

## ExxonMobil 460 Mobilgear SHC Series

Category : Fluid , Lubricant , Polyalphaolefin (PAO)

### Material Notes:

The Mobilgear SHC Series lubricants are heavy-duty gear oils primarily designed for all kinds of enclosed gearing as well as plain and rolling element bearings. They are formulated from wax-free polyalphaolefin (PAO) synthetic base stocks that have exceptional oxidation and thermal properties and excellent low temperature fluidity. The combination of a naturally high viscosity index and a unique additive system enables these products to provide outstanding performance under severe high and low temperature operating conditions. The wax-free nature of the PAO base oils also contributes to the products excellent low temperature performance. They have outstanding EP properties and resistance to shock loading. The base stocks have inherently low traction properties that result in low fluid friction in the load zone of non-conforming surfaces such as gears and rolling element bearings. Reduced fluid friction produces lower operating temperatures and improved gear efficiency. The Mobilgear SHC Series covers a very wide viscosity range, from ISO VG 150 to 6800. Accordingly, they find application in a wide range of enclosed gear applications, as well as plain and rolling element bearings. Because of the very high viscosities available, this family can meet the lubrication needs of very slow speed and high load/high temperature gears and bearings; they are ideal for situations in which conventional products operate in the boundary regime. They may be substituted for all-loss lubricants in certain open gear applications, but cost of equipment modifications needs to be balanced against the benefits of recirculating the lubricant. Mobilgear SHC Series lubricants are the products of choice for many OEMs and customers world-wide based on their wide application range and good performance in tough situations.

**Application Considerations:** While the Mobilgear SHC Series are compatible with mineral oil based products, admixture may detract from their performance. Consequently it is recommended that before changing a system to one of the Mobilgear SHC Series, it should be thoroughly cleaned out and flushed to achieve the maximum performance benefits. Mobilgear SHC Series oils are recommended for all types of enclosed steel-on-steel gear drives. They are suitable for both circulation and splash lubrication systems. The range of viscosity choices in the Mobilgear SHC Series from ISO 150 to ISO 6800, provides the right lubrication option for low temperature applications where pour points of -46°C are required to high temperature applications where operating temperatures of 121°C are encountered. They are particularly recommended for gear sets operating under heavy or shock loads and low speeds where boundary lubrication may prevail. For clarity, applications for this product family are described for two viscosity ranges, as follows: Mobilgear SHC 150 to 1500 - Industrial enclosed spur, helical and bevel gear drives, especially heavy-duty applications especially those found in mining, chemical processing, metals and paper sectors; Mobilgear SHC 150 to 1500 - Industrial gearing for conveyers, agitators, dryers, extruders, fans, mixers, presses, pulpers, pumps (including oil well pumps), screens, extruders and other heavy duty applications; Mobilgear SHC 150 to 1500 - Marine gearing including main propulsion, centrifuges, deck machinery such as winches, windlasses, cranes, turning gears, pumps, elevators and rudder carriers; Mobilgear SHC 3200 and 6800 - Industrial enclosed spur, helical and bevel gears, especially slow speed, and/or high load units; Mobilgear SHC 3200 and 6800 - Plain and rolling element bearings, especially in slow speed, and/or high load applications; Mobilgear SHC 3200 and 6800 - Railroad DC Traction Motor drives; Mobilgear SHC 3200 and 6800 - Certain open gear applications such as oiling pinions or specially designed circulation systems

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Physical Properties	Metric	English	Comments
Density	0.870 g/cc	0.0314 lb/in <sup>3</sup>	ASTM D4052
	@Temperature 15.6 °C	@Temperature 60.1 °F	

Viscosity Measurement Physical Properties	155 Metric	155 English	Index: ASTM D2270 Comments
Kinematic Viscosity at 40°C (104°F)	460 cSt	460 cSt	ASTM D445
Kinematic Viscosity at 100°C (212°F)	46 cSt	46 cSt	ASTM D445

Mechanical Properties	Metric	English	Comments
Four Ball Extreme Pressure, Load Wear Index	48	48	ASTM D2783
Four Ball Extreme Pressure, Weld Load	250 kg	551 lb (mass)	ASTM D2783
Timken Test	27200 g	60.0 lb	

Thermal Properties	Metric	English	Comments
Pour Point	-27.0 °C	-16.6 °F	ASTM D97
Flash Point	245 °C	473 °F	ASTM D92

Descriptive Properties	Value	Comments
Copper Strip Corrosion	1B	3 hrs @ 100°C
Demulsibility, ASTM D2711, mL water	85	EP Oils
Foam Sequence I, ASTM D1009	0/0	
Foam Sequence II, ASTM D893	0/0	
Foam Sequence III, ASTM D893	0/0	
FZG 4-Square Load Support, DIN 51354, Fail Stage	13+	
Rust Prevention, Synthetic Sea Water	pass	ASTM D665B

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