

## SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

#### 1.1 Product identifier

**Product name** MAK-AS  
**Synonyms** ALUMINIUM SULFATE SOLUTION MAK-AS

#### 1.2 Uses and uses advised against

**Uses** WATER TREATMENT

#### 1.3 Details of the supplier of the product

**Supplier name** MAK INDUSTRIAL WATER SOLUTIONS PTY LTD  
**Address** 36 Beringarra Ave, Malaga, Western Australia, 6090, AUSTRALIA  
**Telephone** +61 8 9249 8007  
**Email** [info@makwater.com.au](mailto:info@makwater.com.au)  
**Website** <http://makwater.com.au>

#### 1.4 Emergency telephone numbers

**Emergency** +61 8 9249 8007

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA

##### Physical Hazards

Not classified as a Physical Hazard

##### Health Hazards

Skin Corrosion/Irritation: Category 2  
 Serious Eye Damage / Eye Irritation: Category 2A

##### Environmental Hazards

Not classified as an Environmental Hazard

#### 2.2 GHS Label elements

**Signal word** WARNING

**Pictograms**



##### Hazard statements

H315 Causes skin irritation.  
 H319 Causes serious eye irritation.

##### Prevention statements

P264 Wash thoroughly after handling.  
 P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

**PRODUCT NAME    MAK-AS****Response statements**

P302 + P352      IF ON SKIN: Wash with plenty of water.  
P305 + P351 + P338      IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P321      Specific treatment is advised - see first aid instructions.  
P362 + P364      Take off contaminated clothing and wash it before reuse.

**Storage statements**

None allocated.

**Disposal statements**

None allocated.

**2.3 Other hazards**

No information provided.

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**3. COMPOSITION/ INFORMATION ON INGREDIENTS**

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**3.1 Substances / Mixtures**

| Ingredient                | CAS Number    | EC Number     | Content   |
|---------------------------|---------------|---------------|-----------|
| ALUMINIUM SULPHATE        | 10043-01-3    | 233-135-0     | 30 to 60% |
| NON HAZARDOUS INGREDIENTS | Not Available | Not Available | Remainder |

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**4. FIRST AID MEASURES**

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**4.1 Description of first aid measures**

**Eye**      If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

**Inhalation**      If inhaled, remove from contaminated area. To protect rescuer, use a Full-face Type B (Inorganic and acid gas) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.

**Skin**      If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

**Ingestion**      For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting. Rinse mouth out with water and give plenty of water to drink.

**First aid facilities**      Eye wash facilities and safety shower should be available.

**4.2 Most important symptoms and effects, both acute and delayed**

May cause irritation to the eyes and skin.

**4.3 Immediate medical attention and special treatment needed**

Treat symptomatically.

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**5. FIRE FIGHTING MEASURES**

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**5.1 Extinguishing media**

Use an extinguishing agent suitable for the surrounding fire.

**5.2 Special hazards arising from the substance or mixture**

Non flammable. May evolve toxic gases (sulphur/ aluminium oxides) when heated to decomposition.

**5.3 Advice for firefighters**

Treat as per requirements for surrounding fires. Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

**5.4 Hazchem code**

None allocated.

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**6. ACCIDENTAL RELEASE MEASURES**

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### 6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

### 6.2 Environmental precautions

Prevent product from entering drains and waterways.

### 6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with sodium bicarbonate or 50-50 mixture of sodium carbonate and calcium hydroxide. Collect for complete neutralisation and appropriate disposal.

### 6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

### 7.2 Conditions for safe storage, including any incompatibilities

Store in a secured, cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should have appropriate ventilation and fire protection systems.

### 7.3 Specific end uses

No information provided.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 Control parameters

#### Exposure standards

| Ingredient                       | Reference      | TWA |                   | STEL |                   |
|----------------------------------|----------------|-----|-------------------|------|-------------------|
|                                  |                | ppm | mg/m <sup>3</sup> | ppm  | mg/m <sup>3</sup> |
| Aluminium & compounds            | SWA [Proposed] | --  | 1                 | --   | --                |
| Aluminium, soluble salts (as Al) | SWA [AUS]      | --  | 2                 | --   | --                |

### Biological limits

No biological limit values have been entered for this product.

