Safety Data Sheet

PRODUCT NAME: SPIRIT NEUTRAL (≥ 95%)

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product name: SPIRIT NEUTRAL (≥ 95%)
Chemical Name: ethanol
Synonyms: Ethyl Alcohol, Neutral Grape Alcohol, SVR (SPIRITUS VINI RECTIFICATUS (Latin: Rectified Grape Spirit), Grape Alcohol
Proper shipping name: ETHANOL (ETHYL ALCOHOL)
Chemical formula: C2H6O
CAS number: 64-17-5
Product Code: NGA-00

Use(s): Food and Beverage Industries, alcoholic beverages in suitable dilution; general solvent in laboratory and industry; pharmaceuticals (lotions, tonics, colognes); perfumes

Supplier of the Safety Data Sheet

Supplier Name: TARAC TECHNOLOGIES PTY LTD
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2. HAZARDS IDENTIFICATION

CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA
CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

UN No. 1170
Pkg Group II
DG Class 3
Hazchem Code 2[Y]E
Subsidiary Risk(s) None Allocated
EPG 3A1

GHS Classification
- Flammable liquids (Category 3)
- Eye irritation (Category 2A)

Signal Word DANGER
Hazard statements
- H225 - Highly flammable liquid and vapour.
- H319 - Causes serious eye irritation
Precautionary Statements
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.
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 - Wash skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protection clothing/eye protection/face protection.

Response
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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 extinguishing media detailed in Section 5 for extinction.

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

Disposal
P501 - Dispose of contents/container to hazardous or special waste collection point

3. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Formula</th>
<th>CAS No.</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETHANOL</td>
<td>C2H6O</td>
<td>64-17-5</td>
<td>≥ 95%</td>
</tr>
<tr>
<td>WATER</td>
<td>H2O</td>
<td>7732-18-5</td>
<td>≥ 5%</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Description of first aid measures

Eye Contact
If this product comes in contact with the eyes:
- Wash out immediately with fresh running water
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact
If skin contact occurs
- Immediately remove all contaminated clothing, including footwear
- Flush skin and hair with running water (and soap if available)
- Seek medical attention in event of irritation

Inhalation
- If fumes or combustion products are inhaled remove from contaminated area
- Lay patient down. Keep warm and rested
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary
- Transport to hospital, or doctor.

Ingestion
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully
Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
Seek medical advice.

### 5. FIRE FIGHTING MEASURES

**Extinguishing media**
- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

**Flammability**
- Highly flammable.
- Evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.
- Do not expose to heat or ignition sources.
- Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc.
- Earth containers when dispensing fluids.

**Fire Fighting**
- Highly flammable - explosive vapour.
- Evacuate area & contact emergency services.
- Toxic gases (carbon oxides, hydrocarbons) may be evolved when heated.
- Remain upwind and notify those downwind of hazard.
- Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire.
- Use waterfog to cool intact containers and nearby storage areas.

**Hazchem Code**
- 2[Y]E

### 6. ACCIDENTAL RELEASE MEASURES

**Minor Spills**
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

**Major Spills**
- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- No smoking, naked lights or ignition sources.

### 7. STORAGE AND HANDLING

**Storage**

**Suitable container**
- Plastic containers may only be used if approved for flammable liquid.
- Check that containers are clearly labelled and free from leaks.
- Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages.

<table>
<thead>
<tr>
<th>DG Class</th>
<th>DG Desc</th>
<th>Compatibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Flammable Gas</td>
<td>5 mtr separation</td>
</tr>
<tr>
<td>2.2</td>
<td>Non-flammable, Non-toxic Gas</td>
<td>5 mtr separation</td>
</tr>
<tr>
<td>2.3</td>
<td>Toxic Gas</td>
<td>5 mtr separation</td>
</tr>
<tr>
<td>3</td>
<td>Flammable Liquid</td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>Flammable Solid</td>
<td>5 mtr separation</td>
</tr>
<tr>
<td>4.2</td>
<td>Spontaneously Combustible</td>
<td>fire rated partition</td>
</tr>
</tbody>
</table>
### 4.3 Dangerous when Wet

