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MATERIAL SAFETY DATA SHEET

1. Chemical Product And Company Identification

Product Name	AFRIQ LUBE ANTIFREEZE CONCENTRATE 95 %		
Product Use	Automotive coolant system (antifreeze/anticorrosion) concentrate. For specific application advice see appropriate Technical Data Sheet.		
Manufacturer	Afriq Lube and Services cc P.O. Box 263708 Three Rivers 1935	016 424 4630 (t) 016 424 4651 (f) afriqlube@telkomsa.net (e)	

2. Composition / Information On Ingredients

Chemical Name	Cas- no.	Weight %	Symbol Codes	R-Phrase Numbers
Ethylene glycol: ethanediol	107-21-1	90-95		
Diethylene glycol	111-46-6	1-5		

See Section 15 for European Label Information
See Section 8 for Exposure Limits (if applicable)

3. Hazards Identification

Emergency response data:	Blue. DOT ERG No.- Not applicable
Potential health effects	Harmful if swallowed. Inhalation causes headaches, dizziness, drowsiness, nausea and may lead to unconsciousness.
Skin	Causes irritation.
Eye	Causes irritation.
Ingestion	Do not ingest. Avoid contact with eyes, skin and clothing. Do not breathe vapour or mist. Keep container closed. Use with adequate ventilation. Prolonged or repeated contact can defat the skin and lead to irritation, cracking and /or dermatitis. Wash thoroughly after handling.

See Section 11 for further health effects / toxicological data

4. First Aid Measures



Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.
Skin contact	Immediately wash exposed skin with soap and water. Remove contaminated clothing and shoes. Wash clothing before re-use. Get medical attention immediately.
Eye Contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as collar, tie, belt or waistband. Get medical attention immediately.

5. Fire-Fighting Measures

Flammability of the product	May be combustible at high temperature.
Auto-ignition temperature	398 ° C
Special protective equipment for fire fighters	In case of fire, use water fog, foam, dry chemicals or carbon dioxide. Do not use water jet. Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
Unusual fire/explosion hazards	None.
Products of decomposition	These products are carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide).
Upper Explosion Limits	15.3 % (V)
Lower Explosion Limits	3.2 % (V)
NFPA Hazard ID	Health: 0; Flammability: 1; Reactivity: 0

6. Accidental Release Measures

Procedure if material is released or spilled	Chemical splash goggles. Chemical resistant protective suit. Boots. Chemical resistant gloves. Vapour respirator or a self-contained breathing apparatus. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Methods for cleaning up	If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) scoop up material and place in a sealed, liquid-proof container for disposal. For large spills like spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal. Avoid contact of spilled material with soil and prevent runoff entering surface waterways. See section 13 for Waste Disposal Information.
Personal precautions	See Section 8
Caution	The protection provided by air-purifying respirators is limited. Use a positive



pressure air-supplied respirator if there is any potential for an uncontrolled release, if exposure levels are not known, or if concentrations exceed the protection limits of air-purifying respirator.

7. Handling And Storage

Safe handling advice	Avoid prolonged repeated skin contact. Avoid inhalation of vapours or mists. Avoid ingestion.
Storage information	Do not store in unlabelled containers. Do not store near strong oxidizing agents and combustible materials.

8. Exposure Controls / Personal Protection

Occupational Exposure Limits (OELs)

Components	Cas- no.	Source	TWA	Value	Notations
Ethylene glycol; ethanediol	1-2006	ACGIH TLV		100mg/m ³ Form	Ceiling
Diethylene glycol	-	-	-	-	-

LTEL	Long Term Exposures Limits- Time Weight Average (TWA) over 8 hours.
STEL	Short Term Exposure Limits- Time Weight Average (TWA) over 15 minutes.
Note	Limits Show for guidance only. Follow applicable regulations.

Personal Protection Equipment (PPE)

Engineering controls	Use in well-ventilated area.
Respiratory protection	Approved respiratory equipment should be used if ventilation is inadequate and breathing of mists or vapours is likely.
Eye protection	If splash with liquid is possible, chemical type goggles should be worn.
Skin and body protection	Impervious gloves must be worn. Good personal hygiene practices should always be followed.

9. Physical And Chemical Properties

Appearance	Liquid
Colour	Blue
Odour	Mild
Solubility	Easy Soluble in cold water.
Boiling point / range	171 to 175 °C
Melting Point/range	-18°C
Specific gravity	1.12
Vapour Pressure	<0.013 kPa (<0.1mm Hg)
Vapour Density (Air=1)	2.1
Volatility	97% (v/v)



10. Stability And Reactivity

Stability	Stable
Condition to avoid	Extreme heat.
Materials to avoid	Strong oxidizers
Hazardous decomposition products	Fumes, smoke and carbon monoxide.

