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## #114LF SYNTHETIC PLUS SOUR NATURAL GAS ENGINE OIL SAE 30 AND SAE 40

Synthetic Plus Sour Natural Gas Engine Oil is a superior medium ash para-synthetic natural gas engine oil that is specially formulated for use in medium to high speed, four-cycle gas engines running on landfill gas or sour gas.

Synthetic Plus Sour Natural Gas Engine Oil is blended from the finest severely hydrofinished polyalphaolefin synthetic base fluids and high viscosity index solvent refined severely hydrofinished 100% paraffin base stocks available. This unique combination provides the Synthetic Plus Sour Natural Gas Engine Oil with the following advantages:

- Superior Cold Weather Startability and Operating Characteristics
- Superior Oxidative Stability
- Excellent Resistance to Thermal Degradation
- Low Volatility
- A High Viscosity Index
- Extended Oil Drain Capability and Intervals

Blended into the combination of para-synthetic base fluids is a highly specialized additive package that contains the proper balance of detergent, dispersants, rust and oxidation inhibitors and anti-wear additives in order to provide the following performance benefits:

- Excellent TBN reserve and alkalinity retention to neutralize acidic components such as Total Organic Halides as Chloride and/or hydrogen sulfide at moderate levels.
- Outstanding corrosion control and acid neutralizing properties.
- Medium ash levels to control wear on valve faces and valve seats on some natural gas engines.
- Excellent piston groove, land and skirt cleanliness.
- Elimination of piston skirt varnish.
- Improved oxidation and nitration stability.
- A reduction and modification of carbon deposits on piston crowns, combustion chamber walls, spark plugs, cylinder walls, etc...
- Reduced piston, ring, cylinder wall and bearing wear.
- Reduced bearing corrosion
- Extended oil filter life and longer spark plug life
- Minimized combustion chamber ash accumulation and plug fouling.
- Exhaust gas catalytic converter capability (phosphorous level less than 300 parts per million).
- Increased engine durability and reliability.
- Superior valve train-wear protection.
- Excellent high temperature/high shear performance in order 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 cost due to downtime.

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Further blended into these para-synthetic base fluids, the highly advanced proprietary medium ash performance additive package are two proven frictional modifiers, Micron Moly®, a liquid soluble type of Moly and Schaeffer Mfg's own proprietary additive Penetro®. These two proven frictional modifiers once plated, form a long lasting slippery tenacious lubricant film, which prevents the metal surfaces from coming into contact with each other. By preventing metal-to-metal contact, damaging frictional wear is prevented from occurring. This prevention of metal-to-metal contact and reduction in wear 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.**
- **Reduced maintenance.**

Synthetic Plus Sour Natural Gas Engine Oil meets and exceeds Waukesha's requirements for medium ash oils and the requirements of industrial exhaust gas catalytic converter manufacturers.

Because of the corrosive nature of landfill and sour gases used oil analysis should be performed every 250 to 500 hours. The used oil analysis program that is used must also include tests for Total Base Number ASTM D-2896 or D-4739 and Total Acid Number ASTM D-664

## TYPICAL PROPERTIES

SAE Grade	30	40
API Gravity 60°F/15.5°C	30.75	30.1
Specific Gravity 60°F/15.5°C	.8721	.8756
Viscosity @ 40°C, cSt (ASTM D-445)	92-100	138.94-140.6
Viscosity @ 100°C, cSt (ASTM D-445)	11.02-11.68	14.59-14.88
High Temperature High Shear Viscosity, cP (ASTM D-4683)	3.5	3.8
Viscosity Index (ASTM D-2270)	105	105
Flash Point °F/°C (ASTM D-92)	476°/246.67°	500°/260°
Fire Point °F/°C (ASTM D-92)	515°/268.33°	530°/276.67°
Pour Point °F/°C (ASTM D-97)	-10°/-23.33°	-5°/20.56°
Sulfated Ash Content % weight (ASTM D-874)	0.91	0.91
Total Base Number (ASTM D-2896)	9.4	9.4
Foam Test (ASTM D-892)		
Sequence I	0/0	0/0
Sequence II	0/0	0/0
Sequence III	0/0	0/0
Volatility % Loss @ 700°F/371°C (ASTM D-6417)	5.0	5.0
Zinc % weight	0.026-0.032	0.026-0.32
Phosphorous % weight	0.028-0.04	0.028-.0.04
Calcium % weight	.2553-.2137	.2553-.2137