

## 114S SYNTHETIC PLUS NATURAL GAS ENGINE OIL SAE 30 & 40

Synthetic Plus Natural Gas Engine Oil is a superior low ash para-synthetic natural gas engine oil that is specially formulated for use in stationary 2-cycle and 4-cycle stoichiometric and lean burning natural gas engines.

Synthetic Plus Natural Gas Engine Oil is blended from the finest severely hydro-treated polyalphaolefin (PAO) synthetic base fluids and high viscosity index solvent refined severely hydro-finished 100% paraffin base stocks and available. This unique combination provides Synthetic Plus Natural Gas Engine Oil with the following advantages.

- Superior cold weather startability and operating characteristics. This results in less friction and lubricant drag in the engine during cold weather start up.
- Superior oxidative stability.
- Excellent resistance to thermal degradation.
- Lower volatility. This results in reduced oil consumption.
- A high natural viscosity index.
- Extended oil drain capability and intervals.

Blended into the PAO synthetic base fluids and 100% paraffin base oils is a highly specialized performance additive package, that contain the proper balance of detergent, dispersant, rust and oxidation inhibitors and inhibitors and anti-wear additives to provide the following performance advantages:

- Excellent piston groove, land, and skirt cleanliness.
- Elimination of piston skirt varnish.
- Improved oxidation and nitration stability.
- A vast reduction in piston ring sticking.
- A reduction and modification of carbon deposits on piston crown, combustion chamber walls, spark plugs, cylinder walls, etc.
- Reduced piston, ring cylinder wall and bearing wear and corrosion.
- Extended oil filter life and longer spark plug life.
- Minimized combustion chamber ash accumulation and plug fouling.
- Catalytic convertor compatibility.
- Longer oil drain capability
- Increased engine durability and reliability.
- Excellent TBN retention. This allows for its use in gas engines having alternate energy for fuel gas containing up to 0.3% sulfur as hydrogen sulfide and small amounts of total organic halide, such as chloride.
- Superior valve train-wear protection.
- Excellent high temperature/high shear performance to provide excellent oil film thickness and engine protection at high operating temperatures and shear rates, while minimizing lubricant frictional resistance.
- Excellent thermal and oxidative stability and anti-coking protection.
- Superior low volatility characteristics.
- Rapid circulation and good pumpability at low temperatures.
- Excellent anti-foaming properties.
- Increased engine life and reduced maintenance costs due to downtime.

Further blended into Synthetic Plus Natural Gas Engine Oil 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, durability, and life.
- Less downtime with reduced maintenance

Synthetic Plus Natural Engine Oil meets and exceeds the following manufacturer's requirements: Caterpillar, Cooper-Bessmer, Copper-Enterprise, DeLaval, Dresser-Clark, Dresser-Rand, Superior and Waukesha

## TYPICAL PROPERTIES

SAE Grade	30	40
ISO Grade	100	150
API Gravity 60°F/15°C	30.75	30.1
Specific Gravity 60°F/15°C	.8721	.8756
Viscosity 40°C (ASTM D445), cSt	92-100	138.94-140.6
Viscosity 100°C (ASTM D445), cSt	11.02-11.68	14.59-14.88
High Temperature/High Shear Viscosity (ASTM D4683), cP	3.5	3.8
Viscosity Index (ASTM D2270)	105	100
Flash Point °F/°C (ASTM D92)	476°/247°	500°/260°
Fire Point °F/°C (ASTM D92)	515°/268°	530°/276.67°
Pour Point °F/°C (ASTM D97)	-10°/-23.33°	-5°/-20.56°
Sulfated Ash Content (ASTM D874), % wt	0.4%	0.4%
Total Base Number (ASTM D2896)	5.1	5.1
Total Acid Number (ASTM D664)	2-3	2-3
Foam Test (ASTM D892)		
Sequence I	0/0	0/0
Sequence II	0/0	0/0
Sequence III	0/0	0/0
Sequence IV	0/0	0/0
Thin Film Oxidation Loss Uptake Test (ASTM D4742)		
Induction Time, minutes	200+	200+
Volatility % Loss @ 700°F (ASTM D2281)	5.0%	5.0%
Calcium, % wt	.104-.118	.104-.118
Phosphorous, % wt	.024-.031	.024-.031
Zinc, % wt	.028-.04	.028-.04
Nitrogen, % wt	.081-.098	.081-.098