

## SAFETY DATA SHEET

### 1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

#### 1.1 Product identifier

**Product name** MAK-MEK

**Synonyms** MAK MEK

#### 1.2 Uses and uses advised against

**Uses** CLEANING AGENT • SOLVENT CLEANER  
SOLVENT CLEANER USED ON ABS.

#### 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

**Fax** +61 8 9249 8004

**Email** [service.wa@makwater.com.au](mailto:service.wa@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

Flammable Liquids: Category 2

##### Health Hazards

Serious Eye Damage / Eye Irritation: Category 2A

Specific Target Organ Toxicity (Single Exposure): Category 3 (Narcotic Effects)

Repeated exposure may cause skin dryness or cracking.

##### Environmental Hazards

Not classified as an Environmental Hazard

#### 2.2 GHS Label elements

**Signal word** DANGER

##### Pictograms



##### Hazard statements

AUH066

Repeated exposure may cause skin dryness or cracking.

H225

Highly flammable liquid and vapour.

H319

Causes serious eye irritation.

H336

May cause drowsiness or dizziness.

**PRODUCT NAME    MAK-MEK****Prevention statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P243	Take action to prevent static discharges.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

**Response statements**

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.
P312	Call a POISON CENTRE or doctor/physician if you feel unwell.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P370 + P378	In case of fire: Use appropriate media to extinguish.

**Storage statements**

P403 + P233 + P235	Store in a well-ventilated place. Keep cool. Keep container tightly closed.
P405	Store locked up.

**Disposal statements**

P501	Dispose of contents/container in accordance with relevant regulations.
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**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
METHYL ETHYL KETONE (2-BUTANONE)	78-93-3	201-159-0	100%

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**4. FIRST AID MEASURES**

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**4.1 Description of first aid measures**

<b>Eye</b>	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.
<b>Inhalation</b>	If inhaled, remove from contaminated area. To protect rescuer, use a Type A (Organic vapour) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.
<b>Skin</b>	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.
<b>Ingestion</b>	For advice, contact a Poisons Information Centre on 13 11 26 (Australia Wide) or a doctor (at once). If swallowed, do not induce vomiting.
<b>First aid facilities</b>	Eye wash facilities and safety shower should be available.

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

See Section 11 for more detailed information on health effects and symptoms.

**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**

Dry agent, carbon dioxide or foam. Prevent contamination of drains and waterways.

## 5.2 Special hazards arising from the substance or mixture

Highly flammable. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition. Vapour may form explosive mixtures with air. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, pilot lights, heaters, naked lights, etc when handling. Earth containers when dispensing fluids.

## 5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. 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

- 2YE
- 2 Alcohol Resistant Foam is the preferred firefighting medium but, if it is not available, fine water spray can be used.
- Y Risk of violent reaction or explosion. Wear full fire kit and breathing apparatus. Contain spill and run-off.
- E Evacuation of people in and around the immediate vicinity of the incident should be considered.

# 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. 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 non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal. Eliminate all sources of ignition.

## 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, preferably flammables store, removed from direct sunlight, incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. 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>
Methyl ethyl ketone (MEK)	SWA [AUS]	150	445	300	890
Methyl ethyl ketone (MEK)	SWA [Proposed]	200	590	300	885

### Biological limits

Ingredient	Determinant	Sampling Time	BEI
METHYL ETHYL KETONE (2-BUTANONE)	Methyl ethyl ketone in urine	End of shift	2 mg/L

Reference: ACGIH Biological Exposure Indices

## 8.2 Exposure controls

**Engineering controls** Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Flammable/explosive vapours may accumulate in poorly ventilated areas. Vapours are heavier than air and may travel some distance to an ignition source and flash back. Maintain vapour levels below the recommended exposure standard.

## PPE

<b>Eye / Face</b>	Wear splash-proof goggles.
<b>Hands</b>	Wear barrier gloves.
<b>Body</b>	Wear coveralls.
<b>Respiratory</b>	Where an inhalation risk exists, wear a Type A (Organic vapour) respirator. If spraying, wear a Type A-Class P1 (Organic gases/vapours and Particulate) respirator.



## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

<b>Appearance</b>	LIQUID
<b>Odour</b>	ACETONE-LIKE TO SWEET ODOUR
<b>Flammability</b>	HIGHLY FLAMMABLE
<b>Flash point</b>	-9°C (cc)
<b>Boiling point</b>	79.6°C
<b>Melting point</b>	-86°C
<b>Evaporation rate</b>	2.7 (Ether = 1)
<b>pH</b>	NOT AVAILABLE
<b>Vapour density</b>	2.41 (Air = 1)
<b>Relative density</b>	0.805
<b>Solubility (water)</b>	SOLUBLE
<b>Vapour pressure</b>	10.3 kPa @ 20°C
<b>Upper explosion limit</b>	10 %
<b>Lower explosion limit</b>	1.8 %
<b>Partition coefficient</b>	NOT AVAILABLE
<b>Autoignition temperature</b>	404°C
<b>Decomposition temperature</b>	NOT AVAILABLE
<b>Viscosity</b>	NOT AVAILABLE
<b>Explosive properties</b>	NOT AVAILABLE
<b>Oxidising properties</b>	NOT AVAILABLE
<b>Odour threshold</b>	NOT AVAILABLE

### 9.2 Other information

<b>% Volatiles</b>	100 %
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## 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 is not expected to occur.

