

# The Upgraded Mobil SHC 600 Series

## Supreme Performance Gear and Bearing Oils

### Product Description

The upgraded Mobil SHC 600 Series lubricants are supreme 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, well beyond the capabilities of conventional oils. The upgraded 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.

The upgraded 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. The upgraded Mobil SHC 600 Series products have demonstrated up to 3.6% improvement in energy efficiency in controlled laboratory testing. It also results in extended parts life and allows for more economical equipment design. The upgraded Mobil SHC 600 Series formulation also provides superior 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. The upgraded Mobil SHC 600 Series oils maintain good compatibility with seals and other materials used in equipment normally lubricated with mineral oils.

The upgraded 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.

**DISCLAIMER:** Energy efficiency relates solely to the performance of the upgraded 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 the upgraded 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 the upgraded 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 the upgraded 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 unmatched by mineral products and is a key benefit for remote, low ambient temperature applications.

The upgraded Mobil SHC 600 Series oils offer the following features and potential benefits:

<b>Features</b>	<b>Advantages and Potential Benefits</b>
Superb high temperature thermal/oxidation resistance	Helps extend equipment high temperature operating capability Provides long oil life, helping 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 protect 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 of industrial applications, and reduced operating costs

## Applications

While the upgraded 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 the upgraded Mobil SHC 600 Series, it should be thoroughly cleaned out and flushed to achieve the maximum performance benefits. The upgraded 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 Imperial Oil representative to verify compatibility.

The upgraded 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

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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
- The upgraded Mobil SHC 625, 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

Please note that Mobil SHC 600 Series products are Not for Aviation Use, meaning that they are not designed, or recommended, for lubrication of aircraft components.

## Specifications and Approvals

<b>The Upgraded Mobil SHC 600 Series meets or exceeds the requirements of:</b>	<b>624</b>	<b>625</b>	<b>626</b>	<b>627</b>	<b>629</b>	<b>630</b>	<b>632</b>	<b>634</b>	<b>636</b>	<b>639</b>
AGMA 905 E02	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		

<b>The upgraded Mobil SHC 600 Series has the following builder approvals:</b>	<b>624</b>	<b>625</b>	<b>626</b>	<b>627</b>	<b>629</b>	<b>630</b>	<b>632</b>	<b>634</b>	<b>636</b>	<b>639</b>
Cincinnati Machine			P-63 P-80	P-76	P-77	P-74	P-59	P-35	P-34	P-78

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## Typical Properties

<b>The upgraded Mobil SHC 600 Series</b>	<b>624</b>	<b>625</b>	<b>626</b>	<b>627</b>	<b>629</b>	<b>630</b>	<b>632</b>	<b>634</b>	<b>636</b>	<b>639</b>
ISO Viscosity Grade	32	46	68	100	150	220	320	460	680	1000
Viscosity, ASTM D 445										
cSt @ 40° C	32	46	68	100	150	220	320	460	680	1000
cSt @ 100° C	6.3	8.5	11.6	15.3	21.1	28.5	38.5	50.7	69.0	98.8
Viscosity Index, ASTM D 2270	148	161	165	162	166	169	172	174	181	184
Pour Point, °C, ASTM D 97	-57	-54	-51	-45	-42	-42	-42	-39	-39	-33
Flash Point, °C, ASTM D 92	236	225	225	235	220	220	225	228	225	222
Specific Gravity, ASTM D 4052, 15° C/15° C	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, Hours to 2 NN	10,000+	10,000+	10,000+	10,000+	10,000+	10,000+	10,000+	10,000+	10,000+	10,000+
RBOT, ASTM D 2272, min.	2500	2500	2500	2500	2500	2500	2500	2500	2500	2500
Rust protection, ASTM D665, Sea Water	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
Water Separability, ASTM D 1401, Min. to 37 ml water @ 54° C	10	15	15	-	-	-	-	-	-	-
Water Separability, ASTM D 1401, Min. to 37 ml water @ 82° C	-	-	-	15	20	20	20	20	20	25
Copper Corrosion, ASTM D130, 24 hrs @ 121° C	1B	1B	1B	1B	1B	1B	1B	1B	1B	1B
Foam Test, ASTM D 892, Sequence I,II,III Tendency/ 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
FZG scuffing test, DIN 51534 (mod), A/16.6/90, 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

## Precautions

The products described on this data sheet are manufactured from high quality petroleum base stocks, 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 the Material Safety Data Sheet for further information.

Note: The products described on this data sheet are NOT controlled under Canadian WHMIS legislation.

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