

SECTION 1: Identification of the substance/mixture and of the supplier/undertaking

1.1. GHS product identifier

Product form	: Mixture
Trade name	: ACH WATER TREATMENT
Type of product	: Mixture
EC-No.	: 234-933-1
CAS-No.	: 120242-91-0
Product code	: ACH WATER TREATMENT
Formula	: $Al_2Cl(OH)_5$
Product group	: Trade product

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture	: Water treatment
Recommended uses and restrictions	: Water Treatment .Coagulation and Flocculation - MUL is 200 mg/L

1.4. Supplier's details

Manufacturer

Improchem (Pty) Ltd T/A AECI Water
1 Wharhirst Road
Umbogintwini
South Africa
T +27 (031) 949 8200

1.5. Emergency phone number

Emergency number : 0800 SPILLS OR 0800 774557

SECTION 2: Hazard identification

2.1. GHS classification of the substance/mixture and any national or regional information

Classification according to the United Nations GHS

Corrosive to metals, Category 1	H290
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319

Full text of H-statements: see section 16

Adverse physicochemical, human health and environmental effects : Corrosion tests were done using Polyaluminium Chloride and the Corrosion Rate was 3,08 mm/year which is less than max of 6.25 mm/year, above which a product is classified as corrosive, May be corrosive to metals, Causes skin irritation, Causes serious eye irritation.

2.2. GHS label elements, including precautionary statements

Labelling according to the United Nations GHS

Hazard pictograms (GHS ZA) :



Signal word (GHS-ZA) : Warning
Hazard statements (GHS ZA) : H290 - May be corrosive to metals
H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements (GHS ZA) : P101 - If medical advice is needed, have product container or label at hand.

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P102 - Keep out of reach of children.
P234 - Keep only in original packaging.
P264 - Wash ... thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/....
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

2.3. Other hazards which do not result in classification or are not covered by the GHS

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification according to the United Nations GHS
Aluminium Chlorohydrate	CAS-No.: 12042-91-0	20 – 50	Met. Corr. 1, H290 Skin Irrit. 2, H315 Eye Irrit. 2, H319

SECTION 4: First aid measures

4.1. Description of necessary first aid measures

First-aid measures general	: Check the vital functions. Get medical advice/attention if you feel unwell. Never give anything by mouth to an unconscious person. Respiratory arrest: artificial respiration or oxygen.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention if ill effect develops.
First-aid measures after skin contact	: Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. Wash contaminated clothing before reuse. If skin irritation occurs : Get medical advice/attention. Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse immediately with plenty of water for 15 minutes. Do not apply neutralizing agents. Take victim to an ophthalmologist. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth with water, do not induce vomiting, call a doctor. Do NOT induce vomiting. If swallowed, seek medical advice immediately and show this container or label. Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms/effect, acute and delayed

Symptoms/effects after inhalation	: No effects known.
Symptoms/effects after skin contact	: Slight irritation. Irritation.
Symptoms/effects after eye contact	: Inflammation/damage of the eye tissue. Eye irritation.
Symptoms/effects after ingestion	: No effects known.
Chronic symptoms	: No effects known.

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Water spray. Polyvalent foam. ABC powder. Carbon dioxide. Water spray. Dry powder. Foam. Carbon dioxide.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

- Fire hazard : DIRECT FIRE HAZARD. Non-flammable.
- Explosion hazard : DIRECT EXPLOSION HAZARD. No data available on direct explosion hazard. INDIRECT EXPLOSION HAZARD. No data available on indirect explosion hazard.
- Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective actions for fire-fighters

- Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.
- Firefighting instructions : Dilute toxic gases with water spray.
- Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Protective equipment : Wear recommended personal protective equipment.
- Emergency procedures : Ventilate spillage area. Mark the danger area. No naked flames. Keep containers closed. Wash contaminated clothes. Avoid contact with skin and eyes.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and materials for containment and cleaning up

