# Mobilgear™ SHC XMP Series

Mobil Industrial , New Zealand

Gear Oil

## Product Description

Mobilgear™ SHC XMP Series High performance, synthetic industrial gear oils are designed to provide optimum equipment protection and oil life even under extreme conditions. Mobil's polyalphaolefin (PAO) technology has been selected for its exceptional oxidation resistance and thermal properties, naturally high viscosity index, excellent low temperature fluidity and absence of undesirable compounds that are often found in mineral oils. The high viscosity index and low traction coefficient of this oil combine to help provide significant reduction in power consumption in many gear drives. Mobilgear SHC XMP Series lubricants contain an advanced and carefully blended proprietary additive system designed to provide excellent protection against conventional wear modes such as scuffing and provide a high level of resistance against micropitting fatigue. In addition, compared to conventional gear oil chemistries, they offer the potential for improved lubrication of gearbox rolling element bearings. Mobilgear SHC XMP Series products offer outstanding rust and corrosion protection in applications where salt water and acidic water protection are required. These products provide outstanding filter life even when moderately wet and have excellent compatibility with ferrous and non-ferrous metals even at elevated temperatures.

Mobilgear SHC XMP lubricants are recommended for enclosed industrial gear drives including steel-on-steel spur, helical, and bevel gears. They are highly recommended in applications that may be subject to micropitting: especially heavily loaded gearboxes with surface-hardened tooth metallurgies. They may also be used in gear applications where extreme low and/or high temperatures are encountered and applications where corrosion may be severe.

Because of their unique mix of properties, including resistance to micropitting wear, and their performance in tough applications and wide temperature range, Mobilgear SHC XMP Series products enjoy a growing reputation among customers and OEMs around the world.

## Features and Benefits

The Mobil brand lubricants designated as SHC are recognized and appreciated around the world for innovation and outstanding performance. These molecular design PAO synthetic products, pioneered by our research scientists, symbolize the continuing commitment to using advanced technology to provide outstanding products. A key factor in the development of the Mobilgear SHC XMP Series was the close contacts between our scientists and application specialists with key OEMs to ensure that our product offerings will provide exceptional performance with rapidly evolving industrial gear designs and operation.

Our work with equipment builders has helped confirm the results from our own laboratory tests showing the exceptional performance of the Mobilgear SHC XMP Series lubricants. Not least among the benefits shown in work with OEMs is the ability to resist micropitting wear which can occur with some highly loaded, case-hardened gearing applications. This cooperative work also demonstrated the all-round balanced performance benefits for the new Mobilgear SHC XMP technology, including a wide temperature range of application.

To address the issue of micropitting gear wear, our product formulation scientists designed a proprietary combination of additives which would resist traditional gear wear mechanisms as well as protecting against micropitting. Our formulators chose proprietary PAO synthetic base oils to provide exceptional oil life and deposit control and resistance to thermal/oxidative and chemical degradation, as well as the balance of the performance features. The wax-free nature of the synthetic base oil also provides low temperature fluidity characteristcs unmatched by mineral products and is a key benefit for remote, low ambient, applications. The Mobilgear SHC XMP Series lubricants offer the following benefits:

| Features | Advantages and Potential Benefits |
|---|---|
| Superb protection from micropitting fatigue wear as well as high resistance to traditional scuffing wear | Extended gear and bearing life in enclosed gear drives operating under extreme conditions of load, speed and temperature |
| | Reduced unexpected downtime and less maintenance - especially critical for difficult to access gearboxes. |
| Excellent resistance to degradation at high temperatures | Extended oil life and drain intervals reduced oil consumption and manpower costs |

| Features | Advantages and Potential Benefits |
|---|---|
| Low traction PAO base stocks for improved gear efficiency | Reduced energy consumption and lower operating temperatures |
| High viscosity index base stocks reduce viscosity change with temperature | Ability to operate at both high and low temperatures: especially critical in remote applications with no oil heating or cooling |
| Excellent resistance to rust and corrosion and very good demulsibility | Smooth, trouble-free operation at high temperatures or in water-contaminated applications |
| | Excellent compatibility with soft metals |
| Outstanding filter life, even in presence of water | Fewer filter changes and reduced maintenance costs |
| Excellent compatibility with common gearbox materials of construction and with mineral-based gear oils | Simple conversion from many mineral products |

## Applications

Application Considerations: While the Mobilgear SHC XMP 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 XMP Series, it should be thoroughly cleaned out and flushed to achieve the maximum performance benefits.

Mobilgear SHC XMP Series supreme performance, fully synthetic industrial gear oils are designed to provide optimum equipment protection and oil life even under extreme conditions. They are especially formulated to resist micropitting of modern, case hardened gearing and can operate in both high and low temperature environments. Typical applications include:

- Wind turbines, especially highly loaded and shock loaded units, remotely located units and extreme temperature environments
- Plastic extruder gearboxes
- Modern, highly loaded gearboxes used in the paper, steel, oil, textile, lumber and cement industries where gear protection and optimum oil life are required.

## Specifications and Approvals

| This product meets or exceeds the requirements of: | 320 | 460 |
|---|---|---|
| AGMA 9005-E02-EP | X | X |
| DIN 51517-3:2009-06 | X | X |

## Properties and Specifications

| Property | 320 | 460 |
|---|---|---|
| Grade | ISO 320 | ISO 460 |
| Density @ 15.6 C, kg/l, ASTM D4052 | 0.86 | 0.863 |
| Emulsion, Time to 40/37/3, 82 C, min, ASTM D1401 | 10 | 10 |
| FZG Micropitting, Fail Stage, Rating, FVA 54 | 10 | 10 |
| FZG Micropitting, GFT-Class, Rating, FVA 54 | High | High |

| Property | 320 | 460 |
|---|---|---|
| FZG Scuffing, Fail Load Stage, A/16.6/90, ISO 14635-1(mod) | 14+ | 14+ |
| Flash Point, Cleveland Open Cup, °C, ASTM D92 | 242 | 232 |
| Foam, Sequence II, Stability, ml, ASTM D892 | 0 | 0 |
| Foam, Sequence II, Tendency, ml, ASTM D892 | 0 | 0 |
| Four-Ball Wear Test, Scar Diameter, 20 kg, 1800 rpm, 1 h, 50 C, mm, ASTM D4172 | 0.25 | |
| Four-Ball Wear Test, Scar Diameter, 20 kg, 1800 rpm, 1 h, 54 C, mm, ASTM D4172 | | 0.25 |
| ISO 4406 Cleanliness, class, ISO 4407 | -/14/11 | |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445 | 38.3 | 48.7 |
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445 | 335 | 460 |
| Pour Point, °C, ASTM D97 | -38 | -36 |
| Rust Characteristics, Procedure B, ASTM D665 | PASS | PASS |
| Viscosity Index, ASTM D2270 | 164 | 166 |

### 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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