



Mobilgear™ XMP Series

Mobil Industrial , Switzerland

Extra High Performance Industrial Gear Oils

Product Description

Mobilgear™ XMP Series extra high performance industrial gear oils are designed to provide optimum equipment protection and oil life even under extreme conditions. Mobilgear XMP Series are based on high quality mineral base stocks and an advanced proprietary additive system designed to provide excellent protection against conventional wear modes such as scuffing but also provides a high level of resistance against micropitting fatigue. It also offers the potential for improved lubrication of gearbox rolling element bearings. Mobilgear XMP Series products offer outstanding rust and corrosion protection versus conventional gear oils, including seawater and acidic water protection. They show no tendency to plug fine filters even when wet and excellent compatibility with ferrous and non-ferrous metals even at elevated temperatures.

Mobilgear XMP lubricants are recommended for enclosed industrial gear drives including steel-on-steel spur, helical, and bevel gears. It is especially recommended for applications that may be subject to micropitting: especially heavily loaded gearboxes with surface-hardened tooth metallurgies. It may also be used in gear applications where corrosion may be severe.

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

Features and Benefits

The Mobilgear brand of lubricants are recognized and appreciated around the world for innovation and outstanding performance. A key factor in the development of Mobilgear 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 the 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 XMP 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 gear applications.

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 and providing other key performance features.

The Mobilgear 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 access gearboxes. |
| Very good resistance to degradation at high temperatures | Extended oil life and drain intervals reduced oil consumption and manpower costs |
| 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 |
| No filter plugging, even in presence of water | Less filter changes and reduced maintenance costs |

Applications

Mobilgear XMP Series extra high performance, industrial gear oils are designed to provide optimum equipment and oil life even under extreme conditions. They are recommended for enclosed industrial gear drives including steel-on-steel spur, helical, and bevel gears. It is especially recommended for applications that may be subject to micropitting: especially heavily loaded gearboxes with surface-hardened tooth metallurgies. It may also be used in gear applications where corrosion may be severe.

especially formulated to resist micropitting of modern, case hardened gearing and applications where extended oil life is desired.

Typical applications include:

- Wind turbines
- Plastic extruder gearboxes
- Gearboxes found in the paper, steel, oil, textile, lumber and cement industries

Specifications and Approvals

| This product has the following approvals: | MOBILGEAR XMP 150 | MOBILGEAR XMP 220 | MOBILGEAR XMP 320 | MOBILGEAR XMP 460 | MOBILGEAR XMP 680 |
|---|-------------------|-------------------|-------------------|-------------------|-------------------|
| HANSEN | X | X | X | X | |
| JAHNEL-KESTERMANN | | X | X | X | |
| ZF TE-ML 04H | X | | | | |
| ISO L-CKC (ISO 12925-1:1996) | | | | | X |

| This product meets or exceeds the requirements of: | | | | |
|--|---|---|---|---|
| AGMA 9005-E02-EP | | X | X | X |
| ISO L-CKC (ISO 12925-1:1996) | X | X | | X |
| ISO L-CKD (ISO 12925-1:1996) | | | X | |

Properties and Specifications

| Property | MOBILGEAR XMP 150 | MOBILGEAR XMP 220 | MOBILGEAR XMP 320 | MOBILGEAR XMP 460 | MOBILGEAR XMP 680 |
|--|-------------------|-------------------|-------------------|-------------------|-------------------|
| Grade | ISO 150 | ISO 220 | ISO 320 | ISO 460 | ISO 680 |
| Copper Strip Corrosion, 3 h, 100 C, Rating, ASTM D130 | 1B | 1B | 1B | 1B | 1B |
| Density @ 15.6 C, kg/l, ASTM D4052 | 0.896 | 0.900 | 0.903 | 0.909 | 0.917 |
| Emulsion, Time to 40/37/3, 82 C, min, ASTM D1401 | 10 | 10 | 10 | 10 | 10 |
| FZG Micropitting, Fail Stage, Rating, FVA 54 | | 10+ | 10+ | 10+ | 10 |
| FZG Micropitting, GFT-Class, Rating, FVA 54 | | High | High | High | High |
| FZG Scuffing, Fail Load Stage, A/16.6/90, ISO 14635-1(mod) | 12 | 13+ | 14 | 14+ | 14+ |
| FZG Scuffing, Fail Load Stage, A/8.3/90, ISO 14635-1 | 12+ | 13+ | 14 | 14+ | 14+ |
| Flash Point, Cleveland Open Cup, °C, ASTM D92 | 258 | 272 | 268 | 270 | 272 |
| Foam, Sequence I, Stability, ml, ASTM D892 | 0 | 0 | 0 | 0 | 0 |
| Foam, Sequence I, Tendency, ml, ASTM D892 | 0 | 0 | 0 | 0 | 0 |

| Property | MOBILGEAR XMP 150 | MOBILGEAR XMP 220 | MOBILGEAR XMP 320 | MOBILGEAR XMP 460 | MOBILGEAR 680 |
|---|-------------------|-------------------|-------------------|-------------------|---------------|
| Four-Ball Extreme Pressure Test, Load Wear Index, kgf, ASTM D2783 | 45 | 45 | 45 | 45 | 45 |
| Four-Ball Extreme Pressure Test, Weld Load, kgf, ASTM D2783 | 250 | 250 | 250 | 250 | 250 |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445 | 14.6 | 18.8 | 24.1 | 30.6 | 36.9 |
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445 | 150 | 220 | 320 | 460 | 680 |
| Pour Point, °C, ASTM D97 | -27 | -24 | -18 | -12 | -9 |
| Rust Characteristics, Procedure B, ASTM D665 | PASS | PASS | PASS | PASS | PASS |
| Viscosity Index, ASTM D2270 | 96 | 96 | 96 | 96 | 89 |

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.as>
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04-2024
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