Organ Toxicity - Repeated Exposure Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 2
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

#### Label elements

Hazard pictogram(s)	  
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Signal word	Danger
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**Hazard statement(s)**

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H372	Causes damage to organs through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

**Precautionary statement(s) Prevention**

P260	Do not breathe mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P264	Wash all exposed external body areas thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.

**Precautionary statement(s) Response**

P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P391	Collect spillage.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of water.
P330	Rinse mouth.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

**Precautionary statement(s) Storage**

P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

**Precautionary statement(s) Disposal**

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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Not Applicable

**SECTION 3 Composition / information on ingredients****Substances**

See section below for composition of Mixtures

**Mixtures**

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CAS No	%[weight]	Name
1910-42-5	23	<u>paraquat dichloride</u>
Not Available	>60	ingredients determined not to be hazardous

**Legend:** 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; \* EU IOELVs available

## SECTION 4 First aid measures

### Description of first aid measures

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>Wash out immediately with fresh running water.</li> <li>Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.</li> <li>Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>Immediately remove all contaminated clothing, including footwear.</li> <li>Flush skin and hair with running water (and soap if available).</li> <li>Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>If fumes or combustion products are inhaled remove from contaminated area.</li> <li>Lay patient down. Keep warm and rested.</li> <li>Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.</li> <li>Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.</li> <li>Transport to hospital, or doctor.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>For advice, contact a Poisons Information Centre or a doctor at once.</li> <li>Urgent hospital treatment is likely to be needed.</li> <li>If swallowed do <b>NOT</b> induce vomiting.</li> <li>If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>Observe the patient carefully.</li> <li>Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>Transport to hospital or doctor without delay.</li> </ul>

### Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

for bipyridilium intoxication, suggested treatment regime for paraquat may be useful, viz:

For ingestion:

- If liquid concentrates (20% or more) have been consumed give promptly large quantities of milk, egg whites, or gelatin solutions. 200 or 500 ml of a 30% suspension of activated charcoal, bentonite or Fuller's earth may be given if protein solutions are not available. Conversely, a slurry of granular household detergent or hand-washing liquid, well diluted with water, will precipitate paraquat (0.1-0.2 gm/kg). Emesis is probably best avoided because of potential mucosal injury and because intense vomiting may occur spontaneously.
- If diluted solutions (2% or less) or granular formulations were swallowed, administer syrup of Ipecac and/or perform gastric lavage. Leave in stomach 200 to 500 ml of 30% suspension of activated charcoal or bentonite, together with 30 gm of magnesium sulfate (Epsom salts). Re-administer the absorbent as often as practical (i.e. every 2 to 4 hours) for several days with magnesium sulfate to sustain diarrhoea.
- Forced diuresis may be necessary.
- Check repeatedly for impending pulmonary oedema.
- Methaemoglobinaemia responds to methylene blue but the drug may precipitate a late haemolytic crisis.
- Steroids may be administered in adrenal cortical failure.
- Monitor for signs of renal, hepatic or cardiac failure and institute appropriate therapies.

For spills on skin:

- Wash thoroughly with soap and water; treat local injury with bland preparations which may contain local anaesthetics, steroids and/or antibiotics.
- If dermal contact produces intoxication refer to therapy above.

For inhalation:

- If exposure is severe, institute therapy as above.

For splashes in the eye:

- Irrigate with water for 10 to 15 minutes.
- Use antibiotics to control infection.
- Consult ophthalmologist.

GOSSELIN, SMITH and HODGE: *Clinical Toxicology of Commercial Products*.

Fifth Edition, Lippincott, Williams and Wilkins

**NOTE:** Bipyridilium compounds may be converted, in vivo, to a free radical which, in turn, reacts with molecular oxygen to form toxic intermediates as superoxide ion. Lung lesions have features in common with oxygen poisoning and high oxygen tensions increase paraquat lethality in rats and intensify lung injury.

