1. Identification

<table>
<thead>
<tr>
<th>Name</th>
<th>Product Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHANOL Undenatured 96% LR</td>
<td>EL042</td>
</tr>
<tr>
<td>ETHANOL Undenatured 100% LR</td>
<td>EL043</td>
</tr>
<tr>
<td>ETHANOL Undenatured 100% AR</td>
<td>EA043</td>
</tr>
<tr>
<td>Ethyl alcohol</td>
<td></td>
</tr>
<tr>
<td>ETHANOL Undenatured 70% LR</td>
<td>EP061</td>
</tr>
<tr>
<td>ETHANOL Undenatured 96% AR</td>
<td>EA042</td>
</tr>
<tr>
<td>ETHANOL Undenatured 100% BP</td>
<td>EP043</td>
</tr>
<tr>
<td>ETHANOL 95 SG Undenatured 95%</td>
<td>EP082</td>
</tr>
<tr>
<td>ETHANOL Undenatured 70%w/w LR</td>
<td>EL141</td>
</tr>
<tr>
<td>ETHANOL Undenatured 60% v/v LR</td>
<td>EL146</td>
</tr>
<tr>
<td>ETHANOL Undenatured 45% v/v LR</td>
<td>EL147</td>
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<tr>
<td>ETHANOL Undenatured 25% v/v LR</td>
<td>EL148</td>
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<tr>
<td>ETHANOL 80% v/v LR</td>
<td>EL156</td>
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<tr>
<td>ETHANOL Undenatured 70% AR</td>
<td>EA061</td>
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<tr>
<td>ETHANOL Undenatured 100% AR</td>
<td>EA171</td>
</tr>
<tr>
<td>Ethanol Undenatured 96% RG</td>
<td>ER042</td>
</tr>
</tbody>
</table>

Chem-Supply Pty Ltd does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Chem-Supply Pty Ltd with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Chem-Supply Pty Ltd is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

- **Eye Damage/Irritation:** Category 2A
- **Flammable Liquids:** Category 2

**Signal Word(s):** DANGER

**Hazard Statement(s):**
- H225 Highly flammable liquid and vapour.
- H319 Causes serious eye irritation.

**Pictogram(s):** Flame, Exclamation mark,
Precautionary statement – Prevention
P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/.../equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P264 Wash ... thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement – Response
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.
P370+P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P362 Take off contaminated clothing and wash before reuse.

Precautionary statement – Storage
P403+P235 Store in a well-ventilated place. Keep cool.

Precautionary statement – Disposal
P501 Dispose of contents/container to an approved waste disposal plant.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Name</th>
<th>CAS</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ethyl alcohol</td>
<td>64-17-5</td>
<td>25-100 %</td>
</tr>
<tr>
<td></td>
<td>Water</td>
<td>7732-18-5</td>
<td>0-75 %</td>
</tr>
</tbody>
</table>

4. First-aid measures

Inhalation:
If inhaled, remove from contaminated area to fresh air immediately. Apply artificial respiration if not breathing. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Ingestion:
Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. DO NOT INDUCE VOMITING. Seek medical advice if effects persist.

Skin:
Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. If swelling, redness, blistering or irritation occurs seek medical advice.

Eye contact:
Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. If rapid recovery does not occur, obtain medical attention.

First Aid Facilities:
Maintain eyewash fountain and safety shower in work area.

Advice to Doctor:
Treat symptomatically based on judgement of doctor and individual reactions of the patient.

Other Information:
For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor at once.

5. Fire-fighting measures

Hazards from Combustion Products:
Oxides of carbon.

Specific Methods:
Caution: Use of water spray when fighting fire may be inefficient.
Small fire: Use foam, dry chemical, CO2 or water spray.
Large fire: Use foam, fog or water spray - Do not use water jets.
If safe to do so, move undamaged containers from fire area. Cool containers with flooding quantities of water until well after fire is out.
Specific hazards arising from the chemical:

HIGHLY FLAMMABLE: These products have a low flash point - will be easily ignited by heat, sparks or flames at ambient temperatures. Vapours will form explosive mixtures with air. Vapours will travel to source of ignition and flash back. Fire may produce irritating, poisonous and/or corrosive gases. Containers may explode when heated. Many liquids are lighter than water. Many vapours are heavier than air and will collect in low or confined areas (drains, basements, tanks). Vapours from run-off may create an explosion hazard.

