



TEXACO

FAMILY OF PRODUCTS // **HDAX**

Gas engine lubricants for power generation applications

HDAX

enduring
performance

Our focus helps drive your performance

Our family of Texaco® branded gas engine products and services for power generation applications help provide:

- > Wear protection and increased engine life
- > Engine cleanliness and efficiency
- > Optimum drain intervals
- > Controlled operating costs
- > Reduced cost of buying power off the grid.

In addition, our family of gas engine products can also be used for Oil and Gas Gathering and Processing applications.



Keep the heart of your operation healthy

We know what you're up against. Gas engines are critical to keeping your operation running. Yet today's engine designs and operating conditions mean higher temperatures and loads, more stress on components and lubricants, as well as more potential for costly failures. We developed the HDAX® family of stationary gas engine oils to help you fight back.

HDAX lubricants are formulated to handle the tighter equipment tolerances, extreme temperatures and dirty conditions your operation faces every day. They help you control nitration, oxidation, acids and other deposits that attack pistons, cylinders and valves causing poor performance and even catastrophic shutdowns. HDAX oils help keep you protected, so you can reach higher levels of efficiency and achieve the full potential of your engine.

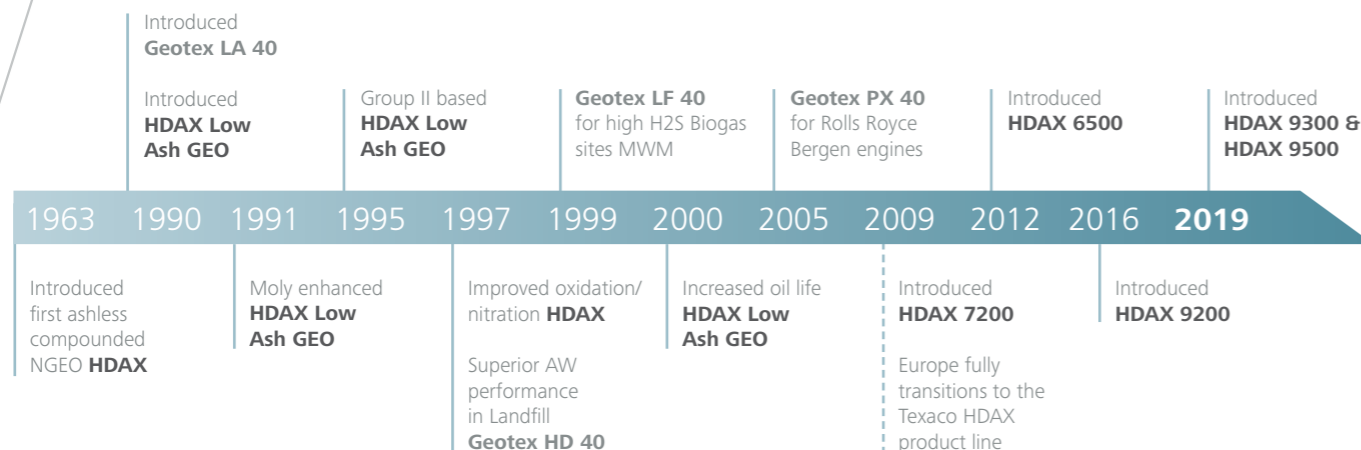


HDAX

Texaco HDAX Path of Innovation

We have developed and produced gas engine oil products for over 50 years.

Since 2009, Europe has fully transitioned to the Texaco HDAX product line.



Texaco® HDAX applications

Engine (landfill and biogas)

- HDAX 9500 Power Generation 4-Cycle
- HDAX 6500 Power Generation 4-Cycle

Engine (natural gas)

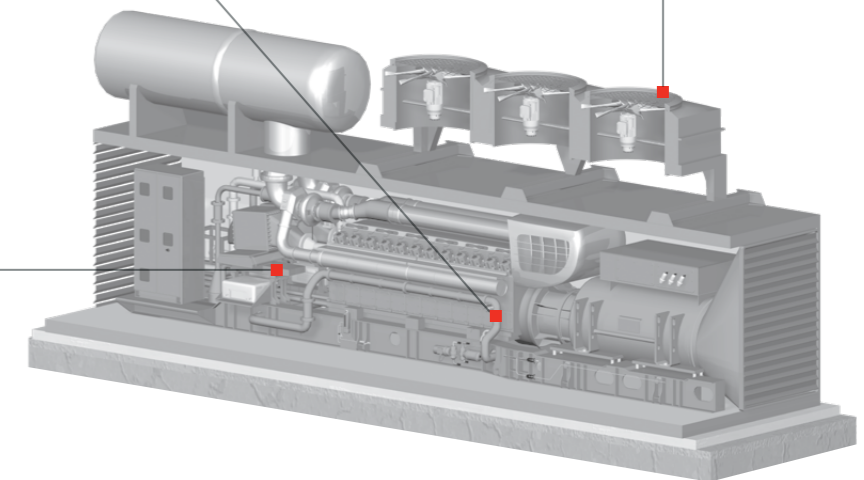
- HDAX 9300 Power Generation 4-Cycle
- HDAX 9200 Power Generation 4-Cycle
- HDAX 7200 Power Generation and Oil & Gas 4-Cycle
- HDAX 5200 Power Generation and Oil & Gas 4-Cycle
- HDAX 5100 Power Generation and Oil & Gas 2-Cycle

