

# MAPEI MAPESIL AC

Chemwatch Material Safety Data Sheet  
Issue Date: Fri 1-Apr-2005

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## Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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### PRODUCT NAME

MAPEI MAPESIL AC

### SYNONYMS

"silicone sealant"

### PRODUCT USE

Sealant and adhesive. Applied using a hand trowel or spreader. Cured material solid has high heat resistance, is practically non combustible, but is decomposed by near red heat.

### SUPPLIER

Company: Mapei Australia P/L

Address:

12 Parkview Drive

Archerfield

QLD, 4108

AUS

Telephone: +61 7 3276 5000

Fax: +61 7 3276 5076

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## Section 2 - HAZARDS IDENTIFICATION

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### STATEMENT OF HAZARDOUS NATURE

**HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.**

### POISONS SCHEDULE

None

### RISK

Irritating to skin.

May produce discomfort of the respiratory system\*.

\* (limited evidence).

### SAFETY

Avoid contact with skin.

To clean the floor and all objects contaminated by this material, use water and detergent.

If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).

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## Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

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NAME	CAS RN	%
dimethylsiloxane, hydroxy-terminated	70131-67-8	>60
ethyltriacetoxysilane	17689-77-9	1-<5
NOTE: During curing or on exposure to moist air product generates acetic acid		
acetic acid glacial	64-19-7	

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## Section 4 - FIRST AID MEASURES

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### SWALLOWED

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

### EYE

If this product comes in contact with eyes:

- Wash out immediately with water.
- If irritation continues, seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

### SKIN

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

### INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

### NOTES TO PHYSICIAN

Treat symptomatically.

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## Section 5 - FIRE FIGHTING MEASURES

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### EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

### FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- DO NOT approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Equipment should be thoroughly decontaminated after use.

### FIRE/EXPLOSION HAZARD

- High temperature decomposition products include silicon dioxide, small amounts of formaldehyde, formic acid, acetic acid and traces of silicon polymers.
- These gases may ignite and, depending on circumstances, may cause the resin/polymer to ignite.
- An outer skin of silica may also form. Extinguishing of fire, beneath the skin, may be difficult.
- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of

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Section 5 - FIRE FIGHTING MEASURES

containers.

- On combustion, may emit toxic fumes of carbon monoxide (CO).
  - May emit acrid smoke.
  - Mists containing combustible materials may be explosive., Combustion products include, carbon dioxide (CO<sub>2</sub>), other pyrolysis products typical of burning organic material.
- May emit corrosive fumes.

## FIRE INCOMPATIBILITY

Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result.

## HAZCHEM

None

## Personal Protective Equipment

PERSONAL PROTECTION EQUIPMENT

Gloves, boots (chemical resistant).

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## Section 6 - ACCIDENTAL RELEASE MEASURES

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## EMERGENCY PROCEDURES

### MINOR SPILLS

Slippery when spilt.

- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Wear impervious gloves and safety goggles.
- Trowel up/scrape up.
- Place spilled material in clean, dry, sealed container.
- Flush spill area with water.
- Clean up all spills immediately.
- Avoid breathing vapours/ aerosols or dusts and avoid contact with skin and eyes.
- Place in a suitable labelled container for waste disposal.

### MAJOR SPILLS

Slippery when spilt.

Minor hazard.

- Clear area of personnel.
- Alert Fire Brigade and tell them location and nature of hazard.
- Control personal contact by using protective equipment as required.
- Prevent spillage from entering drains or water ways.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite and place in appropriate containers for disposal.
- Wash area and prevent runoff into drains or waterways.
- If contamination of drains or waterways occurs, advise emergency services.

### EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (ppm)	Revised IDLH Value (mg/m <sup>3</sup> )
Acetic acid	50	

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

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## Section 7 - HANDLING AND STORAGE

### PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- DO NOT allow material to contact humans, exposed food or food utensils.
- Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately. Launder contaminated clothing before re-use.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

### SUITABLE CONTAINER

- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

### STORAGE INCOMPATIBILITY

Avoid reaction with oxidising agents.

### STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

### EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m <sup>3</sup>	STEL ppm	STEL mg/m <sup>3</sup>	Peak ppm	Peak mg/m <sup>3</sup>
Australian Exposure Standards	Acetic acid	10	25	15	37		

No data available for dimethylsiloxane, hydroxy-terminated as (CAS: 70131-67-8) / (CAS: 63148-60-7)

No data available for ethyltriacetoxysilane as (CAS: 17689-77-9)

None assigned. Refer to individual constituents.

### ODOUR SAFETY FACTOR (OSF)

OSF=21 (ethyltriacetoxysilane)

Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV-TWA for example) is being reached, even when distracted by working activities
B	26-550	As "A" for 50-90% of persons being distracted
C	1-26	As "A" for less than 50% of persons being distracted
D	0.18-1	10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As "D" for less than 10% of persons aware of being tested

### INGREDIENT DATA

DIMETHYLSILOXANE, HYDROXY-TERMINATED:  
No exposure limits set by NOHSC or ACGIH.

ETHYLTRIACETOXYSILANE:

No exposure limits set by NOHSC or ACGIH.  
material reacts with atmospheric moisture producing acetic acid

ACETIC ACID GLACIAL:

Odour Threshold Value: 0.037-0.15 ppm (detection)  
NOTE: Detector tubes for acetic acid, measuring in excess of 1 ppm, are commercially available.  
Exposure at or below the TLV-TWA and TLV-STEL is thought to protect the worker against conjunctival, nose and respiratory tract irritation.

### PERSONAL PROTECTION

#### EYE

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

#### HANDS/FEET

Wear chemical protective gloves, eg. PVC.

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Wear safety footwear or safety gumboots, eg. Rubber.

### OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

### RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half-face Respirator	Full-Face Respirator
1000	10	AB-AUS P	-
1000	50	-	AB-AUS P
5000	50	Airline *	-
5000	100	-	AB-2 P
10000	100	-	AB-3 P
	100+		Airline**

\* - Continuous Flow \*\* - Continuous-flow or positive pressure demand.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

### ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air)	0.25-0.5 m/s (50-100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

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## Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

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Lower end of the range

- 1: Room air currents minimal or favourable to capture
- 2: Contaminants of low toxicity or of nuisance value only
- 3: Intermittent, low production.
- 4: Large hood or large air mass in motion

Upper end of the range

- 1: Disturbing room air currents
- 2: Contaminants of high toxicity
- 3: High production, heavy use
- 4: Small hood - local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

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## Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

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### APPEARANCE

Family of products which vary in their physical properties as a result of variations in production. Data presented here is for typical family member. Coloured paste with acetic acid-like odour; does not mix with water. Material cures / solidifies by reacting with atmospheric moisture and this process generates irritating acetic acid vapour.

### PHYSICAL PROPERTIES

Liquid.  
Does not mix with water.  
Sinks in water.

Molecular Weight: Not applicable  
Melting Range (°C): Not available  
Solubility in water (g/L): Immiscible  
pH (1% solution): Not applicable  
Volatile Component (%vol): Not available  
Relative Vapour Density (air=1): Not available  
Lower Explosive Limit (%): Not available  
Autoignition Temp (°C): Not available  
State: Non slump paste

Boiling Range (°C): Not available  
Specific Gravity (water=1): 1.03  
pH (as supplied): Not applicable  
Vapour Pressure (kPa): Not available  
Evaporation Rate: Not available  
Flash Point (°C): Not available  
Upper Explosive Limit (%): Not available  
Decomposition Temp (°C): Not available

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## Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

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### CONDITIONS CONTRIBUTING TO INSTABILITY

Product is considered stable and hazardous polymerisation will not occur.

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## Section 11 - TOXICOLOGICAL INFORMATION

### POTENTIAL HEALTH EFFECTS

#### ACUTE HEALTH EFFECTS

##### SWALLOWED

The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (eg. liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

##### EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

##### SKIN

There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.

Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.

Excessive use or prolonged contact may lead to defatting, drying and irritation of sensitive skin.

