# MATERIAL SAFETY DATA SHEET

## 1. IDENTIFICATION

**PRODUCT NAME**  
PERTAMINA RADIATOR COOLANT  
**OTHER MEANS OF IDENTIFICATION**  

This fluids is used as coolant for engine as mentioned in the PDS (Product Data Sheets) application recommendation.

**SUPPLIER’S DETAILS**  
Company Name: PERTAMINA  
Address: Gedung Oil Center  
JL. MH. Thamrin Kav. 55  
Central Jakarta  
Post Code: 10350  
Phone: 021-31907195  
Facsimile: 021-31907992

**EMERGENCY PHONE NUMBER**  
Phone: 021-31907195 (Monday-Friday, 7:00 am - 3:30 pm)

## 2. HAZARDS IDENTIFICATION

**CLASSIFICATION OF THE SUBSTANCE OR MIXTURE**  
Classification required according to GHS is Flammable Liquid Category 1 and Irritant

**GHS LABEL ELEMENTS**

<table>
<thead>
<tr>
<th>Irritant</th>
<th>Flammable</th>
</tr>
</thead>
</table>

**OTHER HAZARD**  
Hazardous Material Decomposition: Oxides of carbon, oxides of nitrogen (NOx), toxic gases/vapours

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

**CHEMICAL IDENTITY OF THE MIXTURES**  
Ethylene Glycol

**CHEMICAL MIXTURES COMPONENTS**  
Mixture of ethylene glycol and water with a trace, amount of antioxidant and inhibitor.

## 4. FIRST AID MEASURES

**Eye contact**  
Rinse with plenty of water for 15 minutes minimum. If there is an eye irritation, please contact the doctor.

**Skin contact**  
Wash the exposure skin with water and soap. If irritation occurs, get medical attention.

**Inhalation**  
Remove to fresh air. If breathing is difficult, have trained personal administer oxygen. If respiration stop, give mouth to mouth resuscitation. Get medical attention.

**Ingestion**  
Give 1 or 2 glass of water, then induced vomiting by having patient tickle back of throat with finger. Keep airway clear. Get medical attention immediately.
5. FIRE FIGHTING MEASURE

**Fire Extinguisher**
Carbon dioxide, alcohol foam, dry powder and water spray

**Fire Extinguished Procedure**
Will choke with spraying or cooling, with extinguishing media. Wear full protective clothing and self-contained breathing apparatus.

**Flash point, °C**
122 (ASTM D-92)

**Hazardous Material Decomposition**
Carbon monoxide, and or oxygenated hydrocarbon.

**Special Protector Equipment**
The fireman have to wear *Self Contained Breathing Apparatus* (SCBA)

6. ACCIDENTAL RELEASE MEASURE

**Personal Precautions**
Remove all sources of ignition. Avoid contact with skin, eyes, and clothing. (see Section 8 for detailed)

**Procedure note**
Report the spill happened according to system and procedure decided. If the spill could be enter the aqueduct or river, please report to authority officer as soon as possible.

**Environmental Precautions**
Do not flush into surface water, sanitary sewer or ground water system

**Leakage and Spill Procedure**
Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect the spilled product into suitable containers, which must be tightly sealed and properly labeled.

7. HANDLING AND STORAGE

**Handling**
There is no special action. See section 8 for the suggestion of wearing protection equipment when handling this product. Container must be closed if not in used.

**Storage**
Store in cool, dry, well ventilated area away from incompatible materials. Do not mix with strong oxidants. Keep away from heat, sparks, and flames.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

**Ventilation**
Local exhaust recommended to control vapors, mists, or spray.

**Breath Protection**
Air purifying with organic cartridges, air supplied if other protective measures do not adequately control exposure to vapors. For emergencies and unknown concentrations, use positive pressure self-contained breathing apparatus.

**Eye Protection**
Wear chemical safety goggle or full face shield and chemical goggles to protect against splashing.

**Skin Protection**
Regulation for personnel hygiene still have to give a notice. Wear chemical gloves, such as butyl rubber of PVC coated.

**Exposure limit**
Not tested
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point, °C</td>
<td>165 °C</td>
</tr>
<tr>
<td>Freezing Point, 50 vol%</td>
<td>-36.6</td>
</tr>
<tr>
<td>Density at 20 °C, g/cm³</td>
<td>1.129</td>
</tr>
<tr>
<td>pH Value</td>
<td>7.9</td>
</tr>
<tr>
<td>Foaming Property, ml</td>
<td>0</td>
</tr>
<tr>
<td>Water Content, %</td>
<td>4.2</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

- **Situation/condition have to avoid**: Nor determined
- **Material have to avoid**: Strong oxidizing materials and high oxygen concentration
- **Hazardous decomposition products**: Carbon monoxide, and or oxygenated hydrocarbon.

11. TOXICOLOGICAL INFORMATION

<table>
<thead>
<tr>
<th>Route of Exposure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eye Contact</strong></td>
<td>May cause moderate to severe irritation and moderate transient corneal injury depending upon the concentration of the ethylene glycol.</td>
</tr>
<tr>
<td><strong>Skin Contact</strong></td>
<td>May cause irritation if left in contact with skin. Contact with large areas of skin for extended periods of time may result in the absorption of toxic amounts.</td>
</tr>
<tr>
<td><strong>Ingestion</strong></td>
<td>May cause irritation of the gastrointestinal tract, central nervous system and kidney disturbances.</td>
</tr>
<tr>
<td><strong>Inhalation</strong></td>
<td>Inhalation of mists may cause respiratory tract irritation, and central nervous system effects including headache, narcosis, weakness slurred speech and blurred vision. On the basis of the low vapor pressure of the product, inhalation of vapor is unlikely except at elevated temperatures.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exposure</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acute</strong></td>
<td>May cause severe to moderate eye irritation and transient corneal injury. Slightly irritation to the skin with prolonged contact. Ingestion may produce central nervous system and gastrointestinal disturbances. Due to low vapor pressure, exposure by inhalation is minimal under normal handling condition.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Agency</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTP</td>
<td>None</td>
</tr>
<tr>
<td>IARC Monograph</td>
<td>None</td>
</tr>
<tr>
<td>OSHA Regulation</td>
<td>None</td>
</tr>
</tbody>
</table>

12. DISPOSAL CONSIDERATIONS

- **Waste disposal**: Treat with burning or biological decomposition of the fluid. Entrust the disposal of the industrial waste to a trader concerned.
13. TRANSPORTATION INFORMATION

Not regulated

14. REGULATION INFORMATION

Material is mixture of ethylene glycol with water a trace, amount of antioxidant and inhibitor.

**OSHA PEL**
Not applicable

**ACGIH TLV**
Not Applicable

15. ANOTHER INFORMATION

Product condition and product fitting on special application out of company guarantee; all of the using risk will be the user responsibility. User and officer that handling this product must have the warning and product handling procedure. It’s forbidden to change this document, except with law legacy.