

SAFETY DATA SHEET

SECTION 1 – IDENTIFICATION: PRODUCT IDENTIFIER/CHEMICAL IDENTITY

1.1 PRODUCT IDENTIFIER: Block & Cylinder Head Seal

1.2 PRODUCT CODE: ADBCS

1.3 RELEVANT IDENTIFIED USES OF THE MIXTURE AND USES ADVISED AGAINST:

RELEVANT IDENTIFIED USES: Radiator additive for blocking system leaks

RESTRICTIONS ON USE: None known.

1.4 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET:

SUPPLIER NAME: PENRITE OIL Company Pty Ltd (ABN: 25005 001 525),
ADDRESS (Australia): 110-116 Greens Road, Dandenong South VIC, Australia, 3175
TELEPHONE NUMBER (Australia): 1300 736 748; +61 3 8710 6600 (Int); Fax: 1800 736 748
ADDRESS (New Zealand): 75 Lady Ruby Drive, East Tamaki, Auckland, New Zealand, 2013
TELEPHONE NUMBER (New Zealand): 0800 533 698; Fax: 0800 533 698
E-MAIL: tech@penriteoil.com (Aust and NZ)

1.5 EMERGENCY TEL. NUMBER: Australia: 1300 736 748; New Zealand: 0800 533 698
(Poisons Information Centre (Aust 131 126; NZ 0800 764 766)

1.6 HSNO DETAILS:

HSNO APPROVAL NUMBER: HSR002606.

HSNO GROUP TITLE: Lubricants, Lubricant Additives, Coolants and Anti-Freeze Agents
(Subsidiary Hazard) Group Standard, 2017.

SECTION 2 – HAZARD(S) IDENTIFICATION

2.1 CLASSIFICATION OF THE HAZARDOUS CHEMICAL:

GHS CLASSIFICATION HAZARD

CLASS & CATEGORY: Under the Model Work Health and Safety Regulations the product would be rated as hazardous:
Acute Toxicity - Oral Category 4.
Specific Target Organ Toxicity (Single Exposure) - Category 3
Serious Eye Damage/Irritation - Category 1
Chronic Aquatic Toxicity - Category 3

2.2 LABEL ELEMENTS INCLUDING PRECAUTIONARY STATEMENTS:

SIGNAL WORD: Danger.

PICTOGRAMS:



HAZARD STATEMENTS: H302 - Harmful if swallowed.
H335 - May cause respiratory irritation.
H318 - Causes serious eye damage.
H412 - Harmful to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS:

PREVENTION: P102 - Keep out of reach of children.
P103 - Read label before use.
P261 - Avoid breathing mist/vapours/aerosols/spray.
P264 - Wash hands with soap and water thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/eye protection/face protection.

SAFETY DATA SHEET

SECTION 2 – HAZARD(S) IDENTIFICATION Continued

RESPONSE: P101 - If medical advice is needed, have product container or label at hand.
P301+P312 - IF SWALLOWED: Call a POISON CENTRE or doctor if you feel unwell.
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.
P310 - Immediately call a POISON CENTRE or doctor/physician.
P312 - Call a POISON CENTRE or doctor/physician if you feel unwell.
P330 - Rinse mouth.

STORAGE: P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.

DISPOSAL: P501 - Dispose of contents/container in accordance with local regulations.

2.3 OTHER HAZARDS: Ethylene glycol poisoning can be fatal after ingestion. Ingestion of large quantities can cause kidney damage. The product may be irritating to the respiratory system and eyes. The Ethylene glycol constituent has the Skin Annotation assigned to it. This means absorption through the skin may be a significant source of exposure. As for all chemical products, persons should not expose open wounds, cuts, abrasions or irritated skin to this material. The product contains Kyanite as a Refractory Ceramic Fibre according to the product manufacturer. This is categorised as May cause cancer by inhalation. As the product is a liquid, inhalation should not be a route of exposure. However, in use in car cooling systems, if aerosols, sprays, mists or vapours are generated then the presence of Kyanite as a Refractory Ceramic Fibre must be taken into consideration. There may be residual Kyanite in the engine cooling system upon its removal, though it is expected to be fixed in position and not present as free fibres.