Hazchem Code:

• 2YE

Precautions in connection with Fire:

SCBA and structural firefighter's uniform may provide limited protection. Fully-encapsulating, gas-tight suits should be worn for maximum protection.

6. Accidental release measures

Spills & Disposal:

ELIMINATE all ignition sources (no smoking, flares, sparks or flame) within at least 50m - All equipment used in handling the product must be earthed. Do not touch or walk through spilled material. Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Vapour-suppressing foam may be used to control vapours. Absorb spill with earth, sand or other non-combustible material - Use clean, non-sparking tools to collect material and place it in loosely-covered metal or plastic containers for later disposal. Water spray may be used to knock down or divert vapour clouds. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.

Personal Precautions:

Evacuate the area of all non-essential personnel. Remove ignition sources.

Personal Protection:

Wear protective clothing specified for normal operations (see Section 8).

7. Handling and storage

Precautions for Safe Handling:

Do not breathe vapour. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Take precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities:

Keep in a cool, well-ventilated place. Keep away from heat and other sources of ignition. Store away from oxidizing agents. Store away from strong acids. Keep containers securely sealed and protected against physical damage. Do not store in pits or basements where vapours may become entrapped. Do not store in aluminium containers. Take precautionary measures against static electricity discharges.

Storage Regulations:

Refer Australian Standard AS 1940-2017 'The storage and handling of flammable and combustible liquids'.

8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Name</th>
<th>STEL mg/m³ ppm</th>
<th>TWA mg/m³ ppm</th>
<th>Footnote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethyl alcohol</td>
<td>1880 1000</td>
<td></td>
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</tr>
</tbody>
</table>

These Workplace 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 workplace 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.

A time weighted average (TWA) has been established for Ethyl alcohol (Safe Work Australia) of 1,880 mg/m³, (1,000 ppm). The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.

Other Exposure Information:

Maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.

Respiratory Protection:

Where ventilation is not adequate, respiratory protection may be required. Avoid breathing vapours or mists. Select and use respirators in accordance with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and...
Eye Protection

The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Hand Protection

Wear gloves of impervious material conforming to AS/NZS 2161: Occupational protective gloves - Selection, use and maintenance. Final choice of appropriate glove type will vary according to individual circumstances. This can include methods of handling, and engineering controls as determined by appropriate risk assessments. Avoid skin contact when removing gloves from hands, do not touch the gloves outer surface. Dispose of gloves as hazardous waste.

Personal Protective Equipment

Personal protective equipment should not solely be relied upon to control risk and should only be used when all other reasonably practicable control measures do not eliminate or sufficiently minimise risk. Guidance in selecting personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

Footwear

Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use. Recommendation: Rubber boots.

Body Protection

Flame retardant antistatic protective clothing. Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.

Hygiene Measures

Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. Physical and chemical properties

Form

Liquid

Appearance

Colourless, transparent, volatile liquid.

Odour

Ethereal vinous odour.

Melting Point

-117.3 °C - 100%
-114 °C - 95%

Boiling Point

78.3 °C - 100%
78 °C - 95%

Solubility in Water

Miscible.

Solubility in Organic Solvents

Miscible with methanol, ether, chloroform and acetone.

Specific Gravity

0.7893 - 100%
0.8042 - 95%
0.8676 - 70%

Volatile Component

70 - 100%

Flash Point

9 °C - 100%
12.7 °C - 95%

Flammability

HIGHLY FLAMMABLE. Keep away from heat, sparks or naked flames. Use flameproof equipment and fittings to prevent flammability risk. Electrically link and ground metal containers for transfer of the product to prevent accumulation of static electricity. Ensure adequate ventilation to prevent an explosive vapour-air mixture. Vapours will travel considerable distances to sources of ignition.

Auto-Ignition Temperature

422 °C - 95%

Flammable Limits - Lower

3.5% - 100%

Flammable Limits - Upper

19% - 100%

Molecular Weight

46.08
Other Information

10. Stability and reactivity

Chemical Stability Stable under normal use conditions.
Conditions to Avoid Heat, sparks, flame and build-up of static electricity.
Incompatible Materials Oxidising agents, peroxides, acids, acid chlorides, acid anhydrides, alkali metals and ammonia.
Hazardous Decomposition May liberate toxic fumes in fire producing carbon monoxide and or carbon dioxide.
Products
Hazardous Polymerization Will not occur.

