DESCRIPTION

All Fleet HDD Coolant is a luminescent green coloured, superior, fully formulated Hybrid technology engine coolant. This Hybrid technology coolant has the advantage of being more robust than both conventional and organic acid technology (OAT) engine coolants. This low silicate, phosphate and amine free product is recommended for use in automotive (aluminium compatible), light duty and heavy duty diesel applications namely onroad truck, offroad, farm and marine. It provides excellent high temperature aluminium protection.

It does not require an initial charge of supplemental coolant additives (SCAs) upon initial fill in heavy duty diesel applications as the product is specially formulated to protect heavy duty diesel wet sleeve liners. SCA addition is application dependant and should only be added as and when required by the vehicle’s OEM. This coolant is compatible with coolant filters and heavy duty diesel SCAs and coolant extenders.

SUMMARY OF BENEFITS

- When used as a 50% coolant with softened or deionized water, this engine coolant offers the following advantages:
  - Low silicate
  - Phosphate and amine free
  - OEM approved
  - Hard water compatible
  - No initial SCA requirement at initial fill
  - Universal use, fully meets or exceeds standard industry requirements for automotive, light duty, and heavy duty diesel applications
  - Product is compatible with both conventional and OAT coolants although to get best performance (regarding issues such as extended life and time between SCA additions) it is best to flush the old coolant and replace with All Fleet HDD
  - Product is compatible with standard SCAs and coolant extenders
  - Extended life 6 years, 12,000 hours or 1,000,000km whichever comes first

SPECIFICATIONS

All Fleet HDD Coolant meets or exceeds the performance requirements of the following engine coolant specifications:

- ASTM D3306, D4985, D6210
- Caterpillar
- Cummins 14603
- Detroit Diesel 7SE 298
- Daimler Chrysler MS 7170, MS 9769
- Ford ESEM97B44A, ESEM97B18C, Ford WSSM97B51A1
- Freightliner 482288D
- GM 1825M, 1899M, GM Heavy Truck
- Hyundai
- JIS K2234
- Kenworth RO2617097
ALL FLEET (HDD) COOLANT
HEAVY DUTY DIESEL

SPECIFICATIONS (CONTINUED)

- Landrover
- MACK Trucks
- MAN 324
- Mercedes-Benz DBL 325
- MTU MTL 5048
- White Star
- US Federal AA870A
- New Holland WSNM97B18-D
- PACCAR
- Peterbilt 8502.002
- Perkins
- Saab-Scania 6901
- SAE J1034, J1941
- TMC RP 329
- Volvo Heavy Truck

All Fleet HDD Coolant provides exceptional summer cooling and excellent freezing protection during winter. It should not be used in concentrated form. A 50% dilution (i.e. when mixed with an equal volume of high quality soft, deionized or distilled water) is generally recommended for the best balance of protection against freezing, corrosion and summer boilover.

For increased freezing protection in extremely cold areas a 60% volume concentration can be used. Concentrations of greater than 70% by volume are not recommended.

All Fleet HDD Coolant provides excellent value as an aluminium compatible, universal, long life engine coolant. Along with this value, Gulf Western offers you and your customers continuing commitment to:

- Reliable supply
- Consistent high quality product
- Unsurpassed technology
- Valuable technical service backup
- Education on safe use and handling

STORAGE

All packages should be stored under cover to avoid the possible ingress of water and the obliteration of drum markings. Products should not be stored above 60°C.