Cooling system

- HDAX ELC Premixed 50/50
- Delo XLC Antifreeze/Coolant Concentrate, Premixed 50/50, Premixed 40/60

Cooling fans

- SRI Grease NLGI 2



Texaco® HDAX landfill and biogas engine oils, coolants and LubeWatch® oil analysis programme together form a dedicated lubrication solution designed to optimise performance over the long run, to help your engines deliver to their full potential.



Product highlights:

- > Offers low oil consumption, extended drain and compatible with low oil feed rate operation
- > Helps minimise thickening, sludge and filter plugging
- > Designed for acidic condensate corrosion protection
- > Wear protection promotes longer engine life
- > Formulated for valve recession control
- > Optimised for use in catalyst systems

HDAX 9500

HDAX 9500 SAE 40 is a premium performance dispersant/detergent-type extended drain gas engine oil, designed specifically for gas engines running on landfill gas, biogas and digester gas, and for sour gas applications.

HDAX 9500 SAE 40 is formulated with premium base oils with very low levels of sulphur, nitrogen and aromatics. It contains ashless dispersants, oxidation inhibitors, metallic detergents and anti-wear agents designed to prevent oxidation, corrosion, deposits, wear and scuffing.

Customer benefits:

- > Oxidation/nitration resistance with base number retention provides extended drain, and compatible with very low oil feed rate engines
- > Dispersant/detergent system with oxidation/nitration resistance helps minimise oil thickening, sludge formation and filter plugging
- > Designed for optimum protection against corrosion caused by acidic condensate in intermittent operations in sour gas applications
- > Offers piston deposit control, helping provide cylinder liner scuff and abrasive wear protection, and longer engine service life
- > Formulated with optimised ash level for valve recession control and helps prevent potential pre-ignition
- > Low phosphorus additive formulation allows it to be used with catalyst systems.

Latest Texaco technology premium performance gas engine oil for landfill gas, biogas, digester gas and sour gas applications.

HDAX 6500

HDAX 6500 LFG is a high performance low ash dispersant/detergent type SAE 40 gas engine oil, specifically designed for landfill gas, biogas digester gas and sour gas applications.

HDAX 6500 LFG is formulated with premium quality base oils with very low sulphur, nitrogen and aromatic content, and contains ashless dispersancy and oxidation inhibitor additive technologies, with an advanced metallic detergent and anti-wear package.

