Mobil

# Mobilith SHC™ Series

Mobil Grease , Singapore

Grease

## Product Description

Mobilith SHC™ Series greases are superior performance products designed for a wide variety of applications at extremes of temperature. They combine the unique features of synthetic base fluids with those of a high quality lithium complex thickener. The wax-free nature of synthetic fluids and the low coefficient of traction (compared with mineral oils), provide excellent low temperature pumpability and very low starting and running torque. These products offer the potential for energy savings and can reduce operating temperatures in the load zone of spherical roller and ball bearings. The lithium complex thickener contributes excellent adhesion, structural stability and resistance to water. The greases have a high level of chemical stability and are formulated with special additive combinations to provide excellent protection against wear, rust and corrosion, and providing operating viscosity at high and low temperatures. Mobilith SHC Series greases are available in seven grades, varying in base oil viscosity from ISO VG 100 to 1500 and in NLGI grade from 2 to 00.

Mobilith SHC Series greases have become the products of choice for many users, in many industries worldwide. Their reputation is based on their exceptional quality, reliability, versatility and the performance benefits they deliver.

## Features and Benefits

The Mobil SHC brand of oils and greases are recognized and appreciated around the world for their innovation and outstanding performance. The Mobilith SHC series symbolizes ExxonMobil's continued commitment to using advanced technology to provide outstanding products. A key factor in the development of the Mobilith SHC Series were the close contacts between our scientists and application specialists with key Original Equipment Manufacturers (OEMs) to ensure that our product offerings would provide exceptional performance in the continually evolving industrial equipment designs.

Our work with equipment builders has helped confirm the results from our own laboratory tests showing the exceptional performance of the Mobilith SHC Series lubricants. These benefits include longer grease life, enhanced bearing protection and bearing life, wide temperature range of application, and the potential for improved mechanical efficiency and energy savings.

To combat high thermal exposure of the oil our product formulation scientists chose proprietary synthetic base oils for Mobilith SHC Series oils because of their exceptional thermal/oxidative resistance potential. Our scientists developed a state-of-the-art lithium complex thickener technology and used specific additives to enhance the performance of each grade of the Mobilith SHC Series product family. The Mobilith SHC Series greases offer the following features and benefits:

| Features | Advantages and Potential Benefits |
|---|---|
| Outstanding high temperature and low temperature performance | Wide application temperature ranges, with excellent protection at high temperatures and low torque, easy start-up at low temperatures |
| Excellent protection against wear, rust and corrosion | Reduced downtime and maintenance costs because of reduced wear, rust and corrosion |
| Excellent thermal stability and oxidation resistance | Extended service life with longer intervals between relubrication and improved bearing life |
| Low traction coefficient | Potential to improve mechanical life and reduced energy consumption |
| Includes both high and low viscosity grades | Options for outstanding protection of slow speed, heavily loaded bearings, and options for good low temperature performance |
| Outstanding structural stability in the presence of water | Retains excellent grease performance in hostile aqueous environments |

| Features | Advantages and Potential Benefits |
|---|---|
| Low volatility | Helps resists viscosity increase at high temperatures to maximize relubrication intervals and bearing life |

## Applications

Application Considerations: While Mobilith SHC Series greases are compatible with most mineral oil based products, admixture may detract from their performance. Consequently it is recommended that before changing a system to one of the Mobilith SHC Series, it should be thoroughly cleaned out to achieve the maximum performance benefits. While the Mobilith SHC Series greases share many performance benefits, their applications are best described in terms of each product grade:

- Mobilith SHC 100 is an antiwear and extreme pressure grease primarily recommended for higher speed applications such as electric motors, where reduced friction, low wear and long service life are required. It is an NLGI 2 Grade / ISO VG 100 grease with a synthetic base fluid. Its operating temperature range is -40° C* to 150° C.

- Mobilith SHC 220 is a multi-purpose, NLGI 2 extreme pressure grease recommended for heavy-duty automotive and industrial applications. It uses an ISO VG 220 synthetic base fluid. Mobilith SHC 220 has a recommended operating temperature range of -40° C* to 150° C.

- Mobilith SHC 221 is a multi-purpose, extreme pressure grease recommended for heavy-duty automotive and industrial applications, particularly where centralized grease systems are utilized. It uses an ISO VG 220 synthetic base fluid. Mobilith SHC 221 has a recommended operating temperature range of -40° C to 150° C.

- Mobilith SHC 460 is an NLGI 1.5 Grade grease with ISO VG 460 synthetic base fluid and is an extreme pressure grease recommended for tough industrial and marine applications. It provides outstanding bearing protection under heavy loads at low-to-moderate speeds and in applications where water resistance is a critical factor. Mobilith SHC 460 has demonstrated outstanding performance in steel mills, paper mills and marine applications. The recommended operating temperature range is -30° C* to 150°C.

- Mobilith SHC 1000 Special is an NLGI 2 Grade grease with ISO VG 1000 synthetic base fluid and strongly fortified with solid lubricants including 11% graphite and 1% molybdenum disulphide for maximum protection of plain or rolling element bearings operating under boundary lubrication regimes. This product is designed to extend bearing life under conditions of extremely slow speeds, sliding contacts, and high temperatures. Mobilith SHC 1000 Special has a recommended operating temperature of -30°C* to 150 °C with appropriate relubrication intervals.

