

# HDAX<sup>®</sup> 5200 Low Ash Gas Engine Oil

## Gas Engine Oil



### Product description

Premium performance, 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. Formulated with hydrocracked base oils and additive technology to provide exceptional oxidation and nitration resistance, extended oil and filter life, and outstanding wear protection.

### Customer benefits

- **Maximizes oil service life**  
Synergy of hydrocracked base oils, oxidation inhibitor package and dispersant provides outstanding oxidation and nitration resistance, reducing the buildup of sludges which lead to oil thickening and filter blockage.
- **Lowers operating costs**  
Excellent deposit control on valves and piston reduces oil consumption. Exceptional oxidation and nitration resistance and deposit control extends oil drain capability so that equipment is in service longer generating revenue. Outstanding valve train wear protection maintains fuel economy.
- **Minimizes maintenance costs**  
Exceptional oxidation resistance and dispersancy minimizes sludge formation, avoiding filter plugging, cylinder head sludge, abrasive polishing wear and oil thickening.
- **Extends engine life to overhaul**  
High level of anti-wear additive protects against valve train wear and scuffing of highly loaded parts operating under boundary lubrication conditions. Level and type of ash producing additives reduce valve recession and keep combustion chamber deposits to a minimum with less spark plug fouling and potential for pre-ignition.

### Applications

- Four-cycle high-speed stationary spark ignition engines operating on sweet natural gas or LPG
- 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

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### Product approvals, performance and recommendations

- Approved by Caterpillar for Cat CG132, CG170, CG260 Gas Engines
- Approved by Caterpillar Energy Solutions GmbH (former MWM): Technical Circular 0199-99-2105 (up to 0.6% sulphated ash)
- Approved by MWM for TCG 2015, TCG 2020, TCG 2032, TCG 2032B, TCG 3016 series engine.
- Approved by Deutz against TR 0199-99-01213/2 for 913, 914 series engines
- Jenbacher TA 1000-1109, for the following engine types/ versions with catalyst compatibility:
  - Type 2 and 3 - Fuel Class A<sup>[1]</sup>
  - Type 4 (versions A) - Fuel Class A<sup>[1]</sup>
  - Type 4 (versions B and D) - Fuel Class A<sup>[1]</sup>, Fuel Class B<sup>[2]</sup> and Fuel Class C<sup>[3]</sup>
  - Type 4 (versions C and E) - Fuel Class A<sup>[1]</sup>, Fuel Class B<sup>[2]</sup> and Fuel Class C<sup>[3]</sup>
  - Type 6 (versions C and E) - Fuel Class A<sup>[1]</sup>
  - Type 6 (versions F and J) - Fuel Class A<sup>[1]</sup>, Fuel Class B<sup>[2]</sup> and Fuel Class C<sup>[3]</sup>
  - Type 2 and 3, 4A, 4 (B and D, C and E), 6 (C and E, F and J) - Fuel Class S<sup>[4]</sup>
- Approved by MAN Diesel & Turbo for Large Medium Speed Otto gas and dual fuel operation.
- Approved by Wärtsilä for gas engines and dual fuel engines with natural gas as main fuel
- Approved by Waukesha for cogeneration applications
- Approved by Waukesha for 220GL using pipeline quality gas
- Approved by TEDOM 61-0-0281.1 for fuel types G (natural gas), P (propane/butane)
- Meets Caterpillar field test requirements for G3500 series and smaller engines (self-certified)
- Meets Caterpillar field test requirements for G3600 series engines (self-certified)

<sup>[1]</sup> Natural Gas, associated petroleum gas, mine gas, bio gas (Sulphur < 200 mg/10 kWh).

<sup>[2]</sup> Biogas, sewage gas

<sup>[3]</sup> Landfill gas

<sup>[4]</sup> Hydrogen fuel gases, thermoselect gases and steel mill gases as well as wood gas, syngas and pyrolysis gases with a high hydrogen content

### 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.

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## Typical Test Data

HDAX <sup>®</sup> 5200 LOW ASH GAS ENGINE OIL	TEST METHOD	RESULTS
<b>SAE Grade</b>		<b>40</b>
<b>Product Code</b>		<b>530022</b>
Base No., mg KOH/g	ASTM D2986	4.2
Sulfated Ash, m %	ASTM D874	0.5
Viscosity, mm <sup>2</sup> /s @ 40°C	ASTM D445	124
mm <sup>2</sup> /s @ 100°C	ASTM D445	13.5
Viscosity Index	ASTM D2270	104
Flash Point, °C	ASTM D92	260
Pour Point, °C	ASTM D5950	-33

ENVIRONMENT, HEALTH, and SAFETY. Information is available on this product in the Material Safety Data Sheet (MSDS) and Customer Safety Guide. Customers are encouraged to review this information, follow precautions, and comply with laws and regulations concerning product use and disposal. To obtain a MSDS for this product, visit the Product Information Center.

This Product Data Sheet (PDS) was produced for the Africa, Middle East and Pakistan region in good faith from the best information available at the time of issue. The specific information included may not directly reflect the local market or conditions. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. For the most up-to-date, country-specific information, please contact your local customer service center.

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