- For containment : Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply.
- Methods for cleaning up : Take up liquid spill into absorbent material. Take up liquid spill into absorbent material, e.g.: dry lime or soda (sodium carbonate). Scoop absorbed substance into closing containers. See "Material-handling" for suitable container materials. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.
- Other information : Dispose of materials or solid residues at an authorized site.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Comply with the legal requirements. Remove contaminated clothing immediately. Thoroughly clean/dry the installation before use. Keep away from naked flames/heat. Observe strict hygiene. Keep container tightly closed. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Avoid contact with skin and eyes. Wear personal protective equipment.
- Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Ensure adequate ventilation, especially in confined areas. Facilities: shower, eye shower.
Storage conditions	: Store in corrosive resistant container with a resistant inner liner. Keep only in original container. Store in a well-ventilated place. Keep cool.
Storage area	: Store in a dry area. Meet the legal requirements.
Incompatible materials	: Metals.
Heat and ignition sources	: KEEP SUBSTANCE AWAY FROM: heat sources.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: metals.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: plastics. MATERIAL TO AVOID: steel. aluminium.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment

Hand protection	: Gloves, shoulder length
Eye protection	: Protective goggles. Safety glasses
Skin and body protection	: Protective clothing
Respiratory protection	: High gas/vapour concentration: gas mask with filter type B

Personal protective equipment symbol(s)



8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Colour	: Clear to hazy. Clear to hazy
Odour	: Mild odour. Mild odour
Odour threshold	: No data available
pH	: 3.5 – 4.5
pH solution	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Relative evaporation rate (ether=1)	: No data available
Melting point	: Not applicable
Freezing point	: < 0 °C
Boiling point	: 75 – 100 °C
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability	: Not applicable

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Vapour pressure	: No data available
Vapour pressure at 50°C	: No data available
Relative vapour density at 20°C	: No data available
Relative density	: No data available
Relative density of saturated gas/air mixture	: No data available
Density	: 1.33 – 1.35 kg/l @ 25 C
Relative gas density	: No data available
Solubility	: Miscible with water. Soluble in water. Water: > 1000 g/l (20 °C)
Partition coefficient n-octanol/water (Log Pow)	: No data available
Partition coefficient n-octanol/water (Log Kow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available
Lower explosion limit	: No data available
Upper explosion limit	: No data available
Physical state	: Liquid
Appearance	: Liquid.

9.2. Data relevant with regard to physical hazard classes (supplemental)

Other properties : Substance has acid reaction.

SECTION 10: Stability and Reactivity

10.1. Reactivity

On burning: release of toxic and corrosive gases/vapours (hydrogen chloride). No data available.

10.2. Chemical Stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

Slowly corrodes metals. Corrosion tests were done using Polyaluminium Chloride and the Corrosion Rate was 3,08 mm/year which is less than the max of 6.25 mm/year, above which a product is classified as corrosive to metals.

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

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LD50 oral rat	> 2000 mg/kg bodyweight (Rat; OECD 423: Acute Oral Toxicity – Acute Toxic Class Method; Experimental value)
LD50 dermal rat	> 2000 mg/kg bodyweight (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)

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Aluminium Chlorohydrate (12042-91-0)	
LD50 oral rat	9187 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 8383 - 10067
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat (Dust/Mist)	5 mg/l Source: ECHA

Skin corrosion/irritation	: Causes skin irritation. pH: 3.5 – 4.5
Serious eye damage/irritation	: Causes serious eye irritation. pH: 3.5 – 4.5
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified

ACH WATER TREATMENT (120242-91-0)	
Viscosity, kinematic	No data available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Ecology - air	: Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: Maximum concentration in drinking water: 0.200 mg/l (aluminium) (Directive 98/83/EC); 250 mg/l (chloride) (Directive 98/83/EC). Toxic to fishes. Harmful to invertebrates. pH shift. Inhibition of activated sludge.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

ACH WATER TREATMENT (120242-91-0)	
LC50 - Fish [1]	1.39 mg/l (LC50; OECD 203: Fish, Acute Toxicity Test; 96 h; Danio rerio; Static system; Fresh water; Experimental value)
EC50 - Crustacea [1]	98 mg/l (EC50; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Semi-static system; Fresh water; Experimental value)
EC50 - Crustacea [2]	42 mg/l (EC10; OECD 202: Daphnia sp. Acute Immobilisation Test; 48 h; Daphnia magna; Semi-static system; Fresh water; Experimental value)