**Separate building**

### 5.1 Oxidizing Agent

**5 mtr separation**

### 5.2 Organic Peroxide

**Fire rated partition**

### 6.1 Toxic

**5 mtr separation**

### 8 Corrosive

✔

### 9 Miscellaneous Dangerous goods

✔

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**Handling**

- Containers, even those that have been emptied, may contain explosive vapours.
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Prevent concentration in hollows and sumps.
- DO NOT enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights, heat or ignition sources.
- When handling, DO NOT eat, drink or smoke.

**Safe handling**

- Store in original containers in approved flame-proof area.
- No smoking, naked lights, heat or ignition sources.
- DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
- Keep containers securely sealed.
- Store away from incompatible materials in a cool, dry well ventilated area.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this SDS.

**Other information**

- Other information

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### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**Occupational Exposure Limits**

**Exposure Standards**

- ETHANOL (64-17-5)
- ES-TWA: 1000 ppm (1880 mg/m3)
- WES-TWA: 1000 ppm (1880 mg/m3)

**Exposure Controls**

- Ensure adequate natural 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.

**Personal Protection**

- **Eye and face protection**
  - Safety glasses with side shields.
  - Chemical goggles.
  - Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.
  - In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable.

- **Skin protection**
  - See Hand protection below.

- **Hands/feet protection**
  - Wear chemical protective gloves, e.g. PVC.
  - Wear safety footwear or safety gumboots, e.g. Rubber.
  - Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).
  - When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
  - When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.

- **Body protection**
  - See Other protection below.

- **Other protection**
  - Overalls.
  - PVC Apron.
  - PVC protective suit may be required if exposure severe.
  - Eyewash unit.
- Ensure there is ready access to a safety shower.
- For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets).
- Non sparking safety or conductive footwear
- Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>CLEAR COLOURLESS LIQUID</td>
</tr>
<tr>
<td>Odour</td>
<td>SLIGHT ODOUR</td>
</tr>
<tr>
<td>pH</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Vapour Pressure</td>
<td>59 hPa @ 20°C</td>
</tr>
<tr>
<td>Vapour Density</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>78.3°C</td>
</tr>
<tr>
<td>Melting Point</td>
<td>-130 to -114.1°C</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>2.53 BuAC = 1</td>
</tr>
<tr>
<td>Solubility (water)</td>
<td>SOLUBLE</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>≤ 0.8128</td>
</tr>
<tr>
<td>% Volatiles</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>Flammability</td>
<td>HIGHLY FLAMMABLE</td>
</tr>
<tr>
<td>Flash Point</td>
<td>13°C</td>
</tr>
<tr>
<td>Upper Explosion Limit</td>
<td>19 %</td>
</tr>
<tr>
<td>Lower Explosion Limit</td>
<td>3.3 %</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>365°C</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

Material to Avoid: Incompatible with oxidising agents (eg. hypochlorites, peroxides) and heat sources.
Decomposition: May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

Health Hazard Summary: Low Toxicity - irritant. No adverse health effects are anticipated with normal use of this product. This product is used in trace amounts as a food additive, however the concentrated product is not suitable for ingestion.

Eye: Irritant. Exposure may result in lacrimation, irritation, pain and redness.
Inhalation: Low irritant. Over exposure may result in mucous membrane irritation of the nose and throat with coughing.
Skin: Irritant. May cause redness and irritation with prolonged contact.
Ingestion: Non toxic when used in trace amounts as a food additive. However, the concentrate should not be consumed undiluted. Ingestion may cause gastrointestinal irritation, nausea, dizziness and CNS depression.

Toxicity Data: ETHANOL (64-17-5)
- LC50 (Inhalation): 2000 ppm/10 hours (rat)
- LD50 (Ingestion): 3450 mg/kg (mouse)

12. ECOLOGICAL INFORMATION

Environment: This product is not anticipated to cause adverse effects to animal or plant life if released to the environment in small quantities. Not expected to bioaccumulate.
- Soil: Ethanol quickly biodegrades in soil but may leach into ground water; most is lost by evaporation. Ethanol is expected to have very high mobility in soil.
- Atmosphere: Ethanol is expected to exist solely as a vapour in the ambient atmosphere.

