HAVOLINE® UNIVERSAL ANTIFREEZE/Coolant

PRODUCT DESCRIPTION

Havoline® Universal products are single phase, ethylene glycol antifreeze/coolants based on patented aliphatic carboxylate corrosion inhibitor systems and are available as a concentrate and a 50/50 pre-dilute.

CUSTOMER BENEFITS

Havoline Universal Antifreeze/Coolants deliver value through:

- **Wide service application** — Recommended use in Domestic, Asian and European automotive and light duty truck applications including newer hybrid vehicles.¹
- **Long Service Life** — 150,000 miles/240,000 km/5 years of cooling system protection.
- **Beneficial formulation** — Organic additive formulation that is free of silicate, nitrite, borate, phosphate, nitrate and amines and which promotes long service life.
- **Compatibility** — Compatible with other extended life coolant formulations. Note: It is recommended that this product not be diluted by more than 25% with other coolant formulations.
- **Performance** — Exceptional protection at high operating temperatures. Minimizes the occurrence of hard water scale.
- **Wide temperature application** — Protects against winter freeze up and minimizes chances of summer boil over.
- **Managed Inventory Costs** — Can be used in mixed fleet applications where both cars and light duty trucks are present from various manufacturers.¹
- **Stability** — Storage stability for at least 8 years.

FEATURES

Havoline Universal Antifreeze/Coolants are designed for all makes and all models of automobile and light duty trucks regardless of fuel type built by American, European, or Asian OEMs.¹ This product is dyed yellow, which allows it to be used as top-up in any automobile or light duty truck application without changing the existing coolant color. Havoline Universal is recommended for use in general service applications where cooling system warranty maintenance is not required. Mixing of Havoline Universal with other products will reduce its extended life properties.

Note: These products are not to be used to protect the inside of potable water systems against freezing.

APPLICATIONS

Recommended Applications for Havoline Universal Antifreeze/Coolants:

- All makes and all models of automotive and light duty trucks regardless of fuel type¹
- Meets or exceeds: ASTM D3306
- It is recommended that this product not be diluted with other coolant formulations by more than 25% in order to maintain performance claims.

¹ Some OEMs require the use of silicate containing coolants. Follow your OEM’s recommendation.
PRODUCT DILUTION AND BOIL OVER
PROTECTION RECOMMENDATIONS FOR
HAVOLINE® UNIVERSAL ANTIFREEZE/
COOLANT - CONCENTRATE

Boiling Protection, °F/°C
(using a 15 lb pressure cap)
50% 1:1 (1 part antifreeze/1 part water) 265/129
40% 2:3 (2 parts antifreeze/3 parts water) -12/-24
50% 1:1 (1 part antifreeze/1 part water) -34/-37
60% 3:2 (3 parts antifreeze/2 parts water) -62/-52

Freezing Protection, °F/°C
40% 2:3 (2 parts antifreeze/3 parts water) -12/-24
50% 1:1 (1 part antifreeze/1 part water) -34/-37
60% 3:2 (3 parts antifreeze/2 parts water) -62/-52

Notes
• Product concentrates should be agitated before use or dilution.
• Prediluted 50/50 products should be used as purchased.
• For optimum year round protection against freezing, boiling and corrosion, a 50 percent Havoline Universal (1 part antifreeze/1 part water) is recommended.
• For maximum protection against freezing in extremely cold areas, a 60 percent solution of Havoline Universal Antifreeze/Coolant - Concentrate (3 parts antifreeze/2 parts water) can be used. Concentrations greater than 67 percent are not recommended.
• Always dispose of used coolant in accordance with local, state and federal guidelines.

PRODUCT REFERENCE
Note: Bitterant is a flavor aversive that may help reduce the accidental ingestion of this product. These products contain bitterant.

Product Number 227062
SDS Number 14875
Havoline Universal Antifreeze/Coolant - Concentrate

Product Number 227063
SDS Number 14879
Havoline Universal Antifreeze/Coolant - Premixed 50/50

TYPICAL TEST DATA
HAVOLINE UNIVERSAL ANTIFREEZE/COOLANT - CONCENTRATE

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Light Yellow</th>
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<tbody>
<tr>
<td>Specific gravity</td>
<td>15/15°C</td>
</tr>
<tr>
<td></td>
<td>1.130</td>
</tr>
<tr>
<td>Freezing point, °C.a, ASTM D1177</td>
<td>-37</td>
</tr>
<tr>
<td>pHb, ASTM D1287</td>
<td>8.3</td>
</tr>
<tr>
<td>Reserve alkalinityc, ASTM D1121</td>
<td>6.0</td>
</tr>
<tr>
<td>Silicate, %d</td>
<td>None</td>
</tr>
</tbody>
</table>

Minor variations in product typical test data are to be expected in normal manufacturing.

HANDLING PRACTICES
The primary limiting factor in the shelf life of a coolant is silicate instability. Since silicate will eventually polymerize to silicate gel, silicate containing coolants have a shelf life of about 18 months. Havoline Universal Antifreeze/Coolants are silicate-free and therefore can be stored for at least 8 years, provided the integrity of the container is maintained. Product should be agitated before use.