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENTS	CAS NUMBER	Concentration % W/W	GHS Classification*
1,2 Ethanediol [Ethylene glycol]	107-21-1	25% - < 30%	Acute Tox 4 - H302 STOT SE 3 - H335
Zinc,bis(D-gluconato-O1,02)- (Zinc Gluconate)	4468-02-4	2 - 5%	Eye Dam 1 - H318 Chron Aq Tox 1 - H410
Copper Powder	7440-50-8	1 - 3%	Acute Aq Tox 1 - H400 Chron Aq Tox 3 - H412
Kyanite (Al ₂ O(SiO ₄)) Refractory Ceramic Fibre (Aluminosilicate)	1302-76-7	0.1 - 0.5%	Carc 1B - H350 STOT RE 2 - H373
Denatonium Benzoate	3734-33-6	0.001%	Not Applic
Other non-hazardous ingredients	-	To 100%	Not Applic

Not Applic = Not Applicable

* Please see Section 15 of this SDS for the full text description of the Label Elements.

SECTION 4 – FIRST AID MEASURES

4.1 DESCRIPTION OF NECESSARY FIRST AID MEASURES:

INGESTION: Rinse mouth out with water. Never give fluid to a person exhibiting decreased awareness. Do NOT induce vomiting. Seek medical advice immediately. For advice, contact a Poisons Information Centre (Phone Aust 13 11 26; New Zealand 0800 764 766) or a doctor. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

SAFETY DATA SHEET

SECTION 4 – FIRST AID MEASURES Continued

- 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 after several minutes of rinsing by the exposed person or medical personnel if it can be done easily. As the product is rated as Causes severe eye damage, after flushing, immediately call a Poisons Information Centre (Tel. Australia 13 11 26; New Zealand 0800 764 766) or doctor/physician.
- SKIN CONTACT:** If skin or hair contact has occurred remove any contaminated clothing and footwear, wash skin or hair thoroughly with soap and water. If irritation develops or persists, consult a Doctor.
- INHALATION:** If a person is affected by inhaling the product, remove the patient from further exposure into fresh air, if safe to do so. If providing assistance, avoid exposure to yourself - only enter contaminated environments with adequate respiratory equipment. Once removed, lay patient down in a well-ventilated area and reassure them whilst waiting for medical assistance. If not breathing, provide artificial respiration and seek immediate medical assistance. If unconscious, place in a recovery position and seek immediate medical assistance. If irritation develops/persists, consult a Doctor.
- PROTECTION FOR FIRST AIDERS:** No personnel shall place themselves in a situation that is potentially hazardous to themselves. Assess the scenario for PPE requirements before entering. Assess environment for vapours, mists, aerosols or sprays before entering. Do not enter contaminated area without a respirator. As the product contains Ethylene glycol, if the person has ingested the product, do not use direct mouth-to-mouth resuscitation techniques. Always ensure that you are wearing gloves when dealing with first aid procedures involving chemicals and/or blood.
- FIRST AID FACILITIES:** Eye wash fountain and safety showers are recommended in the area where the product is used.
- 4.2 MOST IMPORTANT SYMPTOMS & EFFECTS, BOTH ACUTE & DELAYED, CAUSED BY EXPOSURE:**
- ACUTE:** The product is rated as harmful by ingestion. Ingestion of large amounts of the product could lead to acute Ethylene glycol poisoning. The product is also rated as May cause respiratory irritation. Ingestion or inhalation of vapours may lead to irritation of the mouth and respiratory tract. Symptoms may include a burning sensation in the nose and throat, coughing or difficulty breathing. Ingestion may lead to nausea and diarrhoea. The product is rated as Causes serious eye damage. Eye contact may lead to severe burns, redness, pain, swelling, tearing and blurred vision, as well as permanent eye damage in a worst case scenario. Skin contact may lead to redness or itching. If the material is aspirated into the lungs it may exhibit as coughing, wheezing, congestion or fever.
- CHRONIC:** Skin contact may aggravate/exacerbate existing skin conditions, such as dermatitis. Ingestion of large quantities of Ethylene glycol may cause kidney damage. The product contains Kyanite as a Refractory Ceramic Fibre according to the product manufacturer. This is categorised as May cause cancer by inhalation. As the product is a liquid, inhalation should not be a route of exposure. However, in use in car cooling systems, if aerosols, sprays, mists or vapours are generated then the presence of Kyanite as a Refractory Ceramic Fibre must be taken into consideration.