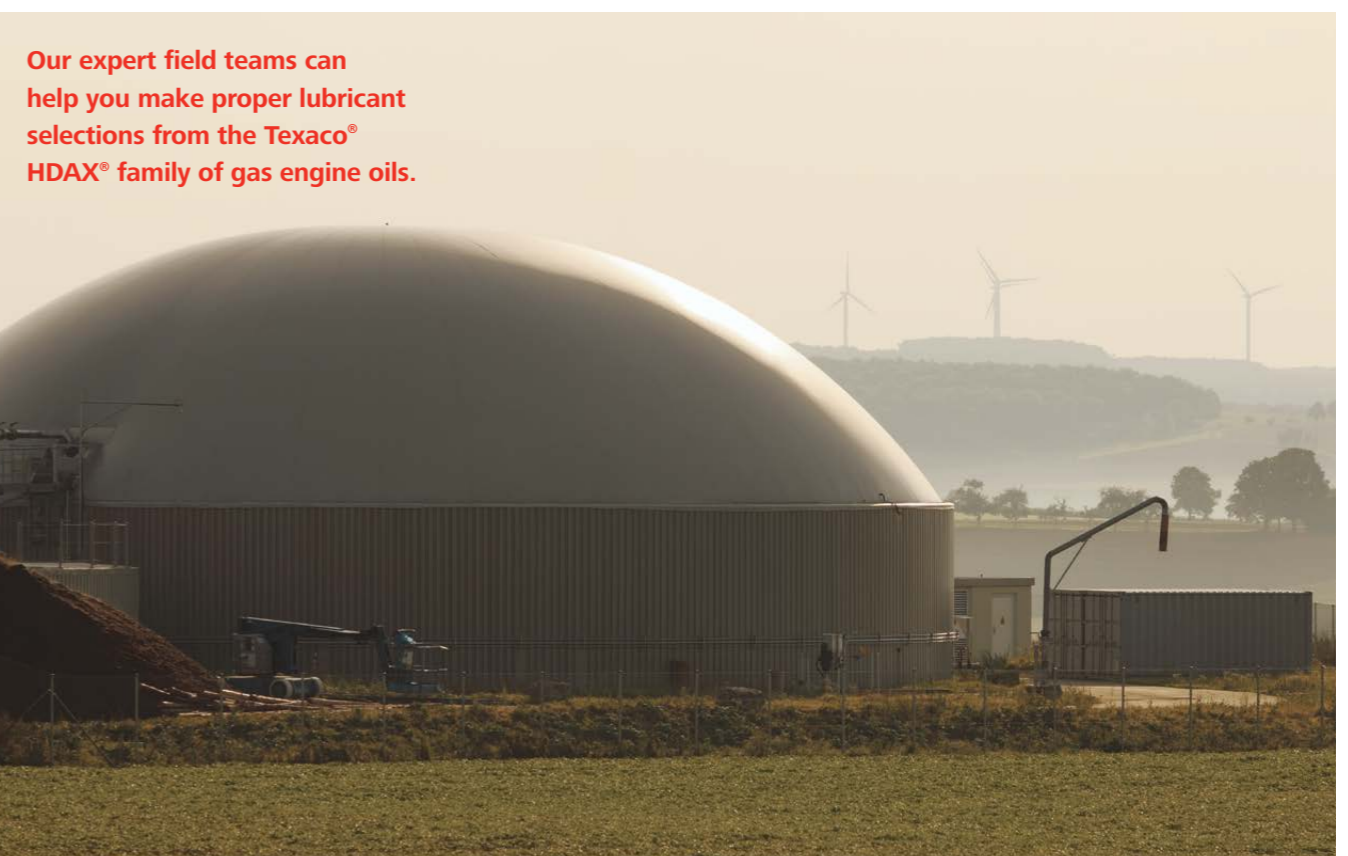
HDAX 6500 LFG promotes reliable corrosion protection, without increasing combustion chamber deposits and aids piston deposit control, offering minimal ring sticking and providing scuffing protection to the cylinder liners, helping minimise oil consumption and lacquering.

Through reliable oxidation and nitration resistance, HDAX 6500 LFG offers a minimal viscosity increase.

High performance gas engine oil designed for landfill gas, biogas digester gas and sour gas applications with a wide application range.

Product highlights:

- > Advanced catalyst protection
- > Extended drain intervals
- > Deposit and sludge resistance
- > High level wear protection
- > Reliable corrosion resistance



The Texaco® HDAX range of engine oils, coolants and LubeWatch® oil analysis is your solution for natural gas engines in the power generation industry, helping to ensure oil integrity and equipment protection, as well as maximise uptime.



Product highlights:

- > Designed for heavy loads, including high output 10 MW_{el} class units
- > Offers extended drain in very low oil feed rate engines
- > Helps minimise oil thickening and filter plugging
- > Promotes longer engine service life
- > Formulated to prevent potential pre-ignition
- > Allows use with catalyst systems

HDAX 9300

HDAX 9300 SAE 40 is a premium performance medium ash dispersant/detergent type gas engine oil, specifically designed to offer protection to gas engines running on natural gas under heavily loaded conditions, including high output engines in the 10 MW_{el} class.

HDAX 9300 SAE 40 offers robust protection against corrosion, harmful deposit and sludge formation, and promotes protection against engine wear and scuffing, helping optimise engine service life.

HDAX 9300 SAE 40 is formulated with premium base oils which contain extremely low levels of sulphur, nitrogen and aromatics, combined with a premium additive package containing ashless dispersants, oxidation inhibitors, metallic detergents and a metallic anti-wear agent.

Customer benefits:

- > Designed to protect engines running on natural gas, operating under heavily loaded conditions, including high output 10 MW_{el} class units
- > Oxidation/nitration resistance with base number retention offers extended drain and is compatible with very low oil feed rate engines
- > Dispersant/detergent formulation with oxidation/nitration resistance helps minimise oil thickening, sludge formation and filter plugging
- > Promotes piston deposit control and protection from cylinder liner scuffing and abrasive wear, offering longer engine service life
- > Formulated to optimise ash level for reliable valve recession control and to help prevent potential pre-ignition
- > Low phosphorus additive design allows use with catalyst systems.

