Section 1 - Identification of The Material and Supplier

Mortech Industries NZ Ltd
Unit 16, 21 Railside Place
Hamilton 3204

EMERGENCY PHONE NUMBER 0800 764 766
NEW ZEALAND NATIONAL POISONS CENTRE

Chemical nature: Mainly methanol with the addition of small quantities of other ingredients.
Trade Name: TISSUE BUILDER
Product Use: Sundry embalming preparation.
Creation Date: October, 2012
This version issued: 24 APRIL 2014 and is valid for 5 years from this date.

Section 2 - Hazards Identification

Statement of Hazardous Nature
This product is classified as: T, Toxic. F+, Highly Flammable. Hazardous according to the criteria of SWA. Dangerous according to the Australian Dangerous Goods (ADG) Code.

Risk Phrases: R11 R/23/24/25. R36 R39 R62 R63 Highly flammable. Toxic by inhalation, in contact with skin, and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. Possible risk of impaired fertility and possible risk of harm to the unborn child
Safety Phrases: S7, S16, S20, S23, S29, S33, S36, S38, S45, S51, 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 or mists. Do not empty into drains. Take precautionary measures against static discharges. Wear suitable protective clothing. 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 this MSDS where possible). Use only in well ventilated areas. Keep locked up and out of reach of children. Wear suitable protective clothing and gloves.

SUSMP Classification: S6
UN Number: 1230, METHANOL

This product is approved under the Hazardous Substances and New Organisms Act Approval Additives, Process Chemicals and Raw Materials (Flammable, Toxic (6.1)) Group Standard 2006
HSR 002500. It is classified as follows:

3.1B Highly Flammable Liquid
6.1C Acutely Toxic
6.4A Eye Irritant
6.8B Suspected human reproductive or developmental toxicant
6.9A Known target organ toxicant
9.3C Harmful to terrestrial vertebrates
GHS Signal word: DANGER

HAZARD STATEMENT:
- H225: Highly flammable liquid and vapour.
- H301: Toxic if swallowed.
- H311: Toxic in contact with skin.
- H319: Causes serious eye irritation.
- H331: Toxic if inhaled.
- H361: Suspected of damaging fertility or the unborn child
- H370: Causes damage to organs.
- H372: Causes damage to organs through prolonged and repeated exposure.
- H433: Harmful to terrestrial vertebrates.

PREVENTION
- P210: Keep away from heat, sparks, open flames and hot surfaces. No smoking.
- P233: Keep container tightly closed.
- P235: Keep cool.
- P240: Ground/bond container and receiving equipment.
- P243: Take precautionary measures against static discharge.
- P260: Do not breathe fumes, mists, vapours or spray.
- P264: Wash contacted areas thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P271: Use only outdoors or in a well ventilated area.

RESPONSE
- P311: Call a POISON CENTER or doctor.
- P361: Remove all contaminated clothing immediately.
- P363: Wash contaminated clothing before reuse.
- P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor.
- P303+P361+P353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
- P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P307+P311: If exposed: Call a POISON CENTER or doctor.
- P376: Stop leak if safe to do so.
- P370+P378: In case of fire, use carbon dioxide, dry chemical, foam. Alcohol resistant foam is the preferred firefighting medium but, if it is not available, fine water spray can be used.

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

DISPOSAL
- P501: Dispose of small quantities and empty containers by wrapping with paper and putting in garbage. For larger quantities, if recycling or reclaiming is not possible, use a commercial waste disposal service.

Emergency Overview

Physical Description & colour: Orange liquid.
Odour: Mild odour.
Major Health Hazards: SYMPTOMATOLOGY of methanol poisoning:
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.
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. Toxic by inhalation, in contact with skin and if swallowed.

**Potential Health Effects**

**Inhalation:**
**Short term exposure:** Extremely high levels cause stupor, headache, nausea, dizziness unconsciousness and may produce adverse effects on vision.
**Long Term exposure:** No data for health effects associated with long term inhalation.

**Skin Contact:**
**Short term exposure:** Repeated or prolonged contact causes drying, brittleness, cracking and irritation. Prolonged and repeated skin contact with Methanol soaked material has produced toxic effects including vision effects and death.
**Long Term exposure:** No data for health effects associated with long term skin exposure. The EPA New Zealand has given this product a 6.1C Classification which includes dermal toxicity.

