

MATERIAL SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION OF THE MATERIAL AND SUPPLIER

PRODUCT NAME: 4 Year Long Life Anti Freeze Anti Boil Concentrate
PRODUCT CODE: AFABLD
RECOMMENDED USE: Engine coolant concentrate.
SUPPLIER NAME: PENRITE OIL Company Pty Ltd (ABN: 25005 001 525)
ADDRESS: 88 Lewis Road, Wantirna South, Victoria, 3152
TELEPHONE NUMBER: 03 9801 0877
EMERGENCY TEL. NUMBER: 03 9801 0877 Business Hours.

SECTION 2 – HAZARDS IDENTIFICATION

Statement of Hazardous Nature of Product: This product is classified as Hazardous according to criteria of the National Occupational Health and Safety Commission (SafeWork Australia). This product is not classified as dangerous goods according to the ADG Code.

Xn – Harmful

Risk Phrases: R22 - Harmful if swallowed.

Safety Phrases:

S2 - Keep out of reach of children.
S13 - Keep away from food, drink and animal feeding stuffs.
S23 - Do not breathe fumes, vapour or spray mists.
S24/25 - Avoid contact with skin and eyes.
S36/37 - Wear suitable protective clothing and gloves.
S46 - If swallowed, seek medical advice immediately and show this container or label.

UN NUMBER: Not applicable.
PROPER SHIPPING NAME: Not applicable.
HAZCHEM CODE: Not applicable.
DANGEROUS GOODS
CLASS/SUBSIDIARY RISK: Not applicable.
POISONS SCHEDULE NUMBER: Schedule 5.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS	CAS NUMBER	PROPORTION % W/W
Ethanediol [Ethylene glycol]	107-21-1	> 60%
Denatonium benzoate	3734-33-6	< 1%
Other ingredients determined not to be hazardous	-	To 100%

SECTION 4 – FIRST AID MEASURES

INGESTION: Rinse mouth out and drink a glass of water. Do NOT induce vomiting. For advice, contact a Poisons Information Centre Phone Australia 131 126) or a doctor at once.

EYE: If in eyes, hold eyelids apart and flush the eye immediately with large amounts of running water. Continue flushing for at least 15 minutes or until advised to stop by a doctor. Check for contact lenses. If there are contact lenses, these should be removed under supervision. After flushing, if irritation develops or persists, seek medical assistance.

SKIN CONTACT: If skin or hair contact has occurred remove any contaminated clothing, wash skin or hair thoroughly with soap and water. If irritation develops or persists, consult a Doctor.

MATERIAL SAFETY DATA SHEET

SECTION 4 – FIRST AID MEASURES continued

INHALATION:	If affected, remove the patient from contaminated area, if safe to do so. Lay patient down in a well-ventilated area and reassure them. If not breathing, provide artificial respiration and seek immediate medical assistance. If unconscious, place in a recovery position and seek immediate medical assistance.
FIRST AID FACILITIES:	Eye wash fountain and safety showers are recommended.
ADVICE TO DOCTOR:	Treat symptomatically. Ethylene glycol can cause central nervous system depression and metabolic acidosis. Consider removal by gastric lavage after endotracheal intubation. Do not use mechanical or pharmacological means of emesis. Any material aspirated during vomiting may produce lung injury. If vomiting has occurred after ingestion, the patient should be monitored for difficulty in breathing, as adverse effects of aspiration into the lungs may be delayed for up to 48 hours. Monitor kidney function as large quantities may cause kidney damage. According to the IUCLID Report, in human Ethylene glycol poisoning cases ethanol/alkali/diuretic infusion antidotal treatment has been successful.