11. Toxicological Information

Acute oral toxicity	(Rats): Toxic (LD50: Greater than 2000 mg/kg). Based on testing of similar products and / or components.
Acute inhalation toxicity	(Rats): Harmful (LC50: Greater than 5 mg/l). Based on testing of similar products and / or components.
Acute dermal toxicity	(Rabbits): Practically non-toxic (LC50: greater than 2000mg/l). Based on testing of similar products and / or components.
Skin irritation	(Rabbits): Practically non-irritating.
Eye irritation	(Rabbits): Irritant. (Draize score: greater than 6 but less than 35). Based on testing of similar products and / or the components.
Repeated dose toxicity	Small quantities of ethylene glycol ingested, inhaled or absorbed through the skin repeatedly over a prolonged period of time may result in systemic toxic effects. Rates fed 1-2 percent ethylene glycol for two years suffered severe kidney damage, liver damage and bladder stones. Inhalation studies for two years at 100 ppm with 7 species of animal did not result in any adverse effects other than respiratory irritation. No carcinogenic effects were observed in animals when they were either injected with the solvent or fed at one percent in the diet for two years. Carcinogenic effects are not known to occur in humans exposed to ethylene glycol.
Toxicity to reproduction	Ethylene glycol, when administered orally to pregnant rats at 2250 mg/kg/day caused some malformations of the offspring. The NOEL was 1250 mg/kg/day. No developmental or teratological effects were observed in rabbits administered 2000 mg/kg/day orally. Aerosols of 2500 mg/m ³ during organogenesis resulted in teratogenic effects in mice but not rats. Nose-only exposure of mice to aerosols of 1000mg/m ³ resulted in developmental effects but minimal teratogenic effects. The NOEL based on maternal toxicity was 500 mg/m ³ . When applied to the skin of rats during organogenesis no teratogenic effects were observed. Although these effects are not known to occur in humans, precautionary measures should be taken to avoid exposure during pregnancy, particularly in the early stages.
Mutagenicity	Ames test: Negative. Mouse Lymphoma (L5178Y/TK+/-) Assay: Positive
Other Toxicological Information	Orally, ethylene glycol is more toxic to humans than animal test data indicates. Probable lethal dose for an adult is 100 ml. Smaller doses can cause serious kidney injury.



12. Ecological Information

Elimination information (persistence and durability)

Biodegradability	Readily biodegradable.
Physic-chemical removability	Soluble in water.
Bioaccumulation	Does not bio-accumulate significantly.
Eco toxicity effects	
Toxicity to fish	(Leuciscus idus) LC/EC50: >100mg/l at 96 hours.
Toxicity to aquatic organisms	(Daphnia magna) LC/EC50: >100 mg/l at 48 hours.
Further information on ecology	
Remarks	AOX: This product contains no organically bound halogen.

13. Disposal Considerations

Waste disposal	Dispose of waste at an appropriate disposal facility in accordance with current applicable laws and regulations.
Contaminated packaging	Empty containers retain residue (liquid and / or vapour) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.
Other regulations	Disposal of unused product may be subject to RCRA regulations (40 CFR, 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity, or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP).

14. Transport Information

Note	This product is not regulated by the following: CFR and IATA.UN number
ADR	
UN number	3082
Class	9
Packaging group	III
Labelling number	9
Product Reportable Quantity	2,200 kg
IMDG	
UN number	3082



Class	9
Packaging group	III
Labelling number	9
Product Reportable Quantity	

15. Regulatory Information

US OSHA Hazard Communication Standard	When used for its intended purposes, this product is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.
Governmental Inventory	All components comply with TSCA, EINECS, AICS, METI, DSL, KECI, ENCS, PICCS and IECSC.
EU labelling	Product is not dangerous as defined by the European Union Dangerous Substances / Preparations Directives. EU labelling not required.
SARA	
U.S Superfund Amendments and Reauthorization Act SARA Title III	This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".
SARA (311/312) Reportable Hazard Categories	Chronic Acute
SARA (313) Toxic Release Chemicals:	Ethylene Glycol (107-21-1) – Cone > 90 %

The following product ingredient are cited on the list below

Chemical name	Cas- no.	Concentration (%)	List Citations
Ethylene Glycol	107-21-1	>= 90.00	1,10,18,19,20,21,23,24,25,26

Regulatory List Searched

1=ACGIH ALL	6=IARC 1	11=TSCA 4	17=CA P65	22=MI 293
2=ACGIH A1	7=IARC 2A	12=TSCA 5a2	18=CA RTK	23=MN RTK
3=ACGIH A2	8=IARC 2B	13=TSCA 5e	19= FL RTK	24=NJ RTK
4=NTP CARC	9=OSHA CARC	14=TSCA 6	20=IL RTK	25=PA RTK
5=NTP SUS	10=OSHA Z	15=TSCA 12b	21=LA RTK	26=RI RTK

Code Key: CARC = Carcinogen; SUS = Suspected Carcinogen

16. Other Information

Note: Afriq Lube products do not contain PCBs.

Health studies have shown that many hydrocarbons pose potential human health risks which may vary from person to person. Information provided on this MSDS reflects intended use. This product should not be used for any other applications. In any case, the following advice should be considered:



INJECTION INJURY WARNING

If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

Empty container may contain product residue, including flammable or explosive vapours. Do not cut, puncture, or weld on or near container. All label warnings and precautions must be observed until container has been thoroughly cleaned or destroyed.

Disclaimer

Information given here in is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond our control; all risks of use of the product are therefore assumed by the user and we expressly disclaim all warranties of every kind of nature, including warranties of merchantability and fitness for a particular purpose in respect to the use or suitability of the product. Nothing intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users.

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