

## Section 1 - Identification of Chemical Product and Company

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**Substance:** Methanol is an aliphatic alcohol.  
**Trade Name:** **Methanol**  
**Product Code:** 505  
**Product Use:** Fixative in staining.  
**Creation Date:** **February, 2006**  
**This version issued:** **October, 2009** and is valid for 5 years from this date.

## Section 2 - Hazards Identification

### Statement of Hazardous Nature

This product is classified as: Hazardous according to the criteria of SWA Australia.

Dangerous according to the Australian Dangerous Goods (ADG) Code.

**Risk Phrases:** R11, R23/24/25, R39/23/24/25. Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects by inhalation, in contact with skin and if swallowed.

**Safety Phrases:** S7, S16, S20, S23, S33, S38, S45, S1/2, S36/37. Keep container tightly closed. Keep away from sources of ignition - No smoking. When using, do not eat or drink. Do not breathe vapours. Take precautionary measures against static discharges. In case of insufficient ventilation, wear suitable respiratory equipment. In case of accident or if you feel unwell, contact a doctor or Poisons Information Centre immediately (show the label where possible). Keep locked up and out of reach of children. Wear suitable protective clothing and gloves.

**SUSDP Classification:** S6

**ADG Classification:** Class 3, Sub risk 6.1 (METHANOL)

**UN Number:** 1230

## Emergency Overview

**Physical Description & Colour:** Clear, colourless liquid.

**Odour:** Alcohol odour.

**Major Health Hazards:** SYMPTOMATOLOGY:

1. A latency usually 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.
2. Headache, anorexia, weakness, fatigue, leg cramps, vertigo, restlessness.
3. Nausea, occasionally vomiting and diarrhoea. Violent abdominal pain, back pain, leg pain.
4. Apathy or delirium progressing sometimes rapidly to coma. Rarely excitement, mania, and convulsions.
5. Dimness of vision with dilated pupils, reacting poorly, if at all, to light, followed often by bilateral blindness (transient or permanent). Eyes are often sensitive to pressure, and eye movements are painful.
6. Breathing is rapid and shallow, not usually deep and laboured as seen in other types of metabolic acidosis.
7. Mild tachycardia is common, but the blood pressure is usually well maintained.
8. Death in coma is due to respiratory failure or rarely to circulatory collapse.
9. Protracted convalescence with asthenia. Blindness is usually permanent.

## Potential Health Effects

See section 11 for Chronic exposure studies.

### Inhalation

**Short Term Exposure:** Available data shows that this product is toxic, see symptoms above.

### Skin Contact:

**Short Term Exposure:** Available data shows that this product is toxic, see symptoms above. However product is unlikely to cause any discomfort in normal use.

### Eye Contact:

**Short Term Exposure:** This product is believed to be not irritating to eyes.

## MATERIAL SAFETY DATA SHEET

**Ingestion:**

**Short Term Exposure:** Significant oral exposure is considered to be unlikely. Available data shows that this product is toxic, symptoms are fully outlined above. This product is unlikely to cause any irritation problems in the short or long term.

**Carcinogen Status:**

**SWA:** No significant ingredient is classified as carcinogenic by SWA.

**NTP:** No significant ingredient is classified as carcinogenic by NTP.

**IARC:** No significant ingredient is classified as carcinogenic by IARC.

### Section 3 - Composition/Information on Ingredients

Ingredients	CAS No	Conc, %	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Methanol	67-56-1	>99.8	262	328

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non hazardous ingredients are also possible.

The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

### Section 4 - First Aid Measures

**General Information:**

You should call The Poisons Information Centre if you feel that you may have been poisoned, burned or irritated by this product. The number is 13 1126 from anywhere in Australia (0800 764 766 in New Zealand) and is available at all times. Have this MSDS with you when you call.

**Inhalation:** If inhalation occurs, contact a Poisons Information Centre. Urgent hospital treatment is likely to be needed. Remove source of contamination or move victim to fresh air. If breathing is difficult, oxygen may be beneficial if administered by trained personnel, preferably on a doctor's advice. DO NOT allow victim to move about unnecessarily. Symptoms of pulmonary oedema can be delayed up to 48 hours after exposure.

**Skin Contact:** Quickly and gently blot away excess liquid. Flush contaminated area with lukewarm, gently flowing water for at least 20-30 minutes, by the clock. DO NOT INTERRUPT FLUSHING. If necessary, keep emergency vehicle waiting (show paramedics this MSDS and take their advice). Under running water, remove contaminated clothing, shoes and leather goods (eg watchbands and belts). If breathing has stopped, trained personnel should begin artificial respiration or, if the heart has stopped, cardiopulmonary resuscitation (CPR) immediately.

**Eye Contact:** First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. Take special care if exposed person is wearing contact lenses.

