1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

Material Name: Methanol

Recommended Uses: Chemical Reagent, Chemical Synthesis, Denature Ethanol, Solvent.

Other names: Methyl alcohol; Wood alcohol; Carbinol.

Supplier: Auschem (NSW) Pty. Ltd.
ABN: 32 084 260 159
PO Box 6309, Wetherill Park
91 Newton Road, Wetherill Park
NSW 2164 Australia

Telephone: +612 9756 5559
Fax: +612 9756 5558

Local Contact

Telephone: +612 9756 5559
Fax: +612 9756 5558

Emergency Telephone Number: 1800 033 111 (24 hours)

2. HAZARDS IDENTIFICATION

This material is hazardous according to criteria of Safe Work Australia; HAZARDOUS SUBSTANCE. Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

Risk Phrase(s):
- R11: Highly Flammable.
- R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.
- R39/23/24/25: Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

Safety Phrase(s):
- S7: Keep container tightly closed.
- S16: Keep away from sources of ignition - No smoking.
- S24/25: Avoid contact with skin and eyes.
- S36/37: Wear suitable protective clothing and gloves.
- S38: In case of insufficient ventilation, wear suitable respiratory equipment.
- S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).

Poisons Schedule: S6 Poison.

3. COMPOSITION/INFORMATION ON INGREDIENTS
### 4. FIRST AID MEASURES

**Inhalation:**
Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

**Skin Contact:**
If skin or hair contact occurs, immediately remove any contaminated clothing and wash skin and hair thoroughly with running water. If swelling, redness, blistering or irritation occurs seek medical assistance.

**Eye Contact:**
If in eyes, wash out immediately with water. In all cases of eye contamination it is a sensible precaution to seek medical advice.

**Ingestion:**
Immediately rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Seek immediate medical assistance.

**Advice to Physician:**
Treat symptomatically. Metabolic acidosis may occur up to 12 hours after ingestion. Administration or ethanol reduces toxic effects by blocking the metabolic route to formaldehyde/formic acid production in the body.

### 5. FIRE FIGHTING MEASURES

**Hazards from Combustion Products:**
Highly flammable liquid. Avoid all ignition sources. May form flammable vapour mixtures with air. Flameproof equipment is necessary in all areas where this chemical is being used. Nearby equipment must be earthed. Vapour may travel a considerable distance to source of ignition and flash back.

**Precautions for Fire Fighters and Special Protective Equipment:**
On burning will emit toxic fumes, including those of oxides of carbon. Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from the path of fire. Keep containers cool with water spray. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion.

**Suitable Extinguishing Media:**
Alcohol resistant foam is the preferred firefighting medium but, if it is not available, fine water spray or water fog can be used.

**Hazchem Code:**
• 2WE

### 6. ACCIDENTAL RELEASE MEASURES
Emergency Procedures: Shut off all possible sources of ignition. Clear area of all unprotected personnel. If contamination of sewers or waterways has occurred advise local emergency services.

Clean Up Methods: Slippery when spilt. Avoid accidents, clean up immediately. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Use water spray to disperse vapour. Collect and seal in properly labelled containers or drums for disposal.

7. HANDLING AND STORAGE

This material is a Scheduled Poison S6 and must be stored, maintained and used in accordance with the relevant regulations.

Conditions for Safe Storage: Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from sources of heat or ignition. Store away from incompatible materials described in Section 10. Keep containers closed when not in use check regularly for leaks.

Precautions for Safe Handling: Avoid skin and eye contact and breathing in vapour. Keep out of reach of children.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits
In the absence of occupational exposure standards for this product, it is recommended that the following are adopted.

<table>
<thead>
<tr>
<th>Material</th>
<th>Type</th>
<th>ppm</th>
<th>Mg/m³</th>
<th>Notation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl Alcohol</td>
<td>TWA (8h)</td>
<td>200</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>STEL (15min)</td>
<td>250</td>
<td>328 mg/m³</td>
<td>Sk</td>
</tr>
</tbody>
</table>

As published by the National Occupational Health and Safety Commission.

TWA: The time-weighted average airborne concentration over an eight-hour working day, for a five-day working week over an entire working life.

STEL: The average airborne concentration over a 15 minute period which should not be exceeded at any time during a normal eight hour work day. According to current knowledge this concentration should neither impair the health of, nor cause undue discomfort to, nearly all workers.

'Sk' Notation: Absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur.

These Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Engineering Controls: Ensure ventilation is adequate to maintain air concentrations below Exposure Standards. If inhalation risk exists: Use with local exhaust ventilation or while wearing organic vapour respirator. Vapour heavier than air – prevent
concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected. Keep containers closed when not in use.

