

FOR FURTHER INFORMATION, PLEASE REFER TO THE SDS

Issue: November 16

PRODUCT: Bioethanol
Other Names: Bioethanol solution, denatured Bioethanol

Uses: Industrial solvent, cleaning component

UN No.	1170
Dangerous Goods Class	3
Subsidiary Risk	None
Pack Group	II
Hazchem	• 2YE
Poison Schedule	5

Hazardous Nature:	This product is classified as hazardous under GHS for Australia criteria
Hazardous Classification:	Flammable Liquids: 2; Acute Toxicity - Oral: 3
Hazardous Statement:	Highly Flammable liquid and vapour
Exposure Standards:	TWA: 1880 mg/m ³ (1000 ppm): STEL: Not specified

Physical Characteristics (Typical) **Section 9 of SDS**

Appearance	Clear, colourless liquid
Boiling Point/ Range (°C):	78
Flash Point (°C):	11
Specific Gravity/ Density (g/ml @ 15°C):	0.79 - 0.81
Chemical Stability:	Stable at room temperature and pressure

Product Ingredients **Section 3 of SDS**

Bioethanol	64-17-5	> 99
Water	7732-18-5	< 1
Denatonium Benzoate	3734-33-6	5 ppm
Methyl Isobutyl Ketone	108-10-1	< 0.2

For further ingredients information, please refer to the full SDS.

GHS Pictograms **Section 2 of SDS**



For further Risk and Safety information, please refer to the full SDS.

DEFINITIONS

Dangerous Goods	Products that are classified as Dangerous for Storage and Transport: these products are allocated a UN No., with accompanying Class, Pack Group, and Sub. Risk, if required. Products that do not have a specific description under the code, but have low flash points, or such, must be classified under their most significant risk, eg. Flammable Goods N.O.S. (Not otherwise specified), UN 1993
Poisonous Substance	Products that are classified under the poisons schedule are a poisonous substance. The proportion of the poison in the product will determine its numerical classification.
Hazardous Substance	Products are considered to be Hazardous if they pose an intrinsic risk to human or environmental health, such as mutagens (able to change DNA), teratogens (able to result in birth defects), carcinogens (able to generate cell abnormalities), etc. Materials are not hazardous substances if they pose risks such as potential for misuse, like flammability, or explosions when heated and ignited.

1. IDENTIFICATION

Product Name:	Bioethanol
Other Names:	Bioethanol solution, denatured Bioethanol
Chemical Family:	Alcohols
Recommended Use:	Industrial solvent, cleaning component
Supplier:	Sydney Solvents Pty. Ltd.
ABN:	51 104 642 695
Street Address:	3/10 Production Place, Jamisontown NSW 2750
Telephone:	02 4722 5060
Fax:	02 4722 5070
Emergency phone:	CHEMCALL: 1800 127 406
All other inquiries:	1800 60 50 40

2. HAZARDS IDENTIFICATION**Hazardous Nature**

This product is classified as hazardous under GHS for Australia criteria

Hazardous Classification

Flammable Liquids: 2; Acute Toxicity - Oral: 3

Hazardous Statement

Highly Flammable liquid and vapour

GHS Pictograms**Hazard Statements**

H225: Highly flammable liquid and vapour

H301: Toxic if swallowed

H372: Causes damage to organs through prolonged or repeated exposure

Precautionary Statements

P102: Keep out of reach of children.

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P307+311: IF exposed: Call a POISON CENTER or doctor/physician.

Dangerous Goods Classification 3**Poisons Schedule 5****3. COMPOSITION: Information on Ingredients**

Chemical Ingredient	CAS No.	Proportion (%v/v)
Bioethanol	64-17-5	> 99
Water	7732-18-5	< 1
Denatonium Benzoate	3734-33-6	5 ppm
Methyl Isobutyl Ketone	108-10-1	< 0.2

4. FIRST AID MEASURES

For advice, contact Poisons Information Centre (Phone Australia: 13 1126) or a doctor.

Ingestion

If swallowed, DO NOT induce vomiting. Keep at rest. Seek immediate medical attention.

Eye Contact

Flush eyes with large amounts of water until irritation subsides. Seek immediate medical attention.

Skin Contact

Flush area with large amounts of water and wash area with soap if available. Remove contaminated clothing, including shoes, and launder before reuse. Seek medical attention for skin irritations.

Inhalation

Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Seek immediate medical attention.

First Aid facilities

Provide eye baths and safety showers.

Medical Attention

Treat according to symptoms. Avoid gastric lavage: risk of aspiration of product to the lungs with the potential to cause chemical pneumonitis.

5. FIRE FIGHTING MEASURES

Shut off product that may 'fuel' a fire if safe to do so. Allow trained personnel to attend a fire in progress, providing firefighters with this Safety Data Sheet. Prevent extinguishing media from escaping to drains and waterways.