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## SECTION 5 Firefighting measures

### Extinguishing media

- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	None known.
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### Advice for firefighters

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▸ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▸ Wear full body protective clothing with breathing apparatus.</li> <li>▸ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▸ Use fire fighting procedures suitable for surrounding area.</li> <li>▸ <b>Do not approach containers suspected to be hot.</b></li> <li>▸ Cool fire exposed containers with water spray from a protected location.</li> <li>▸ If safe to do so, remove containers from path of fire.</li> <li>▸ Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▸ Non combustible.</li> <li>▸ Not considered to be a significant fire risk.</li> <li>▸ Expansion or decomposition on heating may lead to violent rupture of containers.</li> <li>▸ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO).</li> <li>▸ May emit acrid smoke.</li> </ul> <p>Decomposition may produce toxic fumes of: hydrogen chloride nitrogen oxides (NOx)</p>
<b>HAZCHEM</b>	2X

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▸ Clean up all spills immediately.</li> <li>▸ Avoid breathing vapours and contact with skin and eyes.</li> <li>▸ Control personal contact with the substance, by using protective equipment.</li> <li>▸ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▸ Wipe up.</li> <li>▸ Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▸ Clear area of personnel and move upwind.</li> <li>▸ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▸ Wear full body protective clothing with breathing apparatus.</li> <li>▸ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▸ Stop leak if safe to do so.</li> <li>▸ Contain spill with sand, earth or vermiculite.</li> <li>▸ Collect recoverable product into labelled containers for recycling.</li> <li>▸ Neutralise/decontaminate residue (see Section 13 for specific agent).</li> <li>▸ Collect solid residues and seal in labelled drums for disposal.</li> <li>▸ Wash area and prevent runoff into drains.</li> <li>▸ After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.</li> <li>▸ If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### Precautions for safe handling

Continued...

## AC PISTON 250

Safe handling	<ul style="list-style-type: none"> <li>▸ Avoid all personal contact, including inhalation.</li> <li>▸ Wear protective clothing when risk of exposure occurs.</li> <li>▸ Use in a well-ventilated area.</li> <li>▸ Prevent concentration in hollows and sumps.</li> <li>▸ <b>DO NOT</b> enter confined spaces until atmosphere has been checked.</li> <li>▸ <b>DO NOT</b> allow material to contact humans, exposed food or food utensils.</li> <li>▸ Avoid contact with incompatible materials.</li> <li>▸ <b>When handling, DO NOT eat, drink or smoke.</b></li> <li>▸ Keep containers securely sealed when not in use.</li> <li>▸ Avoid physical damage to containers.</li> <li>▸ Always wash hands with soap and water after handling.</li> <li>▸ Work clothes should be laundered separately. Launder contaminated clothing before re-use.</li> <li>▸ Use good occupational work practice.</li> <li>▸ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▸ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> <li>▸ <b>DO NOT</b> allow clothing wet with material to stay in contact with skin</li> </ul>
Other information	<ul style="list-style-type: none"> <li>▸ Store in original containers.</li> <li>▸ Keep containers securely sealed.</li> <li>▸ Store in a cool, dry, well-ventilated area.</li> <li>▸ Store away from incompatible materials and foodstuff containers.</li> <li>▸ Protect containers against physical damage and check regularly for leaks.</li> <li>▸ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>

## Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> <li>▸ Lined metal can, lined metal pail/ can.</li> <li>▸ Plastic pail.</li> <li>▸ Polyliner drum.</li> <li>▸ Packing as recommended by manufacturer.</li> <li>▸ Check all containers are clearly labelled and free from leaks.</li> </ul>
Storage incompatibility	None known

## SECTION 8 Exposure controls / personal protection

## Control parameters

## Occupational Exposure Limits (OEL)

## INGREDIENT DATA

Not Available

## Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
paraquat dichloride	0.15 mg/m3	1.6 mg/m3	9.6 mg/m3

Ingredient	Original IDLH	Revised IDLH
paraquat dichloride	1 mg/m3	Not Available

## Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
paraquat dichloride	E	≤ 0.1 ppm

