

SAFETY DATA SHEET

ALIGN

1: Identification of the Substance and Supplier

Product Name

ALIGN

Recommended Use

Plant Growth Regulator

Suppliers Details

Orion AgriScience Ltd

Unit 1, 15 Sir Gil Simpson Drive, Harewood, Christchurch, 8053

PO Box 39 071, Harewood, Christchurch, 8545

Web Address

www.orionagriscience.co.nz

Email Address

orders@orionagriscience.co.nz

Telephone Number

(03) 928 2386 (office hours), 0800 674 6627 (free phone)

Emergency Telephone

0800 CHEMCALL (0800 243 622) (24 hours)

National Poison Centre

0800 POISON (0800 764 766) (24 hours)

Date of Issue/Revision

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

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).

Response

SAFETY DATA SHEET

ALIGN

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

Symptoms of Exposure which could occur if this material is not handled in accordance with instructions:	
Ingestion:	Indigestion, diarrhea, urinary urgency
Skin Contact:	May cause irritation
Eye Contact:	May cause irritation
Inhalation:	Unknown

5: Fire-Fighting Measures

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

6: Accidental Release Measures

Personal Precautions	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.
Environmental Precautions	Prevent further spillage or leakage. Prevent material from entering drains, waterways, etc.
Clean Up	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

SAFETY DATA SHEET

ALIGN

Storage:	Keep out of reach of children. Store in the original tightly closed container in a secure area.
Handling and Use:	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.
REI	Until spray has dried

8: Exposure Controls / Personal Protection	
Tolerable Exposure Limit	None established
Workplace Exposure Standards	Acetic acid 10 ppm / 25 mg/m ³ (8hr TWA), 15 ppm / 37 mg/m ³ (15 min STEL)
Engineering Controls	Select spray application equipment to minimize exposure to operator and bystanders
Personal Protection:	
	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.
Eye	Safety glasses/goggles when mixing or applying
Skin	Cotton overalls snugly fitting at the neck, wrist and ankle, boots and waterproof gloves when mixing and applying
Respiratory	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	
Appearance	Clear Amber Liquid
Odour	Slight
Odour Threshold	Does not apply
pH	0.8 approx.
Melting Point/Freezing Point	< 0°C
Boiling Point	> 100°C
Flash Point	Does not apply
Flammability	Does not apply
Upper/Lower Flammability Limits	Does not apply
Vapour Pressure	Does not apply
Vapour Density	Does not apply
Relative Density	1.09 g/mL (approx.)
Solubility (ies)	Soluble
Partition Coefficient: n-octanol/water	See section 12
Auto ignition Temperature	Does not apply
Decomposition Temperature	Does not apply
Kinematic Viscosity	Does not apply
Particle characteristics	Does not apply

10: Stability and Reactivity	
Stability	Stable under normal conditions
Hazardous Reactions	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.
Incompatibility	See above
Hazardous Decomposition Products	See above

SAFETY DATA SHEET

ALIGN

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

Acute Oral Toxicity	LD50 > 300 mg/kg
Acute Dermal Toxicity	LD50 > 5000 mg/kg
Acute Inhalation Toxicity	LD50 > 5 mg/L
Skin Corrosion/irritation	Information not available
Serious eye damage/eye irritation	Information not available
Respiratory or skin sensitisation	Information not available
Germ cell mutagenicity	Information not available
Carcinogenicity	Information not available
Reproductive Toxicity	Information not available
Specific Target Organ Toxicity – single exposure	Information not available
Specific Target Organ Toxicity – repeated exposure	Long term animal feeding studies on the active ingredients have found various effects at higher feeding levels including sedation and tonicoclonic 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
Aspiration hazard	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	
Aquatic	<ul style="list-style-type: none">Acute Oral LD50 (Bobwhite quail) >2000 mg/kgLC50 (96 hr) (Rainbow trout) 4300 mg/lLC50 (48 hr) (Daphnia) 68.5 mg/lEC50 (72 hr) (Algae) >1000 mg/lNon - toxic to bees.	
	Chlorethepon	
	<ul style="list-style-type: none">Acute Oral LD50 (Bobwhite quail) 1072 mg/kgLC50 (96 hr) (Rainbow trout) 720 mg/lLC50 (48 hr) (Daphnia) 577 mg/lEC50 (24 - 48 hr) (Algae) 32 mg/lNon - toxic to bees.	
Persistence/degradability	Biodegradable. DT50 (soil) 13 days (typical) (Mepiquat chloride) Biodegradable. DT50 (soil) 13 days (typical) (Chlorethepon)	
Bioaccumulative Potential	Octanol-water partition coefficient	LogP = -3.55 (low) (Mepiquat chloride) LogP = -1.89 (low) (Chlorethepon)
Soil Mobility	Soil organic carbon water partitioning coefficient	Not available (Mepiquat chloride) Not available (Chlorethepon)
Environmental Exposure Limit:	None established	

13: Disposal Considerations

SAFETY DATA SHEET

ALIGN

Product	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.
Container	Dispose of to a suitable landfill or via AgRecovery. Do not burn. Do not use packaging for any other purpose.

14: Transport Information

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

15 Regulatory Information

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

16: Other Information

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

SAFETY DATA SHEET

ALIGN

ERP Guide	Dangerous Goods – Initial Emergency Response Guide SNZ HB 76:2008
GHS	Globally harmonized system of classification and labelling of chemicals
Hazardous Substance Location	For locations storing hazard substances of certain classes above threshold quantities
Compliance Certificate	
Hazardous Area	A designated area designed for the presence of flammable substances - Refer AS/NZS 60079.10.1:2009
HAZCHEM Code	Emergency action code for emergency services
HSWHS Regs	Health and Safety at Work (Hazardous Substances) Regulations 2017
LC50	Concentration that will kill 50% of organisms
LD50	Dose that will kill 50% of organisms
MTQ	Maximum Transport Quantity. The maximum amount of dangerous goods that can be transported by road by the user
Notification	Advance notice given to neighbours and other affected parties, of details of proposed application, and other details as described
Octanol-Water Partition Coefficient	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
PDE	Permitted Daily Exposure - A daily dose below which no adverse effects are expected over a lifetime of exposure
Protected Place	Residential properties, schools, hospitals, kindys, factories, shops, warehouses, etc., and other places where people assemble
Public Place	A place frequented by the public, including roads (does not include private property)
Qualified Person	A requirement for the loader, contractor or person applying the product to hold a qualification such as a GROWSAFE Certificate, Unit Standard 21563, etc.
Record Keeping	Includes a spray diary or other record of application
REI	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.
Segregation	Certain classes of substances must not be in contact with, and must be stored separately from, certain other classes as specified in HSWHS Regs
Separation Distances	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
Signage	Positioned at entrances to commercial premises providing information on the hazardous substances present
Soil Adsorption Coefficient (Kd)	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
Soil Organic Carbon-Water Partitioning Coefficient (Koc)	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
STEL	Short term exposure level – 15 minute time weighted average
Tolerable Exposure Limit	Maximum concentration limit of a substance above which persons must not be exposed
Tracking	For some particularly hazardous substances, a record must be kept of the transport, storage, sale and use of the product
TWA	Time weighted average calculated over an 8 hour working day
Workplace Exposure Standard	An occupational health standard limiting concentrations of specified substances to which persons are exposed
Workplace Only	A product that is restricted to a workplace only and under the supervision of a certified handler
Please Note	

SAFETY DATA SHEET

ALIGN

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.