

114CNG SYNTHETIC PLUS CNG ENGINE OIL SAE 15W-40

Synthetic Plus CNG Engine Oil SAE 15W-40 is a superior low ash, catalyst compatible, para-synthetic engine oil that is formulated for use in CNG (Compressed Natural Gas), LNG (Liquefied Natural Gas) or LPG (Liquefied Petroleum Gas) vehicles such as transit buses, school buses, refuse trucks, airport and intercity shuttles and delivery fleets or in those vehicular natural gas engines that have slider-follower valve trains. Synthetic Plus Natural Gas Engine Oil SAE 15W-40 is particularly recommended for use in those vehicles equipped with Cummins, Detroit Diesel and John Deere CNG or LNG engines.

Synthetic Plus CNG Engine Oil SAE 15W-40 is blended from a unique combination of the finest quality severely hydro-treated polyalphaolefin (PAO) synthetic base fluids and severely hydro-treated and hydrocracked Group II Plus available which provides the following advantages:

- Superior cold weather start-ability and pumpability
- Excellent resistance to thermal and oxidative breakdown
- Excellent low volatility characteristics that provide exceptional oil consumption control and the prevention of the formation of deposits on critical engine parts
- A naturally high viscosity index

A carefully balanced, proprietary low-ash performance additive system with a highly shear stable viscosity index improver is blended into Synthetic Plus CNG Engine Oil SAE 15W-40 to provide these performance benefits:

- A higher level of anti-wear additives than conventional low-ash gas engine oils to meet the demanding requirements of on-highway applications
- Excellent wear protection for slider-follower diesel engines converted to CNG and LNG service
- An optimized balance of detergency and dispersancy to provide excellent piston and engine cleanliness
- Excellent protection against deposit formation on the piston crown, combustion chamber and cylinder walls
- Excellent protection against valve stem deposits and valve seat recession
- Prolonged valve and spark plug life
- Extended oil filter life
- Exceptional nitration and oxidation control
- Excellent overall engine cleanliness
- Excellent TBN retention
- Reduced bearing corrosion
- Excellent rust and corrosion protection
- Excellent thermal and oxidative stability and anti-coking protection
- Excellent oil consumption control
- Superior low volatility characteristics
- Excellent high temperature/high shear performance in order to provide excellent oil film thickness at high operating temperatures and shear rates, while minimizing lubricant frictional resistance
- Excellent shear stability for stay-in-grade performance throughout the entire oil drain interval
- Rapid circulation and good pumpability at low temperatures
- Excellent anti-foaming properties
- Very good catalyst compatibility

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- Excellent minimization of the formation of hot spots that can lead to increased NO_x formation and catalyst poisoning
- Increased engine durability and reliability
- Longer oil life
- Increased engine life and reduced maintenance costs due to down-time

Further blended into SynShield™ Durability Advantage SAE 15W-40 are two proven frictional modifiers, Micron Moly®, a liquid soluble type of moly, and Schaeffer Mfg.'s own proprietary additive Penetro®. Once plated, these frictional modifiers form a long lasting, slippery, tenacious lubricant film, which prevents metal-to-metal contact and damaging frictional wear which results in:

- Increased fuel economy.
- A low coefficient of friction.
- Significantly less bearing, ring, piston, cylinder and valve-train wear.
- Increased engine efficiency, life, and durability
- Less downtime with reduced maintenance

Synthetic Plus CNG Engine Oil SAE 15W-40 meets and exceeds the performance requirements of API Service Category CF and the performance requirements for Cummins CES 200074 and Detroit Diesel 93K216. The product is recommended for Cummins L-10, "B" and "C" series stationary and vehicular CNG engines and Detroit Diesel 50G and 60G natural gas engines. Synthetic Plus Natural Gas Engine Oil SAE 15W-40 is also recommended and suitable for use in Mack CNG, Volvo CNG, Renault RGD, Isuzu CNG, Hino CNG, Hyundai CNG, John Deere CNG/LNG and LPG fueled engines and in earlier model 4 stroke diesel fueled engines calling for API CF-4/CG-4/CE/CD quality engine oils as well as out of warranty 2-stroke Detroit Diesel engines that specify the use of an API CF-2 quality engine oil. Always consult the owner's manual and the OEM's recommendations for the correct engine oil recommendations.

TYPICAL PROPERTIES

SAE Grade	15W-40
Specific Gravity 60°F/15°C	0.87
Viscosity @ 40°C, cSt (ASTM D-445)	90-110
Viscosity @ 100°C, cSt (ASTM D-445)	13.50 – 15.00
High Temperature High Shear Viscosity 302F°/150°C cP (ASTM D-4683)	3.8
Cold Cranking Viscosity cP @ -20°C (ASTM D-5293)	4,300
Mini-Rotary Viscosity cP @ -25°C TP-1 (ASTM D-4684)	16,500
Viscosity Index ASTM D-2270	140
Flash Point °F/°C ASTM D-92	448°/231°
Stable Pour Point °F/°C (FTM 7916 Method 203)	<-41°/ <-42°
Sulfated Ash Content %wt. (ASTM D-874)	0.6%
Total Base Number (ASTM D-2896)	5.1
Total Acid Number (ASTM D-664)	2-3
Foam Inhibition Test (ASTM D-892)	
Sequence I	0/0
Sequence II	0/0
Sequence III	0/0
NOACK Volatility (ASTM D-5800)	
% Evaporation Loss @ 250°C	7.2%
Shear Stability % Viscosity Loss 90 Passes (ASTM D-7901)	10%
Calcium % wt.	0.12 – 0.15
Phosphorous % wt.	0.04 – 0.081
Zinc % wt.	0.07-0.09