SAFETY DATA SHEET

SECTION 4 – FIRST AID MEASURES Continued

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NECESSARY:

ADVICE TO DOCTOR: Treat symptomatically. Ingestion of large amounts of 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

5.1 EXTINGUISHING MEDIA:

SUITABLE MEDIA: Use extinguishing media appropriate for surrounding fire. Use carbon dioxide, alcohol resistant foam, dry chemical or water fog. Spray down fumes resulting from fire.

UNSUITABLE MEDIA: Avoid using full water jet directed at residual material that may be burning.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE:

COMBUSTION HAZARDS: Combustion of the residual material after evaporation of the aqueous component may produce oxides of carbon and phosphorus, as well as small amounts of silicon, copper, aluminium, zinc, smoke and irritating vapours.

5.3 ADVICE FOR FIREFIGHTERS:

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.

HAZCHEM CODE: Not applicable.

EXPLOSION: No information to indicate that the product is an explosion hazard. Extinguish all sources of flame or spark. Closed containers may explode when exposed to extreme heat.

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

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES:

PERSONAL PROTECTION: For small spills, wear Natural rubber, Neoprene, Nitrile and PVC 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. For large spills, or in confined spaces, a full chemically resistant body-suit is recommended and the atmosphere must be evaluated for oxygen deficiency. If in doubt wear self-contained breathing apparatus.

CONTROL MEASURES: 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. Avoid contact with the spilled material.

EMERGENCY PROCEDURES: In the event of a spill or accidental release, notify the relevant authorities in accordance with all applicable regulations.

SAFETY DATA SHEET

SECTION 6 – ACCIDENTAL RELEASE MEASURES Continued

6.2 ENVIRONMENTAL PRECAUTIONS:

SPILL ADVICE: Do not allow product to enter drains, surface water, sewers or watercourses - inform local authorities if this occurs.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP:

CONTAINMENT: Contain the spill and absorb with a proprietary absorbent material, sand or earth. **CAUTION:** The spilled product will be slippery. For large spills prepare a bund/barrier/dyke ahead of the spill to confine the spill and allow later recovery. If there is the possibility of spills to enter drains, surface water, sewers or watercourses ensure bunding, or that drains are covered, to minimise the potential for this to occur.

CLEANING PROCEDURES: Having contained the spill, as mentioned above, collect all material quickly and place used absorbent in suitable containers. **CAUTION:** The spilled product will be slippery. Follow local regulations for the disposal of waste. For large spills that have been banded, the material can be pumped into vessels and returned for reprocessing or destruction. 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. Rinse the cleaned area with water. Do not allow wash water or rinsings to enter drains, surface water, sewers or water courses.

SECTION 7 – HANDLING AND STORAGE, INCLUDING HOW THE CHEMICAL MAY BE SAFELY USED

7.1 PRECAUTIONS FOR SAFE HANDLING:

SAFE HANDLING: Avoid contact with the product by using appropriate protective equipment such as gloves, glasses or goggles and full-length clothing. Prevent small spills and leakage to avoid slip hazards. Properly dispose of any contaminated rags or cleaning materials in order to prevent fire hazards. 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. Remove contaminated clothing and protective equipment before entering eating areas. Due to the presence of Kyanite, prevent the formation of aerosols, mists, vapours or sprays containing the product. Keep containers tightly closed when not in use. Prevent product from entering waterways, drains or sewers.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES:

SAFE STORAGE: Store in a dry, 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. Store only in original containers. Keep out of reach of children.

INCOMPATIBILITIES: Oxidising substances including strong acids, strong caustics, aliphatic amines, isocyanates, sodium chlorite and chlorosulfonic acid.

SECTION 8 – EXPOSURE CONTROLS & PERSONAL PROTECTION

8.1 EXPOSURE CONTROL MEASURES:

EXPOSURE LIMIT VALUES: Exposure standards for the product have not been established. However, in use or at elevated temperatures, if aerosols, sprays, vapours or mists are generated, the following Exposure Standard must be observed:

Ethylene glycol as Vapour (Skin annotation)

TWA: 20 ppm 52 mg/m³ STEL: 40 ppm 104 mg/m³

Ethylene glycol as Particulate (Skin annotation)

TWA: 10 mg/m³

Kyanite as Refractory Ceramic Fibre

TWA (Respirable): 0.5 fibres/mL TWA (Inhalable dust): 2 mg/m³

SAFETY DATA SHEET

SECTION 8 – EXPOSURE CONTROLS & PERSONAL PROTECTION Cont'd

8.2 BIOLOGICAL MONITORING:

No data available.

