



Product description

HDAX® 9300 is an premium performance medium ash, dispersant/detergent type gas engine oil formulated specifically for natural gas applications even under heavily loaded conditions, including high output engines in the 10 MWe class. The optimized ash level provides protection against valve recession, while avoiding the formation of ash deposits in the combustion chamber that could lead to pre-ignition.

HDAX® 9300 is formulated with premium base oils which contain extremely low sulphur, nitrogen and aromatics. The combination of excellent base number retention and oxidation/nitration resistance allows HDAX® 9300 to deliver extended drain capability - even in applications where the oil feed rate is deliberately kept low, placing extra stresses on the lubricant. HDAX® 9300 prevents sludge formation on cylinder liners, which could interfere with oil flow and lead to higher oil consumption.

HDAX® 9300 provides excellent control of carbonaceous deposits on pistons, ensuring correct piston ring operation and providing scuffing protection to cylinder liners.

Customer benefits

HDAX® 9300 provides the following potential benefits:

- **Extended drain capability and low oil consumption** - exceptional oxidation/nitration resistance and base number retention characteristics enable extended drain capability, even in high BMEP, steel piston engines designed to use a very low oil feed rate.
- **Promotes engine cleanliness** - dispersant/detergent system allied to oxidation/nitration resistance minimizes oil thickening and sludge formation, protecting against filter plugging.
- **Long component life** - outstanding piston deposit control, providing scuffing protection to the cylinder liners. Protects against abrasive wear.



- **Optimized ash level** - provides excellent valve recession control and controls potential for pre-ignition.
- **Catalyst compatible** - low phosphorus additive system optimized for use with catalysts.

Applications

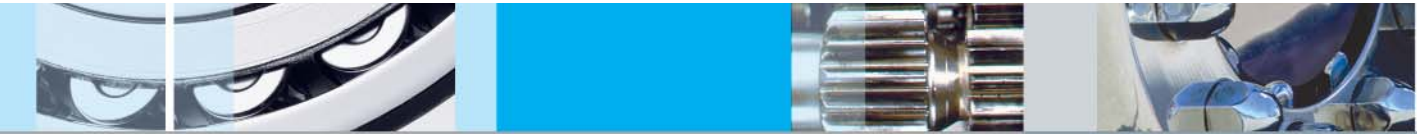
- HDAX® 9300 is designed for use in latest generation high output, low emission four-stroke engines burning natural gas. It has a medium ash level, high performance in high Brake Mean Effective Pressure engines with steel pistons (BMEP greater or equal to 22 bar) with long drain. HDAX® 9300 will also deliver excellent performance in lower BMEP engines with aluminium pistons.
- Four-cycle gas engines in cogeneration applications
- Four-cycle medium-speed stationary spark ignition engines and dual-fuel pilot injection engines operating on sweet natural gas or LPG
- Suitable for use with fuels containing low levels of sulphur and chloro-fluorocarbons (CFC). In sour gas/high CFC applications, lubricants with higher base reserve may be required - for example, HDAX 9500 SAE 40 and HDAX 6500 SAE 40.

Approvals, performance and recommendations

Approvals

GE Jenbacher TA 1000-1108, Fuel Class A⁽¹⁾ for the following engine types/ versions:

- Type 9 All Versions



continued

Typical test data

HDAX [®] 9300 TEST	TEST METHODS	RESULTS
SAE Grade		SAE 40
Product Code		530041
Density, 15 °C, kg/l	ASTM D4052	0.876
Viscosity, Kinematic, 40 °C, mm ² /s	ASTM D445	116
Viscosity, Kinematic, 100 °C, mm ² /s	ASTM D445	13.5
Viscosity Index	ASTM D2270	113
Pour Point, °C	ASTM D97	-33
Flash Point, COC, °C	ASTM D92	270
Total Base Number, mg KOH/g	ASTM D2896	6.2
Sulphated Ash, %wt	ASTM D874	0.70

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.

This bulletin was prepared in good faith from the best information available at the time of issue. While the values and characteristics are considered representative, some variation, not affecting performance, can be expected. It is the responsibility of the user to ensure that the products are used in the applications for which they are intended.

Produced by Chevron Lubricants; Africa, Middle East and Pakistan.

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 www.caltexoils.com.

For more information, go to www.chevronlubricants.com