**Ingestion:** If swallowed, do NOT induce vomiting; rinse mouth thoroughly with water and contact a Poisons Information Centre, or call a doctor at once. Give activated charcoal if instructed.

### Section 5 - Fire Fighting Measures

**Fire and Explosion Hazards:** This product is classified as flammable. There is a moderate risk of an explosion from this product if commercial quantities are involved in a fire. Firefighters should take care and appropriate precautions. Any explosion will likely spread the fire to surrounding materials. Water spray may be used to cool drums involved in a fire, reducing the chances of an explosion. Vapours from this product are heavier than air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures. They may also flash back considerable distances.

Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

**Extinguishing Media:** Alcohol resistant foam is the preferred firefighting medium but, if it is not available, fine water spray can be used. Try to contain spills, minimise spillage entering drains or water courses.

**Fire Fighting:** If a significant quantity of this product is involved in a fire, call the fire brigade. There is a danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is liquid-tight chemical protective clothing and breathing apparatus.

<b>Flash point:</b>	12°C
<b>Upper Flammability Limit:</b>	36%
<b>Lower Flammability Limit:</b>	6%
<b>Autoignition temperature:</b>	464°C
<b>Flammability Class:</b>	Flammable

## MATERIAL SAFETY DATA SHEET

## Section 6 - Accidental Release Measures

**Accidental release:** In the event of a major spill, prevent spillage from entering drains or water courses. Evacuate the spill area and deny entry to unnecessary and unprotected personnel. Immediately call the Fire Brigade. Wear full protective chemically resistant clothing including eye/face protection, gauntlets and self contained breathing apparatus. See below under Personal Protection regarding Australian Standards relating to personal protective equipment. Suitable materials for protective clothing include butyl rubber, Teflon, PE/EVAL. Eye/face protective equipment should comprise as a minimum, protective goggles. If there is a significant chance that vapours or mists are likely to build up in the cleanup area, we recommend that you use a respirator. It should be fitted with a type A cartridge, suitable for organic vapours.

Stop leak if safe to do so, and contain spill. Absorb onto sand, vermiculite or other suitable absorbent material. If spill is too large or if absorbent material is not available, try to create a dike to stop material spreading or going into drains or waterways. Avoid using sawdust or other combustible material. Any electrical equipment should be non-sparking. Any equipment capable of building an electrostatic charge should be electrically grounded. Because of the toxicity of this product, special personal care should be taken in any cleanup operation. Sweep up and shovel or collect recoverable product into labelled containers for recycling or salvage, and dispose of promptly. Recycle containers wherever possible after careful cleaning. After spills, wash area preventing runoff from entering drains. If a significant quantity of material enters drains, advise emergency services. This material may be suitable for approved landfill. Ensure legality of disposal by consulting regulations prior to disposal. Thoroughly launder protective clothing before storage or re-use. Advise laundry of nature of contamination when sending contaminated clothing to laundry.

## Section 7 - Handling and Storage

**Handling:** Keep exposure to this product to a minimum, and minimise the quantities kept in work areas. Check Section 8 of this MSDS for details of personal protective measures, and make sure that those measures are followed. The measures detailed below under "Storage" should be followed during handling in order to minimise risks to persons using the product in the workplace. Also, avoid contact or contamination of product with incompatible materials listed in Section 10.

**Storage:** This product is a Scheduled Poison. Observe all relevant regulations regarding sale, transport and storage of this schedule of poison. Store in a cool, well ventilated area, and make sure that surrounding electrical devices and switches are suitable. Check containers periodically for leaks. Containers should be kept closed in order to minimise contamination and possible evaporation. Make sure that the product does not come into contact with substances listed under "Incompatibilities" in Section 10. If you keep more than 2500kg or L of Dangerous Goods of Packaging Group II, you may be required to license the premises or notify your Dangerous Goods authority. If you have any doubts, we suggest you contact your Dangerous Goods authority in order to clarify your obligations. Check packaging - there may be further storage instructions on the label.

## Section 8 - Exposure Controls and Personal Protection

The following Australian Standards will provide general advice regarding safety clothing and equipment:

Respiratory equipment: **AS/NZS 1715**, Protective Gloves: **AS 2161**, Industrial Clothing: **AS2919**, Industrial Eye Protection: **AS1336** and **AS/NZS 1337**, Occupational Protective Footwear: **AS/NZS2210**.

SWA Exposure Limits	TWA (mg/m <sup>3</sup> )	STEL (mg/m <sup>3</sup> )
Methanol	262	328

No special equipment is usually needed when occasionally handling small quantities. The following instructions are for bulk handling or where regular exposure in an occupational setting occurs without proper containment systems.

**Ventilation:** This product should only be used where there is ventilation that is adequate to keep exposure below the TWA levels. If necessary, use a fan.

