SECTION 1 : PRODUCT AND COMPANY IDENTIFICATION

1.1 PRODUCT DETAILS

Product Type	:	Antifreeze Coolant/ Radiator
Coolant Chemical Name	:	Mixture
Chemical Formula	:	Not applicable
Chemical Family	:	Ethylene glycol
Use	:	Automotive or Industrial

1.2 COMPANY IDENTIFICATION

Supplier's Name	:	Ceylon Petroleum Corporation
Supplier's Address	:	No. 609, Dr Danister De Silva Mawatha, Baseline Road, Dematagoda Colombo-09
Emergency Tel. No.	:	+94-11 5455455
Fax No.	:	+94-11 5455400

SECTION 2 : HAZARD IDENTIFICATION

CLASSIFICATION: Target organ toxicant (repeated exposure): Category 2. Reproductive toxicant (development): Category 2

Signal Word : Warning

Health Hazards : suspected of damaging the unborn child.

Target Organs : May cause damage to organs (kidneys) through prolonged or repeated exposure.

PRECAUTIONARY STATEMENTS:

Prevention: Obtain special instruction before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/ vapour / spray. Use personal protective equipment as required.

Response : Get medical advice/ attention if feed unwell. If exposed or concerned: Get medical advice/attention.

Storage : Store locked up

Disposal : Dispose of contents/ container in accordance with applicable local/ regional/national/ international regulations

HAZARDS NOT OTHERWISE CLASSIFIED: Not applicable

SECTION 3 : COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	WT, %
Ethylene glycol	107-21-1	30-60
Potassium 2- ethylhexanoate	3164-85-0	<3.0

SECTION 4 : FIRST AID MEASURES

EYES CONTACT : Rinse eyes immediately with plenty of water. If irritation occurs, get medical attention. As a precaution, remove contact lenses, if worn, flush eyes with lots of water.

SKIN CONTACT : Remove affected clothing and wash all exposed skin area with mild soap and water, followed by warm water rinse. As a precaution, remove clothing and shoes if contaminated.

INHALATION : No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

INGESTION : If swallowed, get immediate medical attention. DO NOT INDUCE VOMITING. Never give anything by mouth to an unconscious person. Rinse mouth. Take to hospital.

Most important symptom and effects, both acute and delayed

IMMEDIATE HEALTH EFFECTS

Eye : Not expected to cause prolonged or significant eye irritation

Skin : Contact with the skin is not expected to cause prolonged or significant irritation. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin

Ingestion : Toxic: May be harmful or fatal if swallowed

Inhalation : Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, and weakness. Loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposure, central nervous system effects may include respiratory depression, tremors or convulsion. Loss of consciousness, coma or death.

DELAYED OR OTHER HEALTH EFFECTS:

Reproduction and Birth Defects: Contains material that may cause harm to the unborn child if swallowed based on animal data.

Target organs: Contains material that may cause damage to the following organ(s) following repeated inhalation at concentration above the recommended exposure limit. Kidney- risk depends on duration and level of exposure. See Section 11 for additional information.

Indication of any immediate medical
Attention and special treatment needed: Not Applicable

SECTION 5 : FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Use water, fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames. Dry chemicals , CO2, AFFF foam or alcohol resistant foam.

PROTECTION OF FIRE FIGHTERS:

Fire fighting instructions: This material will burn although it is not easily ignited. See Section 7 for proper handling and storage. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment including self-contained breathing apparatus.

Combustion Products: highly dependent on combustion conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

Protective measures: Eliminate all sources of ignition in vicinity of spilled material

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

Spill Management

Land Spill: Scrap up spilled material with shovels into a suitable container for recycle or disposal.

Environmental Precautions Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 : HANDLING AND STORAGE

GENERAL HANDLING INFORMATION: DO NOT taste or swallow antifreeze or solution. Keep out of children and animals.

Precautionary Measures: Do not get in eyes, on skin or on clothing. Do not breathe vapour or fumes. Wash thoroughly after handling. Keep out of the reach of children

Static Accumulator: This material is not a static accumulator.

Storage: Do not store in open or unlabelled containers

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and / or vapour) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame, sparks, static electricity or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

GENERAL CONSIDERATIONS:

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice. Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Natural rubber, Neoprene, Nitrile Rubber, Polyvinyl Chloride (PVC or Vinyl).

Respiratory Protection: Determine if airborne concentrations are below the recommended occupational exposure limits for jurisdiction of use. If airborne concentrations are above the acceptable limits, wear an approved respirator that provides adequate protection from this material, such as: Air-Purifying Respirator for Organic Vapors, Dusts and Mists.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Ethylene Glycol	ACGIH	--	--	100 mg/m3	--
Potassium 2-ethylhexanoate	Not Applicable	--	--	--	--

Consult local authorities for appropriate values

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification

Color: Green
Physical State: Liquid
Odor: Faint or Mild
Odor Threshold: No data available
PH: Min 7.0
Vapor Pressure: No data available
Vapor Density (Air = 1): 2.10
Initial Boiling Point: 109°C (228.2°F) (Estimated)
Solubility: Soluble in water.
Freezing Point: -18°C (-0.4°F) (Min)
Melting Point: Not Applicable
Specific Gravity: 1.12 @ 15.6°C (60.1°F)
Viscosity: No data available
Decomposition temperature: No data available
Octanol/Water Partition Coefficient: No data available

FLAMMABLE PROPERTIES:
Flammability (solid, gas): No Data Available

Flashpoint: Not Applicable
Autoignition: No data available
Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable
Upper: Not Applicable

SECTION 10 : STABILITY AND REACTIVITY

Reactivity: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility with Other Materials: Not applicable

Hazardous Decomposition Products: Aldehydes (Elevated temperatures), Ketones (Elevated temperatures)

Hazardous Polymerization: Hazardous polymerization will not occur

SECTION 11 : TOXICOLOGICAL INFORMATION

Information on toxicological effects

Serious Eye Damage/Irritation: The eye irritation hazard is based on evaluation of data for product
Components.

