Royal Geoguard 500 Mid-Ash

*Mid-Ash Natural Gas Engine Oil/ Compressor Oil*

Royal Geoguard 500 Mid-Ash represents a premium line of lubricants formulated for the crankcase, the power and compressor cylinders of spark-ignited, two cycle and four-cycle gas-fueled engines. These oils provide maximum resistance to oxidation and corrosion while providing excellent anti-wear performance. The full range of viscosity grades enables the user to select a lubricant that best combines the performance and economy for each engine style, fuel quality as well as the severity of its service. This mid-ash oil combines the effective dispersant/detergent package with oxidation and corrosion inhibitors, anti-foam additives as well as anti-wear agents making it suitable for use in the engines of the major equipment manufacturers. This unique formulation is recommended for use in both the naturally aspirated and turbo charged two and four-cycle engines.

The superior level of cleanliness along with the other advantages makes the Royal Geoguard 500 Mid-Ash the best choice for the leaner spark-ignited engines that require the low to mid ash oils.

**Performance Features:**
- Uses high viscosity base oils with low carbon residues to lessen the formation of carbon and varnish.
- Minimizes the oxidation of the oil thus extending its life
- Higher alkalinity reduces combustion acids created from sour gas

**Customer Benefits:**
- Controls deposits and minimizes wear of pistons, rings and liners.
- Increased resistance to oil nitration and oxidation leads to longer oil service life and reduced maintenance
- Compatible with engines equipped with catalytic converters

**Applications:**

**Four Cycle engines:**  
(High and Medium Speed)  
Caterpillar  
Cooper-Besser  
Cummins  
Dresser-Rand: Categories I, II & III  
Superior  
Waukesha  
Worthington  
API CG

**Two cycle engines:**  
Selected models only  
Ajax  
Clark (Dresser Industries)  
Worthington
**Typical Properties**

<table>
<thead>
<tr>
<th>Royal Geoguard 500 Mid-Ash</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product Number</strong></td>
<td>154</td>
<td>155</td>
<td>156</td>
<td>157</td>
<td>Test Method</td>
</tr>
<tr>
<td><strong>SAE Grade</strong></td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>15W40</td>
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<tr>
<td><strong>Viscosity@40°C, cSt</strong></td>
<td>69</td>
<td>108</td>
<td>135</td>
<td>98</td>
<td>ASTM D445</td>
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<tr>
<td><strong>Viscosity@100°C, cSt</strong></td>
<td>8.7</td>
<td>11.7</td>
<td>13.5</td>
<td>14.2</td>
<td>ASTM D7042</td>
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<tr>
<td><strong>Viscosity @100F, SUS</strong></td>
<td>364</td>
<td>560</td>
<td>698</td>
<td>513</td>
<td>Calculated</td>
</tr>
<tr>
<td><strong>Viscosity @210F, SUS</strong></td>
<td>55</td>
<td>66</td>
<td>73</td>
<td>77</td>
<td>Calculated</td>
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<tr>
<td><strong>Viscosity Index</strong></td>
<td>96</td>
<td>95</td>
<td>95</td>
<td>7</td>
<td>Calculated</td>
</tr>
<tr>
<td><strong>Cold Cranking, Cp</strong></td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>&lt;7000 (-20°C)</td>
<td>ASTM D5293</td>
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<tr>
<td><strong>Pour Point, °C</strong></td>
<td>-18</td>
<td>-18</td>
<td>-18</td>
<td>-27</td>
<td>ASTM D97</td>
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<tr>
<td><strong>Flash Point, °C</strong></td>
<td>&gt;220</td>
<td>&gt;250</td>
<td>&gt;250</td>
<td>&gt;220</td>
<td>ASTM D92</td>
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<tr>
<td><strong>API Gravity</strong></td>
<td>28.9</td>
<td>18.7</td>
<td>14.6</td>
<td>29.9</td>
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<tr>
<td><strong>Nitrogen, % weight</strong></td>
<td>0.095</td>
<td>0.095</td>
<td>0.095</td>
<td>0.095</td>
<td>Spectroscopy</td>
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<tr>
<td><strong>Phosphorus, % weight</strong></td>
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<td>0.027</td>
<td>0.027</td>
<td>0.027</td>
<td>Spectroscopy</td>
</tr>
<tr>
<td><strong>Sulfated Ash, % weight</strong></td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
<td>ASTM D874</td>
</tr>
</tbody>
</table>

These properties are typical of the current production. Variations that do not affect product performance are to be expected depending on blending and manufacturing locations. The information above is subject to change without notice.

**Health and Safety:**
This product is unlikely to have any adverse health implications or safety hazards when used for its intended application. Avoid contact with skin, use resistant gloves when handling used oil. If skin comes in contact wash immediately with soap and water. For complete information on safe handling and product characteristics please refer to the Safety Data Sheet (SDS) found on our website, [www.royalmfg.com](http://www.royalmfg.com) or call (918)-584-2671.

**Packaging options:**
- Quarts
- 1 Gal Jugs
- 5 Gal Kegs
- 55 Gal Drums
- 275/330 Gal Totes
- >2000 Gal Bulk