

## 1. IDENTIFICATION

<b>Product Name</b>	<b>Polyaluminium Chloride Solution</b>
<b>Other Names</b>	Aluminium chloride, basic, liquid; Polyaluminium Chloride Liquid
<b>Uses</b>	A cationic coagulant used in waste water treatment.
<b>Chemical Family</b>	No Data Available
<b>Chemical Formula</b>	Unspecified
<b>Chemical Name</b>	Contains: Aluminium hydroxide chloride
<b>Product Description</b>	No Data Available

### Contact Details of the Supplier of this Safety Data Sheet

Organisation	Location	Telephone
Redox Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61-2-97333000
Redox Ltd	11 Mayo Road Wiri Auckland 2104 New Zealand	+64-9-2506222
Redox Inc.	3960 Paramount Boulevard Suite 107 Lakewood CA 90712 USA	+1-424-675-3200
Redox Chemicals Sdn Bhd	Level 2, No. 8, Jalan Sapir 33/7 Seksyen 33, Shah Alam Premier Industrial Park 40400 Shah Alam Sengalor, Malaysia	+60-3-5614-2111

### Emergency Contact Details

*For emergencies only; DO NOT contact these companies for general product advice.*


Organisation	Location	Telephone
Poisons Information Centre	Westmead NSW	1800-251525 131126
Chemcall	Australia	1800-127406 +64-4-9179888
Chemcall	Malaysia	+64-4-9179888
Chemcall	New Zealand	0800-243622 +64-4-9179888
National Poisons Centre	New Zealand	0800-764766
CHEMTREC	USA & Canada	1-800-424-9300 CN723420 +1-703-527-3887

## 2. HAZARD IDENTIFICATION

**Poisons Schedule (Aust)**

Not Scheduled

## Globally Harmonised System

<b>Hazard Classification</b>	Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS)		
<b>Hazard Categories</b>	Skin Corrosion/Irritation - Category 2 Serious Eye Damage/Irritation - Category 2A		
<b>Pictograms</b>			
<b>Signal Word</b>	Warning		
<b>Hazard Statements</b>	<b>H315</b>	Causes skin irritation.	
	<b>H319</b>	Causes serious eye irritation.	
<b>Precautionary Statements</b>	Prevention	<b>P280</b>	Wear protective gloves/eye protection/face protection.
	Response	<b>P302 + P352</b>	IF ON SKIN: Wash with plenty of water.
		<b>P337 + P313</b>	If eye irritation persists: Get medical advice.
		<b>P332 + P313</b>	If skin irritation occurs: Get medical advice.
		<b>P305 + P351 + P338</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
		<b>P362 + P364</b>	Take off contaminated clothing and wash it before reuse.

**National Transport Commission (Australia)**

Australian Code for the Transport of Dangerous Goods by Road &amp; Rail (ADG Code)

<b>Dangerous Goods Classification</b>	NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)
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**3. COMPOSITION/INFORMATION ON INGREDIENTS***Ingredients*

Chemical Entity	Formula	CAS Number	Proportion
Aluminium chloride, basic	Unspecified	1327-41-9	>=10 %
Water	H2O	7732-18-5	Balance %

**4. FIRST AID MEASURES***Description of necessary measures according to routes of exposure*

<b>Swallowed</b>	IF SWALLOWED: Rinse mouth, then drink plenty of water. Do NOT induce vomiting. Call a Poison Centre or doctor/physician for advice. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Never give anything by mouth to an unconscious person.
<b>Eye</b>	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. If eye irritation persists, get medical advice/attention.

# SAFETY DATA SHEET POLYALUMINIUM CHLORIDE SOLUTION REVISION 6, DATE 12 AUG 2020

<b>Skin</b>	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse.
<b>Inhaled</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If respiratory symptoms persist, get medical advice/attention.
<b>Advice to Doctor</b>	Treat symptomatically.
<b>Medical Conditions Aggravated by Exposure</b>	No information available.