Skin Corrosion/Irritation: The skin irritation hazard is based on evaluation of data for product components.

Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for productcomponents.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for product components.

Acute Toxicity Estimate: Not Determined

Germ Cell Mutagenicity: The hazard evaluation is based on data for components or a similar material.

Carcinogenicity: The hazard evaluation is based on data for components or a similar material.

Reproductive Toxicity: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Single Exposure: The hazard evaluation is based on data for components or a similar material.

Specific Target Organ Toxicity - Repeated Exposure: The hazard evaluation is based on data for components or a similar material.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains ethylene glycol (EG). The toxicity of EG via inhalation or skin contact is expected to be slight at room temperature. The estimated oral lethal dose is about 100 cc (3.3 oz.) for an adult human. Ethylene glycol is oxidized to oxalic acid which results in the deposition of calcium oxalate crystals mainly n the brain and kidneys. Early signs and symptoms of EG poisoning may resemble those of alcohol intoxication. Later, the victim may experience nausea, vomiting, weakness, abdominal and muscle pain, difficulty in breathing and decreased urine output. When EG was heated above the boiling point of water, vapors formed which reportedly caused unconsciousness, increased lymphocyte count, and a rapid, jerky movement of the eyes in persons chronically exposed. When EG was administered orally to pregnant rats and mice, there was an increase in fetal deaths and birth defects. Some of these effects occurred at doses that had no toxic effects on the mothers. We are not aware of any reports that EG causes reproductive toxicity in human beings.

2-Ethylhexanoic acid (2-EXA) caused an increase in liver size and enzyme levels when repeatedly administered to rats via the diet. When administered to pregnant rats by gavage or in drinking water, 2-EXA caused teratogenicity (birth defects) and delayed postnatal development of the pups. Additionally, 2-EXA impaired female fertility in rats. Birth defects were seen in the offspring of mice who were administered sodium 2-ethylhexanoate via intraperitoneal injection during pregnancy.

SECTION 12 : ECOLOGICAL INFORMATION

ECOTOXICITY

This material is not expected to be harmful to aquatic organisms. The product has not been tested. The statement has been derived from products of a similar structure and composition.

MOBILITY
No data available.

PERSISTENCE AND DEGRADABILITY

This material is expected to be readily biodegradable. The biodegradability of this material is based on an evaluation of data for the components or a similar material. The product has not been tested. The statement has been derived from the properties of the individual components.

POTENTIAL TO BIOACCUMULATE:

Bioconcentration Factor: No data available.

Octanol/Water Partition Coefficient: No data available

SECTION 13 : DISPOSAL CONSIDERATION

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by international, country, or local laws and regulations

SECTION 14 : TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PROPRIETARY ANTIFREEZE PREPARATION IN NON-BULK PACKAGING; NOT REGULATED F O R TRANSPORT UNDER 49 CFR

Additional Information: Bulk shipments containing a reportable quantity (RQ, 5000 pounds or more) of ethylene glycol in a single packaging are transported as hazardous material. The shipping description is: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (ETHYLENE GLYCOL CONTAINS BITTERANT), 9, III, RQ (ETHYLENE GLYCOL)

IMO/IMDG Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER THE IMDG CODE

ICAO/IATA Shipping Description: NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORTATION UNDER ICAO TI OR IATA DGR.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: Not applicable

SECTION 15 : REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES:

1. Immediate (Acute) Health Effects: YES
2. Delayed (Chronic) Health Effects: YES
3. Fire Hazard: NO
4. Sudden Release of Pressure Hazard: NO
5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1 =IARC Group 1
01-2 A=IARC Group 2A
01-2B=IARC Group 2B
02=NTP Carcinogen
03=EPCRA 313
04=CA Proposition 65
05=MA RTK
06=NJ RTK
07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Ethylene Glycol 04, 05, 07

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), IECSC (China), PICCS (Philippines), TSCA (United States).

One or more components do not comply with the following chemical inventory requirements: ENCS (Japan), KECI (Korea).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 etc. seq., the product is to be identified as follows: Refer to components listed in Section 3.

SECTION 16 : OTHER INFORMATION

NFPA RATINGS: Health: 2 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 2* Flammability: 1 Reactivity: 0
(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category: ANTIFREEZE/COOLANT

SDS Revision Number	:	3
SDS Effective Date	:	02/10/2014
SDS Regulation	:	The content and format of this safety data sheet is in accordance with DOSH Malaysia - Industry Code of Practice 2014
SDS Distribution	:	The information in this document should be made available to all who may handle the product.

The information contained in this Safety Data Sheet is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.