11. Toxicological Information

Acute Toxicity - Oral 
LD50 (rat): 10,470 mg/kg

Acute Toxicity - Inhalation 
LC50 (rat): 124.7 mg/L 4 hour

Ingestion 
May cause nausea, vomiting, headache, dizziness, gastric irritation and CNS depression.

Inhalation 
Irritating to the mucous membranes and respiratory tract. Risk of absorption. May cause headaches, dizziness, nausea and possible CNS effects.

Skin 
May cause irritation. Will have a degreasing action on the skin.

Eye 
May cause irritation and watering. High concentrations of vapours may cause irritation.

Respiratory sensitisation 
Not classified based on available information.

Skin Sensitisation 
Not classified based on available information.

Germ cell mutagenicity 
Not classified based on available information.

Carcinogenicity 
Ethanol [61-17-5] in alcoholic beverages are evaluated in the IARC Monographs (Vol. 96) as Group 1: Carcinogenic to humans, (based on effects of drinking alcoholic beverages).

Safe Work Australia does not classify ethanol as a carcinogen.

Reproductive Toxicity 
Not classified based on available information.

STOT-single exposure 
Not classified based on available information.

STOT-repeated exposure 
Not classified based on available information.

Health Hazard 
Though it is rapidly oxidized in the body and is therefore non-cumulative, ingestion of even moderate amounts causes lowering of inhibitions, often succeeded by dizziness, headache, or nausea. Larger intake causes loss of motor nerve control, shallow respiration, and in extreme cases unconsciousness and even death. Degree of intoxication is determined by concentration of alcohol in the brain. Of primary importance is the fact that intake of moderate amounts together with barbiturates or similar drugs is extremely dangerous and may even be fatal.

Chronic Effects 
Repeated or prolonged skin contact may cause chronic dermatitis. May cause liver and kidney disorders.

Mutagenicity 
No evidence of mutagenic properties.

12. Ecological information

Persistence and degradability 
Readily biodegradable.

Degree of elimination: 94%

Mobility 
log P(o/w): -0.32.
Bioaccumulative Potential

Low probability of bioaccumulation (log P(o/w) <1).

Further ecologic data:
- BOD5: 0.93 - 1.67 g/g (anhydrous substance);
- COD: 1.99 g/g (anhydrous substance);
- ThOD: 2.10 g/g (anhydrous substance).

Short Summary of Assessment of Environmental Impact

No ecological problems are to be expected when the product is handled and used with due care and attention.

13. Disposal considerations

Disposal Considerations

Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.

14. Transport information

Transport Information

Dangerous goods of Class 3 (Flammable Liquid) are incompatible in a placard load with any of the following:
- Class 1, Class 2.1, if both the Class 3 and Class 2.1 dangerous goods are in bulk, Class 2.3, Class 4.2, Class 5, Class 6, if the Class 3 dangerous goods are nitromethane, Class 7.

U.N. Number

1170

UN proper shipping name

ETHANOL (ETHYL ALCOHOL)

Transport hazard class(es)

3

Hazchem Code

• 2YE

Packing Group

II

EPG Number

3A1

IERG Number

14

15. Regulatory information

Regulatory Information

All of the significant ingredients in this formulation are compliant with Australian Industrial Chemicals Introduction Scheme (AICIS) regulations. Not listed under WHS Regulation 2011, Schedule 1B - Prohibited carcinogens, restricted carcinogens and restricted hazardous chemicals.

Poisons Schedule

Not Scheduled

16. Other Information

Literature References

'Standard for the Uniform Scheduling of Medicines and Poisons .', Commonwealth of Australia.
National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.'.
Safe Work Australia, 'National Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals'.
Safe Work Australia, 'Hazardous Chemical Information System'.
Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances'.
Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment'.

Contact Person/Point of Contact

Paul McCarthy Ph. (08) 8440 2000

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Infosafe No™ 1CH89    Issue Date : October 2020    RE-ISSUED by CHEMSUPP

Product Name ETHANOL Undenatured

Classified as hazardous

obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.

Empirical Formula CH3CH2OH

...End Of MSDS...