



# L.P. & NATURAL GAS ENGINE OIL

- **CONTROLS DEPOSITS**
- **LOW ASH**
- **QUALITY BASE OIL**
- **NO VI IMPROVERS**
- **HELPS SPARK IGNITED ENGINES**
- **EXCELLENT TBN**

The name, L.P. & NATURAL GAS ENGINE OIL, explains its use. It is a low ash oil designed for stationary l.p. and natural gas engines. It is an amber colored, high viscosity index oil. This means minimum thinning out under heat or thickening up under cool temperatures. A high viscosity index oil will thin out less under heat than an oil with a low viscosity index.

## L.P. & NATURAL GAS ENGINE OIL Controls Deposits

Several years ago, natural gas engines were commonly lubricated with un-compounded naphthenic oils or conventional motor oils. Unfortunately, with those lubricants, oil deterioration and engine deposits resulted in frequent shutdowns for maintenance. Texas Refinery Corp. has formulated an oil with additives chosen specifically for l.p. and natural gas engine service. A low ash additive package is used which significantly improves piston deposit control.

## L.P. & NATURAL GAS ENGINE OIL Is A Low Ash Oil

Texas Refinery Corp.'s L.P. & NATURAL GAS ENGINE OILS are considered low ash products. They have a sulfated ash value much less than the top limit to be considered a low ash oil. The sulfated ash weight percent is .50. This low ash formula certainly helps to reduce excessive piston top land deposits. High ash oils used in an l.p. and natural gas engine when the fuel has a concentration of hydrogen sulfide ( $H_2S$ ) at 0.10% by volume or less can create deposit buildup



*Typical applications for L. P. & NATURAL GAS ENGINE OIL are stationary engines, burning either natural gas or l.p. gas, which call for low-ash-type oil.*

which can lead to valve, combustion chamber and turbo damage over longer operating type. High ash oils in these types of engines can create deposits resulting in shorter engine life.

## L.P. & NATURAL GAS ENGINE OIL Contains Quality Base Oils

The refining processes Texas Refinery Corp. uses for its base oils make L.P. & NATURAL GAS ENGINE OIL one with outstanding quality characteristics. The base oils go through a solvent extraction process that removes undesirable characteristics that might lead to sludge and gum under heated conditions. The oils then go through a hydro-treating step which improves its oxidation resistance as well as its response to the superior quality additives used by Texas Refinery Corp. Last, but not least, the oils go through a dewaxing process making them highly desirable products for lower temperature application. These special refining steps make the oil much better than is called for by specifications of an l.p. & natural gas engine and it is an exceptional quality product that can be used in other applications.

## L.P. & NATURAL GAS ENGINE OIL Does Not Contain VI Improvers

Texas Refinery Corp. L.P. & NATURAL GAS ENGINE OILS do not contain viscosity index improvers. Some engines equipped with electrical governor actuators are not compatible with viscosity index

improver polymers. This is because the crankcase oil lubricates these controls and precise control of those engines using electrical governor actuators cannot be provided if the engine oil uses VI improver polymers.

## L.P. & NATURAL GAS ENGINE OIL Helps Spark Ignited Engines

Texas Refinery Corp. L.P. & NATURAL GAS ENGINE OILS provide excellent service in heavy-duty spark ignited engines. Using these oils in the 7,000 hour field tests indicated no ring sticking or ring scuffing. In addition there was no liner scuffing or carbon cutting from excessive piston top land deposits. Oil consumption did not exceed the test requirements. Valve recession also did not exceed the limits. At the end of all specified oil change periods, the oil condition remained within limits for oxidation, nitration and Total Base Number (TBN).

## L.P. & NATURAL GAS ENGINE OIL Has Excellent TBN

Texas Refinery Corp. L.P. & NATURAL GAS ENGINE OIL has a TBN of 7.0. This is low in comparison to some of our oils used in other engines; however, most low ash oils used for l.p. and natural gas engine service only have Total Base Numbers of 5. The extra measure of safety with Texas Refinery Corp. L.P. & NATURAL GAS ENGINE OIL means it is possible for these oils to neutralize more acids and protect against the harmful effects of acids better than many of the commercial oils on the market.

Typical applications for L.P. & NATURAL GAS ENGINE OIL include engines manufactured by Caterpillar, Clark, Cooper-Bessmer, Cummins, Fairbanks Morse, Ingersoll-Rand, (category I, II and III), Stewart, Stevenson, Superior & Waukesha V.H.P. which call for low-ash-type oils for l.p. and natural gas engines.

# SPECIFICATIONS

## L.P. & NATURAL GAS ENGINE OIL

PROPERTIES	SAE 30	SAE 40
Product Code	#6653	#6654
Gravity, °F. API	29/31	28/30
Flash Point, °F., COC, Minimum	440	480
Fire Point, °F., COC, Minimum	480	530
Pour Point, °F., Maximum	+5	+10
Total Base Number (TBN)	7.0	7.0
Viscosity @ 100°F., SUS (Typical)	460	760
Viscosity @ 210°F., SUS (Typical)	60/64	74/78
Viscosity Index, Minimum	95	95
Foam Test, Initial after Blowing/ 5 minutes Settling, ml., Max.		
Seq. I	25/0	25/0
Seq. II	25/0	25/0
Seq. III	25/0	25/0
Calcium, Wt. %	.13	.13
Zinc, Wt. %	0.03	0.03
Phosphorous, Wt. %	0.03	0.03
Sulfated Ash, Wt. %, Max.	0.50	0.50

Handling Information: For safe handling of the product, read the Safety Data Sheet (SDS).

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