

# SAFETY DATA SHEET

## ALIGN

### 1: Identification of the Substance and Supplier

<b>Product Name</b>	<b>ALIGN</b>
<b>Recommended Use</b>	Plant Growth Regulator
<b>Suppliers Details</b>	Orion AgriScience Ltd Unit 1, 15 Sir Gil Simpson Drive, Harewood, Christchurch, 8053 PO Box 39 071, Harewood, Christchurch, 8545
<b>Web Address</b>	www.orionagriscience.co.nz
<b>Email Address</b>	orders@orionagriscience.co.nz
<b>Telephone Number</b>	(03) 928 2386 (office hours), 0800 674 6627 (free phone)
<b>Emergency Telephone</b>	0800 CHEMCALL (0800 243 622) (24 hours)
<b>National Poison Centre</b>	0800 POISON (0800 764 766) (24 hours)
<b>Date of Issue/Revision</b>	November 2024

### 2: Hazards Identification

#### Hazard Pictograms



#### Signal Words

##### Hazard Classes:

Acute Oral Toxicity (Cat. 4)  
Specific Target Organ Toxicity repeated exposure (Cat. 2)  
Corrosive to Metals (Cat. 1)  
Hazardous to the aquatic environment chronic (Cat. 3)  
Hazardous to soil organisms  
Hazardous to terrestrial Vertebrate

##### Precautionary Statements:

Prevention

#### Response

#### Warning

##### Hazard Statements:

H302 Harmful if swallowed  
H373 May cause damage to organs through prolonged or repeated exposure  
H290 May be corrosive to metals  
H412 Harmful to aquatic life with long lasting effects  
H422 Toxic to the soil environment  
H432 Toxic to terrestrial vertebrates

P101 If medical advice is needed, have product container or label at hand  
P103 Read carefully and follow all instructions  
P264 Wash hands thoroughly after handling  
P270 Do not eat, drink or smoke when using this product  
P260 Do not breathe spray  
P234 Keep only in original packaging  
P273 Avoid release to the environment  
Keep out of reach of children. Read label before use. Avoid contact with eyes and skin. Do not breathe in the spray mist. When mixing or applying, wear personal protection as described in section 8. Take all reasonable steps to ensure that this product does not cause any significant adverse effects to the environment beyond the application area. Do not apply directly into or onto  
P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell  
P330 Rinse mouth  
P314 Get medical advice/attention if you feel unwell  
P390 Absorb spillage to prevent material damage  
P391 Collect spillage  
First aid measures described in section 4. Contain and collect spillage for disposal. In an emergency call 111, Police or Fire Brigade. For specialist advice in an emergency only, call 0800 CHEMCALL (0800 243 6225) (24 hrs).

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Storage	P406 Store in a corrosive resistant container with a resistant inner liner
Disposal	Keep out of reach of children. P501 Dispose of contents by using it in accordance with this label. Dispose of the container via AgRecovery after triple rinsing (use the rinsate for spraying).

### 3: Composition/ Information on Ingredients

Ingredient	CAS No	Content (% w/v)
Mepiquat chloride (active ingredient)	24307-26-4	30.5
Chlorethephon (active ingredient)	16672-87-0	15.5
Acetic acid	64-19-7	1.4
Other ingredients	Proprietary	Remainder

### 4: First Aid Measures

If medical advice is needed, have product container or label at hand. For advice call the National Poisons Centre or a Doctor

<b>Ingestion:</b>	Rinse mouth. Call a POISON CENTRE/doctor if you feel unwell
<b>Skin Contact:</b>	Wash with plenty of soap and water. Seek medical advice if irritation occurs.
<b>Eye Contact:</b>	Rinse cautiously with water for several minutes. Remove contact lenses, if easy to do so. Continue rinsing. Seek medical advice if irritation persists.
<b>Inhalation:</b>	Remove to fresh air and keep at rest in a position comfortable for breathing. Seek medical advice if feeling unwell.
<b>Workplace Facilities:</b>	Hand wash facility. Eye wash facility
<b>Advice to Doctor:</b>	No specific antidote. Treat symptomatically
<b>National Poison Centre</b>	0800 POISON (0800 764 766) (24 hours)

Symptoms of Exposure which could occur if this material is not handled in accordance with instructions:

<b>Ingestion:</b>	Indigestion, diarrhea, urinary urgency
<b>Skin Contact:</b>	May cause irritation
<b>Eye Contact:</b>	May cause irritation
<b>Inhalation:</b>	Unknown