## 5. FIRE FIGHTING MEASURES

<b>General Measures</b>	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
<b>Flammability Conditions</b>	Non-combustible; Material itself does not burn.
<b>Extinguishing Media</b>	If material is involved in a fire, use extinguishing media appropriate to surrounding fire conditions.
<b>Fire and Explosion Hazard</b>	Containers may explode when heated.
<b>Hazardous Products of Combustion</b>	Decomposes on heating, emitting hydrogen chloride gas and other toxic fumes.
<b>Special Fire Fighting Instructions</b>	Contain runoff from fire control or dilution water - Runoff may cause pollution.
<b>Personal Protective Equipment</b>	Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.
<b>Flash Point</b>	No Data Available
<b>Lower Explosion Limit</b>	No Data Available
<b>Upper Explosion Limit</b>	No Data Available
<b>Auto Ignition Temperature</b>	No Data Available
<b>Hazchem Code</b>	No Data Available

## 6. ACCIDENTAL RELEASE MEASURES

<b>General Response Procedure</b>	Ensure adequate ventilation. Do not touch or walk through spilled material - Slippery when spilt! Avoid breathing vapours and contact with eyes, skin and clothing.
<b>Clean Up Procedures</b>	Absorb with earth, sand or other non-combustible material and transfer to suitable, labelled containers for disposal (see SECTION 13).
<b>Containment</b>	Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas.
<b>Decontamination</b>	Use retention basins for storage and pH adjustment before discharge or disposal.
<b>Environmental Precautionary Measures</b>	Prevent entry into drains and waterways.
<b>Evacuation Criteria</b>	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
<b>Personal Precautionary Measures</b>	Use personal protective equipment as required (see SECTION 8).

## 7. HANDLING AND STORAGE

<b>Handling</b>	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Avoid breathing mist/vapours/aerosols and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8).
<b>Storage</b>	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep containers tightly closed - Check regularly for leaks. Keep away from incompatible materials (see SECTION 10).

\*Do not use incompatible materials for bunding and containment.

**Container**

Keep in the original container.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

<b>General</b>	No specific exposure standards are available for this product. For Aluminium, soluble salts: - Safe Work Australia Exposure Standard: TWA = 2 mg/m <sup>3</sup> (as Al). - New Zealand Workplace Exposure Standard [Next review 2022]: TWA = 5 mg/m <sup>3</sup> (as Al).
<b>Exposure Limits</b>	No Data Available
<b>Biological Limits</b>	No information available.
<b>Engineering Measures</b>	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
<b>Personal Protection Equipment</b>	- Respiratory protection: In case of inadequate ventilation, wear respiratory protection. Recommended: Suitable mist respirator (refer to AS/NZS 1715 & 1716). - Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Chemical goggles. - Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. Nitrile, Viton, Polyvinyl chloride (PVC) or natural rubber gloves. - Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Overalls, safety shoes.
<b>Special Hazards Precautions</b>	No information available.
<b>Work Hygienic Practices</b>	Do not eat, drink or smoke when using this product. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>Physical State</b>	Liquid
<b>Appearance</b>	Liquid
<b>Odour</b>	Mild
<b>Colour</b>	Colourless to slightly cloudy
<b>pH</b>	2.5 - 3.5
<b>Vapour Pressure</b>	No Data Available
<b>Relative Vapour Density</b>	No Data Available
<b>Boiling Point</b>	approx. 100 °C
<b>Melting Point</b>	No Data Available
<b>Freezing Point</b>	No Data Available
<b>Solubility</b>	Miscible with water
<b>Specific Gravity</b>	1.15 - 1.20
<b>Flash Point</b>	No Data Available
<b>Auto Ignition Temp</b>	No Data Available
<b>Evaporation Rate</b>	No Data Available
<b>Bulk Density</b>	No Data Available
<b>Corrosion Rate</b>	No Data Available
<b>Decomposition Temperature</b>	No Data Available
<b>Density</b>	No Data Available
<b>Specific Heat</b>	No Data Available
<b>Molecular Weight</b>	No Data Available

<b>Net Propellant Weight</b>	No Data Available
<b>Octanol Water Coefficient</b>	No Data Available
<b>Particle Size</b>	No Data Available
<b>Partition Coefficient</b>	No Data Available
<b>Saturated Vapour Concentration</b>	No Data Available
<b>Vapour Temperature</b>	No Data Available
<b>Viscosity</b>	No Data Available
<b>Volatile Percent</b>	No Data Available
<b>VOC Volume</b>	No Data Available
<b>Additional Characteristics</b>	No information available.
<b>Potential for Dust Explosion</b>	Not applicable.
<b>Fast or Intensely Burning Characteristics</b>	No information available.
<b>Flame Propagation or Burning Rate of Solid Materials</b>	No information available.
<b>Non-Flammables That Could Contribute Unusual Hazards to a Fire</b>	No information available.
<b>Properties That May Initiate or Contribute to Fire Intensity</b>	Non-combustible; Material itself does not burn.
<b>Reactions That Release Gases or Vapours</b>	Decomposes on heating, emitting hydrogen chloride gas and other toxic fumes.
<b>Release of Invisible Flammable Vapours and Gases</b>	No information available.

