

Mobilgear SHC Series

Gear Oils

Product Description

The Mobilgear SHC Series lubricants are supreme performance 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 superb performance in tough situations.

Features & Benefits

The Mobilgear SHC family of lubricants is a leading member of the SHC brand of products that are world-renowned for their innovation and performance. These products are based on synthesised PAO base oils pioneered by our scientists and which are now the leading non-mineral base oil used in finished lubricants. These molecular design base stocks provide many benefits not possible with mineral stocks, and they result in final products with unique performance features and customer benefits.

Our formulation scientists have used a proprietary additive combination that fortifies the PAO base oils to provide excellent EP and anti-wear performance, even in shock load situations. The resulting finished products have shown exceptional performance in OEM evaluations, customer field tests and commercial use. The higher viscosity grades are particularly effective in low-speed, high load, high temperature situations and provide excellent gear & bearing protection, longer oil life and excellent all-round service compared with conventional products.

Specific features and potential benefits for the Mobilgear SHC Series of lubricants include:



Features	Advantages and Potential Benefits
Outstanding load-carrying and antiwear properties	Extended gear life and reduced maintenance costs
Very high viscosity grades available, without reduction of properties or performance capability	Provides excellent EHL film protection of gears and bearings even at slow speeds, high loads and high temperatures
	Can be used to convert all-loss systems to circulation
	Can replace grease in some applications resulting in plant product consolidation
High viscosity index and wax-free base oils	Trouble-free operation over a wide temperature range particularly at extremely low temperatures.
Low traction properties	Improved gear efficiency and lower operating temperatures lead to lower operating costs
Outstanding thermal/oxidation resistance and long product life	Reduced lubricant consumption, reduced product and change-out costs
Light colour	Minimises need for gear cleaning prior to inspections, reducing maintenance costs

Applications

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



Typical Properties

Mobilgear SHC	150	220	320	460	680	1000	1500	3200	6800
ISO Viscosity Grade	150	220	320	460	680	1000	1500	3200	--
Viscosity, ASTM D 445									
cSt @ 40°C	150	220	320	460	680	1000	1500	3025	8100
cSt @ 100°C	19.5	26	35	46	62	81	106	171	350
Viscosity Index, ASTM D 2270	150	150	155	155	160	160	160	160	170
Pour Point, °C, ASTM D 97	-45	-36	-33	-27	-27	-24	-18	-9	-6
Density @15.6 °C kg/l, ASTM D 4052	0.86	0.87	0.88	0.87	0.89	0.87	0.88	0.89	0.90
Flash Point, °C, ASTM D 92	222	232	238	245	256	-	-	-	-
Timken OK Load	60	60	60	60	60	60	60	60	60
4-Ball EP Teat, ASTM D 2783:									
Weld load, Kg	250	250	250	250	250	250	250	250	250
Load Wear Index, Kgf	48	48	48	48	48	48	48	48	48
FZG test, DIN 51354, Failure Stage	13+	13+	13+	13+	13+	13+	13+	13+	13+
Copper Corrosion, ASTM D130, 3 hrs @ 100°C	1B	1B	1B	1B	1B	1B	1B	1B	1B
Demulsibility, EP Oils, ASTM D 2711-2, Free water, ml	85	85	85	85	85	85	85	85	85
Foaming Characteristics, ASTM D 892:									
Seq. I, Tendency/Stability, ml/ml	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Seq. II, Tendency/Stability, ml/ml	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Seq. III, Tendency/Stability, ml/ml	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0	0/0
Rust Protection, ASTM D 665, Sea Water	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

Precautions

MOBILGEAR SHC SERIES is manufactured from high quality synthetic base oil, carefully blended with selected additives. As with all petroleum products, good personal hygiene and careful handling should always be practiced. Avoid prolonged contact to skin, splashing into the eyes, ingestion or vapour inhalation. Please refer to our Imperial Oil Material Safety Data Sheet for further information.

Note: This product is not controlled under Canadian WHMIS legislation.

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