### 5: Fire-Fighting Measures

<b>Fire/Explosion Hazard</b>	Non-Flammable
<b>HAZCHEM Code</b>	2Z
<b>ERP Guide No</b>	36
<b>Extinguishing Media</b>	Water spray, foam, dry chemical or CO2. Avoid water jet.
<b>Fire Fighting Instructions</b>	During a fire, toxic fumes may be emitted. Wear self-contained breathing apparatus and chemical-protective clothing. Contain runoff.
<b>Specific Hazards Arising from Fire</b>	No data available

### 6: Accidental Release Measures

<b>Personal Precautions</b>	Caution: Floors may be slippery if wet. Wear personal protective clothing and equipment as described in section 8. Exclude non-essential people from the area.
<b>Environmental Precautions</b>	Prevent further spillage or leakage. Prevent material from entering drains, waterways, etc.
<b>Clean Up</b>	Absorb spillage with inert material such as spill kit, sand or cat litter. Collect and place in a sealable container for disposal. Wash down affected area with water and detergent. Absorb and collect washings for disposal. Dispose of safely to a suitable landfill.

### 7: Handling and Storage

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<b>Storage:</b>	Keep out of reach of children. Store in the original tightly closed container in a secure area.
<b>Handling and Use:</b>	Keep out of reach of children. Refer to Prevention statements in section 2 above. Keep people and animals away from the area while spraying and for the duration of the REI.
<b>REI</b>	Until spray has dried

### 8: Exposure Controls / Personal Protection

<b>Tolerable Exposure Limit</b>	None established
<b>Workplace Exposure Standards</b>	Acetic acid 10 ppm / 25 mg/m <sup>3</sup> (8hr TWA), 15 ppm / 37 mg/m <sup>3</sup> (15 min STEL)
<b>Engineering Controls</b>	Select spray application equipment to minimize exposure to operator and bystanders
<b>Personal Protection:</b>	The following Standards provide general advice regarding safety clothing and equipment: Respiratory equipment: AS/NZS 1715, Protective Gloves: AS 2161, Occupational Protective Clothing: AS/NZS 4501, Industrial Eye Protection: AS1336 and AS/NZS 1337, Occupational Protective Footwear: AS/NZS2210.
<b>Eye</b>	Safety glasses/goggles when mixing or applying
<b>Skin</b>	Cotton overalls snugly fitting at the neck, wrist and ankle, boots and waterproof gloves when mixing and applying
<b>Respiratory</b>	Not required where spray mist is not inhaled. Otherwise, respirator (organic vapour and particulate matter) is required.

Clean protective equipment after use

### 9: Physical and Chemical Properties

<b>Appearance</b>	Clear Amber Liquid
<b>Odour</b>	Slight
<b>Odour Threshold</b>	Does not apply
<b>pH</b>	0.8 approx.
<b>Melting Point/Freezing Point</b>	< 0°C
<b>Boiling Point</b>	> 100°C
<b>Flash Point</b>	Does not apply
<b>Flammability</b>	Does not apply
<b>Upper/Lower Flammability Limits</b>	Does not apply
<b>Vapour Pressure</b>	Does not apply
<b>Vapour Density</b>	Does not apply
<b>Relative Density</b>	1.09 g/mL (approx.)
<b>Solubility (ies)</b>	Soluble
<b>Partition Coefficient: n-octanol/water</b>	See section 12
<b>Auto ignition Temperature</b>	Does not apply
<b>Decomposition Temperature</b>	Does not apply
<b>Kinematic Viscosity</b>	Does not apply
<b>Particle characteristics</b>	Does not apply

### 10: Stability and Reactivity

<b>Stability</b>	Stable under normal conditions
<b>Hazardous Reactions</b>	This product should only be mixed, contained in or sprayed by, equipment made from stainless steel, fibreglass, or plastic. A highly flammable gas (hydrogen) may be formed from the contact of this product with galvanised or unlined steel. All spray equipment, including pumps, spray tanks, lines, nozzles, and landing gear (aircraft) should be thoroughly washed with water after each day of spraying.
<b>Incompatibility</b>	See above
<b>Hazardous Decomposition Products</b>	See above

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### 11: Toxicological Information

This section describes effects which could occur if this material is not handled in accordance with this data sheet and label instructions