8.3 CONTROL BANDING: No data available.

8.4 ENGINEERING CONTROLS:

ENGINEERING CONTROLS: Special ventilation is not normally required. However, in enclosed spaces or at elevated temperatures aerosols, sprays, mists or vapour may be generated and exhaust ventilation must be provided to maintain airborne concentration levels below the nominated exposure standards and at an acceptable level that does not cause irritation.

8.5 INDIVIDUAL PROTECTION MEASURES:

EYE & FACE 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. Use eye protection in accordance with AS 1336 and AS 1337.

SKIN (HAND) PROTECTION: If there is the chance of contact with the material wear gloves to provide hand protection. Natural rubber, Neoprene, Nitrile or PVC gloves are recommended.

SKIN (CLOTHING) PROTECTION:

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

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

THERMAL PROTECTION: Not applicable.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Pink viscous liquid.

ODOUR: Semi-sweet like.

ODOUR THRESHOLD: No data available.

pH: Typically 7.5.

MELTING/FREEZING POINT: No data available.

INITIAL BOILING POINT: No data available.

BOILING RANGE (°C): No data available.

FLASHPOINT (°C): Not applicable.

EVAPORATION RATE: No data available.

FLAMMABILITY LIMITS (%): Ethylene glycol LEL: 3.4%; UEL: 15.1.

VAPOUR PRESSURE: No data available.

VAPOUR DENSITY: 1 (Air =1).

DENSITY (g/mL @ 20°C): Typically 1.09.

SOLUBILITY IN WATER(g/L): Soluble in water.

PARTITION COEFFICIENT: No data available for n-octanol/water.

AUTO-IGNITION TEMP (°C): 420°C for Ethylene glycol.

DECOMPOSITION TEMP (°C): No data available.

VISCOSITY (cSt @ 100°C): No data available.

VISCOSITY (cSt @ 40°C): No data available.

VISCOSITY (cSt @ 20°C): No data available.

SAFETY DATA SHEET

SECTION 10 – STABILITY AND REACTIVITY

- 10.1 REACTIVITY:** The product does not pose any further reactivity hazards other than those listed in the following sub-sections.
- 10.2 CHEMICAL STABILITY:** Stable under recommended storage and handling conditions (see section 7).
- 10.3 POSSIBILITY OF HAZARDOUS REACTIONS:** Keep away from strong oxidising agents, such as strong acids, chlorates, nitrates and peroxides. Hazardous polymerisation does not occur.
- 10.4 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.
- 10.5 INCOMPATIBLE MATERIALS:** Strong oxidising agents including concentrated acids as well as strong caustics, aliphatic amines, isocyanates, sodium chlorite and chlorosulfonic acid. Do not store in aluminium or galvanised containers.
- 10.6 HAZARDOUS DECOMPOSITION PRODUCTS:** Hazardous decomposition products are not expected to form during normal storage requirements. See Section 5.2 for Hazardous Combustion products.

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

The product is a mixture and test data is not available for the product as a whole.

Ethylene Glycol

Oral - LD₅₀ (Rat): 4700 mg/kg

Dermal - LD₅₀ (Rabbit): 9530 mg/kg

Inhalation - LC₅₀ (Rat, vapour, 8 hours): 50.1 mg/L

11.2 SWALLOWED:

The product is a Schedule 5 Poison and rated as Harmful if 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. The Ethylene glycol Estimated Lethal Dose (Human) is 100 mL with the Calculated Mean Lethal Dose being 1.2 - 1.5 g/kg, oral, adults. The Oral (human) LDLo is 398mg/kg. The Oral (child) TDLo: 5500 mg/kg.

11.3 SKIN CORROSION/ IRRITATION:

This product is not expected to exhibit Dermal Corrosivity/Irritation based on the available data and the known hazards of the components. May be mildly irritating to the skin. The Ethylene glycol constituent 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. The following RTECS data was reported for Ethylene glycol: Skin (Rabbit): 555 mg (open) - mild.

SAFETY DATA SHEET

SECTION 11 – TOXICOLOGICAL INFORMATION Continued

11.4 SERIOUS EYE DAMAGE/ IRRITATION:

The product is rated by calculation as Causes serious eye damage. Eye contact may lead to severe burns, redness, pain, swelling, tearing and blurred vision, as well as permanent eye damage in a worst case scenario. Correct handling procedures incorporating appropriate eye protection should minimise the risk of eye irritation.