## 10. STABILITY AND REACTIVITY

<b>General Information</b>	Mildly corrosive to metals.
<b>Chemical Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Avoid extremes of temperature.
<b>Materials to Avoid</b>	Incompatible/reactive with acids, alkalis, strong oxidising agents, metals and nylon materials.
<b>Hazardous Decomposition Products</b>	Decomposes on heating, emitting hydrogen chloride gas and other toxic fumes.
<b>Hazardous Polymerisation</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>General Information</b>	<ul style="list-style-type: none"> <li>- Acute toxicity: Ingestion may cause nausea, vomiting and abdominal pain.</li> <li>- Skin corrosion/irritation: Causes skin irritation.</li> <li>- Eye damage/irritation: Causes serious eye irritation.</li> <li>- Respiratory/skin sensitisation: The available data do not provide any evidence of skin sensitisation.</li> <li>- Germ cell mutagenicity: The weight of evidence does not support classification for genotoxicity.</li> <li>- Carcinogenicity: The available data do not support classification as a carcinogen.</li> <li>- Reproductive toxicity: No information available.</li> <li>- STOT (single exposure): Inhalation of mists or aerosols may cause respiratory irritation.</li> <li>- STOT (repeated exposure): No information available.</li> <li>- Aspiration toxicity: No information available.</li> </ul>
<b>Carcinogen Category</b>	None

**12. ECOLOGICAL INFORMATION**

<b>Ecotoxicity</b>	No information available.
<b>Persistence/Degradability</b>	No information available.
<b>Mobility</b>	No information available.
<b>Environmental Fate</b>	Prevent entry into drains and waterways.
<b>Bioaccumulation Potential</b>	No information available.
<b>Environmental Impact</b>	No Data Available

**13. DISPOSAL CONSIDERATIONS**

<b>General Information</b>	Dispose of contents/container in accordance with local/regional/national regulations.
<b>Special Precautions for Land Fill</b>	No information available.

**14. TRANSPORT INFORMATION****Land Transport (Australia)**

ADG Code

<b>Proper Shipping Name</b>	Polyaluminium Chloride Solution
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Land Transport (Malaysia)**

ADR Code

<b>Proper Shipping Name</b>	Polyaluminium Chloride Solution
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Land Transport (New Zealand)**

NZS5433

<b>Proper Shipping Name</b>	Polyaluminium Chloride Solution
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Land Transport (United States of America)**

US DOT

<b>Proper Shipping Name</b>	Polyaluminium Chloride Solution
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for LAND transport.

**Sea Transport**

IMDG Code

<b>Proper Shipping Name</b>	Polyaluminium Chloride Solution
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>EMS</b>	No Data Available
<b>Marine Pollutant</b>	No
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for SEA transport.

**Air Transport**

IATA DGR

<b>Proper Shipping Name</b>	Polyaluminium Chloride Solution
<b>Class</b>	No Data Available
<b>Subsidiary Risk(s)</b>	No Data Available
<b>UN Number</b>	No Data Available
<b>Hazchem</b>	No Data Available
<b>Pack Group</b>	No Data Available
<b>Special Provision</b>	No Data Available
<b>Comments</b>	NON-DANGEROUS GOODS: Not regulated for AIR transport.

**National Transport Commission (Australia)**

Australian Code for the Transport of Dangerous Goods by Road &amp; Rail (ADG Code)

**Dangerous Goods Classification**

NOT Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road &amp; Rail (ADG Code)