### 8.2 Exposure controls

**Engineering controls** Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

### PPE

|                    |                                                                                                                        |
|--------------------|------------------------------------------------------------------------------------------------------------------------|
| <b>Eye / Face</b>  | Wear splash-proof goggles.                                                                                             |
| <b>Hands</b>       | Wear PVC or rubber gloves.                                                                                             |
| <b>Body</b>        | Wear coveralls. When using large quantities or where heavy contamination is likely, wear rubber boots and a PVC apron. |
| <b>Respiratory</b> | Where an inhalation risk exists, wear an Air-line respirator or a Type B (acid gas and vapours) respirator.            |



## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

**Appearance** OFF-WHITE TO LIGHT GREY LIQUID

### 9.1 Information on basic physical and chemical properties

|                           |               |
|---------------------------|---------------|
| Odour                     | SLIGHT ODOUR  |
| Flammability              | NON FLAMMABLE |
| Flash point               | NOT RELEVANT  |
| Boiling point             | 102°C         |
| Melting point             | NOT AVAILABLE |
| Evaporation rate          | NOT AVAILABLE |
| pH                        | 2 to 2.2      |
| Vapour density            | NOT AVAILABLE |
| Relative density          | 1.31 to 1.33  |
| Solubility (water)        | SOLUBLE       |
| Vapour pressure           | NOT AVAILABLE |
| Upper explosion limit     | NOT RELEVANT  |
| Lower explosion limit     | NOT RELEVANT  |
| Partition coefficient     | NOT AVAILABLE |
| Autoignition temperature  | NOT AVAILABLE |
| Decomposition temperature | NOT AVAILABLE |
| Viscosity                 | NOT AVAILABLE |
| Explosive properties      | NOT AVAILABLE |
| Oxidising properties      | NOT AVAILABLE |
| Odour threshold           | NOT AVAILABLE |

### 9.2 Other information

|                |       |
|----------------|-------|
| Freezing point | -15°C |
|----------------|-------|

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Carefully review all information provided in sections 10.2 to 10.6.

### 10.2 Chemical stability

Stable under recommended conditions of storage.

### 10.3 Possibility of hazardous reactions

Polymerization will not occur.

### 10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

### 10.5 Incompatible materials

Incompatible with oxidising agents (e.g. hypochlorites), alkalis (e.g. sodium hydroxide) and some metals.

### 10.6 Hazardous decomposition products

May evolve toxic gases (sulphur/ aluminium oxides) when heated to decomposition.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Acute toxicity** Acute oral exposure may result in irritation of the mouth, throat, oesophagus and gastrointestinal tract.

#### Information available for the ingredients:

| Ingredient         | Oral LD50          | Dermal LD50 | Inhalation LC50 |
|--------------------|--------------------|-------------|-----------------|
| ALUMINIUM SULPHATE | 6207 mg/kg (mouse) | --          | --              |

|                               |                                                                                                                                                                                               |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Skin</b>                   | Contact may result in irritation, redness, pain, rash, dermatitis and possible burns.                                                                                                         |
| <b>Eye</b>                    | Contact may result in irritation, lacrimation, pain, redness, conjunctivitis and possible burns.                                                                                              |
| <b>Sensitisation</b>          | Not classified as causing skin or respiratory sensitisation.                                                                                                                                  |
| <b>Mutagenicity</b>           | Not classified as a mutagen.                                                                                                                                                                  |
| <b>Carcinogenicity</b>        | Not classified as a carcinogen.                                                                                                                                                               |
| <b>Reproductive</b>           | Not classified as a reproductive toxin.                                                                                                                                                       |
| <b>STOT - single exposure</b> | Over exposure may result in irritation of the nose and throat, with coughing. High level exposure may result in breathing difficulties. Aluminium sulphate hydrolyses to form sulphuric acid. |

**PRODUCT NAME    MAK-AS**

**STOT - repeated exposure**            Not classified as causing organ damage from repeated exposure.

**Aspiration**                      Not classified as causing aspiration.

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**12. ECOLOGICAL INFORMATION**

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**12.1 Toxicity**

No information provided.