**Personal Protective Equipment:**

The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors. Wear overalls, safety glasses and impervious gloves. Use with adequate ventilation. If inhalation risk exists wear organic vapour respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Clear Liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless</td>
</tr>
<tr>
<td>Odour</td>
<td>Alcoholic</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>CH3OH</td>
</tr>
<tr>
<td>Solubility</td>
<td>Miscible in water.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.79 @20°C</td>
</tr>
<tr>
<td>Relative Vapour Density (air=1)</td>
<td>1.11</td>
</tr>
<tr>
<td>Vapour Pressure (20 °C)</td>
<td>12 kPa</td>
</tr>
<tr>
<td>Flash Point (°C)</td>
<td>12</td>
</tr>
<tr>
<td>Flammability Limits (%)</td>
<td>6.7 - 36.5</td>
</tr>
<tr>
<td>Autoignition Temperature (°C)</td>
<td>470</td>
</tr>
<tr>
<td>%Volatile by Volume</td>
<td>100</td>
</tr>
<tr>
<td>Boiling Point/Range (°C)</td>
<td>64.7</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Freezing Point/Range (°C)</td>
<td>-97.7</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

**Conditions to Avoid:** Avoid exposure to heat, sources of ignition, and open flame.

**Incompatible Materials:** Incompatible with oxidising agents, acids, alkalis.

**Hazardous Decomposition Products:** Oxides of carbon. Hydrocarbons.

**Hazardous Reactions:** None known.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label.

Symptoms or effects that may arise if the product is mishandled and overexposure occurs are.
**Ingestion:**
Swallowing can result in nausea, vomiting and central nervous system depression. If the victim is showing signs of central system depression (like those of drunkenness) there is greater likelihood of the patient breathing in vomit and causing damage to the lungs. Death may occur if large amounts are ingested.

**Eye Contact:**
May be an eye irritant.

**Skin Contact:**
Contact with skin may result in irritation. Will have a degreasing action on the skin. Repeated or prolonged skin contact may lead to irritant contact dermatitis. Can be absorbed through the skin with resultant adverse effects.

**Inhalation:**
Breathing in vapour can result in headaches, dizziness, drowsiness, and possible nausea. Breathing in high concentrations can produce central nervous system depression, which can lead to loss of co-ordination, impaired judgement and if exposure is prolonged, unconsciousness.

**Long Term Effects:**
Available evidence from animal studies indicate that repeated or prolonged exposure to this material could result in effects on the central nervous system. Chronic exposure to concentrations greater than 1000 ppm can result in permanent blindness.

**Toxicological Data:**
- **Oral LD50 (mice):** 5800 mg/kg
- **Inhalation LC50 (rat):** 64000 ppm/4hr
- **SKIN:** Moderate irritant (rabbit).
- **EYES:** Moderate irritant (rabbit).

**12. ECOLOGICAL INFORMATION**

Ecotoxicity: Avoid contaminating waterways.

**13. DISPOSAL CONSIDERATIONS**

**Material Disposal:**
Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Waste product should not be allowed to contaminate soil or water.

**Container Disposal:**
Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums. Send to drum recoverer or metal reclaimer.

**Local Legislation:**
Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

**14. TRANSPORT INFORMATION**

**ADG**

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

**Proper Shipping Name:** METHANOL
UN Number: 1230
Class: 3
Subrisk 1: 6.1 Toxic
Packing Group: II
Hazchem Code: •2WE

IMDG

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

Proper Shipping Name: METHANOL
UN Number: 1230
Class-Primary: 3
Subrisk 1: 6.1 Toxic
Packing Group: II
IMDG EMS Fire: F-E
IMDG EMS Spill: S-D

IATA

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

Proper Shipping Name: METHANOL
UN Number: 1230
Class-Primary: 3 Flammable Liquid
Subrisk 1: 6.1 Toxic
Packing Group: II

15. REGULATORY INFORMATION

Classification: This material is hazardous according to criteria of Safe Work Australia; HAZARDOUS SUBSTANCE.

Hazard Category:
F: Highly flammable
T: Toxic

Risk Phrase(s): R11: Highly Flammable.
R23/24/25: Toxic by inhalation, in contact with skin and if swallowed.
R39/23/24/25: Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

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S38: In case of insufficient ventilation, wear suitable respiratory equipment.
S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label whenever possible).

Poisons Schedule:
S6 Poison.

This material is listed on the Australian Inventory of Chemical Substances (AICS).
16. OTHER INFORMATION

MSDS Version Number: 4.0

MSDS Effective Date: 07.02.2012

MSDS Revisions: A vertical bar (|) in the left margin indicates an amendment from the previous version.

MSDS Regulation:

MSDS Distribution: The information in this document should be made available to all who may handle the product

Disclaimer: This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.