Suitable extinguishing media

Water fog or fine spray mist

Hazards from combustion products

Carbon monoxide and carbon dioxide, water and hydrogen gas

Precautions for fire fighters and special protective equipment

Full protective clothing and self-contained breathing apparatus

Hazchem Code: • 2YE

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures

Prevent fluid from escaping to drains and waterways. Contain leaking packaging in a containment drum. Prevent vapours from building up in confined areas. Ensure that drain valves are closed at all times. Clean up and report spills immediately.

Methods and materials for containment

Major Land Spill

- Eliminate sources of ignition.
- Warn occupants of downwind areas of possible fire and explosion hazard.
- Prevent liquid from entering sewers, watercourses, or low-lying areas.
- Keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.
- Take measures to minimise the effect on the ground water.
- Contain the spilled liquid with sand or earth.
- Recover by pumping – use explosion proof pump or hand pump – or with a suitable absorbent material.
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See "First Aid Measures" and "Stability and Reactivity"

Major Water Spill

- Eliminate any sources of ignition.
- Warn occupants and shipping in downwind areas of possible fire and explosion hazard.
- Notify the port or relevant authority and keep the public away from the area.
- Shut off the source of the spill if possible and safe to do so.

- Confine the spill if possible.
- Remove the product from the surface by skimming or with suitable absorbent material.
- Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.
- See "First Aid Measures" and "Stability and Reactivity".

7. HANDLING AND STORAGE

Precautions for safe handling

This product is flammable. Do not open near open flame, sources of heat or ignition. No smoking. Keep container closed. Handle containers with care. Open slowly to control possible pressure release. Material will accumulate static charge. Use grounding leads to avoid discharge (electrical spark).

Conditions for safe storage

Store in a cool, dry place away from direct sunlight. Do not pressurise, cut, heat or weld containers - residual vapours are flammable. This product is flammable and will fuel a fire in progress.

Incompatible materials

None specified

8. EXPOSURE CONTROLS: PERSONAL PROTECTION

National Exposure Standards

The time weighted average concentration (TWA) for this product is: 1880 mg/m³ (1000 ppm), which means the highest allowable exposure concentration in an eight-hour day for a five-day working week. The short-term exposure limit (STEL) is: Not specified, which is the maximum allowable exposure concentration at any time.

Biological limit values

None specified

Engineering Controls: Ventilation

The use of local exhaust ventilation is recommended to control process emissions near the source. Laboratory samples should be handled in a fume hood. Provide mechanical ventilation of confined spaces. Use explosion-proof ventilation equipment.

Personal Protective Equipment

Respiratory Protection: Where concentrations in air may exceed the limits described in the National Exposure Standards, it is recommended to use a half-face filter mask to protect from overexposure by inhalation. A type "A" filter material is considered suitable for this product.

Eye Protection: Always use safety glasses or a face shield when handling this product.

Skin/ Body Protection: Always wear long sleeves and long trousers or coveralls, and enclosed footwear or safety boots when handling this product. It is recommended that chemical resistant gloves (e.g. PVC) be worn when handling this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Unit of measurement	Typical value
Appearance	-	Clear, colourless liquid
Boiling Point/ Range	°C	78
Flash Point	°C	11
Density @ 15°C	g/ml	0.79 - 0.81
Vapour Pressure @ 20°C	kPa	44 mmHg
Explosive Limits (LEL – UEL)	%	3.5 – 19.0
Vapour Density @ 20°C	kPa	1.59
Autoignition Temperature	°C	392
Viscosity @ 20°C	cSt	Not applicable
Percent Volatiles	%	100
Solubility with Water	% w/w	Completely soluble

The values listed are indicative of this product's physical and chemical properties. For a full product specification, please consult the Product Data Sheet.

10. STABILITY AND REACTIVITY**Chemical Stability**

Stable at room temperature and pressure

Conditions to avoid

Sources of heat and ignition, open flames.

Hazardous decomposition products

Carbon monoxide, carbon dioxide, and other organic compounds on incomplete burning or oxidation

Hazardous reactions

None specified

Hazardous Polymerisation

Will not occur

11. TOXICOLOGICAL INFORMATION**Acute Effects*****Ingestion***

If swallowed, will cause harmful central nervous system effects. Symptoms include excitation, euphoria, headache, dizziness, drowsiness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death. Severe, acute intoxication may cause hypoglycemia, hypothermia and extensor rigidity. Other effects may include decreased blood pressure, vomiting blood and blood discharges. Aspiration to the lungs may cause chemical pneumonitis.

Eye Contact

Vapour s may irritate the eyes. Liquid and mists may severely irritate or damage the eyes.