**Eye Contact:**
**Short term exposure:** May cause eye injury which may persist for several days. Liquid and vapour in high concentrations causes irritation, tearing and burning sensations.
**Long Term exposure:** No data for health effects associated with long term eye exposure.

**Ingestion:**
**Short term exposure:** Product is highly toxic. Poisonous or fatal if swallowed. A small amount can cause mental sluggishness, nausea and vomiting leading to severe illness and may produce adverse effects on vision with possible blindness or death if treatment is not received.
**Long Term exposure:** No data for health effects associated with long term ingestion.

**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

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>CAS No</th>
<th>Conc.%</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>67-56-1</td>
<td>90</td>
<td>262</td>
<td>328</td>
</tr>
<tr>
<td>Ethanol</td>
<td>64-17-5</td>
<td></td>
<td>1880</td>
<td>not set</td>
</tr>
<tr>
<td>Nitrocellulose</td>
<td>9004-70-0</td>
<td>6</td>
<td>not set</td>
<td>not set</td>
</tr>
</tbody>
</table>

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

The SWA 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. If breathing has stopped give artificial respiration.

Skin Contact: 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 (e.g. 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: If irritation does occur, flush contaminated eye(s) with lukewarm, gently flowing water for 20 minutes holding the eyelids open or until the product is removed. Immediately obtain medical assistance.

Ingestion: If swallowed, do NOT induce vomiting; rinse mouth thoroughly with water and contact a Poisons Information Centre, or seek medical attention immediately. Urgent hospital treatment is required. Give activated charcoal if instructed.

Section 5 - Fire Fighting Measures

Fire and Explosion Hazards: The major hazard in fires is usually inhalation of heated and toxic or oxygen deficient (or both), fire gases. 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 packages involved in a fire, reducing the chances of an explosion. Fire decomposition products from this product may be toxic if inhaled. Take appropriate protective measures.

Extinguishing Media: In case of fire, use carbon dioxide, dry chemical, foam. 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. Cool closed, undamaged containers exposed to fire with water spray.

Flash point: Approx 15°C
Upper Flammability Limit: 36.5%
Lower Flammability Limit: 5.5%
Autoignition temperature: 464°C
Flammability Class: Highly flammable.

Section 6 - Accidental Release Measures

Accidental release: This product is sold in small packages, and the accidental release from one of these is not usually a cause for concern. For minor spills, clean up, rinsing to sewer and put empty container in garbage. Although no special protective clothing is normally necessary because of occasional minor contact with this product, it is good practice to wear impermeable gloves when handling chemical products. In the event of a major spill, prevent spillage from entering drains or water courses and call emergency services.

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**
- Occupational Protective Clothing: **AS/NZS 4501 set 2008**
- Industrial Eye Protection: **AS1336** and **AS/NZS 1337**
- Occupational Protective Footwear: **AS/NZS2210**

#### SWA Exposure Limits

<table>
<thead>
<tr>
<th></th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>262</td>
<td>328</td>
</tr>
<tr>
<td>Ethanol</td>
<td>1880</td>
<td>not set</td>
</tr>
</tbody>
</table>

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 in a well ventilated area. If natural ventilation is inadequate, use of a fan is suggested.
- **Eye Protection:** Eye protection such as protective glasses or goggles is recommended when this product is being used.
- **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: PVC, nitrile, neoprene.
- **Respirator:** Usually, no respirator is necessary when using this product. However, if you have any doubts consult the Australian Standard mentioned above. Otherwise, not normally necessary. Safety deluge showers should, if practical, be provided near to where this product is being handled commercially.

