

MATERIAL SAFETY DATA SHEET



1. IDENTIFICATION

Revision Date	May 2004			
Product Name	ETHANOL			
Other Names	METHYLATED SPIRITS, DENATURED ALCOHOL, ETHYL ALCOHOL			
Uses	General industrial solvent, methylated spirits, fuel, solvents.			
Contact Information	Organisation	Location	Telephone	Ask For
	Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	+61 2 97333000	Technical Officer
		11 Mayo Road Wiri Auckland 2104 New Zealand	+64 9 2506222	
	Poison Information Centre	Westmead NSW Australia	131126	
	Chemcall 24 Hour Emergency Number	Australia	1800-127406	
		New Zealand	0800-243622	
	National Poisons Centre	New Zealand	0800-764766	

2. HAZARD IDENTIFICATION

NOT Hazardous according to criteria of NOHSC/ASCC.

Dangerous According to the Australian Code for the Transport of Dangerous Goods.

Classified as Dangerous Goods According to NZS 5433:1999.

Risk Phrases R11 Highly flammable.

Safety Phrases S7 Keep container tightly closed.

S16 Keep away from sources of ignition - No smoking.

**ERMA New Zealand
Approval Code**

HSNO Hazard

No data available.

This Material Safety Data Sheet may not provide exhaustive guidance for all HSNO Controls assigned to this substance. The ERMA Web Site should be consulted for a full list of triggered controls and cited regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Chemical Entity	CAS Number	Proportions (%)
	ETHYL ALCOHOL	[64-17-5]	> 96
	WATER	[7732-18-5]	< 6
	DENATURANT	various	< 1

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure.

Swallowed	Rinse mouth with water. Give water to drink provided person is conscious. Do NOT induce vomiting. Seek medical attention.
Eye	Irrigate with water for 15 minutes. If irritation persists or any loss of vision, seek medical attention.
Skin	Wash with water. Remove contaminated clothing.
Inhaled	Remove to fresh air, rest patient and seek medical attention if necessary. Give artificial respiration if breathing stops.
Advice to Doctor	Treat as for excess consumption of alcoholic drink. Supportive, hospital or even intensive care may be required.
Aggravated medical conditions caused by exposure	Chronic intoxication by swallowing or repeated inhalation, may cause degenerative changes in the liver, kidneys, hair, gastrointestinal tract and heart muscle. Persons with pre-existing liver impairment, skin and respiratory disorders may be at an increased risk from exposure. Ethanol may also cause adverse reproductive effects. Concurrent absorption of ethanol and some drugs may cause adverse health effects.

5. FIRE FIGHTING MEASURES

Extinguishing Media	Use water, dry chemical, carbon dioxide, or alcohol stable foam. Use water to cool fire exposed containers. Spills and leaks may be washed away with copious amounts of water, fog or spray.
Hazards from Combustion Products	Burns with a colourless flame. The vapour is heavier than air and may travel along the ground; distant ignition and flash back is possible. Run off to sewers and drains may cause explosions. Isolate at least 800 metres in all directions if tanks or tankers are involved. Burning can produce carbon dioxide and/or carbon monoxide. Fire fighters should wear a self contained breathing apparatus with full face mask and protective clothing.
Special Protective Precautions and Equipment for Fire	No data available.
Flammability	

Fighters Highly flammable liquid. May form flammable mixtures with air.

Additional Information

Hazchem Code 2[Y]E

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedures Clean up personnel should wear full protective clothing including respiratory protection if risk of inhaling of vapours. Eliminate all sources of ignition - no smoking. Take precautionary measures against static discharges.

Methods and Materials for Containment and Clean Up Stop and contain the spill for salvage or absorb in inert absorbent material for disposal by an approved method. Wash the cleaned up area with volumes of water to remove any trace of the product; ethanol mixes completely with water. Ventilate area well.

7. HANDLING AND STORAGE

Precautions for Safe Handling Ensure an eye bath and safety shower are available and ready for use.

Conditions for Safe Storage (Including Any Incompatibles) Store in tightly closed containers in cool, dry, isolated, well ventilated areas away from heat, sources of ignition and incompatibilities. Do not eat, drink or smoke in areas of use and storage. Observe State Regulations concerning the storage and handling of Dangerous Goods. Store with all precautions required for handling flammable liquids. The Storage and Handling of Flammable and Combustible Liquids should be observed.

Container Type No Data Available.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National Exposure Standards Worksafe recommends TWA = 1000ppm (1880 mg/m³)

Biological Limit Values No data available.

Engineering Controls Local exhaust and/or mechanical (general) exhaust is recommended, provided these are fitted with flame and explosion proof electrical fittings.

Personal Protection Skin protection: Use approved chemical resistant gloves and aprons - PVC or neoprene (AS2161). Eye protection: Use splash resistant monogoggles or face shield (AS/NZS1336) whenever exposed to vapour or mist or if there is a risk of splashing liquid in the eyes. Respiratory protection: None should be needed under normal conditions. In high vapour concentration such as empty vessels or confined spaces, use air supplied hood, or if ethanol concentration likely to exceed 500 ppm, wear an approved organic vapour respirator (AS/NZS1715 and 1716).