SECTION 5 – FIRE FIGHTING MEASURES

FIRE:	This product is not flammable under conditions of use. Once the aqueous component has evaporated, the residue will be combustible. Keep storage tanks, pipelines, fire exposed surfaces, etc. cool with water spray.
EXPLOSION:	No information to indicate that the product is an explosion hazard.
FIRE EXTINGUISHING MEDIA:	Use extinguishing media appropriate for surrounding fire. Use carbon dioxide, foam, dry chemical or water fog. Spray down fumes resulting from fire. Avoid using full water jet directed at residual material that may be burning. Water may cause splattering of burning residual material. Product is miscible with water.
COMBUSTION HAZARDS:	Combustion of residual material may produce oxides of carbon as well as smoke and irritating vapours.
PROTECTIVE EQUIPMENT:	In the event of a fire, wear full protective clothing and self-contained breathing equipment with full-face piece operated in the pressure demand or other positive pressure mode.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTION:	Wear gloves, glasses/goggles, boots and full-length clothing. During routine operation a respirator is not required. However, if mists or vapours are generated, an approved organic vapour/particulate respirator is required.
EMERGENCY PROCEDURES:	Ventilate area and extinguish and/or remove all sources of ignition. Stop the leak if safe to do so. Caution: The spilled product will be slippery. Contain the spill and absorb with a proprietary absorbent material, sand or earth. Place used absorbent in suitable containers and follow local and state regulations for the disposal of waste. Do not allow product to enter drains, surface water, sewers or watercourses - inform local authorities if this occurs.
CLEANING PROCEDURES:	Having contained the spill, collect all material quickly as mentioned above. Personnel must wear gloves, goggles or glasses, boots and full-length clothing during cleaning procedures. Wash contaminated area and objects with detergent and water after spill has been cleared, and then rinse with water.

MATERIAL SAFETY DATA SHEET

SECTION 7 – HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING:

Avoid contact with the product by using appropriate protective equipment such as gloves, glasses or goggles and full-length clothing. Eating, drinking, and smoking should be prohibited in the area where this material is handled, stored and processed. Workers should follow good personal hygiene practices, such as washing hands before eating, drinking and smoking. Keep containers tightly closed when not in use. Prevent product from entering waterways, drains or sewers.

CONDITIONS FOR SAFE STORAGE:

Store in a well ventilated area away from direct sunlight, ignition sources, oxidising agents, foodstuffs, animal feed and clothing. Keep containers closed when not in use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Keep out of reach of children.

INCOMPATIBILITIES:

Oxidizing substances including strong acids.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

AIRBORNE EXPOSURE:

Exposure standards for the product have not been established. However, in the operation of certain equipment or at elevated temperatures, if ethylene glycol vapours or mists are generated, the following Exposure Standard must be observed:

Ethylene glycol as Vapour (Skin annotation)

Time Weighted Average (TWA): 20 ppm, 52 mg/m³

Short Term Exposure Limit (STEL): 40 ppm, 104 mg/m³

Ethylene glycol as Particulate (Skin annotation)

Time Weighted Average (TWA): 10 mg/m³

VENTILATION SYSTEMS:

Special ventilation is not normally required. However, in the operation of certain equipment or at elevated temperatures mists, fumes, particulates or vapour may be generated and exhaust ventilation should be provided to maintain airborne concentration levels below the exposure standard.

PERSONAL RESPIRATORS:

During routine operation a respirator is not required. However, if mists, fumes, particulates or vapours are generated, an approved organic vapour/particulate respirator is required. Use respirators in accordance with AS 1715 and AS 1716.

GLOVE TYPE:

Wear gloves to provide hand protection. Natural rubber, Neoprene, Nitrile and PVC gloves are recommended.

CLOTHING:

During normal operating procedures, long sleeved clothing is recommended to avoid skin contact. Soiled clothing should be washed with detergent prior to re-use.

EYE PROTECTION:

Wear safety glasses/goggles to avoid eye contact when handling. If there is a risk of splashing during use, a full face shield is recommended.

MATERIAL SAFETY DATA SHEET

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Green liquid.
ODOUR:	Slight odour.
VAPOUR DENSITY:	No data available.
VAPOUR PRESSURE (mmHg):	No data available.
DENSITY (g/mL @ 20°C):	Typically 1.12.
VISCOSITY (cSt @ 100°C):	No data available.
VISCOSITY (cSt @ 40°C):	No data available.
FLASHPOINT (°C):	Typically > 120°C.
FLAMMABILITY LIMITS (%):	No data available.
SOLUBILITY IN WATER(g/L):	Fully miscible in water.
BOILING RANGE (°C):	No data available.
% VOLATILE-VOL/VOL:	No data available.
EVAPORATION RATE:	No data available.
pH:	Typically 6.0 to 7.0.

SECTION 10 – STABILITY AND REACTIVITY

CHEMICAL STABILITY:	Stable under recommended storage and handling conditions (see section 7).
CONDITIONS TO AVOID:	Observe the usual precautionary measures for handling chemicals. Do not heat the container or leave the container open when not in use. Avoid contact with foodstuffs and animal feeds.
INCOMPATIBLES:	Strong oxidising agents including concentrated acids.
HAZARDOUS DECOMPOSITION PRODUCTS:	Combustion of residual material may produce oxides of carbon as well as smoke and irritating vapours.
HAZARDOUS REACTIONS:	Keep away from strong oxidising agents. Hazardous polymerisation does not occur.