The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.

##### INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models).

Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Not normally a hazard due to non-volatile nature of product.

#### CHRONIC HEALTH EFFECTS

Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

#### TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

DIMETHYLSILOXANE, HYDROXY-TERMINATED:  
TOXICITY

Oral (rat) LD50: >5000 mg/kg \*

Oral (rat) LD50: >40000 mg/kg \*\*

Inhalation (rat) LC50: >535 mg/l \*\*

\* [Mobay Chemical Corp]

\*\*[GE]

IRRITATION

Nil Reported

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## Section 11 - TOXICOLOGICAL INFORMATION

### ETHYLTRIACETOXYSILANE:

No data of toxicological significance identified in literature search.

### ACETIC ACID GLACIAL:

#### TOXICITY

Oral (human) TDLo: 1.47 mg/kg

Unreport (man) LDLo: 308 mg/kg

Oral (rat) LD50: 3310 mg/kg

Inhalation (human) TCLo: 816 ppm/3 min

Inhalation (rat) LCLo: 16000 ppm/4 hr

Dermal (rabbit) LD50: 1060 mg/kg

#### IRRITATION

Skin (human):50mg/24hr - Mild

Skin (rabbit):525mg (open)-SEVERE

Eye (rabbit): 0.05mg (open)-SEVERE

## Section 12 - ECOLOGICAL INFORMATION

DO NOT discharge into sewer or waterways.

Refer to data for ingredients, which follows:

### ACETIC ACID GLACIAL:

Fish LC50 (96hr.) (mg/l): 88,92

Daphnia magna EC50 (48hr.) (mg/l): 32

Algae IC50 (72hr.) (mg/l): 90

log Kow (Prager 1995): -0.31

log Kow (Sangster 1997): -0.17

log Pow (Verschueren 1983): 1.8E+0

log Kow : -0.3- -0.17

Half-life (hr) air : 641

Henry's atm m<sup>3</sup> /mol: 1.00E-09

BOD 5 if unstated: 0.34-0.88,36%

BCF : <1

Toxicity Fish: LC50 (96h) 75-88 mg/l

Toxicity invertebrate: cell mult. inhib. 78-4000mg/L

Bioaccumulation : not sig

Degradation Biological: readily degrad

processes Abiotic: Rxn OH\*,hydrol

Acetic acid is degraded photochemically in the atmosphere to produce hydroxyl radicals (estimated typical half-life of 22 days).

Physical removal of acetates on atmospheric particulates may occur via wet or dry deposition.

Natural water will neutralise dilute solutions of acetic acid.

Spills of acetic acid on soil will readily biodegrade.

Acetic acid is not expected to bioconcentrate in the aquatic system.

Low concentrations of acetic acid are harmful to fish.

Drinking water standards: none available.

Soil Guidelines: none available.

Air Quality Standards: none available.

## Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorised landfill.
- Recycle containers if possible, or dispose of in an authorised landfill.

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## Section 14 - TRANSPORTATION INFORMATION

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Dangerous Goods Class: None  
Subrisk: None  
UN/NA Number: None  
Packing Group: None  
Labels Required:  
Additional Shipping Information:  
International Transport Regulations:  
IMO Dangerous Goods class: None  
IMO Packing group: None  
IATA Dangerous goods class: None  
Cargo Instructions:  
Cargo Max:  
Passenger Instructions:  
Passenger Max:  
Special Provisions: None, None

## HAZCHEM

None

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## Section 15 - REGULATORY INFORMATION

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### POISONS SCHEDULE

None

### REGULATIONS

dimethylsiloxane, hydroxy-terminated (CAS: 70131-67-8) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)

ethyltriacetoxysilane (CAS: 17689-77-9) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)

acetic acid glacial (CAS: 64-19-7) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)

Australian Poisons Schedule

Australia High Volume Industrial Chemical List (HVICL)

No data available for dimethylsiloxane, hydroxy-terminated as CAS: 63148-60-7.

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## Section 16 - OTHER INFORMATION

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