SAFETY DATA SHEET

Section 1: IDENTIFICATION

ETHANOL, ABSOLUTE (25-100%)

Synonyms – Ethyl alcohol, Undenatured alcohol, hydroxyethane

Product Code – ETHABS2.5P, ETHABS5P, ETHABS10P, ETHABS10M, ETHABS20P, ETHABS20M

Recommended use – Laboratory solvent.

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Australian Emergency Services: 000 (24 hours)
Australian Poisons Information Centre: 131 126 (24 hours)

Section 2: HAZARDS IDENTIFICATION

*Classified as a **Hazardous** substance according to the* Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.

*Classified as a **Dangerous goods** according to the ADG Code for the Transport of Dangerous Goods by Road and Rail (7th Edition).*

GHS classification of the substance/mixture: Flammable Liquids: Category 2
Serious Eye Damage/Irritation: Category 2A

Pictogram (s)

Signal Word (s): **DANGER**

Hazard Statement (s):

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.

Precautionary Statement (s):

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.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P264 Wash ... thoroughly after handling.

Response
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P370 + P378 In case of fire: Use extinguishing media as outlined in Section 5 of this Safety Data Sheet
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.

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

Disposal
P501 Dispose of contents/container in accordance with local authority guidelines.

Section 3: COMPOSITION INFORMATION

Chemical Name	CAS Number	Concentration
Ethyl Alcohol	64-17-5	25-100%
Water	7732-18-5	Remainder

Section 4: FIRST AID MEASURES

Eye contact Flush eyes with copious amounts of water for at least 15 minutes. Seek medical attention.

Skin contact Remove contaminated clothing and wash affected area with soap and water thoroughly. If irritation develops, seek medical attention.

Inhalation Evacuate to fresh air immediately. If there are signs of intoxication, respiratory irritation, dizziness, nausea or headache seek medical attention immediately. If unconscious place in recovery position, provide artificial respiration if breathing ceases.

Ingestion DO NOT induce vomiting. If a small amount has been swallowed, dilute the stomach by consuming copious amounts of water. For large volumes seek immediate medical attention.

First aid facilities Eye wash station, safety shower and First Aid kit.

Advice to Doctor Treat symptomatically and based on individual reactions of patient and judgement of a Doctor.

Section 5: FIREFIGHTING MEASURES

Suitable extinguishing media Water fog or foam. Keep containers cool with water spray.

Hazards for combustion products Toxic gases may evolve (Oxides of Carbon).

Special protective precautions and equipment for fire fighters Wear SCBA (Self-Contained Breathing Apparatus) and full protective equipment.

Hazchem code **2YE**

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency procedures	If spill or leakage occurs eliminate all sources of ignition and take measures to prevent static discharge. Clear area of all persons not involved with the clean-up and ensure all others wear suitable protective equipment and breathing apparatus. Contain the spill or absorb using a suitable inert material such as vermiculite or sand etc… Prevent run off into drains and if contamination of waterways has occurred notify the local emergency services. Use water spray to disperse vapour and do not smoke. Ventilate the area well and ensure the atmosphere is clear of contaminant prior to allowing personnel to return.
Clean up methods	Wash the affected area with a large volume of water. De-gas any non-returnable containers prior to disposal and adhere to local government guidelines for the disposal of any material or packaging.

Section 7: HANDLING AND STORAGE

Precautions for safe handling	Use in well ventilated areas away from all sources of ignition. Do not use compressed gas to fill, discharge or mix due to the high vapour hazard of this product. Observe good personal hygiene practices and procedures to avoid contact with eyes, skin and clothing. Ensure containers are earthed when agitating or transferring product to avoid static discharge.
Conditions of safe storage	Store in tightly closed containers in a cool, dry environment away from sources of ignition and check regularly for leaks. Store away from explosives (Class 1), flammable gases in bulk (Class 2.1), poisonous gases (Class 2.3), spontaneously combustible substances (Class 4.2), oxidising agents (Class 5.1), organic peroxides (Class 5.2) or radioactive substances (Class 7).

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

National exposure standards	**Name: Ethanol (100%)** **TWA:** 1000 ppm/1880 mg m^{-3} (NES)
Biological Limit Values	None allocated.
Engineering Controls	Ensure adequate ventilation to maintain airborne concentrations below national exposure standards.
Personal Protective Equipment	Wear suitable protective clothing, safety glasses or chemical resistant splash-proof goggles to prevent eye contact and nitrile/neoprene gloves. If working within a confined area use a suitable respirator at all times.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear Colourless liquid
Odour	Distinct Alcohol odour
pH	Not available
Vapour pressure	44mm Hg (@20 ^{o}C)
Vapour density	1.59 (air = 1)
Boiling point	78 ^{o}C
Freezing point	-117 ^{o}C
Solubility	Miscible with aqueous and organic solvents
Specific gravity	Approx. 0.8 (water = 1)
Flash Point	13 ^{o}C (closed cup)
Upper and lower flammable limits in air	3.5% - 19%
Ignition Temperature	392 ^{o}C

Section 10: STABILITY AND REACTIVITY

Chemical stability	Stable under recommended conditions for use and storage.
Conditions to avoid	Heat, direct sunlight, moisture, sparks, flame and build-up of static electricity.
Incompatible materials	Strong oxidising agents, acids, strong alkalis, heat and ignition sources.
Hazardous decomposition products	Can produce carbon dioxide and carbon monoxide.
Hazardous reactions	None known.

