Quadrex® / Quadrex® Hi-Base

Premium Four-Cycle Natural Gas Engine Oil

Beyond Synthetic™

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Quadrex® is a low ash, synthetic blend, high performance, four-cycle natural gas engine oil. Quadrex® extends oil drain intervals, reduces fuel consumption and keeps engines clean. Its tough film strength significantly improves engine reliability and reduces maintenance costs.

Synerlec® additive technology makes the difference!

Synthetic oils enable Royal Purple to make superior lubricants, but it is Royal Purple's advanced Synerlec® additive technology that gives its lubricants their amazing performance advantages. Synerlec® additive technology truly is *beyond synthetic*.™

Synerlec® additive technology forms a tough, slippery, synthetic film on all metal surfaces. This proprietary film significantly improves lubrication: first, by increasing the oil film's thickness, and second, by increasing the oil film's toughness, both of which help to prevent metal-to-metal contact. It displaces moisture from metal surfaces and protects all metals against rust and corrosion. It also fortifies the oil against the detrimental effects of heat, which causes oil to oxidize.

Performance Advantages:

- **Reduces Maintenance Costs**
  Quadrex® improves engine reliability and extends engine life.
- **Outstanding Film Strength**
  Quadrex® provides superior protection to the crank and bearings and prevents piston ring / cylinder seizing and scuffing.
- **Extends Oil Drain Intervals**
  The outstanding oxidation and nitration stability of Quadrex® greatly extend oil drain intervals. Much less oil is purchased and disposed of and less oil is consumed.
- **Saves Fuel**
  Quadrex® has a low coefficient of friction and promotes improved sealing between piston rings and cylinder walls to improve combustion efficiency.
- **Cleaner Engines**
  Quadrex® is excellent for lean burn, fuel efficient engines that cause rapid oil oxidation, dirty engines and shorter oil and filter life.
- **Catalyst Compatible**
  Quadrex® is safe to use with catalytic converters and exhaust catalyst.
- **Synthetic Solvency**
  The synthetic solvency of Quadrex® will clean dirty engines; however, oil and filter life may be shortened as it cleans up deposits left by previous oils. To rapidly clean up dirty engines, use Royal Purple's Max-Solv™. For more information, request the Max-Solv™ product sheet.
- **Environmentally Responsible**
  All components in Quadrex® are TSCA listed and meet EPA, RCRA and OSHA requirements. Quadrex® extends oil drain intervals, decreases the amount of oil purchased and disposed of and conserves energy.
- **Low Ash** (0.45 percent)**
  Quadrex® is preferable for four-cycle natural gas engines and acceptable for most two-cycle gas engines
- **Superior Corrosion Protection**
  Quadrex® contains synthetic inhibitors and has a moderately high base number to protect against rust and corrosion during operation and to preserve the engine during shut-down. (It is especially suited for land fill and co-generation engines.)
- **Low Temperature Fluidity**
  Quadrex® has excellent low temperature pumpability and reduces the need for oil heaters.

**Quadrex® Hi-Base has all of the performance advantages of Quadrex®, but is formulated for gas engines using high sulfur fuel. When new, its sulfated ash is above 0.45, but in service, its synthetic solvency controls ash. This makes it comparable in performance to conventional low ash gas engine oils, yet it will still protect against the harmful effects of corrosive fuels. Quadrex® Hi-Base is available with TBNs of 8, 10 and 14.

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Typical Properties*	SAE Grade 30	40
Viscosity		
cSt @ 40˚C	93.4	128.8
cSt @ 100˚C	11.4	14.1
SSU @100˚F	485	672
SSU @ 210˚F	66	76
Viscosity Index	110	108
Flash ˚F	430	445
Super Detergency	Yes	Yes
Corrosion Corrosion	1a	1a
Rust Test	Pass	Pass
Timken OK Load, Lbs.	60	60
Four Ball EP Test		
Weld Load, kgf	315	315
Foam Tendency	Nil	Nil
Total Base Number	6	6
Sulfated Ash, % max**	0.45	0.45

*Properties are typical and may vary.

**Ash content will be somewhat higher for Quadrex® Hi-Base.

Filter instructions: Because Quadrex® cleans engine oil deposits left by previous oils, its use can shorten the first oil and / or filter change interval (depending on the amount of engine deposits), which should be determined by oil analysis. Full flow filters are desirable. Bypass filters can by used with close supervision and frequent oil analysis. Once the engine is clean, either filter may be used. (Detergency keeps new deposits from forming; only solvency can clean old engine deposits.)

Note: The synthetic solvency in Quadrex® cleans wear metals and deposits left by previous oils. These wear metals and deposits may cause abnormally high values on initial used oil analysis until the engine is clean.

Lubricant Selection Chart

Two-Cycle Engines

Manufacturer	Lubricant
Cooper (Cooper-Bessemer)	
BMEP <85 PSI	Aegis® SAE 40
BMEP >85 PSI	Aegis® SAE 40
Clark (Dresser Rand)	Aegis® SAE 40
Worthington (Dresser-Rand)	Aegis® SAE 40
Fairbanks Morse (MEP)	
Oil Temp. <185˚F	Quadrex® SAE 40
Oil Temp. >185˚F	Quadrex® SAE 40
Ajax (Cooper Energy Service)	Aegis® SAE 40

Note: Royal Purple offers two premium, energy saving, gas engine oils. 1)Aegis® “ashless” and 2)Quadrex® “low ash”. Aegis® is preferred for 2-cycle engines and Quadrex® is preferred for 4-cycle engines, although both are acceptable in either case.

Four-Cycle Engines

Manufacturer	Lubricant
Cooper-Bessemer	
BMEP <175 PSI	Quadrex® SAE 40
BMEP >8175 PSI	Quadrex® SAE 40
Ingersol (Dresser Rand)	
Category I, II, III	Quadrex® SAE 30
Superior	
Natural Aspirated	Quadrex® SAE 40
Waukesha	
All Gas Engine Models	
Oil Temp. 160-195˚F	Quadrex® SAE 30
Oil Temp. 195-230˚F	Quadrex® SAE 40
Caterpillar	
All Models	Quadrex® SAE 30, 40

Note: models 3300, 3400, 500, & 3600 - low ash oil is preferred.

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