



Seal and Oil Compatibility

Helping to prevent premature seal failures

Introduction

Highly durable seals and seal materials are essential for long equipment life. Replacing seals that have been compromised by a lubricant can result in unscheduled downtime, and that can be expensive. Consequently, manufacturers of seals and lubricants strive to minimize interactions that can jeopardize seal life. These interactions can be divided into two main groups:

- **Physical:** Seal components migrate into the lubricant causing the seal to shrink or lubricant components migrate into the seal causing it to swell.
- **Chemical:** Lubricant components attack the seal chemically affecting its elasticity leading to a hardening or softening of the seal.

Radial Shaft Seals

Radial shaft seals are the most critical seal components in modern gearboxes because they can be one of the determining factors for gearbox service life.

Causes of seal leakage

Incorrect shaft processing, poor assembly and faulty seals are the primary causes of seal leakage. Other causes, including those relating to lubricant incompatibility, represent 15 percent of all premature seal failures.*

Secondary effects

In addition to the direct mechanical stress shaft rotation is exerting on the shaft seal, shaft rotation can also cause secondary effects in the sealing zone:

- Friction in the contact zone between seal and shaft could raise lubricant temperatures at the seal lip up to 50°C above sump temperature leading to increased thermal stress of lubricant, seal and shaft surface.



Mobilgear 600 XP Series' formulation is specially balanced to maximize its compatibility with a range of seal materials and its ability to protect gears and bearings.

* Source: Freudenberg Simmering GmbH & Co KG

- Poor lubricity between seal and shaft may cause wear of seal and/or shaft surface, leading in the end to leakage.
- The presence of hard particle contaminations in the sealing clearance derived from insufficient wear protection (wear debris) or poor thermal and oxidative stability (carbon deposits) may also lead to leakage due to excessive wear of seal and shaft surface.

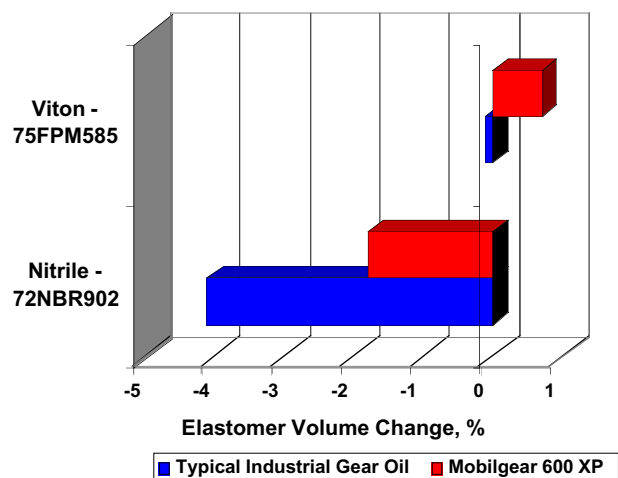
Mobilgear 600 XP Series

Extra care was taken to balance the formulation of the Mobilgear 600 XP Series to maximize the oil's compatibility with a range of seal materials and its ability to protect gears and bearings.

The Mobilgear 600 XP Series complies with the compatibility requirements of the most commonly used standards, including DIN 51517-3 (January 2004) and Flender QMC.BO Revision 9, and based on testing does exhibit significant improvement in seal compatibility when compared to another standard gear oil.

Using the Mobilgear 600 XP Series can mean better seal protection for your equipment. Better seal protection helps eliminate leaking oil and can prevent gears and bearings from failing prematurely.

Nitrile and Viton Compatibility



Testing conducted by an independent laboratory confirms that the Mobilgear 600 XP Series exhibits significant improvement in seal compatibility when compared to another standard gear oil.