<b>Acute Oral Toxicity</b>	LD50 > 300 mg/kg
<b>Acute Dermal Toxicity</b>	LD50 > 5000 mg/kg
<b>Acute Inhalation Toxicity</b>	LD50 > 5 mg/L
<b>Skin Corrosion/irritation</b>	Information not available
<b>Serious eye damage/eye irritation</b>	Information not available
<b>Respiratory or skin sensitisation</b>	Information not available
<b>Germ cell mutagenicity</b>	Information not available
<b>Carcinogenicity</b>	Information not available
<b>Reproductive Toxicity</b>	Information not available
<b>Specific Target Organ Toxicity – single exposure</b>	Information not available
<b>Specific Target Organ Toxicity – repeated exposure</b>	Long term animal feeding studies on the active ingredients have found various effects at higher feeding levels including sedation and tonic spasms (convulsive contraction of muscles), decreased food intake and body weights, decreased haemoglobin and red blood cell, and increased hematocrit (red blood cell proportion) and reticulocytes (immature red blood cells) (mepiquat chloride); and decrease in red blood cell and plasma cholinesterase activity (chlorethepon). Long term ingestion of acetic acid may lead to digestive disorders
<b>Aspiration hazard</b>	Information not available

### 12: Ecological Information

This section describes effects which could occur if this material is not handled in accordance with this data sheet and label instructions

The following information is presented in respect of the active ingredient:

Ecotoxicity	Mepiquat chloride	
<b>Aquatic</b>	<ul style="list-style-type: none"> <li>Acute Oral LD50 (Bobwhite quail) &gt;2000 mg/kg</li> <li>LC50 (96 hr) (Rainbow trout) 4300 mg/l</li> <li>LC50 (48 hr) (Daphnia) 68.5 mg/l</li> <li>EC50 (72 hr) (Algae) &gt;1000 mg/l</li> <li>Non - toxic to bees.</li> </ul>	
	Chlorethepon	
	<ul style="list-style-type: none"> <li>Acute Oral LD50 (Bobwhite quail) 1072 mg/kg</li> <li>LC50 (96 hr) (Rainbow trout) 720 mg/l</li> <li>LC50 (48 hr) (Daphnia) 577 mg/l</li> <li>EC50 (24 - 48 hr) (Algae) 32 mg/l</li> <li>Non - toxic to bees.</li> </ul>	
<b>Persistence/degradability</b>	Biodegradable. DT50 (soil) 13 days (typical) (Mepiquat chloride)	
	Biodegradable. DT50 (soil) 13 days (typical) (Chlorethepon)	
<b>Bioaccumulative Potential</b>	Octanol-water partition coefficient	LogP = -3.55 (low) (Mepiquat chloride)
		LogP = -1.89 (low) (Chlorethepon)
<b>Soil Mobility</b>	Soil organic carbon water partitioning coefficient	Not available (Mepiquat chloride)
		Not available (Chlorethepon)
<b>Environmental Exposure Limit:</b>	None established	

### 13: Disposal Considerations

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<b>Product</b>	Dispose of product by using it in accordance with the label. Waste product should be disposed of to a suitable landfill. For disposal of large quantities contact Orion AgriScience Ltd.
<b>Container</b>	Dispose of to a suitable landfill or via AgRecovery. Do not burn. Do not use packaging for any other purpose.

### 14: Transport Information

<b>Dangerous Goods</b>	
<b>UN Number</b>	3265
<b>Proper Shipping Name</b>	CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (CHLORETHEPHON 15%)
<b>Dangerous goods class</b>	8
<b>Subsidiary Class</b>	None
<b>Packing Group</b>	III
<b>Additional Information</b>	Corrosive to metals
<b>MTQ (Non-Commercial)</b>	250 litres
<b>Passenger Service Vehicle</b>	No restriction

### 15 Regulatory Information

<b>EPA Approval No</b>	HSR000806
<b>ACVM Registration No</b>	P5989
<b>Qualified Person</b>	Not required
<b>Certified Handler</b>	Not required
<b>Workplace Only</b>	No
<b>Tracking</b>	Not required
<b>Record Keeping</b>	Not required
<b>Site Requirements under EPA Notice and HSWHS Regs:</b>	<ul style="list-style-type: none"><li>• A hazardous substance location compliance certificate is not required</li><li>• A hazardous area is not required</li><li>• Separation distances for class 3 and class 6 substances to protected places and public places is not applicable</li><li>• Fire extinguishers are not required</li><li>• Signage is required for more than 1000 litres</li><li>• An emergency response plan is required for more than 1000 litres</li><li>• Secondary containment is required for more than 1000 litres</li><li>• Segregation from class 4.3, 5.1, 5.2, food stuffs</li></ul>
<b>Additional Requirements</b>	Refer to NZS 8409:2004 'Management of Agrichemicals', and relevant local and regional council plans

