Customer benefits

Exceptional engine performance
Optimized detergent/dispersant additive package helps to minimize the formation of engine deposits.

Valve recession protection
The level and type of ash-producing additives in the oil provides minimum valve recession with low levels of combustion chamber deposits to minimize the potential for pre-ignition and spark plug fouling.

Low wear
Offers outstanding protection against piston, ring, and liner scuffing, scoring, and wear.

Long oil life
Improved oxidation and nitration resistance provides maximum flexibility in maintenance scheduling.

Clean pistons
Works to keep pistons clean, which helps prevent ring sticking and maintains clean, varnish-free piston skirts.

Applications
• Lean-burn and stoichiometric four-cycle stationary spark ignition engines burning sweet natural gas or LPG, operating under high load, high temperature conditions.
• Four-cycle medium-speed stationary spark ignition engines operating on sweet natural gas or LPG
• Four-cycle medium-speed stationary dual-fuel pilot injection engines operating on sweet natural gas or LPG
• Formulated to meet NSCR catalyst compatibility requirements and is suited for installation requiring low phosphorus oil to help prevent exhaust catalyst poisoning.

Product features:
• HDAX® 7200 Low Ash Gas Engine Oil is a premium performance, long-drain, heavy-duty, low ash crankcase oil specifically designed to lubricate a wide range of four-stroke natural gas and dual-fuel engines where low ash oils are recommended.
• HDAX® 7200 Low Ash Gas Engine Oil is formulated with hydrocracked base oils and additive technology to provide exceptional oxidation and nitration resistance, extended oil and filter life, outstanding protection against ring and liner scuffing and wear, and excellent piston and ring belt deposit control to effectively protect against the formation and build-up of engine sludge.
Typical key properties

<table>
<thead>
<tr>
<th>HDAX® 7200 LOW ASH</th>
<th></th>
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<tbody>
<tr>
<td>GAS ENGINE OIL</td>
<td></td>
</tr>
<tr>
<td>SAE Grade</td>
<td>40</td>
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<tr>
<td>Product Code</td>
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<tr>
<td>Base No., D2896, mg KOH/g</td>
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<tr>
<td>Phosphorus, m %</td>
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<tr>
<td>Sulfated Ash, m %</td>
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<td>Viscosity, mm²/s @ 40°C</td>
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<td>Viscosity, mm²/s @ 100°C</td>
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<tr>
<td>Viscosity Index</td>
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</tr>
</tbody>
</table>

Performance standards

- Meets Caterpillar field test requirements for G3500 series and smaller engines (self certified)
- Meets Caterpillar field test requirements for G3600 and C280 series engines (self certified)
- Approved by Waukesha for cogeneration applications
- Meets Waukesha field test requirements for engines burning natural gas other than the 220GL series (self-certified)
- Approved by GE Jenbacher for Type 2, 3, 4 (version B) and 6 (version E) engines
- Limited approval by Caterpillar for Cat CG132, CG170, CG 260 and MWM engines
- Approved by Deutz against TR 0199-99-01213/2 for 913, 914 and TCG2015 series engines
- Approval for MTU Series 4000 model L61, L62, L63, L64, L32 & L33
- Approval on MTU Series 400 engines, both naturally aspirated and turbocharged, running on natural gas and propane gas
HDAX® 7200 Low Ash Gas Engine Oil

Service considerations

The sulfated ash, alkalinity reserve and phosphorus content of gas engine oils can be properly matched to the needs of individual applications, taking account of engine design, operating conditions, fuel type and quality, with particular reference to sulfur content and whether or not the engine is fitted with an exhaust catalyst for emission control purposes.

Spark ignition, gas-fuelled engines may be sensitive to the sulfated ash level of the lubricant and to the chemical nature of the ash. Excessive ash can lead to problems such as spark plug fouling, exhaust valve guttering and build-up of pre-ignition-inducing combustion chamber deposits. On the other hand, many engines require a certain amount of lubricant ash to ensure satisfactory valve seat lubrication and to minimize valve seat recession.