

# Material Safety Data Sheet (MSDS) / (SDS)

## AQUATIC CLEAR DROP DAMS Safety Data Sheet

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AQUATIC  
TECHNOLOGIES

## 1. IDENTIFICATION

**Product name:** AQUATIC CLEAR DROP - Dams  
**Other Names:** Alum, Cake Alum, Granular Aluminium Sulphate.  
**Recommended use:** Flocculation of dam water

## 2. HAZARDS IDENTIFICATION

**Hazard Classification:** Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.

Classified as a Non Dangerous Goods according to the ADG Code

**GHS Classification:** Skin Corrosion/Irritation - Category 2  
Serious eye damage/eye irritation – Category 2A  
Corrosive to Metals – Category 1  
Acute Toxicity(Oral) – Category 4  
Acute Toxicity(Inhalation) – Category 5

**Signal Word (s):** Warning



**Hazard Statement(s):** H315 Causes skin irritation  
H319 Causes serious eye irritation  
H290 May be corrosive to metals  
H302 Harmful if swallowed  
H333 May be harmful if inhaled

**Precautionary Statement(s):** P102 Keep out of reach of children.

**Prevention Statement(s):** P103 Read label before use.  
P234 Keep only in original container.  
P261 Avoid breathing dust.  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P390 Absorb spillage to prevent material damage.

**Response Statement(s):** P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
P330 Rinse mouth.  
P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P321 Specific treatment (see First Aid Measures on the Safety Data Sheet).  
P332+P313 If skin irritation occurs: Get medical advice/attention.  
P362 Take off contaminated clothing before re-use.  
P305+P354+P338 IF IN EYES: Rinse cautiously with water for several minutes.

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**Response Statement(s):** Remove contact lenses, if present and easy to do. Continue rinsing.  
P337+P313 If eye irritation persists: Get medical advice/attention.  
P390 Absorb spillage to prevent material damage.  
P304+P312 IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell.

**Storage Statement(s):** P406 Store in corrosive resistant/compatible container.

**Disposal Statement(s):** P501 Dispose of contents/container in accordance with jurisdictional regulations.

**Poisons Schedule (SUSMP):** N/A

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS Number	Proportion:	Hazard Codes
Aluminium Sulphate	10043-01-3	100%	H315, H319, H290, H302, H333

## 4. FIRST AID MEASURES

**Ingestion:** Immediately rinse mouth with water. DO NOT induce vomiting. Seek medical attention. Ingested material is not easily absorbed. It reacts with phosphate, forming an insoluble compound which is readily passed out of the body.

**Eye Contact:** Immediately irrigate with copious quantities of water for at least 15 minutes. Eyelids to be held open. Remove clothing if contaminated and wash skin. Seek immediate medical attention.

**Skin Contact:** Remove all contaminated clothing. Wash skin gently and thoroughly with copious amounts of water. If irritation occurs, seek medical attention.

**Inhalation:** Remove the source of contamination or move the victim to fresh air; avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical attention.

**Advice to Doctor:** Treat symptomatically.

**Additional Information:**

**Aggravated medical conditions caused by exposure:** Prolonged exposure can cause irritation and numbing of the fingers. Inhaled dust may accumulate in the lungs until slowly cleared.

## 5. FIRE-FIGHTING MEASURES

**Extinguishing Media:** In case of fire, use an appropriate extinguishing media (foam, carbon dioxide, dry chemical powder) that is the most suitable for surrounding fire conditions. If safe to do so, remove containers from path of fire.

**Hazchem Code:** N/A.

**Specific Hazards arising from the substance or mixture:**

**Hazards from Combustion:** Product is non-flammable. Forms aluminium oxide and sulphur trioxide at temperatures above 650°C. Hazardous polymerisation is not expected.

**Flammability Conditions:** Product is a non-flammable solid. It will decompose under fire conditions emitting toxic gases and vapours including oxides of sulphur.

**Special Protective Precautions and Equipment for Fire Fighters:** Fire fighters should wear a self-contained breathing apparatus and full protective clothing along with protective equipment. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## 6. ACCIDENTAL RELEASE MEASURES

<b>Emergency Procedures/Protective Equipment/Personal Precautions:</b>	Carefully vacuum/sweep up spill and place in suitable containers for reuse or disposal. For large spills notify local emergency services.
<b>Environmental Precautions:</b>	Do not allow product to enter drains, sewers, waterways or soil. If contamination of drains has occurred, advise the local emergency services.
<b>Methods and Materials for Containment and Clean Up:</b>	Carefully vacuum or sweep up spill and place in suitable containers for reuse or disposal. For large spills notify local emergency services.