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear to yellow liquid with alcohol characteristic odour.
Formula	C ₂ H ₅ OH
Odour	No data available.
Vapour Pressure	44 mm Hg (1 atmosphere)
Vapour Density	No data available.
Boiling Point	78 deg C
Melting Point	-117 deg C
Solubility in Water	Complete
Specific Gravity	0.79 (Water = 1)
Flash Point	Open Cup 13
pH	7-8 ()
Lower Explosion Limit	3.5 (as percentage volume in air)
Upper Explosion Limit	19.0 (as percentage volume in air)
Ignition Temperature	No data available.
Specific Heat Value	No data available.
Particle Size	No data available.
Flame Propagation/Burning Rate of Solid Materials	No data available.
Properties of Materials That May Initiate or Contribute to Fire Intensity	No data available.
Potential for Dust Explosion	No data available.
Reactions that Release Flammable Gases	No data available.
Fast or Intensely Burning Characteristics	No data available.
Non-flammables That Could Contribute Unusual Hazards to a Fire	No data available.
Release of Invisible Flammable Vapours and Gases	No data available.

Decomposition Temperature	No data available.
Additional Information	Autoignition Temp: 392°C Evaporation Rate: (n-Butyl Acetate = 100) 253 Vapour Density: 1.59 Percent Volatiles: 100%

10. STABILITY AND REACTIVITY

Chemical Stability	No data available.
Conditions to Avoid	No data available.
Incompatible Materials	No data available.
Hazardous Decomposition Products	No data available.
Hazardous Reactions	No data available.

11. TOXICOLOGICAL INFORMATION

Toxicity Data	Oral LD50 (Ethanol) = 7060 mg/kg (Rat) Inhalation LC50 (Ethanol) = 38mg/L 10hrs (Rat) Toxicity to fish LC0 = >1000mg/L 48 hrs Toxicity to daphnia EC50 = >1000mg/L 24hrs
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Health Effects - Acute

Swallowed	Unlikely under normal occupational exposures, but swallowing ethanol may cause harmful central nervous system effects. Effects may include excitation, euphoria, headache, dizziness, 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 changes. Aspiration into the lungs may cause pneumonitis.
Eye	Vapours may irritate the eyes. Liquid and mists may severely irritate or damage the eyes.
Skin	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 people exposed to repeated skin contact may develop an allergic skin reaction.
Inhaled	Moderately irritating to respiratory tract and mucous membranes. Inhalation of the vapour may result in headaches, nausea, and vomiting. High concentrations may cause central nervous system symptoms similar to 'swallowed' above.

12. ECOLOGICAL INFORMATION

Ecotoxicity

	No data available.
Persistence and Degradability	No data available.
Mobility	No data available.
Environmental Fate (Exposure)	No data available.
Bioaccumulative Potential	No data available.

13. DISPOSAL CONSIDERATIONS

Disposal	Incinerate under controlled conditions if permitted by local authorities. Dispose of in accordance with all Local, State and Federal regulations at an approved waste disposal facility.
Special Precautions for Land Fill or Incineration	No data available.

14. TRANSPORT INFORMATION

Land Transport

UN Number	1170
Shipping Name	ETHANOL
Dangerous Goods Class	3
Subsidiary Risk	Not applicable.
Pack Group	II
Precaution for User	No data available.
Hazchem Code	2[Y]E



Sea Transport

UN Number	1170
Shipping Name	ETHANOL
Dangerous Goods Class	3

Subsidiary Risk	Not applicable.
Pack Group	II
Precaution for User	No data available.
Hazchem Code	2[Y]E



15. REGULATORY INFORMATION

No data available.

Poisons Schedule	5
EPG	14
AICS Name	ETHANOL
NZ Toxic Substance	N
HSNO Hazard Classification	No data available.
ERMA Approval Code	No data available.

16. OTHER INFORMATION

Literature References No data available.

Sources for Data No data available.

Legend to Abbreviations and Acronyms

<	less than
>	greater than
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (Registry Number)
cm²	square centimetres
CO₂	Carbon Dioxide
COD	Chemical Oxygen Demand
deg C (°C)	degrees Celsius
ERMA	Environmental Risk Management Authority
g	

	gram
g/cm3	grams per cubic centimetre
g/l	grams per litre
HSNO	Hazardous Substance and New Organism
IDLH	Immediately Dangerous to Life and Health
immiscible	liquids are insoluble in each other
kg	kilogram
kg/m3	kilograms per cubic metre
LC50	LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50	LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals
ltr	Litre
m3	cubic metre
mbar	millibar
mg	milligram
mg/24H	milligrams per 24 hours
mg/kg	milligrams per kilogram
mg/m3	milligrams per cubic metre
Misc	miscible
miscible	liquids form one homogeneous liquid phase regardless of the amount of either component present
mm	millimetre
mPa.s	milli Pascal per second
N/A	Not Applicable
NIOSH	National Institute for Occupational Safety and Health
NOHSC	National Occupational Health and Safety Commission
OECD	Organization for Economic Co-operation and Development
PEL	Permissible Exposure Limit
ppb	parts per billion
ppm	parts per million
ppm/2h	parts per million per 2 hours
ppm/6h	parts per million per 6 hours
RCP	Reciprocal Calculation Procedure
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
tne	tonne
TWA	Time Weighted Average
ug/24H	micrograms per 24 hours
UN	United Nations (number)
wt	weight



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This MSDS summarises Redox Pty Ltd best knowledge of the health and safety hazard information of the selected substance and how to safely handle the selected substance in the workplace however Redox Pty Ltd expressly disclaims that the MSDS is a representation or guarantee of the chemical specifications for the substance.

Each user should read the MSDS and consider the information in the context of how the selected substance will be handled and used in the workplace including its use in conjunction with other substances.

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