**Eye Protection:** Eye protection is not normally necessary when this product is being used. However, if in doubt, wear suitable protective glasses or goggles.

**Skin Protection:** It is essential that all skin areas are adequately covered by impermeable gloves, overalls, hair covering, apron and face shield. See below for suitable material types.

**Protective Material Types:** We suggest that protective clothing be made from the following materials: butyl rubber, Teflon, PE/EVAL.

**Respirator:** Usually, no respirator is necessary when using this product. If necessary, use a respirator fitted with a type A cartridge, suitable for organic vapours.

Safety deluge showers should, if practical, be provided near to where this product is being used.

## Section 9 - Physical and Chemical Properties:

**Physical Description & colour:** Clear, colourless liquid.

**Odour:** Alcohol odour.

**Boiling Point:** 65°C at 100kPa

### MATERIAL SAFETY DATA SHEET

<b>Freezing/Melting Point:</b>	-98°C
<b>Volatiles:</b>	Completely volatile at 100°C.
<b>Vapour Pressure:</b>	Approx 10kPa at 15°C
<b>Vapour Density:</b>	No data.
<b>Specific Gravity:</b>	0.81 at 0°C
<b>Water Solubility:</b>	Completely soluble.
<b>pH:</b>	No data. Expected to be neutral.
<b>Volatility:</b>	No data.
<b>Odour Threshold:</b>	No data.
<b>Evaporation Rate:</b>	No data.
<b>Coeff Oil/water Distribution:</b>	-0.74 (log P octanol/water)
<b>Autoignition temp:</b>	464°C
<b>Refractive index:</b>	1.3288 at 20°C

## Section 10 - Stability and Reactivity

**Reactivity:** This product is unlikely to react or decompose under normal storage conditions. However, if you have any doubts, contact the supplier for advice on shelf life properties.

**Conditions to Avoid:** This product should be kept in a cool place, preferably below 30°C. Containers should be kept dry. Keep away from sources of sparks or ignition. Keep isolated from combustible materials. Handle and open containers carefully. Any electrical equipment in the area of this product should be flame proofed.

**Incompatibilities:** oxidising agents.

**Fire Decomposition:** Carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water. Carbon monoxide poisoning produces headache, weakness, nausea, dizziness, confusion, dimness of vision, disturbance of judgment, and unconsciousness followed by coma and death.

**Polymerisation:** This product will not undergo polymerisation reactions.

## Section 11 - Toxicological Information

**Toxicity:** The following figures suggest that this product is neither toxic nor even harmful. However, this product causes severe health problems and even death in ways not adequately measured by quick LD<sub>50</sub> measurements.

Oral (rat) LD<sub>50</sub>: 5628 mg/kg.

Oral (mouse) LD<sub>50</sub>: 7300 mg/kg.

Oral (monkey) LD<sub>50</sub>: 7000 mg/kg.

Skin (rabbit) LD<sub>50</sub>: 15,800 mg/kg.

Inhalation (rat) LC<sub>50</sub>: 64,000 ppm, 4-hr exposure.

Skin Irritation (rabbit): Moderate, 20 mg, 24-hr exposure

Eye Irritation (rabbit): Moderate, 100 mg, 24-hr exposure

In human methanol poisoning, the transformation of methanol to formaldehyde and formic acid can cause metabolic acidosis and ocular injury. Repeated exposure to airborne concentrations in the range of 200 to 375 ppm have been associated with headaches, and at 1200 to 8300 ppm with damaged vision. Repeated skin contact can cause defatting dermatitis with dryness and cracking.

Repeated inhalation exposures to rats caused CNS and behavioural effects, and changes to the spleen. Repeated oral exposures to rats caused liver toxicity, CNS effects and behavioural changes.

Inhalation exposure of pregnant rats to very high concentrations of methanol in air, 7 hr/day on gestation days 1-19, produced foetotoxic effects (10,000 ppm) and birth defects (20,000 ppm), as well as maternal toxicity. No adverse effects were seen at 5,000 ppm. Pregnant rats administered methanol orally at very high dose levels (20-35 g/kg) on gestation day 10 produced foetotoxic effects, as well as maternal toxicity.

Other Data: None.

## Section 12 - Ecological Information

This product is biodegradable. It will not accumulate in the soil or water or cause long term problems.

Will biodegrade rapidly in soil, water, and air.

96-Hr LC<sub>50</sub> (fathead minnow, 28-29 days old): 29,400 mg/L, 25°C, 7.3 mg/L dissolved water, water hardness 43.5 mg/L (CaCO<sub>3</sub>), alkalinity 46.6 CaCO<sub>3</sub>, pH 7.66.

