Mobil SHC™ 600 Series

Exceptional Performance Gear and Bearing Oils

Product Description

Mobil SHC™ 600 Series lubricants are exceptional performance gear and bearing oils designed to provide outstanding service in terms of equipment protection, oil life and problem-free operation helping to enable increased customer productivity. These scientifically engineered oils are formulated using the latest proprietary and patent pending Mobil SHC technology to provide outstanding and balanced performance in demanding applications at high and low temperatures. Mobil SHC 600 products feature excellent low temperature properties, as well as improved air release performance in the lower viscosity grades. These products are resistant to mechanical shear, even in heavily loaded gear and high shear bearing applications, so that there is virtually no loss of viscosity.

Mobil SHC 600 Series products have low traction coefficients relative to mineral oils which derive from the molecular structure of the base stocks used. This results in low fluid friction in the load zone of non-conforming surfaces such as gears and rolling contact bearings. Low fluid friction produces lower operating temperatures and improved gear efficiency, which translates into reduced power consumption. Mobil SHC 600 Series products have demonstrated up to 3.6% improvement in energy efficiency in controlled laboratory testing(*). Mobil SHC 600 Series formulation also provides excellent resistance to oxidation and deposit formation at elevated temperatures, as well as exceptional resistance to rusting and corrosion, antiwear, demulsibility, foam control and air release properties, and multi-metal compatibility. Mobil SHC 600 Series oils maintain good compatibility with seals and other materials used in equipment normally lubricated with mineral oils.

Mobil SHC 600 Series lubricants are suitable for use in a wide range of equipment, not only as high temperature problem solvers, but also because of the other benefits they offer.

(*) Energy efficiency relates solely to the performance of Mobil SHC 600 when compared to conventional (mineral) reference oils of the same viscosity grade in circulating and gear applications. The technology used allows up to 3.6% efficiency compared to the reference when tested in a worm gearbox under controlled conditions. Efficiency improvements will vary based on operating conditions and application.

Features and Benefits

The Mobil SHC brand of lubricants are recognized and appreciated around the world for their innovation and outstanding performance. These synthetic products, molecularly designed and pioneered by our research scientists, embody the continuing commitment to using advanced

technology to provide outstanding lubricant products. The development of Mobil SHC 600 Series was preceded by close contacts between our scientists and application specialists with key Original Equipment Manufacturers (OEMs) to ensure that the products provide exceptional performance in the continually evolving industrial equipment designs.

Our work with key equipment builders has helped confirm the results from our own laboratory and rig tests showing the exceptional performance of Mobil SHC 600 Series lubricants. Not least among the benefits, shown in work with OEMs, is the potential for energy efficiency improvements up to 3.6% relative to mineral oils (*). These benefits are particularly evident in equipment with a high level of mechanical losses, such as high ratio worm gears.

To develop the latest Mobil SHC technology for Mobil SHC 600 Series oils, our product formulation scientists chose select base oils because of their exceptional thermal/oxidative resistance potential and combined them with a balanced additive system, which complements the inherent benefits of the base oils to provide excellent oil life, deposit control and resistance to thermal/oxidative and chemical degradation. This formulation approach provides low temperature fluidity characteristics exceeding that of many conventional mineral products and is a key benefit for remote, low ambient temperature applications. Mobil SHC 600 Series oils offer the following features and potential benefits:

Features	Advantages and Potential Benefits
Superb high temperature thermal/oxidation resistance	Helps extend equipment high temperature operating capability Long oil life, helps reduce maintenance costs Helps minimize deposits to enable trouble-free operation and long filter life
High Viscosity Index and absence of wax	Maintains viscosity and film thickness at high temperatures Helps enable exceptional low temperature performance, including start-up
Low traction coefficient	Helps reduce friction and increase efficiency in sliding mechanisms such as gearing, with potential for reduced power consumption and lower steady-state operating temperatures. Helps minimize the effects of micro slip in rolling contact bearings to potentially extend rolling-element life
High load carrying capability	Helps protects equipment and extends life; helps minimize unexpected downtime and extends service periods
Balanced additive combination	Provides excellent performance in terms of rust and corrosion prevention, water separability, foam control and air release performance enabling problem-free operation in a wide range

Features	Advantages and Potential Benefits
	of industrial applications, and reduced operating costs

(*) Energy efficiency relates solely to the performance of Mobil SHC 600 when compared to conventional (mineral) reference oils of the same viscosity grade in circulating and gear applications. The technology used allows up to 3.6% efficiency compared to the reference when tested in a worm gearbox under controlled conditions. Efficiency improvements will vary based on operating conditions and application.

Applications

While Mobil SHC 600 Series are generally compatible with mineral oil based products, admixture may detract from their performance. Consequently it is recommended that before changing a system to one of Mobil SHC 600 Series products, it should be thoroughly cleaned out and flushed to achieve the maximum performance benefits. Mobil SHC 600 Series oils are compatible with most NBR, FKM and most other elastomeric seal materials that are used with mineral oils. There is the potential for substantial variations in the elastomers. For best results, consult your equipment supplier, seal manufacturer, or your local company representative to verify compatibility.

