

Polyrex® EM

Grease

Product Description

DISCONTINUED -- The recommended replacement is Mobil Polyrex EM.

Polyrex EM is a super performance polyurea grease, specially designed for high shear and very high temperature ball and roller bearing applications found, for example, in electric motors. The proprietary polyurea thickener system in Polyrex EM, developed exclusively by ExxonMobil research scientists, exhibits excellent durability and stability when subjected to mechanical shearing forces. Tests show this technology similar to the performance of high-quality lithium-complex greases, which are the benchmark for excellent shear stability. For example, in the ASTM D 217 cone penetration test, the consistency of Polyrex EM changed by approximately one NLGI grade after being worked for 100,000 strokes. By contrast, conventional polyurea greases containing shear-unstable thickener technology can soften by three NLGI grades under the same test conditions. A proprietary manufacturing technique ensures Polyrex EM has low noise characteristics, an increasingly important grease property. Polyrex EM contains an additive system specially formulated to resist water washout and metal corrosion and protect bearing surfaces from wear under boundary lubrication conditions.

Specially formulated for lubricating electric motor bearings, Polyrex EM polyurea grease sets a new standard for long-life high-temperature performance in this type of application. It exhibits outstanding lubrication life in bearings operating at high speeds and high temperatures. Its good mechanical shear stability is important in roller bearing applications where excessive grease softening may lead to grease leakage or purging from the bearing.

The superb balance of performance between mechanical stability and high temperature grease life provided by Polyrex EM make it the grease of choice for many users. Its balanced performance, including excellent rust and corrosion protection, wear protection and water washout make it a top candidate for a wide range of tough applications.

Features and Benefits

Polyrex EM is a member of the Esso brand of lubricating products recognized for their high quality and reliability, as well as performance capabilities. This product is manufactured under the strictest quality control protocols and exhibits reliable and consistent properties. The introduction of next-generation polyurea thickener technology, pioneered by ExxonMobil research scientists, symbolises the continuing commitment to using advanced technology to provide outstanding products.

Our work with equipment builders and customers has helped define the needs for this new technology as well as confirming the results from our own laboratory tests showing the exceptional performance of Polyrex EM.

While the high temperature capabilities of polyurea-thickened greases are well known, it has been the mechanical stability properties of this technology which have been of concern to OEMs and customers alike. Our synthesis chemists and grease formulators aggressively addressed this issue, and took a basic approach to improving the structural stability of the polymer thickener, while retaining traditional benefits such as exceptional high temperature performance. The result is a thickener which can be manufactured with consistent high quality and



which can be formulated with appropriate additives to provide an exceptional grease product. Thoroughly tested in critical laboratory tests and customer trials, Polyrex EM offers the following benefits:

Features	Advantages and Potential Benefits
Proprietary shear stable polyurea thickener technology	Excellent mechanical stability assures long grease life and low leakage in high shear applications - especially critical for roller bearings
Superb high temperature stability	Outstanding grease life in high temperature applications
Excellent rust and corrosion prevention	Excellent bearing protection and extended bearing life in aqueous environments
High level of wear protection	Good bearing protection in high temperature and other low film situations
Excellent water washout resistance	Retained grease integrity and performance in water spray conditions
Low noise characteristics	Improved bearing life and quieter operation for noise sensitive applications.

Applications

Polyrex EM polyurea grease sets a new standard for long-life performance in applications operating at high temperatures where good mechanical stability and low oil separation is required. Examples of applications where Polyrex EM excels are:

- Electric motor bearings
- Fin fan bearings
- High-temperature pump bearings
- Factory-filled, sealed-for-life ball bearings
- Ball or roller bearings operating at high temperatures where low oil separation is required
- Ball or roller bearings operating in noise sensitive environments

Typical Properties

Polyrex EM	
NLGI Grade	2
Thickener Type	Polyurea
Color, Visual	Blue
Penetration, Worked, 25° C, ASTM D 217	280
Dropping Point, °C, ASTM D 2265	288+
Viscosity of Oil, ASTM D 445	
cSt @ 40° C	110
Penetration Change from 60X to 100,000X, ASTM D 217, mm/10	+35
High temperature Grease Life, ASTM D 3336, hrs	750
Low temperature torque, ASTM D 1478	
Starting @ -29°C, gcm	6300
Running @ -29°C, gcm	488

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Emcor Rust Test, ASTM D 6138	0,0
Four-Ball Wear Test, ASTM D 2596, mm	0.4
High Temperature Wheel Bearing Leakage, ASTM D 4290, g	< 1
Oil Separation, ASTM D 1742, mass%	< 1
Water Washout, ASTM D 1264, %	2

Health and Safety

Based on available information, this product is not expected to produce adverse effects on health when used for the intended application and the recommendations provided in the Material Safety Data Sheet (MSDS) are followed. MSDS's are available upon request through your sales contract office, or via the Internet. This product should not be used for purposes other than its intended use. If disposing of used product, take care to protect the environment.

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