11.5 RESPIRATORY OR SKIN SENSITISATION:

This product is not expected to be a skin sensitiser based on the available data and the known hazards of the components. This product is not expected to be a respiratory tract sensitiser, based on the available data and the known hazards of the components.

11.6 GERM CELL MUTAGENICITY:

This product is not expected to be mutagenic based on the available data and the known hazards of the components. However, studies have shown Ethylene glycol to be mutagenic to rat cells.

11.7 CARCINOGENICITY:

This product is not expected to be a carcinogen based on the available data and the known hazards of the components. However, the product contains Kyanite as a Refractory Ceramic Fibre according to the product manufacturer. This is categorised as May cause cancer by inhalation. As the product is a liquid, inhalation should not be a route of exposure. However, in use in car cooling systems, if aerosols, sprays, mists or vapours are generated then the presence of Kyanite as a Refractory Ceramic Fibre must be taken into consideration. There may be residual Kyanite in the engine cooling system upon its removal, though it is expected to be fixed in position and not present as free fibres.

11.8 REPRODUCTIVE TOXICITY:

This product is not expected to be a reproductive hazard based on the available data and the known hazards of the components. However, Ethylene glycol has been shown to cause birth defects in rat studies.

11.9 SPECIFIC TARGET ORGAN TOXICITY (STOT) - SINGLE EXPOSURE:

This product is rated as May cause respiratory irritation. Inhalation of vapours or mist (generated at elevated temperatures or by mechanical action) may cause irritation to the nose and throat. At mist concentrations of 80ppm Ethylene glycol, a 1991 ACGIH report nominates that coughing and tracheal burning became intolerable. Inhalation of vapours or mist may cause drowsiness or dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of coordination and vertigo. This is likely to occur at temperatures higher than normally expected when using the product. As mentioned, acute poisoning with Ethylene glycol includes central nervous system effects, cardiopulmonary effects, usually attributed to metabolic acidosis, and finally renal failure.

11.10 SPECIFIC TARGET ORGAN TOXICITY (STOT) - REPEATED EXPOSURE:

This product is not expected to cause organ damage from prolonged or repeated exposure based on the available data and the known hazards of the components. Evidence from animal studies indicates that repeated or prolonged exposure to Ethylene glycol could lead to central nervous system, liver and kidney side effects. The product also contains Kyanite that is rated May cause damage to organs through prolonged or repeated exposure. This ingredient is present at less than 0.5% and incorporated within the liquid finished product and therefore should not present a potential hazard.

11.11 ASPIRATION HAZARD: This product is not expected to be an aspiration hazard, based on the available data and the known hazards of the components. However, the manufacturer recommends that if swallowed, do NOT induce vomiting. If vomiting has occurred after ingestion the person should be observed to ensure that aspiration into the lungs has not occurred.

SAFETY DATA SHEET

SECTION 11 – TOXICOLOGICAL INFORMATION Continued

11.12 OTHER INFORMATION: Ethylene glycol has been shown to produce teratogenic effects in mice when high doses were ingested. Though there is animal data that suggests that Ethylene glycol has some toxicological effects in regards to reproductive effects, mutagenicity and teratogenicity, the results were not considered relevant to normal industrial use of the product to require it to be rated. Though this highlights the fact that care should be taken when handling the product.

SECTION 12 – ECOLOGICAL INFORMATION

- 12.1 ECOTOXICITY:** The following Ecotoxicity data applies:
- Ethylene Glycol:**
IC₅₀ (Algae, 72hr): 180,000mg/L.
LC₅₀ (Fish, 96hr): 4,100 - 18,500mg/L.
- Zinc Gluconate (Read across data based upon Zinc metal, Zinc sulphate and Zinc chloride):**
EC₅₀ (Crustacea, 48hr): 22.8mg/L.
EC₅₀ (Algae or other aquatic plants, 72hr): 0.26mg/L.
EC₅₀ (Fish, 96hr): 11.12mg/L.
- There is no data available for the product as a whole. Based upon calculated values, the overall product would be expected to be rated as Harmful to aquatic life with long lasting effects.
- 12.2 PERSISTENCE & DEGRADABILITY:** Based on the available data and the known hazards of the components and similar products the product is expected to be readily biodegradable. Major constituents are expected to be inherently biodegradable. Ethylene glycol is expected to be readily biodegradable (OECD 301A > 70% DOC Reduction).
- 12.3 BIOACCUMULATIVE POTENTIAL:** There is no data available for the product as a whole. Studies suggest Ethylene glycol does not bioaccumulate with BCF = 200.
- 12.4 MOBILITY IN SOIL:** There is no data available for the product as a whole. Ethylene glycol is not expected to evaporate from the soil surface. Ethylene glycol has little or no capacity to bind to soil and will be mobile. The log Pow of Ethylene glycol is nominated as between -1.93 and -1.36. KOC for Ethylene glycol is 1.
- 12.5 OTHER ADVERSE EFFECTS:** There is no additional data available for the product as a whole. The product is miscible in water.