### 16: Other Information

<b>SDS review date:</b>	November 2024
<b>ADE</b>	Acceptable Daily Exposure – A daily dose, received via any route, below which no adverse effects are expected over a lifetime of exposure
<b>ACVM</b>	Agricultural Compounds and Veterinary Medicines group of the Ministry of Primary Industries
<b>Cat.</b>	GHS category
<b>Ceiling</b>	A concentration that should not be exceeded at any time during any part of the working day
<b>Certified Handler</b>	A qualification issued by a Compliance Certifier to handle and use particularly toxic substances (6.1A and 6.1B)
<b>DT50</b>	Time (days) for 50% reduction in concentration
<b>EC50</b>	Concentration required to produce an effect in 50% of organisms
<b>Environmental Exposure Limit</b>	Maximum concentration limit of a substance in an environmental medium, e.g., water, soil.
<b>EPA Notice</b>	Hazardous Property Controls Notice 2017

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<b>ERP Guide</b>	Dangerous Goods – Initial Emergency Response Guide SNZ HB 76:2008
<b>GHS</b>	Globally harmonized system of classification and labelling of chemicals
<b>Hazardous Substance Location</b>	For locations storing hazard substances of certain classes above threshold quantities
<b>Compliance Certificate</b>	
<b>Hazardous Area</b>	A designated area designed for the presence of flammable substances - Refer AS/NZS 60079.10.1:2009
<b>HAZCHEM Code</b>	Emergency action code for emergency services
<b>HSWHS Regs</b>	Health and Safety at Work (Hazardous Substances) Regulations 2017
<b>LC50</b>	Concentration that will kill 50% of organisms
<b>LD50</b>	Dose that will kill 50% of organisms
<b>MTQ</b>	Maximum Transport Quantity. The maximum amount of dangerous goods that can be transported by road by the user
<b>Notification</b>	Advance notice given to neighbours and other affected parties, of details of proposed application, and other details as described
<b>Octanol-Water Partition Coefficient</b>	The partition coefficient of a substance between n-octanol and water, used as the Logarithm base 10 form, as an indicator that a substance may bioaccumulate
<b>PDE</b>	Permitted Daily Exposure - A daily dose below which no adverse effects are expected over a lifetime of exposure
<b>Protected Place</b>	Residential properties, schools, hospitals, kindys, factories, shops, warehouses, etc., and other places where people assemble
<b>Public Place</b>	A place frequented by the public, including roads (does not include private property)
<b>Qualified Person</b>	A requirement for the loader, contractor or person applying the product to hold a qualification such as a GROWSAFE Certificate, Unit Standard 21563, etc.
<b>Record Keeping</b>	Includes a spray diary or other record of application
<b>REI</b>	Restricted Entry Interval – The length of time after application before entry into the treated area is permitted without the use of protective equipment. For indoor environments, this time period commences once ventilation after treatment begins.
<b>Segregation</b>	Certain classes of substances must not be in contact with, and must be stored separately from, certain other classes as specified in HSWHS Regs
<b>Separation Distances</b>	The distances specified in Part 11 and Part 13 of HSWHS Regs between storage and/or use of hazardous substances and protected places and/or public places
<b>Signage</b>	Positioned at entrances to commercial premises providing information on the hazardous substances present
<b>Soil Adsorption Coefficient (Kd)</b>	The ratio of the concentrations of a substance adsorbed onto a solid sorbent to that dissolved in a liquid phase. The higher the value the less mobile the chemical is in soil
<b>Soil Organic Carbon-Water Partitioning Coefficient (Koc)</b>	The ratio of the mass of a chemical that is adsorbed in the soil per unit mass of organic carbon in the soil. The higher the value the less mobile the chemical is in soil
<b>STEL</b>	Short term exposure level – 15 minute time weighted average
<b>Tolerable Exposure Limit</b>	Maximum concentration limit of a substance above which persons must not be exposed
<b>Tracking</b>	For some particularly hazardous substances, a record must be kept of the transport, storage, sale and use of the product
<b>TWA</b>	Time weighted average calculated over an 8 hour working day
<b>Workplace Exposure Standard</b>	An occupational health standard limiting concentrations of specified substances to which persons are exposed
<b>Workplace Only</b>	A product that is restricted to a workplace only and under the supervision of a certified handler
<b>Please Note</b>	

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Users must ensure that the most up to date version of this safety data sheet is used.

This Safety Data Sheet summarises information on this product, and how to safely handle and use the product. Each user should familiarise themselves with the product label and Safety Data Sheet, and consider the information in the context of how the product will be handled and used, including in conjunction with other products. Orion AgriScience Ltd assumes no responsibility for the accuracy, completeness or suitability of this information. The user is responsible for determining the suitability and accuracy of this information for their particular purposes.

If clarification or further information is needed to ensure that an appropriate risk assessment can be made, the user should contact this company.