Skin Contact

Moderately irritating to the skin. Brief contact may cause redness. Repeated or prolonged contact may lead to dermatitis with redness, itching, swelling and possible secondary infection. A small proportion of the population may develop an allergic skin reaction.

Inhalation

Moderately irritating to respiratory tract and mucous membranes. Inhalation of the vapour may result in headache, nausea and vomiting. High concentrations may cause central nervous system depression - symptoms outlined in 'Ingestion'.

Chronic Effects

Chronic intoxication by swallowing or repeated inhalation, may cause degenerative changes in the liver, kidneys, hair, gastrointestinal tract and heart muscle. The combination of this product and Toluene produce potentiated (greatly increased) health effects. These symptoms can be found in 'Ingestion' and 'Inhalation'.

Other Health Effects Information

Persons with pre-existing liver impairment, skin and respiratory disorders may be at an increased risk from exposure. Bioethanol may also cause adverse reproductive effects. Concurrent absorption of Bioethanol and some drugs may cause adverse health effects. Ingestion of beverages containing Bioethanol by pregnant women is associated with 'foetal alcohol syndrome' in their babies. The IARC has evaluated alcohol drinking as a Group 1 carcinogenic to humans.

Toxicological Information

Oral LD₅₀: Rat: 7060 mg/lg

Dermal TC_{Lo}: Rabbit (dermal): 20 g/kg

12. ECOLOGICAL INFORMATION**Ecotoxicity****Aquatic Toxicity**

Fish Toxicity (rainbow trout, goldfish, bluegill):

LC₅₀(96hr): Fathead minnow: 13480000 µg/L

Daphnia Magna EC₅₀ (24 hr):

LC₅₀ (Mort): 5680000 µg/L

Blue-green algae (Toxicity threshold 7-8 days):

LO_{EC}: 1450000 µg/L

Green algae (Toxicity threshold 7-8 days):

LO_{EC}: 5000000 µg/L

Persistence/ degradability

This product readily biodegrades on exposure to light and air.

Mobility

This product is mobile on dilution, risking contamination of waterways, grasslands and soils.

13. DISPOSAL CONSIDERATIONS**Disposal Methods**

Empty packaging should be taken for recycling, recovery or disposal through a suitably qualified or licensed contractor. Care should be taken to ensure compliance with national and local authorities. Packaging may still contain fumes and vapours that are flammable and harmful. Ensure that empty packaging is allowed to dry.

Special Precautions for Landfill or Incineration

This product is NOT suitable for disposal by either landfill or via municipal sewers, drains, natural streams or rivers. This product is ashless and can be burned directly in appropriate equipment.

14. TRANSPORT INFORMATION

Road and Rail Transport		Marine Transport		Air Transport	
UN No.	1170	UN No.	1170	UN No.	1170
Proper Shipping Name	Bioethanol Solution	Proper Shipping Name	Bioethanol Solution	Proper Shipping Name	Bioethanol Solution
DG Class	3	DG Class	3	DG Class	3
Sub. Risk	None	Sub. Risk	None	Sub. Risk	None
Pack Group	II	Pack Group	II	Pack Group	II
Hazchem	• 2YE	Hazchem	• 2YE	Hazchem	• 2YE

Dangerous Goods Segregation

This product is classed as Dangerous Goods Class 3, packing group II. Please consult the Australian Dangerous Goods Code for Transport by Road and Rail for information.

15. REGULATORY INFORMATION

Country/ Region: Australia

Inventory: AICS

Status: Listed

Poisons Schedule: 5

16. OTHER INFORMATION

Reasons for Issue: Upgrade to GHS SDS; Amalgamated supplier changes in all sections

Abbreviations:

AICS: Australian Inventory of Chemical Substances

CAS Number: Chemical Abstracts Number

IARC: International Agency for Research on Cancer

NOHSC: National Occupational Health and Safety Council

References:

- Supplier Safety Data Sheets
- <http://chem.sis.nlm.nih.gov/chemidplus> (November 15)
- <http://hsis.ascc.gov.au/SearchHS.aspx> (November 15)
- Ecotoxicology data: http://cfpub.epa.gov/ecotox/quick_query.htm (November 15)
- Sax's Dangerous Properties of Industrial Materials, Richard J. Lewis Snr., pub. Canada (2000)

The information sourced for the preparation of this document was correct and complete at the time of writing to the best of the writer's knowledge. The document represents the commitment to the company's responsibilities surrounding the supply of this product, undertaken in good faith. This document should be taken as a safety guide for the product and its recommended uses, but is in no way an absolute authority. Please consult the relevant legislation and regulations governing the use and storage of this type of product. For further information, please contact Sydney Solvents Pty. Ltd.