



# HDAX<sup>®</sup> 9200 Low Ash Gas Engine Oil SAE 40

Premium performance low-ash gas engine lubricant

## Product description

HDAX 9200 Low Ash Gas Engine Oil SAE 40 is a premium performance low-ash, dispersancy and detergency type gas engine lubricant, offering robust component protection even under heavy loads, and is designed for use in natural gas applications.

HDAX 9200 Low Ash Gas Engine Oil SAE 40 is formulated with a premium base oil, offering extremely low sulphur, nitrogen and aromatic content, in combination with ashless dispersant and oxidation inhibitors, with a metallic detergent and anti-wear additive system. HDAX 9200 Low Ash Gas Engine Oil SAE 40 offers reliable corrosion resistance and good combustion chamber deposit protection. Good piston deposit control helps minimise ring sticking. HDAX 9200 Low Ash Gas Engine Oil SAE 40 oxidation and nitration resistance performance is designed to minimise viscosity increases in service.

## Customer benefits

- Designed for latest generation high output, turbocharged, low emission 4-cycle engines requiring low ash lubricant technology
- Formulated with a combination of premium base oils and high performance additives for extended oil drain
- Excellent oxidation and nitration resistance and strong base retention characteristics help to significantly prolong oil service life
- Offers combustion chamber and piston deposit control, liner protection, sludge and wear control and corrosion protection
- Helps minimise valve recession and combustion chamber deposits, minimising the potential for pre-ignition and spark plug fouling
- Low fluid volatility helps reduce oil consumption

## Product highlights

- **Low ash lubricant technology**
- **Formulated with premium base oils and high performance additives**
- **Designed for extended oil drain**
- **Offers deposit control, sludge, wear and corrosion protection**
- **Helps minimise valve recession**
- **Low fluid volatility helps reduce oil consumption**

### Selected specification standards include:

Caterpillar	Caterpillar Energy Solutions
MTU	RMB/Energie
Waukesha	

## Applications

- HDAX 9200 Low Ash Gas Engine Oil SAE 40 is suited to new generation high output, turbocharged, low emission 4-cycle engines requiring low ash lubricants and is recommended for use in natural gas applications
- HDAX 9200 Low Ash Gas Engine Oil SAE 40 is designed to meet the more demanding needs of high speed 4-cycle gas engines in cogeneration applications
- HDAX 9200 Low Ash Gas Engine Oil SAE 40 is formulated to meet catalyst compatibility requirements with low phosphorus levels
- HDAX 9200 Low Ash Gas Engine Oil SAE 40 is suitable for use with fuels containing low levels of sulphur and chloro-fluoro-carbons (CFC). In sour gas/high CFC applications, lubricants with higher base reserve may be required

## Approvals, performance and recommendations

### Approvals

- Caterpillar Energy Solutions (former MWM): Technical Circular 0199-99-2105 (up to 0.6% sulphated ash)
- RMB/Energie: Natural gas

### Performance

- MTU preliminary approval MTL 5074 for Series 4000 gas engines\*

### Recommendations

- Proof of Performance gained during extensive field trials in Waukesha engines
- Proof of Performance gained during extensive field trials in Caterpillar 3516 E+ and 3516 TALE engines

\* This preliminary approval can be used to carry out a field test, which, on successful conclusion, will result in a formal approval for use in MTU gas engines and listing in the Fluids and Lubricants Specification. The preliminary approval has no expiration date.

Typical test data		
Test	Test Methods	Results
<b>Viscosity Grade</b>		<b>SAE 40</b>
Density at 15°C, kg/l	ASTM D4052	0.881
Kinematic viscosity at 100°C, mm <sup>2</sup> /s	ASTM D445	13.5
Pour Point, °C	ASTM D5950	-18
Flash Point, COC, °C	ASTM D92	278
Total Base Number, mg KOH/g	ASTM D2896	4.2
Sulphated Ash, %wt	ASTM D874	0.50

The information given in the typical data does not constitute a specification but is an indication based on current production and can be affected by allowable production tolerances. The right to make modifications is reserved. This supersedes all previous editions and information contained in them.

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**Health, safety, storage and environmental** Based on current available information, this product is not expected to produce adverse effects on health when used for the intended application and in accordance with the recommendations provided in the Material Safety Data Sheet (MSDS). MSDS's are available upon request through your local sales office, or via the Internet. This product should not be used for purposes other than its intended use. When disposing of used product, take care to protect the environment and follow local legislation.

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