

SAFETY DATA SHEET

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name MAK-ACRA

Synonyms

1.2 Uses and uses advised against

Uses AMMONIA ANALYSER • REAGENT

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

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

Acute Toxicity: Oral: Category 4

Skin Corrosion/Irritation: Category 1B

Serious Eye Damage / Eye Irritation: Category 1

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word DANGER

Pictograms



Hazard statements

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

Prevention statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P264 Wash thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

PRODUCT NAME MAK-ACRA**Response statements**

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTRE or doctor/physician.
P321 Specific treatment is advised - see first aid instructions.
P363 Wash contaminated clothing before reuse.

Storage statements

P405 Store locked up.

Disposal statements

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS Number	EC Number	Content
SODIUM TARTRATE	868-18-8	212-773-3	5 to 15%
LITHIUM HYDROXIDE	1310-65-2	215-183-4	1 to 5%
SODIUM DICHLOROISOCYANURATE	2893-78-9	220-767-7	1 to 5%
SODIUM CITRATE	68-04-2	200-675-3	80 to 90%

4. FIRST AID MEASURES

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. 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.

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

4.2 Most important symptoms and effects, both acute and delayed

Causes burns.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

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 if strongly heated. May evolve chlorides and nitrogen oxides when heated to decomposition.

5.3 Advice for firefighters

No fire or explosion hazard exists.

5.4 Hazchem code

2X
2 Fine Water Spray.
X Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then collect and place in suitable containers for 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 cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

No exposure standards have been entered for this product.

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.

PPE

Eye / Face	Wear dust-proof goggles.
Hands	Wear PVC or rubber gloves.
Body	Wear coveralls. When using large quantities or where heavy contamination is likely, wear rubber boots and a PVC apron.
Respiratory	Where an inhalation risk exists, wear a Class P1 (Particulate) respirator. At high dust levels, wear an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	WHITE POWDER
Odour	CHLORINE ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE

9.1 Information on basic physical and chemical properties

Melting point	> 240°C
Evaporation rate	NOT AVAILABLE
pH	12.33 (5 % solution)
Vapour density	NOT AVAILABLE
Relative density	1.783
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

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), acids (e.g. nitric acid), metals, heat and ignition sources.

10.6 Hazardous decomposition products

May evolve chlorides and nitrogen oxides when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Harmful if swallowed. Ingestion may result in burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
LITHIUM HYDROXIDE	210 mg/kg (rat) (RTECS)	--	--
SODIUM DICHLOROISOCYANURATE	1,823 mg/kg (rat)	> 5,000 mg/kg (rat)	0.27 - 1.17 mg/l/4hrs (rat)
SODIUM CITRATE	6,150 mg/kg (rat)	> 2,280 mg/kg (rat)	--

Skin	Contact may result in irritation, redness, pain, rash, dermatitis and possible burns.
Eye	Contact may result in irritation, lacrimation, pain, redness, corneal burns and possible serious eye damage.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.
Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Over exposure may result in irritation of the nose and throat, coughing and bronchitis. High level exposure may result in intense thirst, ulceration, lung tissue damage, chemical pneumonitis and pulmonary oedema.
STOT - repeated	Not classified as causing organ damage from repeated exposure. Adverse effects are generally associated

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exposure with single exposure.
Aspiration Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Harmful effect due to pH shift. Discharge into the environment should be avoided.

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

Avoid contamination of drains and waterways.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal Collect without generating dust. Place in clean, sealed containers and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	2680	2680	2680
14.2 Proper Shipping Name	LITHIUM HYDROXIDE	LITHIUM HYDROXIDE	LITHIUM HYDROXIDE
14.3 Transport hazard class	8	8	8
14.4 Packing Group	II	II	II

14.5 Environmental hazards

No information provided.

14.6 Special precautions for user

Hazchem code 2X
GTEPG 8A1
EmS F-A, S-B

Other information If this product is transported as a kit, UN number 3316 would be applicable.

15. REGULATORY INFORMATION

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).

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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. UNITED STATES: TSCA (US Toxic Substances Control Act) All components are listed on the TSCA inventory, or are exempt.

16. OTHER INFORMATION

Additional information	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. WORKPLACE CONTROLS AND PRACTICES: Unless a less toxic chemical can be substituted for a hazardous substance, ENGINEERING CONTROLS are the most effective way of reducing exposure. The best protection is to enclose operations and/or provide local exhaust ventilation at the site of chemical release. Isolating operations can also reduce exposure. Using respirators or protective equipment is less effective than the controls mentioned above, but is sometimes 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.
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Abbreviations	<table><tr><td>ACGIH</td><td>American Conference of Governmental Industrial Hygienists</td></tr><tr><td>CAS #</td><td>Chemical Abstract Service number - used to uniquely identify chemical compounds</td></tr><tr><td>CNS</td><td>Central Nervous System</td></tr><tr><td>EC No.</td><td>EC No - European Community Number</td></tr><tr><td>EMS</td><td>Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)</td></tr><tr><td>GHS</td><td>Globally Harmonized System</td></tr><tr><td>GTEPG</td><td>Group Text Emergency Procedure Guide</td></tr><tr><td>IARC</td><td>International Agency for Research on Cancer</td></tr><tr><td>LC50</td><td>Lethal Concentration, 50% / Median Lethal Concentration</td></tr><tr><td>LD50</td><td>Lethal Dose, 50% / Median Lethal Dose</td></tr><tr><td>mg/m³</td><td>Milligrams per Cubic Metre</td></tr><tr><td>OEL</td><td>Occupational Exposure Limit</td></tr><tr><td>pH</td><td>relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).</td></tr><tr><td>ppm</td><td>Parts Per Million</td></tr><tr><td>STEL</td><td>Short-Term Exposure Limit</td></tr><tr><td>STOT-RE</td><td>Specific target organ toxicity (repeated exposure)</td></tr><tr><td>STOT-SE</td><td>Specific target organ toxicity (single exposure)</td></tr><tr><td>SUSMP</td><td>Standard for the Uniform Scheduling of Medicines and Poisons</td></tr><tr><td>SWA</td><td>Safe Work Australia</td></tr><tr><td>TLV</td><td>Threshold Limit Value</td></tr><tr><td>TWA</td><td>Time Weighted Average</td></tr></table>	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 ³	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
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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.

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