Mobil SHC 600 Series lubricants are recommended for use in a wide variety of gear and bearing applications where high or low temperatures are encountered or where operating temperatures or bulk oil temperatures are such that conventional lubricants give unsatisfactory life, or where improved efficiency is desired. They are particularly effective in applications where the maintenance costs of component replacement, system cleaning and lubricant changes are high. Specific applications require selection of the appropriate viscosity grade and include:

- Filled for life gearboxes, especially high ratio/ low-efficiency worm gears
- Remotely located gearboxes, where oil change-out is difficult
- Low temperature applications, such as ski lifts where seasonal oil changes can be avoided
- Mixer roll bearings and roll neck bearings where high temperatures are encountered
- Plastic calendars
- Severe centrifuge applications, including marine centrifuges
- Railroad A/C Traction Drives
- Mobil SHC 626, 627, 629 and 630 are suitable for Oil Flooded Rotary Screw Compressors compressing natural gas, field gas gathering, CO2 and other process gasses used in the natural gas industry
- Mobil SHC 629, 630, 632, 634, 636, and 639 are approved by Siemens AG for use in Flender gearboxes

Specifications and Approvals

Mobil SHC 600 Series meets or exceeds the requirements of:	624	625	626	627	629	630	632	634	636	639
AGMA 9005 E02	X	X	X	X	X	X	X	X	X	X
DIN 51517-3 CLP				X	X	X	X	X	X	X
ISO 12925-1 CKB	X									
ISO 12925-1 CKD		X	X	X	X	X	X	X	X	X

Mobil SHC 600 Series has the following builder approvals:	624	625	626	627	629	630	632	634	636	639
MAG IAS, LLC			P-63 P-80	P-76	P-77	P-39 P-74	P-59	P-35 P-39	P-34	P-78
SIEMENS AG Flender gear units, T 7300, Table A-c, Flender Code No.					A36	A35	A34	A33	A32	A31
SEW Eurodrive:										
SEW IG CLP HC	32		68		150	220	320	460	680	1000
SEW SG CLP HC	32		68		150	220		460		

Typical Properties

Mobil SHC 600 Series	624	625	626	627	629	630	632	634	636	639
ISO Viscosity Grade	32	46	68	100	150	220	320	460	680	1000
Viscosity, ASTM D 445										
cSt @ 40º C	32	46	68	100	150	220	320	460	680	1000
cSt @ 100º C	6.3	8.5	11.6	15.3	21.1	28.5	38.5	50.7	69.0	98.8
Viscosity Index, ASTM D2270	148	161	165	162	166	169	172	174	181	184
Pour Point, ºC, ASTM D5950	-57	-54	-51	-45	-42	-42	-42	-39	-39	-33

Mobil SHC 600 Series	624	625	626	627	629	630	632	634	636	639
Flash Point, ºC, ASTM D 92	236	225	225	235	220	220	225	228	225	222
Density @ 15°C (60°F) (g/cc) ASTM D4052	0.85	0.85	0.86	0.86	0.86	0.87	0.87	0.87	0.87	0.87
Appearance, visual	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange	Orange
TOST, ASTM D 943 mod, hours	10,000+	10,000+	10,000+	10,000+	10,000+	10,000+	10,000+	10,000+	10,000+	10,000+
RPVOT, ASTM D 2722, minutes	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Rust protection, ASTM D665B, Synthetic Sea Water	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Water Separability, ASTM D1401,Min. to 37 ml water @ 54º C	10	15	15	-	-	-	-	-	-	-
Water Separability, ASTM D1401,Min. to 37 ml water @ 82º C	-	-	-	15	20	20	20	20	20	25
Copper Corrosion, ASTM D130, 24 hrs @ 121º C	1B	1B	1B	1B	1B	1B	1B	1B	1B	1B
Foam Test, ASTM D892, Seq I,II,IIITendency / Stability, ml/ml	15/0, 20/0, 25/0	10/0, 30/0, 10/0	10/0, 20/0, 10/0	0/0, 10/0, 0/0	0/0, 0/0,0/0	0/0, 10/0, 0/0	0/0,0/0,0/0	0/0,0/0,0/0	0/0,0/0,0/0	0/0, 0/0, 0/0

Mobil SHC 600 Series	624	625	626	627	629	630	632	634	636	639
FZG gear scuffing test, A/8.3/90, ISO 14635-1 (mod), Failure Stage	11	12	12	12	13	13+	13+	13+	13+	13+
FAG FE8 Bearing Wear Test 7.5/80-80 ((DIN 51819-3) Roller Wear (mg)	-	-	-	2	2	2	2	2	2	2

Health and Safety

Based on available information, this product is not expected to produce adverse effects on health when used for the intended application and the recommendations provided in the Material Safety Data Sheet (MSDS) are followed. MSDS's are available upon request through your sales contract office, or via the Internet. This product should not be used for purposes other than its intended use. If disposing of used product, take care to protect the environment.

All products may not be available locally.

Note for Canadian users: Mobil SHC 600 Series is not controlled under Canadian WHMIS legislation.

9-2014

Exxon Mobil Corporation
3225 Gallows Road
Fairfax, VA 22037

1-800-ASK MOBIL (275-6624)

Typical Properties are typical of those obtained with normal production tolerance and do not constitute a specification. Variations that do not affect product performance are to be expected during normal manufacture and at different blending locations. The information contained herein is subject to change without notice. All products may not be available locally. For more information, contact your local ExxonMobil contact or visit www.exxonmobil.com
ExxonMobil is comprised of numerous affiliates and subsidiaries, many with names that include Esso, Mobil, or ExxonMobil. Nothing in this document is intended to override or supersede the corporate separateness of local entities. Responsibility for local action and accountability remains with the local ExxonMobil-affiliate entities.