96-Hr LC<sub>50</sub> (rainbow trout fingerling): 13,680 mg/L, 12°C

96-Hr LC<sub>50</sub> (rainbow trout fingerling): 10,800 mg/L, 12°C

## Section 13 - Disposal Considerations

**Disposal:** There are many pieces of legislation covering waste disposal and they differ in each state and territory, so each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. The Hierarchy of Controls seems to be common - the user should investigate: Reduce, Reuse, and Recycle and only if all else fails

### MATERIAL SAFETY DATA SHEET

should disposal be considered. Note that properties of a product may change in use, so that the following suggestions may not always be appropriate. The following may help you in properly addressing this matter for this product. This product may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. If neither of these options is suitable, consider controlled incineration, or landfill.

## Section 14 - Transport Information

**ADG Code:** 1230, METHANOL

**Hazchem Code:** 2WE

**Special Provisions:** 279

**Limited quantities:** ADG 7 specifies a Limited Quantity value of 1 L for this class of product.

**Dangerous Goods Class:** Class 3, Flammable liquids.

**Sub Risk:** Class 6.1, Toxic Substances.

**Packaging Group:** II

**Packaging Method:** P001, IBC02

Class 3 Flammable Liquids shall not be loaded in the same vehicle or packed in the same freight container with Classes 1 (Explosives), 2.1 (Flammable Gases where flammable liquids and flammable gases are both in bulk), 2.3 (Toxic Gases), 4.2 (Spontaneously Combustible Substances), 5.1 (Oxidising Agents), 5.2 (Organic Peroxides), 6 (Toxic Substances, except Flammable Liquid is nitromethane), and 7 (Radioactive Substances). They may however be loaded in the same vehicle or packed in the same freight container with Classes 2.1 (Flammable Gases except where the Flammable Liquids and Flammable Gases are in bulk), 2.2 (Non-Flammable Non-Toxic Gases), 4.1 (Flammable Solids), 4.3 (Dangerous When Wet Substances), 6 (Toxic Substances, except where Flammable Liquid is nitromethane), 8 (Corrosive Substances), 9 (Miscellaneous Dangerous Goods), Foodstuffs or foodstuff empties.

## Section 15 - Regulatory Information

**AICS:** This product is compliant with NICNAS regulations.

The following ingredient: Methanol, is mentioned in the SUSDP.

## Section 16 - Other Information

**This MSDS contains only safety-related information. For other data see product literature.**

**KINETIK is a manufacturer and supplier of quality tested biomedical stains and solutions.  
Customised products are available on request.**

### Acronyms:

<b>ADG Code</b>	Australian Code for the Transport of Dangerous Goods by Road and Rail, 7th Edition
<b>AICS</b>	Australian Inventory of Chemical Substances
<b>CAS Number</b>	Chemical Abstracts Service Registry Number
<b>Hazchem Code</b>	Emergency action code of numbers and letters that provide information to emergency services especially firefighters
<b>IARC</b>	International Agency for Research on Cancer
<b>SWA</b>	Safe Work Australia, formerly ASCC and NOHSC
<b>NOS</b>	Not otherwise specified
<b>NTP</b>	National Toxicology Program (USA)
<b>R-Phrase</b>	Risk Phrase
<b>SUSDP</b>	Standard for the Uniform Scheduling of Drugs & Poisons
<b>UN Number</b>	United Nations Number

THIS MSDS SUMMARISES OUR BEST KNOWLEDGE OF THE HEALTH AND SAFETY HAZARD INFORMATION OF THE PRODUCT AND HOW TO SAFELY HANDLE AND USE THE PRODUCT IN THE WORKPLACE. EACH USER MUST REVIEW THIS MSDS IN THE CONTEXT OF HOW THE PRODUCT WILL BE HANDLED AND USED IN THE WORKPLACE.

IF CLARIFICATION OR FURTHER INFORMATION IS NEEDED TO ENSURE THAT AN APPROPRIATE RISK ASSESSMENT CAN BE MADE, THE USER SHOULD CONTACT THIS COMPANY SO WE CAN ATTEMPT TO OBTAIN ADDITIONAL INFORMATION FROM OUR SUPPLIERS. OUR RESPONSIBILITY FOR PRODUCTS SOLD IS SUBJECT TO OUR STANDARD TERMS AND CONDITIONS, A COPY OF WHICH IS SENT TO OUR CUSTOMERS AND IS ALSO AVAILABLE ON REQUEST.

Please read all labels carefully before using product.

This MSDS is prepared in accord with the SWA document "National Code of Practice for the Preparation of Material Safety Data Sheets" 2nd Edition [NOHSC:2001(2003)]

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Phone: (07)5495 5248 (business hours)

**Poisons Information Centre: 13 1126 from anywhere in Australia, (0800 764 766 in New Zealand)**