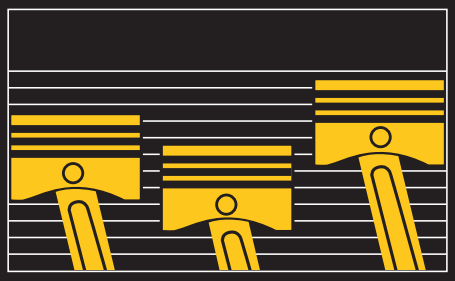
Natural Gas Engine Oil (NGEO™ EL250)

SAE 30
SAE 40

For natural gas engines and other engines requiring low ash oil



Cat Natural Gas Engine Oil (NGEO™ EL250) provides a unique blend of additives to assure optimum engine component life in Caterpillar gaseous fueled engines. It features new detergent/dispersant chemistry and a superior base oil formulation to maximize oil performance.

Recommended use

Application

Cat NGEO EL250 is designed by Caterpillar engineers to specifications that provide superior lubrication performance in engines using all types of gaseous fuels. This oil is designed to optimize the life of each engine component. It has been tested and proven superior in demanding applications throughout the world.

Fuel Compatibility

For maximum engine service life and oil life, use Cat NGEO EL250 with low sulfur gaseous fuels that contain less than 0.43 mg hydrogen sulfide per mega Joule (0.45 µg hydrogen sulfide per BTU).

Engines using high sulfur natural gas or bio-gas (from landfills and sewage digesters) may also benefit from Cat NGEO EL250, but a shorter oil change interval may be required.

Cat Natural Gas Engine Oil is fomulated from select base stocks blended with special additives to provide:

- Excellent anti-oxidation/nitration properties
- Thermal stability
- Reduced carbon and sludge formulation

Cat NGEO EL250 is also compatible with exhaust catalyst applications that require a low phosphorus oil. With a typical phosphorus level of 300 PPM, Cat NGEO EL250 meets the requirements of most catalyst suppliers.

Performance

Cat NGEO EL250 has been formulated with increased detergent concentration and acid neutralizing capability to assure less lacquer and deposits on pistons and values. This oil provides superior control of sludge formation, as well as outstanding resistance to oil nitration and oxidation. This formulation is designed to improve ring and liner service life and provide increased soot-handling capability.

Typical Characteristics*

SAE Viscosity Grade	30	40
Gravity, @ API (ASTM D286)	28.4	27.5
Flash Point, °C (ASTM D92)	265	265
Pour Point, °C (ASTM D97)	-15	-15
Viscosity,		
cSt @ 40°C (ASTM D445)	95	130
cSt @ 100°C (ASTM D445)	11.0	13.5
Viscosity Index (ASTM D567)	99	99
Sulfated Ash, % wt. (ASTM D874)	.57	.57
TBN,mg KoH/g (ASTM D2896)	6.5	6.5
Phosphorus % wt. (Spectro or AA)	0.030	0.030
Calcium % wt. (Spectro or AA)	0.138	0.138

* The values shown are typical values and should not be used as quality control parameters to either accept or reject product. Specifications are subject to change without notice.

Important terms

Nitration

The formation of nitrogen acids in oil, resulting in increased viscosity, corrosive wear, and sludge and varnish on pistons and cylinder walls.

Sulfated Ash Level

The amount of non-combustible material (ash) left when a certain quantity of oil is burned using a standard industry test method. These compounds contibute to TBN or oil alkalinity.

Oxidation

The combination of oil and oxygen that degrades oil, resulting in increased viscosity, as well as varnish, and sludge deposits.

Natural Gas Engine Oil (NGEO™ EL250)

Unique formula for maximum performance and protection

Cat NGEO EL250 protects vital engine components and helps your engine perform better. It provides maximum protection against:

- valve guide face and seat damage.
- piston scuffing, scoring, and piston/cylinder liner wear.
- foam and corrosion damage.
- piston carbon deposits.

Cat Oil Filters for the best protection

Oil change intervals for spark-ignited gaseous fuel engines are several times longer than with diesel engines. The increased demand on the oil filter makes it so important to use the best quality filters in conjunction with the best Natural Gas Engine Oil. Cat filters are the best available, featuring spiral roving, acrylic beading, a non-metalic center tube and molded polyurethane end caps.

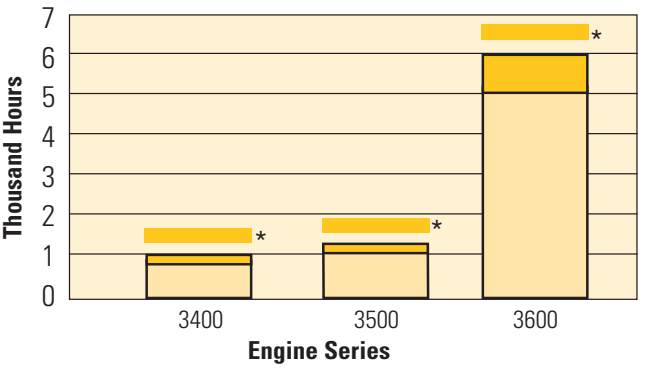
S•O•S℠ Services to determine optimal oil change intervals

S•O•S Services are the means to determine optimum oil drain periods for your natural gas engines. In extreme operating conditions with corrosive fuels, S•O•S Oil Analysis can be used to identify premature oil degradation.

Cat NGEO EL 250 Part Numbers

Package Size	Part Numbers	
Metric (Liters)	SAE 30	SAE 40
208 L	216-9223	216-9224
20 L	216-9220	216-9221
North American (Gallons)	SAE 30	SAE 40
55 Gal.	216-9228	216-9229
5 Gal.	216-9225	216-9227

Standard Oil Change Recommendations



*With use of Cat Filters and S•O•S Oil Analysis, engines in certain applications and load factors may obtain longer oil change intervals.

Engine Series	NGEO Hours	NGEO EL250 Additional Hours
3400	750	250
3500	1000	250
3600	5000	1000

Information sources

We can help you determine the right oil for your Cat engines, or you can refer to your "Operations and Maintenance Manual" or service publication SEBU6400 (Natural Gas Engines).

Proper use for health and safety

According to toxicology information, Cat NGEO EL250 has little or no adverse effects if handled and used properly. No special precautions are suggested beyond attending to good personal hygiene and avoiding prolonged, repeated skin contact. For more information, refer to the "Material Safety Data Sheet," on the Caterpillar web site: www.catmsds.com