SECTION 13 – DISPOSAL CONSIDERATIONS

- 13.1 DISPOSAL METHODS:**
- PRODUCT:** The product should not be released to the environment, so any unused material should be recycled wherever possible or be disposed of as hazardous waste at an appropriate collection depot. Spilled product that cannot be recovered should be absorbed and then shovelled into a suitable waste container, such as a plastic drum and then be treated as a solid waste. Follow Government regulations for disposal of such waste. All unused, waste or spilled product must be taken for recycling or disposal by suitably licensed contractors in accordance with Government regulations.
- CONTAINERS:** Empty containers may contain residual product. They should be completely drained and then stored until reconditioned or disposed of. Empty containers should be taken for recycling or disposal through suitably licensed contractors in accordance with Government regulations. Where the containers are of metal construction they should not be pressurised, cut by a grinder, welded, brazed, soldered, drilled or exposed to heat, flames or other sources of ignition. Closed metal containers when exposed to such conditions/treatment may explode causing serious injury or death.

SAFETY DATA SHEET

SECTION 14 – TRANSPORT INFORMATION

This product is not regulated for land, sea or air transportation. (HS Code: 3824.90.90)

14.1 LAND (ADG Code):

UN NUMBER: Not applicable
UN PROPER SHIPPING NAME: Not applicable
TRANSPORT HAZARD CLASS(ES): Not applicable
PACKAGING GROUP: Not applicable
ENVIRONMENTAL HAZARDS: Not applicable
SPECIAL PRECAUTIONS FOR USER: Not applicable
HAZCHEM CODE: Not applicable

14.2 SEA (IMDG):

UN NUMBER: Not applicable
UN PROPER SHIPPING NAME: Not applicable
TRANSPORT HAZARD CLASS(ES): Not applicable
PACKAGING GROUP: Not applicable
ENVIRONMENTAL HAZARDS: Not applicable
SPECIAL PRECAUTIONS FOR USER: Not applicable

14.3 AIR (IATA):

UN NUMBER: Not applicable
UN PROPER SHIPPING NAME: Not applicable
TRANSPORT HAZARD CLASS(ES): Not applicable
PACKAGING GROUP: Not applicable
ENVIRONMENTAL HAZARDS: Not applicable
SPECIAL PRECAUTIONS FOR USER: Not applicable

SECTION 15 – REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS:

APPLICABLE REGULATIONS:

SUSMP: Schedule 5.
AICS: All ingredients are on the AICS List.
MONTREAL PROTOCOL: Not applicable to this product.
STOCKHOLM CONVENTION: Not applicable to this product.
ROTTERDAM CONVENTION: Not applicable to this product.
BASEL CONVENTION: Not applicable to this product.
INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS (MARPOL): Not determined.

SAFETY DATA SHEET

SECTION 15 – REGULATORY INFORMATION Continued

OTHER REGULATORY INFORMATION:

GHS CLASSIFICATION HAZARD CLASS & CATEGORY

AND HAZARD STATEMENT: Acute Toxicity - Oral Category 4; H302 - Harmful if swallowed.
Serious Eye Damage/Irritation Category 1; H318 - Causes serious eye damage.
Specific Target Organ Toxicity (Single Exposure) Category 3; H335 - May cause respiratory irritation.
Carcinogenicity Category 1B; H350 - May cause cancer.
STOT (Repeated Exposure) Category 2; H373 - May cause damage to organs through prolonged or repeated exposure through the oral route.
Acute Aquatic Toxicity Category 1; H400 - Very toxic to aquatic life.
Chronic Aquatic Toxicity Category 1; H410 - Very toxic to aquatic life with long lasting effects.
Chronic Aquatic Toxicity Category 3; H412 - Harmful to aquatic life with long lasting effects.