### Section 9 - Physical and Chemical Properties:

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical Description &amp; colour</strong></td>
<td>Orange liquid.</td>
</tr>
<tr>
<td><strong>Odour</strong></td>
<td>Mild odour.</td>
</tr>
<tr>
<td><strong>Boiling Point</strong></td>
<td>65°C at 100kPa</td>
</tr>
<tr>
<td><strong>Freezing/Melting Point</strong></td>
<td>No specific data. Liquid at normal temperatures.</td>
</tr>
<tr>
<td><strong>Volatiles</strong></td>
<td>90%</td>
</tr>
<tr>
<td><strong>Vapour Pressure</strong></td>
<td>16kPa at 25°C</td>
</tr>
<tr>
<td><strong>Vapour Density</strong></td>
<td>No data</td>
</tr>
<tr>
<td><strong>Specific Gravity</strong></td>
<td>0.80</td>
</tr>
<tr>
<td><strong>Water Solubility</strong></td>
<td>Soluble.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>No data.</td>
</tr>
<tr>
<td><strong>Volatility</strong></td>
<td>No data.</td>
</tr>
<tr>
<td><strong>Odour Threshold</strong></td>
<td>No data.</td>
</tr>
<tr>
<td><strong>Evaporation Rate</strong></td>
<td>No data.</td>
</tr>
<tr>
<td><strong>Coeff Oil/water distribution</strong></td>
<td>No data.</td>
</tr>
<tr>
<td><strong>Autoignition temp</strong></td>
<td>464°C</td>
</tr>
</tbody>
</table>
**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. Keep containers tightly closed. Containers should be kept dry. Keep containers and surrounding areas well ventilated. Keep away from sources of sparks or ignition. Keep isolated from combustible materials. Any electrical equipment in the area of this product should be flame proofed.

**Incompatibilities:** strong acids, strong oxidising agents.

**Fire Decomposition:** Combustion forms carbon dioxide, and if incomplete, carbon monoxide and possibly smoke. Water is also formed. May form nitrogen and its compounds, and under some circumstances, oxides of nitrogen. Occasionally hydrogen cyanide gas in reducing atmospheres. 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 (for METHANOL toxicology) 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 LD₅₀ measurements.

**Oral (rat) LD₅₀:** 5628 mg/kg.
**Oral (mouse) LD₅₀:** 7300 mg/kg.
**Oral (monkey) LD₅₀:** 7000 mg/kg.
**Skin (rabbit) LD₅₀:** 15,800 mg/kg.

**Inhalation (rat) LC₅₀:** 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.

**Classification of Hazardous Ingredients**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Risk Phrases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>Conc&gt;=20%: T; R23/24/25 R36 R39 R62 R63</td>
</tr>
</tbody>
</table>

There is no data to hand indicating any particular target organs.

**Section 12 - Ecological Information**

This product is biodegradable. It will not accumulate in the soil or water or cause long term problems. Expected to not be an environmental hazard.

Will biodegrade rapidly in soil, water, and air.

**96-Hr LC₅₀** (fathead minnow, 28-29 days old): 29,400 mg/L, 25°C, 7.3 mg/L dissolved water, water hardness 43.5 mg/L (CaCO₃), alkalinity 46.6 CaCO₃, pH 7.66.

**96-Hr LC₅₀** (rainbow trout fingerling): 13,680 mg/L, 12°C

**96-Hr LC₅₀** (rainbow trout fingerling): 10,800 mg/L, 12°C

**Section 13 - Disposal Considerations**

**Disposal:** Dispose of small quantities and empty containers by wrapping with paper and putting in garbage. For larger quantities, if recycling or reclaiming is not possible, use a commercial waste disposal service.
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, where Flammable Liquid is nitromethane), 8 (Corrosive Substances), 9 (Miscellaneous Dangerous Goods), Foodstuffs or foodstuff empties.

Section 15 - Regulatory Information

A 6.1C product requires an Approved Handler to be present onsite at all times while the product is being used. This applies when any quantity is being stored or used onsite.

Section 16 - Other Information

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

Acronyms:

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

This MSDS summarises our best knowledge of the health and safety hazard statement: 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 MSD sheet was prepared by Quality & Safety Management Ltd and is based on our current state of knowledge including information obtained from suppliers and the EPA HSNO Chemical Classification Information Database. The format and general content of this data sheet is taken from the Group Standards for Embalming Products 2006, the Responsible Care Code of Practice on the format and contents of Material Safety Data Sheets and the HSNO Labelling Guide originally published by ERMA in 2006.
The MSDS is given in good faith and constitutes a guideline not a guarantee of safety. The level of risk each substance poses is relevant to its properties and how the substance is used. While guidelines are given for personal protective equipment such precautions must be relevant to its use. The HSNO classifications provided are those obtained from the EPA which have been modified with information provided by the product manufacturer HS Eckels & Company Canada.

SAFETY DATA SHEET

Issued by: Morteck Industries NZ Ltd
Phone: (07) 848 1692
Poisons Information Centre: 0800 764 766