**12.2 Persistence and degradability**

No information provided.

**12.3 Bioaccumulative potential**

No information provided.

**12.4 Mobility in soil**

No information provided.

**12.5 Other adverse effects**

No information provided.

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**13. DISPOSAL CONSIDERATIONS**

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**13.1 Waste treatment methods**

**Waste disposal**            For small amounts (as determined by risk assessment or similar): Wearing the protective equipment detailed above, neutralise to pH 6-8 by SLOW addition to a saturated sodium bicarbonate solution or similar basic solution. Dilute with excess water and flush to drain. Waste disposal should only be undertaken in a well ventilated area. For larger amounts: Dispose in accordance with local regulations.

**Legislation**                Dispose of in accordance with relevant local legislation.

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**14. TRANSPORT INFORMATION**

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**NOT CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE, IMDG OR IATA**

|                                    | LAND TRANSPORT (ADG) | SEA TRANSPORT (IMDG / IMO) | AIR TRANSPORT (IATA / ICAO) |
|------------------------------------|----------------------|----------------------------|-----------------------------|
| <b>14.1 UN Number</b>              | None allocated.      | None allocated.            | None allocated.             |
| <b>14.2 Proper Shipping Name</b>   | None allocated.      | None allocated.            | None allocated.             |
| <b>14.3 Transport hazard class</b> | None allocated.      | None allocated.            | None allocated.             |
| <b>14.4 Packing Group</b>          | None allocated.      | None allocated.            | None allocated.             |

**14.5 Environmental hazards**

No information provided.

**14.6 Special precautions for user**

**Hazchem code**            None allocated.

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**15. REGULATORY INFORMATION**

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**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

**Poison schedule**            A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

**Classifications**            Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).

**Inventory listings**            **AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)**  
All components are listed on AIIC, or are exempt.

## 16. OTHER INFORMATION

### Additional information

**ACIDS:** When mixing acids with water (diluting), caution must be taken as heat will be generated which causes violent spattering. Always add a small volume of acid to a large volume of water, NEVER the reverse.

**RESPIRATORS:** In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.

### PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

### HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

### Abbreviations

|                   |                                                                                                 |
|-------------------|-------------------------------------------------------------------------------------------------|
| ACGIH             | American Conference of Governmental Industrial Hygienists                                       |
| CAS #             | Chemical Abstract Service number - used to uniquely identify chemical compounds                 |
| CNS               | Central Nervous System                                                                          |
| EC No.            | EC No - European Community Number                                                               |
| EMS               | Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)                   |
| GHS               | Globally Harmonized System                                                                      |
| GTEPG             | Group Text Emergency Procedure Guide                                                            |
| IARC              | International Agency for Research on Cancer                                                     |
| LC50              | Lethal Concentration, 50% / Median Lethal Concentration                                         |
| LD50              | Lethal Dose, 50% / Median Lethal Dose                                                           |
| mg/m <sup>3</sup> | Milligrams per Cubic Metre                                                                      |
| OEL               | Occupational Exposure Limit                                                                     |
| pH                | relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline). |
| ppm               | Parts Per Million                                                                               |
| STEL              | Short-Term Exposure Limit                                                                       |
| STOT-RE           | Specific target organ toxicity (repeated exposure)                                              |
| STOT-SE           | Specific target organ toxicity (single exposure)                                                |
| SUSMP             | Standard for the Uniform Scheduling of Medicines and Poisons                                    |
| SWA               | Safe Work Australia                                                                             |
| TLV               | Threshold Limit Value                                                                           |
| TWA               | Time Weighted Average                                                                           |

### Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ("SDS").

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

**PRODUCT NAME    MAK-AS**

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