HSNO APPROVAL NUMBER: HSR002606

HSNO GROUP TITLE: Lubricants, Lubricant Additives, Coolants and Anti-Freeze Agents (Subsidiary Hazard) Group Standard 2017.

SECTION 16 – ANY OTHER RELEVANT INFORMATION

SDS INFORMATION:

Date of SDS Preparation: 24th January 2019

Revision: 0.0

REVISION CHANGES: Initial preparation of SDS.

ACRONYMS:

SUSMP	Standard for the Uniform Scheduling of Medicines and Poisons
CAS Number	Chemical Abstracts Service Registry Number
EINECS	European Inventory of Existing Commercial Chemical Substances
UN Number	United Nations Number
OSHA	Occupational Safety and Health Administration
ACGIH	American Conference of Governmental Industrial Hygienists
HSE-WEL	Health and Safety Executive - Workplace Exposure Limit
EH40	EH40/2005 Workplace Exposure Limits
IMDG	International Maritime Dangerous Goods
IATA	International Air Transport Association
IUCLID	International Uniform Chemical Information Database
RTECS	Registry of Toxic Effects of Chemical Substances
%W/W	Percent weight for weight
OECD	Organisation for Economic Co-Operation and Development
ADG Code	Australian Code for the Transport of Dangerous Goods by Road and Rail
HAZCHEM Code	Emergency action code of numbers and letters which gives information to emergency services
NOHSC	National Occupational Health and Safety Commission
NICNAS	National Industrial Chemicals Notification & Assessment Scheme
IMAP	Inventory Multi-Tiered Assessment and Prioritisation
AICS	Australian Inventory of Chemical Substances
TWA	Time-Weighted Average
STEL	Short Term Exposure Limit
HSNO	Hazardous Substances and New Organisms Act 1996
GHS	Globally Harmonised System of Classification and Labelling of Chemicals
WHS	Work Health and Safety
PPE	Personal Protective Equipment
LD ₅₀	Median Lethal Dose
LC ₅₀	Median Lethal Concentration
EC ₅₀	Effective Concentration of a substance that causes 50% of the maximum response after exposure for a nominated time
NOAEL	No Observed Adverse Effect Level
NOEC	No Observed Effect Concentration

SAFETY DATA SHEET

SECTION 16 – ANY OTHER RELEVANT INFORMATION Continued

ACRONYMS (Continued):

ECHA	European Chemicals Agency
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
HCIS	Hazardous Chemical Information System

LITERATURE REFERENCES AND SOURCES OF DATA:

OECD Guidelines for Testing of Chemicals
Annex I: OECD Test Guidelines for Studies Included in SIDS
Manual for the Assessment of Chemicals Chapter 2 Data Gathering
International Toxicity Testing Guidelines
Hazardous Substance Information System - Guidance Material for Hazard Classifications
Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice.
Model Work Health and Safety Regulations.
Model Work Health and Safety Regulations - Transitional Principles
Workplace Exposure Standards for Airborne Contaminants
Australian Dangerous Goods Code 7th Edition
Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]
Guidance on the Classification of Hazardous Chemicals under the WHS Regulations
Assigning a Hazardous Substance to a Group Standard
User Guide to the HSNO Thresholds and Classifications
Summary User Guide to the HSNO Thresholds and Classifications of Hazardous Substances
Correlation between GHS and New Zealand HSNO Hazard Classes and Categories
HSNO Control Regulations
Record of Group Standard Assignment
Labelling of Hazardous Substances Hazard and Precautionary Information
Thresholds and Classifications Under the Hazardous Substances and New Organisms Act 1996
Workplace Exposure Standards and Biological Exposure Indices
NICNAS IMAP Human Health Tier II Assessment for Kyanite (Al₂O(SiO₄)) CAS Number: 1302-76-7
NICNAS IMAP Human Health Tier II Assessment for 1,2-Ethanediol CAS Number: 107-21-1
ECHA Brief Profile for 1,2-Ethanediol (Ethylene Glycol) CAS Number 107-21-4
ECHA Registration Dossier for Bis(D-gluconato-O1,O2)zinc (Zinc Gluconate) CAS Number 4468-02-4
ECHA Brief Profile for Bis(D-gluconato-O1,O2)zinc (Zinc Gluconate) CAS Number 4468-02-4
ECHA Registration Dossier for Copper Powder CAS Number 7440-50-8

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