

## Material Safety Data Sheet

### 1. Chemical and Company Identification

<b>Trade Name</b>	Leppon No 2, Tropical Weather Coolant
<b>Supplier</b>	Terbit Agensi Sdn Bhd No 7 & 9, Jalan 6/33B, MWE Kepong Commercial Park, Off Jalan Kepong, 51200 Kuala Lumpur, Malaysia
<b>Routine Enquiries</b>	++603-62588819
<b>Fax</b>	++603-62573950
<b>Chemical Description</b>	Radiator Coolant Premixed with water

### 2. Composition and Ingredients

Components	CAS No.	Range in %
<b>Ethylene Glycol</b>	107211	10-30
<b>Water</b>	7732185	>60
<b>Corrosion Inhibitor</b>		< 10

### 3. Hazards Identification

<b>Warning Statements</b>	HARMFUL OF FATAL IF SWALLOWED. MAY CAUSE IRRITATION TO THE EYES, SKIN AND RESPIRATORY TRACT. MAY CAUSE DIZZINESS AND DROWSINESS. ASPIRATION HAZARD IF SWALLOWED. CAN ENTER LUNGS AND CAUSE DAMAGE
<b>Eyes</b>	May cause slight eye irritation
<b>Oral</b>	May be toxic by ingestion. Ingestion of this product and subsequent vomiting can result in aspiration into the lungs, causing chemical pneumonia and lung damage. Liver and kidney damage have been reported to occur following significant over exposures
<b>Inhalation</b>	Product not volatile at ambient temperatures. Vapours, mist or fumes in high concentrations, as generated from spraying or heating in an enclosed space, may cause irritation. Breathing the vapour or mist at concentrations in air that exceed the ACGIH TLV can cause central nervous systems effects.
<b>Skin</b>	Brief contact may cause slight irritation. Prolonged contact can cause more severe irritation and discomfort, seen as local redness and swelling.
<b>Long Term Toxic Effects</b>	Contains a solvent that may cause adverse systemic effects when ingested, inhaled, or absorbed through the skin. See Section 11 for additional information.

#### 4. First Aid Measures

<b>Eyes</b>	Flush eyes immediately with fresh water for several minutes while holding the eyelids open. If irritation persists, see a doctor
<b>Skin</b>	Wash skin thoroughly with soap and water. If skin irritation persists or a rash develops as a result of excessive contact, see a doctor
<b>Ingestion</b>	If swallowed and person is conscious, give water or milk. DO NOT make person vomit except on advice of medical personnel. If advice cannot be obtained, take person with container and label to nearest emergency treatment center. Never give anything by mouth to an unconscious person
<b>Inhalation</b>	If there are signs or symptoms as described in this MSDS due to breathing this material, move the person to fresh air. If breathing has stopped, apply artificial respiration. Call a doctor
<b>Advice to Doctor</b>	<p>Signs of toxicity may resemble those of general anaesthetics with initial excitement followed by depression. Symptoms may include behavioural changes, drowsiness, vomiting, diarrhea, thirst, and convulsions. Nephrotoxicity may occur. End stages of poisoning may include renal damage or failure with acidosis. Intravenous administration of ethanol has been suggested as an antidote for ethylene glycol/diethylene glycol toxicity. Other antidotal treatments also exist for ethylene glycol poisoning. Prompt treatment may reduce kidney damage, supplemented if necessary with hemodialysis.</p> <p>Gastric lavage by qualified medical personnel may be considered, depending upon quantity of material ingested.</p> <p>This product may present an aspiration hazard. See related comments in this MSDS. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed upto 48 hours.</p>

#### 5. Fire Fighting Measures

<b>Ignition Temperature, °C</b>	Not determined
<b>Flammable Limits (% by Volume)</b>	Not applicable
<b>Flash Point, °C</b>	>0 Not applicable
<b>Fire Extinguishing Agents</b>	According to the US National Fire Protection Association Guide, use water spray, dry chemical, foam or carbondioxide. Water or foam may cause frothing. Use water to cool fire-exposed containers. If a leak or spill has not ignited. use water sprav to disperse the vanours and

	to provide protection for persons attempting to stop the leak
<b>Explosion Hazards</b>	For fires involving this material, do not enter any enclosed or confined space without self-contained breathing apparatus to protect against the hazardous effects of combustion products or oxygen deficiency.