## Notes:

Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

## MATERIAL DATA


Sensory irritants are chemicals that produce temporary and undesirable side-effects on the eyes, nose or throat. Historically occupational exposure standards for these irritants have been based on observation of workers' responses to various airborne concentrations. Present day expectations require that nearly every individual should be protected against even minor sensory irritation and exposure standards are established using uncertainty factors or safety factors of 5 to 10 or more. On occasion animal no-observable-effect-levels (NOEL) are used to determine these limits where human results are unavailable. An additional approach, typically used by the TLV committee (USA) in determining respiratory standards for this group of chemicals, has been to assign ceiling values (TLV C) to rapidly acting irritants and to assign short-term exposure limits (TLV STELs) when the weight of evidence from irritation, bioaccumulation and other endpoints combine to warrant such a limit. In contrast the MAK Commission (Germany) uses a five-category system based on intensive odour, local irritation, and elimination half-life. However this system is being replaced to be consistent with the European Union (EU) Scientific Committee for Occupational Exposure Limits (SCOEL); this is more closely allied to that of the USA.

OSHA (USA) concluded that exposure to sensory irritants can:

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- cause inflammation
- cause increased susceptibility to other irritants and infectious agents
- lead to permanent injury or dysfunction
- permit greater absorption of hazardous substances and
- acclimate the worker to the irritant warning properties of these substances thus increasing the risk of overexposure.

## Exposure controls

<p><b>Appropriate engineering controls</b></p>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p> <table border="1"> <thead> <tr> <th>Type of Contaminant:</th><th>Air Speed:</th></tr> </thead> <tbody> <tr> <td>solvent, vapours, degreasing etc., evaporating from tank (in still air).</td><td>0.25-0.5 m/s (50-100 f/min)</td></tr> <tr> <td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td><td>0.5-1 m/s (100-200 f/min.)</td></tr> <tr> <td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td><td>1-2.5 m/s (200-500 f/min.)</td></tr> <tr> <td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td><td>2.5-10 m/s (500-2000 f/min.)</td></tr> </tbody> </table> <p>Within each range the appropriate value depends on:</p> <table border="1"> <thead> <tr> <th>Lower end of the range</th><th>Upper end of the range</th></tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td><td>1: Disturbing room air currents</td></tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td><td>2: Contaminants of high toxicity</td></tr> <tr> <td>3: Intermittent, low production.</td><td>3: High production, heavy use</td></tr> <tr> <td>4: Large hood or large air mass in motion</td><td>4: Small hood-local control only</td></tr> </tbody> </table> <p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>	Type of Contaminant:	Air Speed:	solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min)	aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)	direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)	grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)	Lower end of the range	Upper end of the range	1: Room air currents minimal or favourable to capture	1: Disturbing room air currents	2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity	3: Intermittent, low production.	3: High production, heavy use	4: Large hood or large air mass in motion	4: Small hood-local control only
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<p><b>Personal protection</b></p>																					
<p><b>Eye and face protection</b></p>	<ul style="list-style-type: none"> <li>▸ Safety glasses with side shields.</li> <li>▸ Chemical goggles.</li> <li>▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]</li> </ul>																				
<p><b>Skin protection</b></p>	<p>See Hand protection below</p>																				
<p><b>Hands/feet protection</b></p>	<ul style="list-style-type: none"> <li>▸ Wear chemical protective gloves, e.g. PVC.</li> <li>▸ Wear safety footwear or safety gumboots, e.g. Rubber</li> </ul>																				
<p><b>Body protection</b></p>	<p>See Other protection below</p>																				

**Other protection**

- ▶ Overalls.
- ▶ Eyewash unit.
- ▶ Barrier cream.
- ▶ Skin cleansing cream.