### 10.4 Conditions to avoid

Avoid shock, friction, heavy impact, heat, sparks, open flames and other ignition sources.

**10.5 Incompatible materials**

Incompatible oxidising agents (e.g. hypochlorites), acids (e.g. nitric acid), alkalis (e.g. sodium hydroxide), chloroform, copper, chlorosulphonic acid, amines, ammonia, isocyanates and pyridines. Reaction with hydrogen peroxide and nitric acid forms heat and a shock-sensitive explosive product. Mixture with 2-propanol will produce explosive peroxides during storage. Ignites on contact with potassium t-butoxide.

**10.6 Hazardous decomposition products**

May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

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**11. TOXICOLOGICAL INFORMATION**

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**11.1 Information on toxicological effects**

**Acute toxicity**                      Acute exposure may result in nausea, vomiting, abdominal pain, diarrhoea, dizziness and drowsiness.

**Information available for the ingredients:**

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
METHYL ETHYL KETONE (2-BUTANONE)	2737 mg/kg (rat)	6480 mg/kg (rabbit)	23500 mg/kg (rat)

**Skin**                                      Contact may result in drying and defatting of the skin, rash and dermatitis.

**Eye**                                        Causes serious eye irritation. Contact may result in irritation, lacrimation, pain and redness.

**Sensitisation**                        Not classified as causing skin or respiratory sensitisation.

**Mutagenicity**                        Insufficient data available to classify as a mutagen.

**Carcinogenicity**                    Insufficient data available to classify as a carcinogen.

**Reproductive**                      Insufficient data available to classify as a reproductive toxin.

**STOT - single exposure**            Over exposure may result in central nervous system (CNS) effects with headache, drowsiness and dizziness.

**STOT - repeated exposure**        Repeated exposure to some solvents have been reported to cause adverse effects to the central nervous system (CNS), liver and kidney. Over exposure to methyl ethyl ketone (MEK) in combination with certain other solvents (eg n-hexane) may result in peripheral nerve damage.

**Aspiration**                            Aspiration into the lungs may result in chemical pneumonitis and pulmonary oedema.

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**12. ECOLOGICAL INFORMATION**

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**12.1 Toxicity**

No information provided.

**12.2 Persistence and degradability**

Methyl ethyl ketone (MEK) vapour in the atmosphere will degrade primarily by reaction with photochemically produced hydroxyl radicals. MEK is rapidly biodegradable.

**12.3 Bioaccumulative potential**

Methyl ethyl ketone (MEK) is not expected to bioaccumulate.

**12.4 Mobility in soil**

Methyl ethyl ketone (MEK) will volatilise from the soil and water surfaces and is highly mobile with in soil.

**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, absorb with sand, vermiculite or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information if disposing of large quantities (if required). Prevent contamination of drains and waterways as aquatic life may be threatened and environmental damage may result.

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

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**14. TRANSPORT INFORMATION**

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



	LAND TRANSPORT (ADG)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
<b>14.1 UN Number</b>	1193	1193	1193
<b>14.2 Proper Shipping Name</b>	ETHYL METHYL KETONE (METHYL ETHYL KETONE)	ETHYL METHYL KETONE (METHYL ETHYL KETONE)	ETHYL METHYL KETONE (METHYL ETHYL KETONE)
<b>14.3 Transport hazard class</b>	3	3	3
<b>14.4 Packing Group</b>	II	II	II

#### 14.5 Environmental hazards

No information provided.

#### 14.6 Special precautions for user

<b>Hazchem code</b>	●2YE
<b>GTEPG</b>	3A1
<b>EmS</b>	F-E, S-D

## 15. REGULATORY INFORMATION

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

<b>Poison schedule</b>	Classified as a Schedule 5 (S5) Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).
<b>Classifications</b>	Safe Work Australia criteria is based on the Globally Harmonised System (GHS) of Classification and Labelling of Chemicals (GHS Revision 7).
<b>Inventory listings</b>	<b>AUSTRALIA: AIIC (Australian Inventory of Industrial Chemicals)</b> All components are listed on AIIC, or are exempt. <b>UNITED STATES: TSCA (US Toxic Substances Control Act)</b> All components are listed on the TSCA inventory, or are exempt.

## 16. OTHER INFORMATION

<b>Additional information</b>	<p><b>WORK PRACTICES - SOLVENTS:</b> Organic solvents may present both a health and flammability hazard. It is recommended that engineering controls should be adopted to reduce exposure where practicable (for example, if using indoors, ensure explosion proof extraction ventilation is available). Flammable or combustible liquids with explosive limits have the potential for ignition from static discharge. Refer to AS 1020 (The control of undesirable static electricity) and AS 1940 (The storage and handling of flammable and combustible liquids) for control procedures.</p> <p><b>SYNERGISM - ANTAGONISM:</b> Ingredients in this product may act together to aggravate or reduce adverse effects. Accordingly the time weighted average concentration (TWA) provided for single ingredients should be considered as a guide only and all due care exercised when handling.</p> <p><b>RESPIRATORS:</b> 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.</p>
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**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.

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