Latest Texaco technology natural gas engine oil for high BMEP steel piston engines requiring medium ash lubricant.

HDAX 9200

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:

- > Oxidation and nitration resistance with base number retention offer extended drain in engines designed with a very low oil feed rate
- > Combustion chamber and piston deposit control, increased liner protection, sludge, wear and corrosion resistance help reduce downtime
- > Helps minimise valve recession, combustion chamber deposits and ash build up, helping minimise the potential for pre-ignition
- > Dispersant/detergent system and oxidation/nitration resistance helps minimise oil thickening and promotes engine cleanliness
- > Designed to resist sludge formation, filter plugging and cylinder liner honing pattern glazing, helping optimise oil flow and consumption
- > Low phosphorus additive system suitable for use with most catalyst systems.

Premium performance natural gas engine oil for low emission engines requiring low ash lubricant technology.

Product highlights:

- > Reduced maintenance downtime
- > Promotes increased engine protection
- > Aids reduced valve recession, deposits, pre-ignition and spark plug fouling
- > Assists wear protection and increased engine life
- > Promotes keep-clean engine performance
- > NSCR compatibility

HDAX 7200

HDAX 7200 Low Ash Gas Engine Oil SAE 40 is a high performance low ash, bright stock free, dispersant/detergent type gas engine oil.

HDAX 7200 Low Ash Gas Engine Oil SAE 40 is formulated with premium base oil technology, offering a low sulphur, nitrogen and aromatic formulation. It uses a proprietary additive package containing ashless dispersants, oxidation inhibitors, metallic detergents and a metallic anti-wear agent.

HDAX 7200 Low Ash Gas Engine Oil SAE 40 offers reliable oxidation and nitration resistance, which helps reduce the build-up of insolubles and promotes long oil and filter life.

HDAX 7200 Low Ash Gas Engine Oil SAE 40 offers protection against ring and liner scuffing wear and valve recession in four-stroke engines. It also promotes piston and ring belt deposit control to help protect against the formation and build-up of engine sludge.

Premium performance natural gas engine oil, reliably protecting engines in power generation and gas compression applications.

HDAX 5200

HDAX 5200 Low Ash Gas Engine Oils are a high performance low ash, bright stock free formulation with premium base oil technology.

HDAX 5200 lubricants offer reliable oxidation and nitration resistance, which helps reduce the build-up of insolubles and promotes long oil and filter service life.

HDAX 5200 offers protection against ring and liner scuffing, wear and valve recession in four-stroke engines. It also promotes piston and ring belt deposit control to help protect against the formation and build-up of engine sludge.

High performance natural gas engine oil, reliably protecting engines in power generation and gas compression applications.

Product highlights:

- > Reduced maintenance downtime
- > Promotes increased engine protection
- > Aids reduced valve recession, deposits, pre-ignition and spark plug fouling
- > Assists wear protection and increased engine life
- > Promotes keep-clean engine performance
- > NSCR compatibility

HDAX 5100

HDAX 5100 Ashless Gas Engine Oil SAE 40 is a high performance ashless natural gas engine lubricant. It is designed to promote reliable crankcase, intake and exhaust port keep-clean performance in two-stroke engines.

HDAX 5100 offers high performance protection to high speed, high output, turbocharged two-stroke and selected four-stroke natural gas engines operating at full capacity under severe conditions and over extended maintenance intervals.

A non-bright stock design, HDAX 5100 is a low sulphur, nitrogen and aromatic formulation in combination with ashless dispersancy and extreme pressure additives with ashless oxidation and corrosion inhibitors.

High performance ashless engine oil for two-stroke engines fueled by natural gas.

Product highlights:

- > Low maintenance long engine service life
- > Advanced ash deposit control
- > Ring and cylinder wear resistance
- > High performance keep-clean protection
- > Reliable severe service viscosity performance

Product highlights:

- > Designed for use in a wide range of applications
- > Temperature range, from -20°C to +150°C
- > Formulated to offer robust oxidation stability
- > Helps protect at high temperatures and speeds
- > Provides rust protection as defined by ASTM D5969

SRI Grease NLGI 2

SRI Grease 2 is a high performance high temperature ball and roller bearing grease. It is dark green in colour and has a smooth, buttery structure.

SRI Grease 2 is formulated with highly refined base stocks, a high performance ashless organic polyurea thickener and robust anti-rust and anti-oxidation additives.