**Respiratory protection**

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required minimum protection factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator
up to 10	1000	A-AUS / Class1 P2	-
up to 50	1000	-	A-AUS / Class 1 P2
up to 50	5000	Airline *	-
up to 100	5000	-	A-2 P2
up to 100	10000	-	A-3 P2
100+			Airline**

\* - Continuous Flow \*\* - Continuous-flow or positive pressure demand

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

**SECTION 9 Physical and chemical properties****Information on basic physical and chemical properties**

Appearance	Dark bluish green liquid with pungent, slightly fruity odour; mixes with water.		
Physical state	Liquid	Relative density (Water = 1)	1.08
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	Not Available	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	~0	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	~100	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (Not Available%)	5-6.5
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

**SECTION 10 Stability and reactivity**

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>



<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 Toxicological information

### Information on toxicological effects

<b>Inhaled</b>	<p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may produce severely toxic effects; these may be fatal.</p> <p>Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.</p> <p>Inhalation of mists, dusts or vapours containing bipyridyliums may produce respiratory irritation with coughing, dyspnea, nosebleed, and pulmonary oedema. Other symptoms may include pulmonary alveolar cell necrosis, followed by connective tissue proliferation and pulmonary fibrosis (characteristic of paraquat intoxications).</p>
<b>Ingestion</b>	<p>Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.</p> <p>Bipyridylum quaternary ammonium compounds (also known as dipyrityliums, bipyridiniums, viologens), as represented by the cationic herbicides paraquat and diquat, are strongly cationic in aqueous solution and may produce severe corrosive damage following ingestion. In addition, they may be extremely potent systemic toxins following absorption and may cause multiple system organ damage including liver and kidney injury. Death results from pulmonary oedema, cardiac damage, cardiovascular and circulatory collapse, and cerebral haemorrhage/ infarctions. Reaction with bipyridylum di-cations and NADPH produces highly reactive free radicals, leading to tissue destruction through lipid peroxidation.</p> <p>Symptoms of overexposure include hypotension and arrhythmias, coughing, dyspnea, nosebleed (epistaxis), headache, lethargy, central nervous system (CNS) depression and coma. Other symptoms may include pulmonary alveolar cell necrosis, followed by connective tissue proliferation and pulmonary fibrosis (characteristic of paraquat intoxications), cerebral and brain stem haemorrhagic infarctions (characteristic of diquat intoxications), gastrointestinal fluid sequestration and renal failure. Cyanosis may be due to anoxic hypoxia or methaemoglobinaemia. Ingestion of concentrated solutions may produce swelling in the mouth and throat and oral ulceration. Nausea, vomiting, and a burning pain in the mouth, pharynx, oesophagus and abdomen, profuse, bloody vomiting (haematemesis), paralytic ileus and diarrhoea with bloody stools, may also result. The severity and tempo of the onset of symptoms depend on the dose with severe exposures leading to corrosive gastrointestinal damage, rapid onset of renal failure (resulting from massive fluid and electrolyte loss), muscle damage (myonecrosis), shock and death within hours or days. Lesser exposures may produce a more indolent response evolving over several days. Symptoms such as sore throat and dysphagia may occur within 24 hours; excoriated lips, and ulcers of the tongue, buccal mucosa and the pharynx may also be evident.</p> <p>Kidney damage (acute renal failure) may occur within 1 to 6 days; signs include oliguria, proteinuria, glucosuria and aminoaciduria. Signs of adrenal cortical necrosis may include fever, abdominal pain, lethargy, somnolence, and hypovolaemic vascular shock. Signs of liver damage (hepatotoxicity) may include pain in the upper quadrant due to enlargement and tenderness and jaundice.</p> <p>Signs of toxic myocarditis or signs of pulmonary congestion and early pulmonary oedema may or may not reflect acute cardiac failure. Recovery is generally complete in survivors, although pulmonary function tests may remain abnormal for months.</p> <p>Decreased pulmonary function may be evident from generalised rales, reduced arterial oxygen saturation, cyanosis, restriction in lung volume, increasing alveolar-arterial oxygen tension gradient, intrapulmonary shunt, and granular changes in X-rays of the lung fields. There may be an occasionally persistent anaemia due to selective erythropoiesis in the bone marrow.</p>
<b>Skin Contact</b>	<p>Skin contact with the material may be harmful; systemic effects may result following absorption.</p> <p>Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period.</p> <p>Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.</p> <p>The material may accentuate any pre-existing dermatitis condition</p> <p>Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p>Direct skin contact with bipyridylum compounds may produce irritation, dryness, erythema, blistering, ulceration, and nail changes (transverse ridging, furrowing). Irritant or contact dermatitis may also occur. Cyanosis with jaundice may result following absorption or entry through wounds or lesions. Repeated exposures may result in severe skin irritation, blistering and excoriation.</p>
<b>Eye</b>	<p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p>