SECTION 11 – TOXICOLOGICAL INFORMATION

HEALTH EFFECTS

ACUTE:

SWALLOWED: Acute poisoning with Ethylene glycol includes central nervous system effects, cardiopulmonary effects usually attributed to metabolic acidosis, and finally renal failure. Neurological effects incorporating the facial nerves with visual impairment have occurred after Ethylene glycol ingestion by humans according to the IUCLID Report. The clinical effect of ingesting high doses of Ethylene glycol appears in 3 stages (IUCLID Report). The first twelve hours involves the central nervous system and is characterised by the appearance of drunkenness, nausea, vomiting, coma and then convulsions. There are also changes in blood cellular composition and urine profile, mild drops in blood pressure, rapid heartbeat, slight fever, depressed reflexes, eye effects and possibly seizures. The second stage involves the heart and lungs. The commonly observed effects include rapid breathing and heart beat, mild drops in blood pressure, blue colouration of the skin, possibly fluid in the lungs, pneumonia, enlarged or congested heart. Death in this stage starts 24 to 72 hours after ingestion. The final stage is kidney failure, with oxalic acid being found in the urine.

EYE: May be mildly irritating to the eyes. Symptoms may include localised burning, redness and tearing.

MATERIAL SAFETY DATA SHEET

SECTION 11 – TOXICOLOGICAL INFORMATION continued

SKIN:	May be mildly irritating to the skin. The material has the Skin Annotation assigned to it. This means absorption through the skin may be a significant source of exposure. Correct handling procedures incorporating appropriate protective clothing and gloves should minimise the risk of skin absorption and irritation. People with pre-existing skin conditions, such as dermatitis, should take extreme care so as not to exacerbate the condition.										
INHALED:	Inhalation of vapours or mist (generated at elevated temperatures or by mechanical action) may cause irritation to the nose and throat and lead to symptoms such as headache, dizziness, drowsiness, muscle weakness, delirium and possibly nausea.										
CHRONIC:	The product contains Ethylene glycol. Animal studies suggest that repeated ingestion of high doses of Ethylene glycol can lead to brain damage, kidney damage, degeneration of the liver and changes in blood chemistry. Prolonged, repeated, long term exposure in humans may lead to similar effects. Observation of good work practices should minimise the potential for this to occur.										
TOXICITY DATA:	There is no data on the product as a whole. The following data is applicable to Ethylene glycol:										
Immunotoxicity:	<p>The following results are referenced from RTECS.</p> <table><tr><td>Oral (Rat) LD₅₀: 4,700 mg/kg</td><td>Oral (Human) LDLo: 398 mg/kg</td></tr><tr><td>Oral (Child) TDLo: 5,500 mg/kg</td><td>Inhalation (Human) TCLo: 10,000 mg/m³</td></tr><tr><td>Dermal (Rabbit) LD₅₀: 9,530 mg/kg</td><td>Inhalation (Rat) LC₅₀: 50,100 mg/m³/8 hr</td></tr></table> <p>Estimated Lethal Dose (Human): 100 mL Calculated Mean Lethal Dose: 1.2 - 1.5 g/kg, oral, adults</p> <p>Irritation:</p> <table><tr><td>Skin (Rabbit): 555 mg (open) - mild</td><td>Eye (Rabbit): 100 mg/1 hr - mild</td></tr><tr><td>Eye (Rabbit): 500 mg/24 hr - mild</td><td>Eye (Rabbit): 1,440 mg/6 hr - moderate</td></tr></table>	Oral (Rat) LD ₅₀ : 4,700 mg/kg	Oral (Human) LDLo: 398 mg/kg	Oral (Child) TDLo: 5,500 mg/kg	Inhalation (Human) TCLo: 10,000 mg/m ³	Dermal (Rabbit) LD ₅₀ : 9,530 mg/kg	Inhalation (Rat) LC ₅₀ : 50,100 mg/m ³ /8 hr	Skin (Rabbit): 555 mg (open) - mild	Eye (Rabbit): 100 mg/1 hr - mild	Eye (Rabbit): 500 mg/24 hr - mild	Eye (Rabbit): 1,440 mg/6 hr - moderate
Oral (Rat) LD ₅₀ : 4,700 mg/kg	Oral (Human) LDLo: 398 mg/kg										
Oral (Child) TDLo: 5,500 mg/kg	Inhalation (Human) TCLo: 10,000 mg/m ³										
Dermal (Rabbit) LD ₅₀ : 9,530 mg/kg	Inhalation (Rat) LC ₅₀ : 50,100 mg/m ³ /8 hr										
Skin (Rabbit): 555 mg (open) - mild	Eye (Rabbit): 100 mg/1 hr - mild										
Eye (Rabbit): 500 mg/24 hr - mild	Eye (Rabbit): 1,440 mg/6 hr - moderate										
Skin Sensitisation:	This product is not expected to be a skin sensitizer, based on the available data and the known hazards of the components.										
Respiratory Tract Sensitisation:	This product is not expected to be a respiratory tract sensitizer, based on the available data and the known hazards of the components.										
Mutagenic:	Studies have shown Ethylene glycol to be mutagenic to rat cells.										
Reproductive Toxicity:	Ethylene glycol has been shown to cause birth defects in rat studies.										
Teratogenicity/Embryotoxicity:	Ethylene glycol has been shown to produce teratogenic effects in mice when high doses were ingested.										
Carcinogenicity:	This product does not contain any materials that are classified as carcinogens.										

