



## El Mar® LF-D GEO

Phillips 66® El Mar LF-D (landfill-digester) GEO is a premium quality, next-generation, low-ash, gas engine oil designed for landfill gas applications. It is especially effective in controlling silica deposits formed during the combustion of siloxane gases found in many landfills.

El Mar LF-D GEO is formulated with high-quality Group II base stocks and the newest high dispersant additive technology developed to meet the rigorous lubrication demands of natural gas engines operating on landfill or digester fuel. It provides outstanding resistance to oil oxidation and nitration, and has a well-balanced alkaline reserve (TBN) to neutralize acids over long service intervals. It protects against ring and liner wear, minimizes the formation of silica deposits on cylinder heads and liners. The additive package is zinc and phenate free for use in landfill applications. Low ash content protects catalysts and all exhaust after-treatment hardware.

El Mar LF-D GEO has the capability to extend cylinder head and other engine component life. The combination of high-quality base stocks and enhanced silica deposit control helps reduce oil consumption thereby resulting in lower operating costs.

### Applications

- Turbocharged, lean-burn and naturally aspirated 4-stroke cycle and some 2-stroke cycle natural gas engines where the manufacturer specifies a low-ash gas engine oil meeting API CF or API CD performance requirements
- Gas engines burning landfill gas containing hydrogen sulfide

El Mar LF-D GEO is recommended for use in natural gas engines manufactured by:

- Caterpillar
- GE Jenbacher
- Wartsila
- Waukesha
- Siemens SL and HM Engines

### Features/Benefits

- Proven extended-drain capability for reduced maintenance costs and maximum productivity
- Field-proven performance in providing outstanding engine cleanliness
- High dispersancy protects against sludge and varnish formation
- Outstanding resistance to oil oxidation and nitration
- Enhanced protection against piston scuffing and ring and liner wear
- Excellent protection against rust and corrosion

**Premium, Next-  
Generation GEO  
for landfill and  
digester fuel**

**KEEPING THE  
WORLD  
RUNNING  
SMOOTHLY.**





- Compatible with emissions system catalysts

## El Mar® LF-D GEO

Typical Properties	
<b>SAE Grade</b>	<b>40</b>
Specific Gravity @ 60°F	0.885
Density, lbs/gal @ 60°F	7.38
Color, ASTM D1500	2.5
Flash Point (COC), °C (°F)	274 (525)
Pour Point, °C (°F)	-17(7)
Viscosity, Kinematic	
cSt @ 40°C	125
cSt @ 100°C	13.5
Viscosity Index	102
Cold Cranking Viscosity, cP @ (°C)	---
Sulfated Ash, ASTM D874, wt %	0.50
Total Base Number (TBN), ASTM D2896	6.2
Phosphorus, wt %	0.029

## Health & Safety Information

For recommendations on safe handling and use of this product, please refer to the Safety Data Sheet via <http://www.phillips66.com/SDS>

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Typical properties are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.

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