<b>Chronic</b>	Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.	
	Toxic: danger of serious damage to health by prolonged exposure if swallowed.	
	Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions. Such damage may become apparent following direct application in subchronic (90 day) toxicity studies or following sub-acute (28 day) or chronic (two-year) toxicity tests.	
<b>AC PISTON 250</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>paraquat dichloride</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: 80 mg/kg <sup>[2]</sup>	Eye (rabbit): 12.5 mg SEVERE
	Inhalation(Rat) LC50; <0.001 mg/L4h <sup>[1]</sup>	Eye (rabbit): 25 mg - mild
	Oral (Guinea) LD50; 22 mg/kg <sup>[2]</sup>	
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

<b>PARAQUAT DICHLORIDE</b>	<p>Changed recordings from specific areas of brain and coverings, somnolence, convulsions, excitement, emphysema, interstitial fibrosis, acute pulmonary oedema, chronic pulmonary oedema, dyspnea, respiratory stimulation, ulceration and bleeding of the stomach, diarrhoea, nausea, vomiting, liver changes, gastrointestinal and liver changes, changes in kidney tubules and glomeruli) decreased urine volume, cutaneous sensitisation after topical application, effects on fertility, specific developmental (musculoskeletal system) recorded.</p> <p>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p>
<b>AC PISTON 250 &amp; PARAQUAT DICHLORIDE</b>	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p>

<b>Acute Toxicity</b>	✓	<b>Carcinogenicity</b>	✗
<b>Skin Irritation/Corrosion</b>	✓	<b>Reproductivity</b>	✗
<b>Serious Eye Damage/Irritation</b>	✓	<b>STOT - Single Exposure</b>	✓
<b>Respiratory or Skin sensitisation</b>	✗	<b>STOT - Repeated Exposure</b>	✓
<b>Mutagenicity</b>	✗	<b>Aspiration Hazard</b>	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## SECTION 12 Ecological information

### Toxicity

<b>AC PISTON 250</b>	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	Not Available	Not Available	Not Available	Not Available	Not Available
<b>paraquat dichloride</b>	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
	BCF	1008h	Fish	<0.2-0.3	7
	EC50	72h	Algae or other aquatic plants	0.067mg/L	4
	EC50	48h	Crustacea	1.01-1.485mg/L	4
	NOEC(ECx)	168h	Algae or other aquatic plants	<0.001mg/l	4

Continued...

	LC50	96h	Fish	5.13-27.31mg/l	4
	EC50	96h	Algae or other aquatic plants	<0.001mg/L	4

**Legend:** Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
paraquat dichloride	HIGH	HIGH

### Bioaccumulative potential

Ingredient	Bioaccumulation
paraquat dichloride	LOW (BCF = 1.9)

### Mobility in soil

Ingredient	Mobility
paraquat dichloride	LOW (KOC = 652.4)



## SECTION 13 Disposal considerations

### Waste treatment methods

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>Containers may still present a chemical hazard/ danger when empty.</li> <li>Return to supplier for reuse/ recycling if possible.</li> </ul> <p>Otherwise:</p> <ul style="list-style-type: none"> <li>If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.</li> <li>Where possible retain label warnings and SDS and observe all notices pertaining to the product.</li> </ul>
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## SECTION 14 Transport information