## 7. HANDLING AND STORAGE

<b>Precautions for Safe Handling:</b>	Ensure an eye bath and safety shower are available and ready for use. Use only in a well-ventilated area. Avoid inhalation of dusts, and skin or eye contact. Wear appropriate protective equipment to prevent inhalation, skin and eye contact when mixing and using. Ensure a high level of personal hygiene is maintained when using this product, that is, always wash hands before eating, drinking, smoking or using the toilet. Keep containers sealed when not in use.
<b>Container Type:</b>	Packaging must comply with requirements of Hazardous Substances (Packaging) Regulations 2001. Store in original packaging as approved by manufacturer. Bags would be suitable.
<b>Conditions for Safe Storage, including any Incompatibles:</b>	Air and moisture sensitive. Store in a cool, dry, well-ventilated area out of direct sunlight and away from heat, sources of ignition, oxidizing agents and acids. Do not place near structural steel. Avoid dust formation. Keep containers closed when not in use and securely sealed and protected against physical damage. Inspect regularly for deficiencies such as damage or leaks. Do not store with any foodstuffs.

## 8. EXPOSURE CONTROLS

### Control Parameters:

<b>National Exposure Standards:</b>	Aluminium Sulphate: No specific exposure standard. Aluminium soluble salts (as Aluminium): AU OEL: 2 mg/m3.
<b>Biological Limit Values:</b>	No data available

<b>Appropriate Engineering Controls:</b>	Select suitable materials for the construction of storage tanks, containers, pipe valves and fittings. Ensure adequate ventilation using a combination of natural and local or general exhaust as appropriate. Where dust is generated, particularly in enclosed areas, a local exhaust ventilation system, drawing dust away from workers' breathing zone is required. Keep containers closed when not in use in a well-ventilated area.
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### Individual Protection Measures, such as Personal Protective Equipment (PPE):

<b>Respirator:</b>	If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable particulate/dust filter should be used.
<b>Eyes:</b>	Chemical splash goggles or safety glasses with side shields and a full-face shield as appropriate should be used.
<b>Hands:</b>	Wear elbow-length gloves of impervious material, PVC or rubber should be suitable.

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**Clothing:** Protective cotton overalls, buttoned at the neck and wrists.

After 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

### Core Information

<b>Appearance:</b>	White lustrous crystals, granules or white powder. This anhydrous salt is hygroscopic (absorbs moisture from the air).	
<b>Formula:</b>	Al <sub>2</sub> (SO <sub>4</sub> ) <sub>3</sub>	
<b>Odour:</b>	Odourless.	
<b>pH (1% w/w solution in water):</b>	3.7	
<b>Vapour Pressure:</b>	No data available.	
<b>Vapour Density:</b>	No data available.	
<b>Melting Point:</b>	770°C (Decomposes).	
<b>Freezing Point:</b>	N/A	
<b>Solubility (in Water):</b>	50% w/w.	
<b>Specific Gravity:</b>	2.71 (at 25°C).	
<b>Flash Point:</b>	N/A.	
<b>Flammability Limits</b>	Lower Explosive Limit	N/A.
<b>(as Percent Volume in Air):</b>	Upper Explosive Limit	N/A.
<b>Ignition Temperature:</b>	No data available.	

### Additional Information

<b>Specific Heat Value:</b>	No data available.	
<b>Particle Size:</b>	No data available.	
<b>Volatile Organic Compounds Content (VOC):</b>	No data available.	
<b>Viscosity:</b>	No data available.	
<b>Percent Volatile:</b>	No data available.	
<b>Octanol/Water Partition Coefficient:</b>	No data available.	
<b>Saturated Vapour Concentration:</b>	No data available.	
<b>Additional Characteristics:</b>	Insoluble in alcohol.	
<b>Flame Propagation/Burning Rate of Solid Materials:</b>	No data available.	
<b>Properties that may Initiate or Contribute to the Intensity of a Fire:</b>	No data available.	
<b>Potential for Dust Explosion:</b>	No data available.	

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## Reactions that Release

**Flammable Gases or Vapours:** No data available.

## Fast or Intensely Burning

**Characteristics:** No data available.

## Non-Flammables that Could Contribute Unusual Hazards to a Fire:

No data available.

## Release of Invisible Flammable Vapours and Gases:

No data available.