**15. REGULATORY INFORMATION****General Information**

No Data Available

**Poisons Schedule (Aust)**

Not Scheduled

**Environmental Protection Authority (New Zealand)**

Hazardous Substances and New Organisms Amendment Act 2015

**Approval Code**

Water Treatment Chemicals Subsidiary Hazard Group Standard 2020 HSR002684

**National/Regional Inventories****Australia (AIC)**

Listed

**Canada (DSL)**

Not Determined

**Canada (NDSL)**

Not Determined

**China (IECSC)**

Not Determined

**Europe (EINECS)**

Not Determined

**Europe (REACH)**

Not Determined

**Japan (ENCS/METI)**

Not Determined

**Korea (KECI)**

Not Determined

**Malaysia (EHS Register)**

Not Determined

**New Zealand (NZIoC)**

Listed

**Philippines (PICCS)**

Not Determined

**Switzerland (Giftliste 1)**

Not Determined

**Switzerland (Inventory of Notified Substances)**

Not Determined

**Taiwan (NCSR)**

Not Determined

**USA (TSCA)**

Not Determined

**16. OTHER INFORMATION**



# SAFETY DATA SHEET POLYALUMINIUM CHLORIDE SOLUTION REVISION 6, DATE 12 AUG 2020

<b>Related Product Codes</b>	POALCB1000, POALCB3000, POALCD3000, POALCD3001, POALCD3100, POALCD4000, POALCD4500, POALCD4600, POALCH1011, POALCH1801, POALCH1811, POALCH1812, POALCH1813, POALCH1814, POALCH1815, POALCH1816, POALCH1817, POALCH1818, POALCH1819, POALCH1820, POALCH1821, POALCH1822, POALCH1823, POALCH1824, POALCH1825, POALCH1826, POALCH1827, POALCH1828, POALCH1829, POALCH1830, POALCH1831, POALCH1832, POALCH1833, POALCH1834, POALCH1918, POALCH1923, POALCH2160, POALCH2165, POALCH3200, POALCH3400, POALCH4200, POALCH4250, POALCH4700, POALCH9300, POALCL0500, POALCL1000, POALCL1001, POALCL1002, POALCL1003, POALCL1004, POALCL1500, POALCL1501, POALCL2000, POALCL2500, POALCL2900, POALCL3000, POALCL3001, POALCL3100, POALCL3200, POALCL3500, POALCL4000, POALCL4500, POALCL4600
<b>Revision</b>	6
<b>Revision Date</b>	12 Aug 2020
<b>Reason for Issue</b>	SDS updated
<b>Key/Legend</b>	< Less Than > Greater Than <b>AICS</b> Australian Inventory of Chemical Substances <b>atm</b> Atmosphere <b>CAS</b> Chemical Abstracts Service (Registry Number) <b>cm<sup>2</sup></b> Square Centimetres <b>CO<sub>2</sub></b> Carbon Dioxide <b>COD</b> Chemical Oxygen Demand <b>deg C (°C)</b> Degrees Celcius <b>EPA (New Zealand)</b> Environmental Protection Authority of New Zealand <b>deg F (°F)</b> Degrees Farenheit <b>g</b> Grams <b>g/cm<sup>3</sup></b> Grams per Cubic Centimetre <b>g/l</b> Grams per Litre <b>HSNO</b> Hazardous Substance and New Organism <b>IDLH</b> Immediately Dangerous to Life and Health <b>immiscible</b> Liquids are insoluable in each other. <b>inHg</b> Inch of Mercury <b>inH<sub>2</sub>O</b> Inch of Water <b>K</b> Kelvin <b>kg</b> Kilogram <b>kg/m<sup>3</sup></b> Kilograms per Cubic Metre <b>lb</b> Pound <b>LC<sub>50</sub></b> LC stands for lethal concentration. LC <sub>50</sub> is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours. <b>LD<sub>50</sub></b> LD stands for Lethal Dose. LD <sub>50</sub> is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals. <b>ltr or L</b> Litre <b>m<sup>3</sup></b> Cubic Metre <b>mbar</b> Millibar <b>mg</b> Milligram <b>mg/24H</b> Milligrams per 24 Hours <b>mg/kg</b> Milligrams per Kilogram <b>mg/m<sup>3</sup></b> Milligrams per Cubic Metre <b>Misc or Miscible</b> Liquids form one homogeneous liquid phase regardless of the amount of either component present. <b>mm</b> Millimetre <b>mmH<sub>2</sub>O</b> Millimetres of Water <b>mPa.s</b> Millipascals per Second <b>N/A</b> Not Applicable <b>NIOSH</b> National Institute for Occupational Safety and Health <b>NOHSC</b> National Occupational Health and Safety Commission <b>OECD</b> Organisation for Economic Co-operation and Development <b>Oz</b> Ounce <b>PEL</b> Permissible Exposure Limit <b>Pa</b> Pascal <b>ppb</b> Parts per Billion <b>ppm</b> Parts per Million <b>ppm/2h</b> Parts per Million per 2 Hours <b>ppm/6h</b> Parts per Million per 6 Hours <b>psi</b> Pounds per Square Inch <b>R</b> Rankine <b>RCP</b> Reciprocal Calculation Procedure

**SAFETY DATA SHEET POLYALUMINIUM CHLORIDE SOLUTION REVISION 6, DATE 12 AUG 2020**

**STEL** Short Term Exposure Limit

**TLV** Threshold Limit Value

**tne** Tonne

**TWA** Time Weighted Average

**ug/24H** Micrograms per 24 Hours

**UN** United Nations

**wt** Weight