## 6. Accidental Release Measures

<b>In case of Spill</b>	Stop the source of the leak or release and contain spill if possible. Ventilate the area. Use respirator and protective clothing as discussed in this MSDS. Cover spill with a generous amount of inert absorbent. Use a stiff broom to mix thoroughly. Sweep up and place in a disposable container. Scrub contaminated area with detergent and water using a stiff broom. Pick up liquid with additional absorbent and place in a disposable container. Prevent contamination of ground water or surface water.
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## 7. Handling and Storage

Minimum feasible handling temperatures should be maintained. Periods of exposure to high temperatures should be minimised. Water contamination should be avoided.
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## 8. Exposure Control/Personal Protection

<b>Eyes</b>	Avoid eye contact. The wearing of chemical safety goggles or face shield is recommended.
<b>Skin</b>	Exposed employees should exercise reasonable personal cleanliness; this includes cleansing exposed skin several times daily with soap and water, and laundering or dry cleaning soiled work clothing at least weekly.
<b>Inhalation</b>	Respiratory protection is normally not required. However, if operating conditions create airborne concentrations which exceed the recommended exposure standard(s), the use of an approved respirator is recommended. Wear approved respiratory protection such as toxic dust, mist and fume respirator.
<b>Ventilation</b>	No special ventilation is usually necessary. However if operating conditions create high airborne concentrations of this material, engineering controls may be needed. Local exhaust ventilation and/or enclosure of the processes is preferred in these cases
<b>Exposure Limits</b>	The ACGIH TLV for ethylene glycol is 100 ppm as a ceiling limit not to be exceeded at anytime during the work schedule.

## 9. Physical and Chemical Properties

Note: The following data may represent a range of approximate or typical values for products in the same family. Precise technical information is provided in Product Bulletins and can be obtained from your Marketing Representative.

<b>Appearance and Odor</b>	Flourescent Green or colorless liquid, mild odor
<b>Boiling Point</b>	>110
<b>Vapor Pr (mmHG @ 25 °C)</b>	Low
<b>Density( kg/l at 15 °C)</b>	1.0 to 1.13
<b>Vapor Density (Air=1)</b>	2
<b>Undiluted product's pH</b>	More than 8
<b>Solubility in Water</b>	>10%
<b>Percent Volatile by Volume</b>	Not determined
<b>Evaporation</b>	Not determined
<b>Viscosity (All Product Grades)</b>	<20 mm <sup>2</sup> /s at 40 °C

## 10. Stability and Reactivity

<b>Hazardous Polymerizations</b>	DO NOT OCCUR
<b>Products of Combustion</b>	Carbon monoxide/carbon dioxide formed during burning in limited air
<b>Conditions to Avoid</b>	Strong oxidizers as chlroates, nitrates, peroxides etc and heat

## 11. Toxicological Information

<b>General</b>	<p>This product contains ethylene glycol (EG) and/or diethylene glycol (DEG) which are poorly absorbed through the skin, and which are usually not hazardous via inhalation unless working conditions result in heating or spraying of the material. Aerosols or mists are extremely irritating and are generally not tolerated at high levels, therefore significant absorption and exposure is unlikely. EG and °Can cause severe intoxication when swallowed in a single dose, due to the action of several toxic metabolites. The estimated oral lethal dose of undiluted material is about 100 cc (3.3 Oz) for an adult human. Early symptions may resemble those of alcohol intoxication. Later symptions may include behavioural changes, drowsiness, vomitting, diarrhea, thirst, convulsions, cyanosis, rapid heart rate and kidney failure, depending upon the dose. The cause of death is usually acute central nervous system depression or subsequent kidney damage. Acute or chronic consumption of products containing EG can product health effects in humans. The major health effects observed in animals following repeated ingestions are on the central</p>
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	nevous system, liver, kidney and reproductive/developmental systems. While normal use of this material should not result in any adverse effects, we strongly recommend that the precautions outlined in this MSDS be followed to minimize skin contact and keep inhalation of mists to a minimum.
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## 12. Ecological Information

<b>Environmental Effects</b>	This product is expected to hae a moderate (more than or equal to 30%) rate of biodegradation, and a low potential to bioaccumulate
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## 13. Disposal Considerations

<b>Waste Disposal</b>	Check governmental regulations and local authorities for approved disposal of this material
<b>Remarks</b>	Releases of this product should be prevented from containing soil, and from entering drainage, sewer systems, and all bodies of water.

## 14. Transport Information

<b>UN Number</b>	N/A
<b>Dangerous Goods Class</b>	N/A
<b>Proper Shipping Name</b>	N/A
<b>Hazchem Code</b>	Not determined
<b>Additional Information</b>	None determined

## 15. Regulatory Information

<b>Respirator Information</b>	In the absense of local approval authorities/standards, follow US NIOSH/MSHA, UK BSI regulations. Respirators must meet either the above or local standard for approved respirators
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**16. Other Information** — No specific notes on this product.