DO NOT discharge into sewer or waterways

13. DISPOSAL CONSIDERATIONS

Waste Disposal: No special precautions are required for the disposal of this product.
Legislation: Dispose of in accordance with relevant local legislation.
14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

NOT A MARINE POLLUTANT

Land Transport ADG

<table>
<thead>
<tr>
<th>Shipping Name</th>
<th>ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)</th>
</tr>
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<tbody>
<tr>
<td>UN No.</td>
<td>1170</td>
</tr>
<tr>
<td>DG Class</td>
<td>3</td>
</tr>
<tr>
<td>Subsidiary Risk(s)</td>
<td>None Allocated</td>
</tr>
<tr>
<td>Pkg Group</td>
<td>II</td>
</tr>
<tr>
<td>Hazchem Code</td>
<td>2YE</td>
</tr>
<tr>
<td>EPG</td>
<td>3A1</td>
</tr>
<tr>
<td>Limited Qty</td>
<td>1 ltr</td>
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</table>

Maritime Transport IMDG

<table>
<thead>
<tr>
<th>Shipping Name</th>
<th>ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)</th>
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<tbody>
<tr>
<td>UN No.</td>
<td>1170</td>
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<td>IMDG Class</td>
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<tr>
<td>Subsidiary Risk(s)</td>
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<tr>
<td>Pkg Group</td>
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</tr>
<tr>
<td>Hazchem Code</td>
<td>2YE</td>
</tr>
<tr>
<td>EMS Number</td>
<td>F- E, S- D</td>
</tr>
<tr>
<td>Limited Qty</td>
<td>1 ltr</td>
</tr>
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</table>

Air Transport (/ DGR)

<table>
<thead>
<tr>
<th>Shipping Name</th>
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<tbody>
<tr>
<td>UN No.</td>
<td>1170</td>
</tr>
<tr>
<td>ICAO-IATA Class</td>
<td>3</td>
</tr>
<tr>
<td>Subsidiary Risk(s)</td>
<td>None Allocated</td>
</tr>
<tr>
<td>Pkg Group</td>
<td>II</td>
</tr>
<tr>
<td>Cargo Only</td>
<td>364</td>
</tr>
<tr>
<td>Cargo only max</td>
<td>60 L</td>
</tr>
<tr>
<td>P &amp; C Limited Ins</td>
<td>Y341</td>
</tr>
<tr>
<td>Pass &amp; Cargo</td>
<td>353</td>
</tr>
<tr>
<td>5 L</td>
<td>P &amp; C Limited Qty</td>
</tr>
</tbody>
</table>

15. REGULATORY INFORMATION

Poison Schedule

A poison schedule number has not been allocated to this product using the criteria in the Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP).

Regulatory Lists

Australian Exposure Standards
Australian Inventory of Chemical Substances (AICS).
Australian Hazardous Substances Information System – Consolidated Lists

16. OTHER INFORMATION

Additional Information

ABBREVIATIONS:
mg/m3 - Milligrams per cubic metre
ppm - Parts Per Million
TWA/ES - Time Weighted Average or Exposure Standard.
NOS - Not Otherwise Specified
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 - to uniquely identify chemical compounds.
PC – TWA: Permissible Concentration-Time Weighted Average
PC – STEL: Permissible Concentration-Short Term Exposure Limit
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL :Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:
The recommendation for protective equipment contained within 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.

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.

All information given by Tarac Technologies Pty Ltd is offered in good faith and is true and accurate to the best of our knowledge. However, since conditions of use are beyond our control, all information relative to usage is offered without warranty or guarantee and should not be construed as a recommendation to use any of our products in breach of any provisions of any Federal or State Acts or Regulations.

In particular, the information contained herein should not be construed as a representation that the product is suitable for any particular purpose or application

End of Report