HEALTH, SAFETY AND ENVIRONMENT

Health, safety and environmental information is provided for this product in the relevant Materials Safety Data Sheet, which can be obtained by contacting Gulf Western Oil on: 02 9673 9600.
PERFORMANCE TESTING

<table>
<thead>
<tr>
<th>COUPON</th>
<th>ASTM D1384 GLASSWARE CORROSION</th>
<th>ASTM D2570 SIMULATED SERVICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>TYPE¹</td>
<td>TEST RESULTS¹</td>
<td>MAX SPEC¹</td>
</tr>
<tr>
<td>Copper</td>
<td>1.7</td>
<td>10</td>
</tr>
<tr>
<td>Solder²</td>
<td>4.3</td>
<td>30</td>
</tr>
<tr>
<td>Brass</td>
<td>0.6</td>
<td>10</td>
</tr>
<tr>
<td>Steel</td>
<td>0.1</td>
<td>10</td>
</tr>
<tr>
<td>Cast Iron</td>
<td>+0.8</td>
<td>10</td>
</tr>
<tr>
<td>Aluminium</td>
<td>+0.3</td>
<td>30</td>
</tr>
</tbody>
</table>

1. Wt. loss coupon in mg. 2. Copper/brass radiator results. 3. Regular 70/30 lead on copper/brass coupons.

ASTM TEST PROCEDURE | TEST RESULTS | SPECIFICATION
D4340 Heat Rejecting Aluminium Corrosion | 0.16 mg/cm²/week | 1.0 maximum
D2809 Aluminium Water Pump Cavitation Erosion Corrosion (rating from 1 to 10) | 10 | 8 minimum

Shelflife stability: minimum 2 years from date of manufacture.
# All Fleet (HDD) Coolant

## Typical Characteristics

<table>
<thead>
<tr>
<th>ALL FLEET (HDD)</th>
<th>Test Method</th>
<th>Units</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH 50%</td>
<td>ASTM D1287</td>
<td>(ml)</td>
<td>7.6 - 8.5</td>
</tr>
<tr>
<td>Reserve Alkalinity</td>
<td>ASTM D1121</td>
<td>(ml)</td>
<td>6 min.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>ASTM D1122</td>
<td>(15.6°C/60°F)</td>
<td>1.125 - 1.135</td>
</tr>
<tr>
<td>Freeze Point</td>
<td>ASTM D1177</td>
<td>(50% vol.)</td>
<td>-37°C/-34°F</td>
</tr>
<tr>
<td>Foam Volume</td>
<td>ASTM D1881</td>
<td>(ml)</td>
<td>50 max.</td>
</tr>
<tr>
<td>Break Time</td>
<td>ASTM D1881</td>
<td>(sec)</td>
<td>5 max.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>ASTM D92</td>
<td>-</td>
<td>116°C/240°F</td>
</tr>
<tr>
<td>Fire Point</td>
<td>-</td>
<td>-</td>
<td>120°C/248°F</td>
</tr>
<tr>
<td>Ash Content</td>
<td>ASTM D1119</td>
<td>(wt. %)</td>
<td>5 max.</td>
</tr>
<tr>
<td>Odour</td>
<td>-</td>
<td>-</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Colour</td>
<td>-</td>
<td>-</td>
<td>Luminescent Green</td>
</tr>
<tr>
<td>Total Glycols</td>
<td>-</td>
<td>(Weight %)</td>
<td>94.0 min.</td>
</tr>
<tr>
<td>Inhibitors and dye</td>
<td>-</td>
<td>(Weight %)</td>
<td>5.0 max.</td>
</tr>
<tr>
<td>Total Apparent Water</td>
<td>-</td>
<td>(Weight %)</td>
<td>3.5 max.</td>
</tr>
<tr>
<td>Chloride</td>
<td>ASTM D3634</td>
<td>ppm</td>
<td>25 max.</td>
</tr>
<tr>
<td>Silicon</td>
<td>ICP</td>
<td>ppm</td>
<td>185 max.</td>
</tr>
</tbody>
</table>

Typical characteristics are only a guide to industry and are not necessarily manufacturing or marketing specifications and do not constitute any legal liability.

## Available Pack Sizes

- **Pre Mixed**: IBC - 40055B, 205lt - 40055, 20lt - 42055, 5lt - 40555
- **Concentrate**: IBC - 40054B, 205lt - 40054, 20lt - 42054, 5lt - 40554