**Decomposition Temperature:** No data available.

**Evaporation Rate:** No data available.

## 10. STABILITY AND REACTIVITY

**Reactivity:** Reacts with alkali.

**Chemical Stability:** Stable under normal conditions of storage and handling.

**Possibility of hazardous Reactions:** Reacts with water to produce corrosive sulphuric acid.

**Conditions to Avoid:** Air and moisture sensitive. Keep containers sealed.

**Incompatible Materials:** Avoid contact with mild steel. Keep away from all foodstuffs.

**Hazardous Decomposition Products:** Hazardous decomposition products include oxides of sulphur.

## 11. TOXICOLOGICAL INFORMATION

### Toxicity Data-

**LD50:** 6207 mg/kg (mouse, oral).

**LD50:** 1930 mg/kg (rat, intraperitoneal).

**Neurotoxicity:** Injection of aluminium salts directly into the brain of animals caused functional and structural damage.

**Inhalation:** Prolonged inhalation of 2 to 4 mg/m<sup>3</sup> of aluminium sulphate caused scarring of upper lung tissue.

### Acute (short term)

**Ingestion:** May be harmful if swallowed. May cause abdominal pain, nausea and vomiting. Concentrated solutions (over 20%) can cause burns of the mouth, bleeding stomach, incoordination, muscle spasms and kidney damage.

**Eye:** Dusts can cause irritation and inflammation to the eyes. Eye contact will cause tearing, stinging, blurred vision, and redness. Corneal injury may occur if not washed off immediately. Concentrated solutions may cause severe eye damage.

**Skin:** Dust and concentrated solutions can cause irritation especially to open cuts and wounds. Skin contact will cause redness and itchiness.

**Inhalation:** Dust forms sulphuric acid in contact with moisture in air or in tissues; they can cause sore throat, coughing and irritation of nose and throat. High dust concentrations may cause congestion and constriction of airways.

### Chronic (long term)

**Skin:** Repeated or prolonged exposure may cause irritation and numbing of the fingers.

**Ingestion:** Repeated ingestion of this product may cause phosphate deficiency which can weaken bones.

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## 12. ECOLOGICAL INFORMATION

**Toxicity and Eco-toxicity:** No data available.

**Persistence / Degradability:** No data available.

**Mobility:** No data available.

### Additional Information

**Environmental Fate (Exposure):** No data available.

**Bio accumulative Potential:** No data available.

**Other Adverse Effects:** Discharge into the environment must be avoided. Avoid contaminating waterways, drains and sewers.

## 13. DISPOSAL CONSIDERATIONS

**Disposal Methods:** Dispose of in accordance with all local, state and federal regulations. Refer to appropriate State Waste Disposal Authority. Observe local regulations. After dilution and careful neutralisation, approved liquid waste land fill site may be suitable.

**Special Precautions for Landfill or Incineration:** No data available.

## 14. TRANSPORT INFORMATION

**UN Number:** None allocated.

**UN Proper Shipping Name:** Aluminium Sulphate.

**Dangerous Goods Class:** None allocated.

**Subsidiary Risk:** None allocated.

**Packaging Group:** None allocated.

**Special Precautions for User:** Irritant.

**Hazchem Code:** N/A.

## 15. REGULATORY INFORMATION

**Poisons Schedule:** N/A.

**EPG:** N/A.

**AICS Name:** Sulphuric acid, aluminium salt (3:2).

**Additional information:** No data available.

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## 16. OTHER INFORMATION

### Revision Details

#### Reason for Revision:

- Version 1** 5 year review. Updated to a new format. Additional information added.
- Version 2** Alignment to GHS requirements.

### Literature References

- Chemical Rubber Company:** Handbook of Chemistry and Physics, 85th Edition.
- Safe Work Australia:** Hazardous Substances Information System (HCIS) Exposure Standards and GHS Classifications Data-Base, 25 June 2016.
- National Transport Commission:** Australian Code for the Transport of Dangerous Goods by Road and Rail, Volume 7.

### Abbreviations

- CAS Number:** Chemical Abstract Service Registry Number.
- GHS:** Globally Harmonized System of Classification and Labelling of Chemicals.
- EPG:** Emergency Procedure Guide.
- LD50:** Lethal Dose 50%: The lowest concentration at which approximately 50% of test animals will die when given the specified dose by mouth.
- ADG Code:** Australian Code for the Transport of Dangerous Goods by Road and Rail, Volume 7.
- AICS Name:** Australian Inventory of Chemical Substances Name.
- OEL:** Occupational Exposure Level.
- N/A:** Not Applicable.

### **Disclaimer**

This Safety Data Sheet is offered solely for information, consideration and investigation to determine the suitability of various health and safety precautions as may be required under the user's specific conditions and processes. All such conditions and processes are beyond the control of Aquatic Technologies.

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