

METHANOL (COOGEE CHEMICALS)

Ingredient	Conc.	CAS No.
METHANOL	100%	67-56-1

Shipping	CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA METHANOL		
Synonyms	METHYL ALCOHOL.		
Appearance	CLEAR COLOURLESS LIQUID		
Odour	ALCOHOLIC ODOUR		
Use(s)	SOLVENT, LABORATORY APPLICATIONS, CHEMICAL REAGENT, DENATURE ETHANOL.		
Supplier	COOGEE CHEMICALS PTY LTD Ph: (08) 9439 8205		
Stock No.	, .		
Poison Sched	6	Hazchem 2WE	UN No. 1230
Pkg Group	II	EPG 3A3	D.G Class 3 Sub/Tert Risk 6.1

HEALTH HAZARDS

Health Hazard Summary	Toxic. Use safe work practices to avoid eye or skin contact and vapour inhalation. Methanol primarily affects the central nervous system, with symptoms of headache, nausea, vomiting and dizziness. Damage to the optic nerves may occur with chronic or high level exposure, causing visual problems and blindness. Experimental teratogen.
Eye	Irritant. Exposure may result in lacrimation, irritation, pain, redness, conjunctivitis and possible corneal burns with prolonged contact.
Inhalation	Irritant - narcotic. Over exposure may result in mucous membrane irritation of the nose & throat, nausea and headache. Chronic exposure/high vapour levels may cause dizziness, drowsiness, weakness, fatigue, breathing difficulties and unconsciousness.
Skin	Irritant - toxic. Prolonged contact may result in drying and defatting of the skin, rash and dermatitis. Toxic effects may result from skin absorption.
Ingestion	Toxic. Ingestion may result in nausea, vomiting, abdominal pain, diarrhoea, dizziness and drowsiness. Large doses; acidosis, visual effects, optic nerve damage, circulatory and respiratory collapse, coma and death.

PRECAUTIONS

Flammability	Highly flammable. Vapours may form explosive mixtures with air. May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.
Reactivity	Incompatible with oxidising agents (eg. hypochlorites, peroxides), acids (eg. sulfuric acid), strong alkalis (eg. hydroxides), heat and ignition sources.
Ventilation	Do not inhale vapours. Use in well ventilated areas. In poorly ventilated areas, mechanical explosion proof extraction ventilation is recommended.

PERSONAL PROTECTIVE EQUIPMENT

PPE Wear splash-proof goggles, coveralls and butyl or nitrile gloves. Where an inhalation risk exists, wear a Type A (Organic vapour) Respirator. If spraying, wear a Type A-Class P1 (Organic vapour and Particulate) Respirator.



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FIRST AID

- Eye** Flush gently with running water, holding eyelids open for 20 minute period. Seek immediate medical attention.
- Inhalation** If over exposure occurs leave exposure area immediately. If other than minor symptoms are displayed seek immediate medical attention.
- Skin** Remove contaminated clothing and gently flush affected areas with water. Seek medical attention if irritation develops. Launder clothing before reuse.
- Ingestion** If poisoning occurs, contact a Doctor or Poisons Information Centre on 13 11 26 (Australia Wide). If more than 15 minutes from a hospital induce vomiting, preferably using Ipecac Syrup APF. SEEK URGENT MEDICAL ATTENTION.

SAFE HANDLING

- Storage** Store in cool, dry, well ventilated area, removed from oxidising agents, acids, alkalis, direct sunlight, heat or ignition sources 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 fire protection.
- Waste Disposal** Wearing the protective equipment outlined, ensure all ignition sources are extinguished. For small quantities, absorb on paper, sand or similar and evaporate under a fume cupboard or open area. For large volumes, atomise into incinerator (mixing with more flammable solvent if required) or recycle by gravimetric separation, distilling & reusing. Contact RMT on (08) 9322 1711 for additional information if required.
- Transport** Class 3 Flammable liquid. Do not transport with chemicals of class; 1 (Explosives), 2.1/ 2.3 (Flammable/ Toxic gases), 4.2 (Spontaneously combustibles), 5.1 (Oxidising agents), 5.2 (Organic peroxides), 6 (Toxics), 7 (Radioactives) and foodstuffs.