Aluminium Chlorohydrate (12042-91-0)	
LC50 - Fish [1]	1.39 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	98 mg/l Test organisms (species): Daphnia magna
EC50 - Crustacea [2]	> 200 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	0.24 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	0.075 mg/l Test organisms (species): Raphidocelis subcapitata (previous names: Pseudokirchneriella subcapitata, Selenastrum capricornutum)
LOEC (chronic)	7.5 mg/l Test organisms (species): Ceriodaphnia dubia Duration: '8 d'
NOEC (chronic)	3.8 mg/l Test organisms (species): Ceriodaphnia dubia Duration: '8 d'

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12.2. Persistence and degradability

ACH WATER TREATMENT (120242-91-0)

Persistence and degradability	Biodegradability: not applicable. No (test)data on mobility of the components available.
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12.3. Bioaccumulative potential

ACH WATER TREATMENT (120242-91-0)

Bioaccumulative potential	No bioaccumulation data available.
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DEIONIZED WATER (7732-18-5)

Partition coefficient n-octanol/water (Log Kow)	-1.38
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12.4. Mobility in soil

ACH WATER TREATMENT (120242-91-0)

Mobility in soil	No additional information available
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Surface tension	0.0736 N/m (20 °C; 1 g/l)
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12.5. Other adverse effects

Ozone : Not classified
Other adverse effects : No additional information available

SECTION 13: Disposal Considerations

13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Precipitate/make insoluble. Remove to an authorized dump (Class I). Treat using the best available techniques before discharge into drains or the aquatic environment.
Additional information : LWCA (the Netherlands): KGA category 01. Hazardous waste according to Directive 2008/98/EC.

SECTION 14: Transport information

In accordance with SANS / IMDG / IATA

SANS	IMDG	IATA
14.1. UN number		
Not regulated for transport		
14.2. UN Proper Shipping Name		
Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)		
Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable
14.4. Packing group, if applicable		
Not applicable	Not applicable	Not applicable

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SANS	IMDG	IATA
14.5. Environmental hazards		
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No
MUL is 200 mg/L		

14.6. Special precautions for user

SANS

Transport regulations (UN) : Subject

IMDG

Transport regulations (IMDG) : Subject to the provisions

IATA

Transport regulations (IATA) : Subject to the provisions

14.7. Transport in bulk according to IMO instructions

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations specific for the product in question

No additional information available

SECTION 16: Other information

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Abbreviations and acronyms : ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE - Acute Toxicity Estimate
BCF - Bioconcentration factor
BLV - Biological limit value
BOD - Biochemical oxygen demand (BOD)
COD - Chemical oxygen demand (COD)
DMEL - Derived Minimal Effect level
DNEL - Derived-No Effect Level
EC-No. - European Community number
EC50 - Median effective concentration
EN - European Standard
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
IMDG - International Maritime Dangerous Goods
LC50 - Median lethal concentration
LD50 - Median lethal dose
LOAEL - Lowest Observed Adverse Effect Level
NOAEC - No-Observed Adverse Effect Concentration
NOAEL - No-Observed Adverse Effect Level
NOEC - No-Observed Effect Concentration
OECD - Organisation for Economic Co-operation and Development
OEL - Occupational Exposure Limit
PBT - Persistent Bioaccumulative Toxic
PNEC - Predicted No-Effect Concentration
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail

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SDS - Safety Data Sheet
STP - Sewage treatment plant
ThOD - Theoretical oxygen demand (ThOD)
TLM - Median Tolerance Limit
VOC - Volatile Organic Compounds
CAS-No. - Chemical Abstract Service number
N.O.S. - Not Otherwise Specified
vPvB - Very Persistent and Very Bioaccumulative
ED - Endocrine disrupting properties

Full text of H-statements:	
H290	May be corrosive to metals
H315	Causes skin irritation
H319	Causes serious eye irritation

Safety Data Sheet (SDS), South Africa (HCA)

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