### Labels Required

	
<b>Marine Pollutant</b>	
<b>HAZCHEM</b>	2X

### Land transport (ADG)

<b>UN number</b>	3016				
<b>UN proper shipping name</b>	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC				
<b>Transport hazard class(es)</b>	<table> <tr> <td>Class</td><td>6.1</td></tr> <tr> <td>Subrisk</td><td>Not Applicable</td></tr> </table>	Class	6.1	Subrisk	Not Applicable
Class	6.1				
Subrisk	Not Applicable				
<b>Packing group</b>	III				
<b>Environmental hazard</b>	Environmentally hazardous				

Special precautions for user	Special provisions	61 223 274
	Limited quantity	5 L

**Air transport (ICAO-IATA / DGR)**

UN number	3016	
UN proper shipping name	Bipyridilium pesticide, liquid, toxic *	
Transport hazard class(es)	ICAO/IATA Class	6.1
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	6L
Packing group	III	
Environmental hazard	Environmentally hazardous	
Special precautions for user	Special provisions	A3 A4
	Cargo Only Packing Instructions	663
	Cargo Only Maximum Qty / Pack	220 L
	Passenger and Cargo Packing Instructions	655
	Passenger and Cargo Maximum Qty / Pack	60 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y642
	Passenger and Cargo Limited Maximum Qty / Pack	2 L

**Sea transport (IMDG-Code / GGVSee)**

UN number	3016	
UN proper shipping name	BIPYRIDILIUM PESTICIDE, LIQUID, TOXIC	
Transport hazard class(es)	IMDG Class	6.1
	IMDG Subrisk	Not Applicable
Packing group	III	
Environmental hazard	Marine Pollutant	
Special precautions for user	EMS Number	F-A, S-A
	Special provisions	61 223 274
	Limited Quantities	5 L

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
paraquat dichloride	Not Available

**Transport in bulk in accordance with the ICG Code**

Product name	Ship Type
paraquat dichloride	Not Available

**SECTION 15 Regulatory information****Safety, health and environmental regulations / legislation specific for the substance or mixture****paraquat dichloride is found on the following regulatory lists**

Australia Chemicals with non-industrial uses removed from the Australian Inventory of Chemical Substances (old Inventory)

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 7

**National Inventory Status**

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	No (paraquat dichloride)
Canada - NDSL	No (paraquat dichloride)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	No (paraquat dichloride)
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	No (paraquat dichloride)
<b>Legend:</b>	<p>Yes = All CAS declared ingredients are on the inventory</p> <p>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.</p>

**SECTION 16 Other information**

<b>Revision Date</b>	20/08/2021
<b>Initial Date</b>	14/11/2013

**SDS Version Summary**

Version	Date of Update	Sections Updated
4.1	03/09/2020	Classification change due to full database hazard calculation/update.
5.1	20/08/2021	Classification change due to full database hazard calculation/update.

**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

**Definitions and abbreviations**

PC—TWA: Permissible Concentration-Time Weighted Average  
 PC—STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit.  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 ES: Exposure Standard  
 OSF: Odour Safety Factor  
 NOAEL :No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection  
 OTV: Odour Threshold Value  
 BCF: BioConcentration Factors  
 BEI: Biological Exposure Index  
 AIIC: Australian Inventory of Industrial Chemicals

DSL: Domestic Substances List  
NDSL: Non-Domestic Substances List  
IECSC: Inventory of Existing Chemical Substance in China  
EINECS: European INventory of Existing Commercial chemical Substances  
ELINCS: European List of Notified Chemical Substances  
NLP: No-Longer Polymers  
ENCS: Existing and New Chemical Substances Inventory  
KECI: Korea Existing Chemicals Inventory  
NZIoC: New Zealand Inventory of Chemicals  
PICCS: Philippine Inventory of Chemicals and Chemical Substances  
TSCA: Toxic Substances Control Act  
TCSI: Taiwan Chemical Substance Inventory  
INSQ: Inventario Nacional de Sustancias Químicas  
NCI: National Chemical Inventory  
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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