EMERGENCY

- Spillage** If spilt (bulk), contact emergency services if appropriate. Wear splash-proof goggles, butyl/nitrile gloves, a Type A (Organic vapour) respirator, coveralls and boots. Ventilate and clear area of all unprotected personnel. Absorb spill with sand or similar, collect and place in sealable containers for disposal.
- Environment** If released to the atmosphere methanol degrades via reaction with photochemically produced hydroxyl radicals. It is expected to biodegrade in both soil and water. If spilt on soil it is expected to be susceptible to significant leaching, as well rapid evaporation from dry surfaces is likely to occur. Chronic aquatic toxicity possible above 32 ppm.
- Fire and Explosion** Highly flammable - explosive vapour. Evacuate area and contact emergency services. Toxic gases may be evolved when heated. Remain upwind and notify those downwind of hazard. Wear full protective equipment (see spill above) including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.
- Extinguishing** Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways, absorb runoff with sand or similar.

PHYSICAL AND CHEMICAL PROPERTIES

Flammability: HIGHLY FLAMMABLE
Boiling Point: 64.7 C
Exposure Standard (TWA): 200 ppm Methanol
pH: NOT AVAILABLE
Specific Gravity: 0.79
Vapour Pressure: 127 mm Hg @ 25 C
Lower Explosion Limit: 6.7 %
Vapour Density: 1.1 (Air = 1)

Flash Point: 12 C
Melting Point: NOT AVAILABLE
Evaporation Rate: NOT AVAILABLE
% Volatiles: 100 %
Solubility: SOLUBLE
Upper Explosion Limit: 36.5 %
Autoignition Temperature: 470 C

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ADDITIONAL INFORMATION

This Chem Alert Report has been prepared as a material safety data sheet on behalf of the manufacturer, in accordance with the National Code of Practice for the Preparation of Material Safety Data Sheets [NOHSC: 2011(1994)]

RISK AND SAFETY PHRASES

Risk and Safety Phrases are standardised phrases allocated to Hazardous Substances. Risk phrases convey a general description of the physicochemical, environmental and health hazards of a substance. Safety phrases provide information on safe storage, handling, disposal, personal protection and first aid.

R11 Highly flammable.

R23/25 Toxic by inhalation and if swallowed.

S16 Keep away from sources of ignition - No smoking.

S2 Keep out of reach of children.

S24 Avoid contact with skin.

S7 Keep container tightly closed.

S45 In case of accident or if you feel unwell, contact a doctor or Poisons Information Centre immediately (show the label where possible).

HAG PHRASES

HAG stands for Hazmat Action Guide. HAG phrases describe in simple terms the hazard associated with chemical products and the appropriate action to take in the event of an emergency involving the product. HAG phrases are commonly used by emergency services.

(14) Highly flammable.

(9) Form: Liquid.

(28) Toxic/poisonous.

(62) Avoid personal/skin contact.

(50) Mixes with or is soluble in water.

(65) Prevent from entering drains.

(82) Fire fighting: Water spray/fog.

(83) Fire fighting: Foam.

(85) Fire fighting: Dry agent.

(60) Eliminate ignition sources.

ADDITIONAL INFORMATION FOR : METHANOL

Concentration in this product : 100%

Molecular Formula : C-H4-O

Molecular Weight : 32.05

HEALTH HAZARDS - HEALTH HAZARD SUMMARY

Chronic poisoning from repeated exposure to vapour was manifested by conjunctivitis, headache, giddiness, insomnia, gastric disturbances, and blindness. One fatal case of occupational intoxication by inhalation has been reported. [American Conference of Governmental Industrial Hygienists. Documentation of the TLVs and BEIs. 5th ed. Cincinnati, 1986. 372]. A latency period of 12-18 hours, during which time the only clinical signs are those of a generally mild and transient state of inebriation as after ethanol, may pass before symptoms including headache, weakness, fatigue, cramps, nausea, delirium, dimness of vision, rapid, shallow breathing and coma. Death is usually due to respiratory or cardiac failure. Blindness is usually permanent.

HEALTH HAZARDS - EYE

Methanol may accumulate in the body and attack the optic nerve causing permanent damage including blindness.

HEALTH HAZARDS - INHALATION

An experimental teratogen. Occupational exposure at high vapour concentrations, in poorly ventilated areas has

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ADDITIONAL INFORMATION cont.

been reported to cause visual disturbances, liver enlargement, blindness and death. A woman died after exposure to vapour levels of 4000-13,000 ppm for 12 hours.