Section 11: TOXICOLOGICAL INFORMATION

HEALTH EFFECTS:

Eye Contact Irritating to eyes. Exposure may result in lacrimation, irritation, pain and redness.

Skin Contact Skin irritant. Prolonged contact may result in drying and defatting of the skin, rash and dermatitis. Toxic effects may result from skin absorption.

Ingestion Chronic ingestion may result in cirrhosis of the liver. Over exposure may cause central nervous system depression. Low toxicity. Ingestion may result in gastrointestinal irritation, nausea, vomiting, abdominal pain, diarrhoea, headache, dizziness and drowsiness with large doses. Liver damage may occur with high level of chronic ingestion.

Inhalation Vapour is moderately irritating to the mucous membranes and respiratory tract. Caution, inhalation of the vapour may result in drunkenness, headache, nausea, inco-ordination, narcosis and vomiting.

CHRONIC

Eye Contact Prolonged eye exposure to the product may severely irritate and damage the optic nerve, potentially leading to loss of sight.

Skin Contact Prolonged or repeated exposure may cause cracking of the skin, dryness and dermatitis presented as redness, itching and swelling.

Inhalation Chronic exposure by inhalation/ingestion can lead to any of the effects detailed above under Acute: Ingestion.

TOXICITY DATA:

Ethanol (100%) : Inhalation LC50 Rat: 2000 ppm/10h
Oral LD50 Rat: 7060 mg/kg
Ingestion LD50 Mouse: 3450 mg/kg

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity	Fish (acute): Golden ide – LC50 > 1000 mg l^{-1} 48 h^{-1}
	Daphnia: Daphnia magna – EC50 > 1000 mg l^{-1} 24 h^{-1}
Persistence and degradability	Degree of elimination: 94 % (biodegradable)
Mobility	Not available.
Environmental fate (exposure)	Do not contaminate drains and waterways.
Bioaccumulative potential	Not expected to bio-accumulate.

Section 13: DISPOSAL CONSIDERATIONS

Disposal methods and containers	Dispose of in accordance with local authority guidelines.
Special precautions	Product must not be disposed of in sewerage systems, drains or

allowed to enter the waterways. Empty containers retain liquid and/or vapour residue and are not to be pressure cut, welded, brazed, soldered, drilled or exposed to heat, flame, sparks electricity or any other source of ignition. Rinse containers thoroughly with cold water when empty.

Section 14: TRANSPORT INFORMATION

*Classified as **Dangerous Goods** by the criteria of the Australian Dangerous Goods Code.*

UN Number	1170
UN Proper shipping name	Ethanol (Ethyl Alcohol)
Class and subsidiary risk	3, no subsidiary risk allocated
Packing group	II
Special precautions	No data available
Hazchem code	2YE

Section 15: REGULATORY INFORMATION

- **Poison Schedule: S5**
- **TWA (Time Weighted Average):** The average airborne concentration of a particular substance when calculated over a normal eight hour working day, for a five day week.

Section 16: OTHER INFORMATION

Release Information

Date of preparation:	June, 2016
Date of Revision:	
Issue Number:	1

References

1. Safe Work Australia, *Preparation of Safety Data Sheets for Hazardous Chemicals* Code of Practice, (2011).
2. Safe Work Australia, *National Code of Practice for the Labelling of Workplace Hazardous Chemicals* (2015).
3. Safe Work Australia, *Workplace Exposure Standards for Airborne Contaminants (2013)*
4. National Transport Commission *Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code)*; Canprint: Canberra (2007), Volume 1, 7th Edition.
5. Standards Australia, *Dangerous Goods Initial Emergency Response Guide: Australian Handbook* (SAA/SNZ HB76); Homebush (2004).

Disclaimer

This SDS is prepared in accordance with the *Safe Work Australia, Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice, (2011).* The information contained within is believed to be accurate at the date of preparation/review. Point of Care Diagnostics Pty Ltd makes no claims of the accuracy or completeness of the information and excludes all liability for any loss or damage related to the supply or use of the information in this material safety data sheet. It is recommended the user make their own determinations as to the suitability of the information provided to the application in which the product is to be used.