COOLANT / ANTIFREEZE

Product highlights:

- > Silicate-free formula offers next-level heat transfer
- > Helps reduce hard water and phosphate scale
- > Offers up to 32,000 hours service life
- > Contributes to longlife pump seal and corrosion protection
- > Designed for low maintenance operation

HDAX ELC Premixed 50/50

HDAX ELC Premixed 50/50 is a high performance extended life coolant designed to offer optimum heat transfer performance and longlife protection to stationary gas engine coolant systems.

HDAX ELC Premixed 50/50 is formulated with Chevron patented carboxylate corrosion inhibitor technology, designed to offer high performance system protection with maximum uptime across a wide range of operating conditions.

Product highlights:

- > Formulated for long, low maintenance service life
- > Offers at least 32,000 hours in stationary engines
- > Promotes reliability and corrosion protection
- > Contributes to reliable hard water stability
- > Aids high temperature corrosion protection

Delo XLC Antifreeze/Coolants

Texaco Delo XLC Antifreeze/Coolant is a high performance longlife coolant formulated to protect engines from freezing and boiling while offering advanced cooling system corrosion protection, including high temperature corrosion resistance in modern aluminium engines.

Delo XLC Antifreeze/Coolant is an ethylene glycol based fluid formulated with advanced non-depleting corrosion inhibitor technology. It is designed to offer long, low maintenance service life and is available as a concentrate, or premixed in concentrations of 40/60, 50/50 and 55/45 (grades dependent on region/country).

OIL ANALYSIS SERVICE



LubeWatch used oil analysis

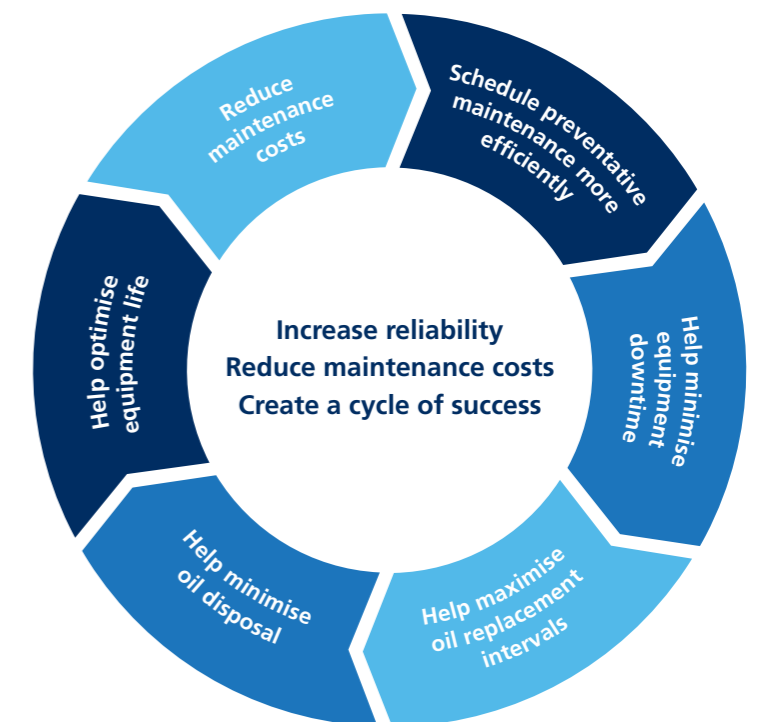
LubeWatch oil analysis enables you to track the performance of equipment that is the lifeblood of your business. By analysing oil samples on a regular basis, you can help optimise equipment life and oil replacement intervals, identify lubricant-related needs and understand the changing environment within a piece of equipment. This knowledge helps in the precise scheduling of maintenance work that can reduce downtime or even eliminate the risk of catastrophic failure.

The LubeWatch oil analysis programme provides:

- > Accurate results on five basic test packages and a wide variety of specialised testing procedures
- > Reliable interpretation of test results and actionable recommendations based on the data
- > 48-hour turnaround of tests and analyses indicating abnormal or critical steps, provided by email or accessible online
- > Advanced technical services including component failure and/or wear particle analysis
- > Expert training and in-field advice and support
- > Added assurance of oil and system integrity when running on an extended oil drain interval programme.

LubeWatch® Oil Analysis Program

For more information visit:
texacolubricants.com/LubeWatch





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Advanced technology Texaco® gas engine lubricants & coolants.
Whatever the lubricant requirement – private and commercial vehicles
through to industrial plant and machinery operating in some of the
world's most challenging environments – customers trust Texaco.

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