TWA : 200 ppm (262 mg/m³) SKIN

STEL : 250 ppm (328 mg/m³)

IDLH (Inhalation) : 25000 ppm

TCLo (Inhalation) : 300 ppm human (visual effects)

LCLo (Inhalation) : 1000 ppm (monkey)

LC50 (Inhalation) : 50 g/m³/2 hours (mouse)

Odour Threshold : 4.3 - 8,800 ppm (Poor warning properties).

HEALTH HAZARDS - SKIN

Prolonged contact may result in drying and defatting of the skin, scaling, rash, dermatitis, and toxic systemic effects through skin absorption.

LD50 (Skin) : 15,800 mg/kg (rabbit)

LDLo (Skin) : 393 mg/kg (monkey)

HEALTH HAZARDS - INGESTION

Methanol is a cumulative poison and is metabolised in the body to highly toxic formaldehyde and formic acid. 15mL is reported to have caused blindness, < 30 mL was fatal.

TDLo (Ingestion) : 3429 mg/kg (man-visual change)

LDLo (Ingestion) : 143 mg/kg (human)

LD50 (Ingestion) : 5628 mg/kg (rat)

EMERGENCY - ENVIRONMENT

ATMOSPHERE: Methanol degrades via reaction with photochemically produced hydroxyl radicals (approximate half-life of 17.8 days). Physical removal from air can occur via rainfall. **SOIL:** If released to soil, methanol is expected to rapidly biodegrade and be susceptible to significant leaching to groundwater. Relatively rapid evaporation from dry surfaces is likely to occur. **WATER:** Rapidly biodegrade Volatilization half-lives of 4.8 days and 51.7 days have been estimated for a model river (1 m deep) and an environmental pond, respectively. Aquatic hydrolysis, oxidation, photolysis and adsorption to sediment are not significant. **BIOLOGICAL:** Biodegradable, not expected to bioconcentrate. Aquatic Toxicity: LC50 (rainbow trout fingerlings) is 13,680 ppm/96 hours @ 12 C; LC50 (brown shrimp) is 1700 ppm/96 hours; TLm (brine shrimp) is 10,000 ppm/24 hours; Plants 31,100 ppm. Chronic aquatic toxicity is > 32 ppm.

ADDITIONAL SAFE HANDLING INFORMATION

ABBREVIATIONS: *** mg/m³ - Milligrams per cubic metre *** ppm - Parts Per Million *** TWA/ES - Time Weighted Average or Exposure Standard. *** pH - relates to hydrogen ion concentration - this value will relate to a scale of 0 - 14, where 0 is highly acidic and 14 is highly alkaline. *** CAS# - Chemical Abstract Service number - used to uniquely identify chemical compounds. *** M - moles per litre, a unit of concentration. *** IARC - International Agency for Research on Cancer.

WORK PRACTICES - SOLVENTS: 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.

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

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ADDITIONAL INFORMATION cont.

mentioned above, but is sometimes necessary.

PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:

The recommendation for protective equipment contained within this Chem Alert report is provided as a guide only. Factors such as 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. Information provided by Risk Management Technologies is summarised for ease of use. Additional technical information is available by calling (08) 9322 1711.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: 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 Chem Alert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

TRANSPORT INFORMATION:

Where a United Nations Number (UN No) is present on the Chem Alert report, the product is classified as a Dangerous Good by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road or Rail.

If no UN Number, Dangerous Goods Class or Hazchem Code has been allocated, then the Chem Alert report will state 'none allocated' in accordance with NOHSC:2011(1994)].

STATUS OF CHEM ALERT REPORTS

Chem Alert reports are compiled as an independent source of information by RMT's scientific department, based on the latest chemical and toxicological research and, where appropriate, in compliance with relevant standards, guidance notes and legislation. Unless otherwise stated, RMT takes full responsibility for the information in the Chem Alert reports. Where available the manufacturer's original MSDS is also provided to Chem Alert subscribers as a scanned image for their convenience. In many instances Chem Alert reports are compiled on behalf of manufacturers in which case they serve as the "Manufacturer's MSDS" and are clearly identified as such on the relevant reports.

ADDITIONAL PRODUCT INFORMATION

PRECAUTIONS - FLAMMABILITY

Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc. when handling. Earth containers when dispensing fluids.

PRECAUTIONS - VENTILATION

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 standards (TLV/TWA).

Last Reviewed : 24th September 2002

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END OF REPORT