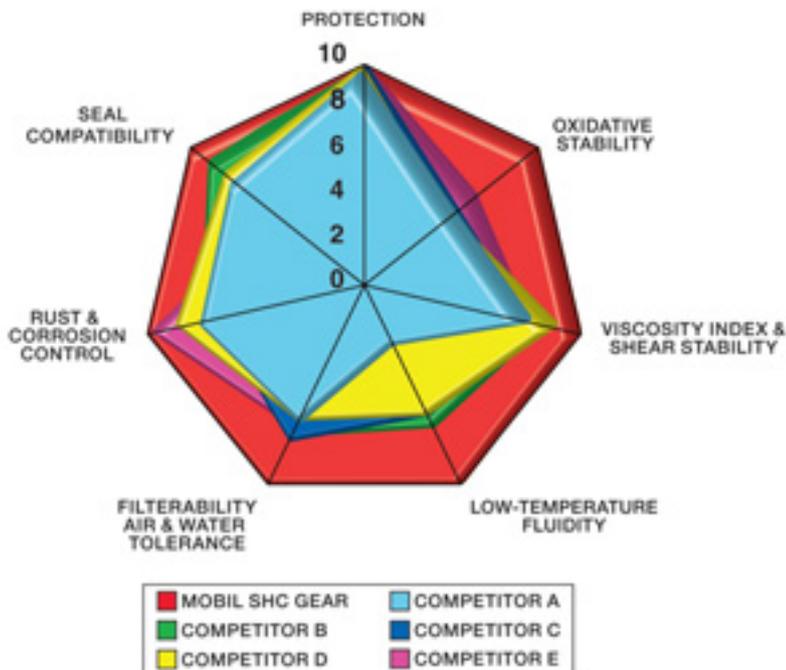


This month's edition of the Reliability Files includes information from Exxon Mobil Corporation.



This chart shows that some competitive synthetic gear oils are formulated specifically to deliver exceptional results in one area but may sacrifice performance in many other areas. Only by selecting an oil that has a balanced formulation can operators look toward maximizing productivity. (Source: ExxonMobil Research)Problem

For many industrial businesses, gearboxes represent the heart of production. Today, advancements in technology have enabled equipment manufacturers to decrease the footprint of gearboxes, while maintaining the same—or even higher—power transmission capabilities.

Compared to previous models, these newer, higher-performing units typically require lubricants that offer more comprehensive protection. If a gearbox isn't properly maintained with the appropriate lubricant, there's a potential for the equipment to experience a condition known as "micropitting."

A common sign of excessive load, torques and stress placed on operating components, micropitting is surface fatigue that's mainly seen in gears—*but which also can be found in rolling element bearings*. Micropitting
causes destructive wear that can occur within the first few hours of operation.

One measure of micropitting is profile deviation, which is the modification of the in-service gear tooth profile by tens of microns versus its starting profile. When small amounts of material are worn away from the pitch line, it results in changes to the tooth profile. This can be detected through increased vibration and a change in load distribution across the tooth surface. The combination of higher local loading on the tooth surface due to these changes in tooth profile and the existence of micropitting as a surface flaw can lead to the initiation of *macropitting* and spalling on the gear teeth. Both of these conditions can greatly impact equipment performance and reliability.

Solution

To help mitigate wear such as micro-pitting, companies should select a high-performance synthetic lubricant that features a balanced formulation and is designed to deliver exceptional, long-lasting wear and corrosion protection.

The Mobil SHC™ Gear Series, a family of outstanding-performance, fully synthetic industrial gear oils, represents the latest innovation from ExxonMobil that pushes the boundaries of what's possible in gearbox lubrication technology.

Mobil SHC Gear Series lubricants are developed with ExxonMobil's proprietary balanced formulation approach, which stresses well-rounded equipment protection in all critical performance areas for a targeted application.

Approved by Siemens for use in Flender gearboxes, Mobil SHC Gear Series lubricants meet or exceed nearly every other major industry and Original Equipment Manufacturers (OEM) specification for industrial gearbox applications.



Click to enlarge. Return On Investment

The above chart shows how Mobil SHC Gear Series oils meet or exceed the capabilities of competing synthetic and conventional mineral-based fluids across a wide spectrum of performance parameters, including:

- Micropitting Protection
- Oxidative Stability
- Foam and Air Release
- Rust and Corrosion Protection
- Low-Temperature Fluidity

In addition, Mobil SHC Gear Series lubricants offer potential energy-efficiency benefits. Across a range of statistically validated tests, they exhibited energy savings of up to 3.6% compared with conventional oils.*

And, when compared with competitive mineral oil-based gear lubricants, Mobil SHC Gear Series oils deliver a service life of up to six times longer, helping to reduce oil consumption and staff time needed for lubricants changes. **MT**

**Energy efficiency relates solely to the fluid performance when compared with conventional reference oils of the same viscosity grade in gear applications. The technology used allows up to 3.6% efficiency compared with the reference when tested in a worm gearbox under controlled*

conditions. Efficiency improvements will vary based on operating conditions and application.

Exxon Mobil Corporation
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For more information, enter 260 at www.MT-freeinfo.com