- Mobilith SHC 1500 is an NLGI 1.5 Grade / ISO VG 1500 grease with a synthetic base fluid. It is intended for use in plain and rolling element bearings operating at extremely slow speeds, under heavy loads and high temperatures. Mobilith SHC 1500 has a recommended operating temperature range of -30 °C* to 150 °C with appropriate relubrication intervals. Continuous lubrication with Mobilith SHC 1500 has been very effective in prolonging bearing life in a severe roll press application. Mobilith SHC 1500 has also provided excellent performance in rotary kiln roller bearings and in slag transfer rail car bearings.

- Mobilith SHC 007 is an NLGI 00 Grade / ISO VG 460 grease with a synthetic base fluid; it has a recommended operating temperature range of -50° C to 150 ° C with appropriate relubrication intervals. Its primary uses are in grease filled industrial gear cases subject to high temperatures, where conventional semi fluid greases will not provide acceptable lubricant life and in non-driven heavy-duty truck trailer wheel hubs.

*Low temperature claims based on ASTM D 1478 results vs. maximum limits of 10,000 / 1000 gcm @ startup and 1 hour respectively.

## Specifications and Approvals

| This product has the following approvals: | 007 | 100 | 1500 | 220 | 221 | 460 |
|---|---|---|---|---|---|---|
| AAR-M942 | | X | | | X | |
| Siemens Gamesa Renewable Energy offshore direct drive wind turbine main bearing | X | | | | | |

| This product is recommended for use in applications requiring: | 007 | 100 | 1500 | 220 | 221 | 460 |
|---|---|---|---|---|---|---|
| CEN EN 12081:2017 | | X | | | | |

| This product meets or exceeds the requirements of: | 007 | 100 | 1500 | 220 | 221 | 460 |
|---|---|---|---|---|---|---|
| DIN 51825:2004-06 - KP HC 1-2 N -30 | | | X | | | |
| DIN 51825:2004-06 - KP HC 1-2 N -40 | | | | | | X |
| DIN 51825:2004-06 - KP HC 2 N -30 | | | | X | | |
| DIN 51825:2004-06 - KP HC 2 N -40 | | X | | | | |
| DIN 51826:2005-01 - GP HC 00 K -30 | X | | | | | |

Properties and Specifications

| Property | 007 | 100 | 1000 SPECIAL | 1500 | 220 | 221 | 460 |
|---|---|---|---|---|---|---|---|
| Grade | NLGI 00 | NLGI 2 | NLGI 2 | NLGI 1.5 | NLGI 2 | NLGI 1 | NLGI 1.5 |
| Thickener Type | Lithium Complex | Lithium Complex | Lithium Complex | Lithium Complex | Lithium Complex | Lithium Complex | Lithium Complex |
| Color, Visual | Red | Red | Gray-Black | Red | Red | Light Tan | Red |
| Copper Strip Corrosion, 24 h, 100 C, Rating, ASTM D4048 | 1B | 1B | 1B | 1B | 1B | | 1B |
| Corrosion Preventive Properties, Rating, ASTM D1743 | | | Pass | Pass | Pass | Pass | Pass |
| Dropping Point, °C, ASTM D2265 | | 265 | 265 | 265 | 265 | 265 | 265 |
| Four-Ball Extreme Pressure Test, Weld Point, kgf, ASTM D2596 | 250 | 250 | 620 | 250 | 250 | 250 | 250 |
| Four-Ball Wear Test, Scar Diameter, mm, ASTM D2266 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 |
| Oil Separation, 0.25 psi, 24 h @ 25 C, mass%, ASTM D1742 | | | 1 | <1 | 2 | | 3 |
| Penetration, 60X, 0.1 mm, ASTM D217 | 415 | 280 | 280 | 305 | 280 | 325 | 305 |
| SKF Emcor Rust Test, 10% Synthetic Sea Water, ASTM D6138 | | 0 , 1 | | 0 , 1 | 0 , 1 | | 0 , 1 |
| SKF Emcor Rust Test, Acidic Water, ASTM D6138 | | 0 , 1 | | 0 , 1 | 0 , 1 | | 0 , 1 |
| SKF Emcor Rust Test, Distilled Water, ASTM D6138 | 0 , 0 | 0 , 0 | 0 , 0 | 0 , 0 | 0 , 0 | 0 , 0 | 0 , 0 |
| Viscosity @ 100 C, Base Oil, mm2/s, ASTM D445 | 55.6 | 16.3 | 83.7 | 149 | 30.3 | 30.3 | 55.6 |
| Viscosity @ 40 C, Base Oil, mm2/s, ASTM D445 | 460 | 100 | 1000 | 1500 | 220 | 220 | 460 |

| Property | 007 | 100 | 1000 SPECIAL | 1500 | 220 | 221 | 460 |
|---|---|---|---|---|---|---|---|
| Viscosity Index, ASTM D2270 | 188 | 175 | 164 | 212 | 179 | 179 | 188 |
| Water Washout, Loss @ 79 C, wt%, ASTM D1264 | | 6 | 1 | 6 | 1.5 | | 7 |

## Health and Safety

Health and Safety recommendations for this product can be found on the Material Safety Data Sheet (MSDS) @ http://www.msds.exxonmobil.com/psims/psims.aspx

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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
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