SECTION 12 – ECOLOGICAL DATA

ECOTOXICITY:	There is no data available for the product as a whole. The product should not be discharged to sewer or waterways. Data reported for Ethylene glycol has the Fish LC ₅₀ (96 hr) as 4,100 - 18,500 mg/L and Algae IC ₅₀ (72 hr) as 180,000 mg/L.
PERSISTENCE & DEGRADABILITY:	There is no data available for the product as a whole; however Ethylene glycol is expected to be readily biodegradable (OECD 301A > 70% DOC Reduction).
MOBILITY:	The log Pow of Ethylene glycol is nominated as between -1.93 and -1.36.
ENVIRONMENTAL FATE:	No information is available.
BIOACCUMULATIVE POTENTIAL:	Studies suggest Ethylene glycol does not bioaccumulate.

MATERIAL SAFETY DATA SHEET

SECTION 13 – DISPOSAL CONSIDERATIONS

DISPOSAL METHODS/ CONTAINERS:

Spilled product should be contained, absorbed and then shovelled into a suitable waste container, such as a plastic drum and then be treated as a solid waste. Follow state or local regulations for disposal of the waste. For large spills, the material should be bunded and the liquid recovered for recycling where possible. The product should not be released to the environment, so any unused material or contaminated containers should be disposed of as hazardous waste at an appropriate collection depot or be recycled wherever possible. Dispose of containers and unused contents in accordance with Federal, State and local requirements. Do not allow product to enter drains, sewers and watercourses.

SECTION 14 – TRANSPORT INFORMATION

This product is not regulated according to the ADG Code, IATA or IMDG.

SECTION 15 – REGULATORY INFORMATION

This product is classified as Hazardous according to criteria of the National Occupational Health and Safety Commission (SafeWork Australia). It is a Schedule 5 Poison according to the SUSMP.

Xn – Harmful

Risk Phrases: R22 - Harmful if swallowed.

Safety Phrases:

S2 - Keep out of reach of children.
S13 - Keep away from food, drink and animal feeding stuffs.
S23 - Do not breathe fumes, vapour or spray mists.
S24/25 - Avoid contact with skin and eyes.
S36/37 - Wear suitable protective clothing and gloves.
S46 - If swallowed, seek medical advice immediately and show this container or label.

All ingredients are on the AICS List.

SECTION 16 – OTHER INFORMATION

Date of MSDS Preparation: 22nd September 2011

Revision: 0.0

ACRONYMS

SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
CAS Number	Chemical Abstracts Service Registry Number
UN Number	United Nations Number
ACGIH	American Conference of Governmental Industrial Hygienists
R-Phrase	Risk Phrases
S-Phrase	Safety Phrases
HAZCHEM No	An emergency action code of numbers and letters which gives information to emergency services
NOHSC	National Occupational Health and Safety Commission
AICS	Australian Inventory of Chemical Substances
IUCLID	International Uniform Chemical Information Database
RTECS	Register of Toxic Effects of Chemical Substances

MATERIAL SAFETY DATA SHEET

SECTION 16 – OTHER INFORMATION continued

CONTACT POINT

NAME: Tony Lawton
TITLE: Technical Manager
TELEPHONE NUMBER: (03 9801 0877 Business Hours

All information contained in this Material Safety Data Sheet and the health, safety and environmental information are considered to be accurate to the best of our knowledge as of the issue date specified above. However, no warranty or representation, expressed or implied, is made as to the accuracy or completeness of the data and information contained in this data sheet.

Health and safety precautions and environmental advice noted in this data sheet may not be accurate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The Company accepts no responsibility for any injury, loss or damage, resulting from abnormal use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material.