



## El Mar® Ashless Heavy Duty GEO

Phillips 66® El Mar Ashless Heavy Duty GEO is a high quality, ashless gas engine oil designed for use in naturally aspirated and moderately turbocharged 2-stroke cycle natural gas engines. Engines operating in this type of service typically are found on crude oil and gas transmission pipelines, electrical power generators, gas compressors, irrigation water pumps and well drilling rigs.

El Mar Ashless Heavy Duty GEO is formulated with field-proven performance additives to meet the rigorous lubrication demands of modern, fuel-efficient, low-emission gas engines. It provides excellent resistance to oxidation and nitration, protects against ring and liner wear, minimizes the formation of sludge and piston deposits for outstanding engine cleanliness, and protects against corrosion. The absence of ash-forming additives results in very clean intake ports to help maintain peak engine performance, and also helps extend spark plug life in spark-ignited gas engines.

### Applications

- 2-stroke cycle and some 4-stroke cycle natural gas engines where the manufacturer specifies an ashless gas engine oil
- SAE 5W-30 special application only contact technical service

El Mar Ashless Heavy Duty GEO is recommended for use in natural gas engines manufactured by:

- Ajax
- Climax
- Colt-Fairbanks Morse
- Cooper Bessemer
- Dresser Clark
- Dresser Rand (Category I & II)
- Worthington

### Features/Benefits

- Field-proven performance in providing outstanding engine cleanliness
- Ashless formulation helps minimize port deposits
- Good dispersancy protects against sludge and varnish formation
- Excellent resistance to oxidation and nitration
- Protects against scuffing and wear
- Protects against rust and corrosion
- Does not contain any bright stock, which can cause harmful carbon deposits

## Ashless Natural Gas Engine Oil





### El Mar<sup>®</sup> Ashless Heavy Duty GEO

Typical Properties				
SAE Grade	30	40	15W-40	5W-30
Specific Gravity @ 60°F	0.883	0.889	0.875	0.8586
Density, lbs/gal @ 60°F	7.36	7.40	7.29	7.15
Color, ASTM D1500	3.0	3.5	2.5	3.0
Flash Point (COC), °C (°F)	211(412)	270 (518)	235(455)	214(418)
Pour Point, °C (°F)	-27(-17)	-27 (-17)	-36(-33)	-42(-44)
Viscosity, Kinematic				
cSt @ 40°C	94.7	142	107	61
cSt @ 100°C	11.0	14.2	14.3	10.45
Viscosity Index	101	97	136	161
Cold Cranking Viscosity, cP @ (°C)	---	---	6300 (-20)	5150(-30)
Sulfated Ash, ASTM D874, wt %	<0.01	<0.01	<0.01	<0.01
Total Base Number (TBN), ASTM D2896	1.0	1.0	1.0	1.0
Phosphorus, wt %	0.054	0.054	0.054	0.54

### 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/EN/products/Pages/MSDS.aspx>.

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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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