



Mobil EAL Arctic Series
Mobil Industrial, United States

Refrigeration Oils

Product Description

Mobil EAL Arctic Series are high performance Environmental Awareness Lubricants (EAL) that are fully synthetic products designed specifically for the lubrication of refrigeration compressors and systems, using ozone-friendly HFC refrigerants. (HFCs are chlorine-free products replacing chlorine-containing refrigerants in the world market). They are also recommended for carbon dioxide applications, with appropriate miscibility for proper oil return to compressor (typically piston type applications). Mobil EAL Arctic Series oils are formulated from proprietary synthesized Polyol Esters (POEs) and a unique additive system to provide outstanding lubricity, wear protection, chemical and thermal stability, and hydrolytic stability. They are miscible with HFC refrigerants and have well-defined viscosity/temperature/pressure relationships with a wide range of HFCs. The performance of the Mobil EAL Arctic Series has been well documented with HFCs in a broad range of refrigeration and air conditioning systems and are used by many major compressor and system builders around the world.

Mobil EAL Arctic Series are available in ISO Viscosity grades 15 to 220. They are recommended for use in household and commercial refrigeration and air conditioning systems where HFC or carbon dioxide refrigerants are used.

Features and Benefits

The Mobil EAL brand of lubricants are recognised and appreciated around the world for their compatibility with the environment and their excellent performance. The Mobil EAL Arctic Series of products were designed by our research scientists to complement the new generation of ozone-friendly refrigerants mandated by the Montreal Protocol and succeeding world-wide agreements. Development of these products symbolises our continuing commitment to use advanced technology to provide outstanding lubricant products. A key factor in the development of Mobil EAL Arctic Series of lubricants was our close contacts between our scientists and key compressor OEMs and system designers to ensure that our product offerings will provide exceptional performance in a wide range of applications.

This work in combination with our lab testing has helped confirm the exceptional performance of the Mobil EAL Arctic Series lubricants. This cooperative work allowed our scientists to design optimum synthetic POE structures for each viscosity grade in the product series and to develop an additive package to meet the stability and compatibility requirements for refrigeration applications

Mobil EAL Arctic Series oils offer the following features and potential benefits:

| Features | Advantages and Potential Benefits |
|----------|-----------------------------------|
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| Excellent high temperature stability | Improved evaporator cleanliness, less unscheduled downtime and reduced maintenance costs |
| Well defined miscibility and P-V-T relationships with HFC refrigerants | Assures high system efficiency and proper oil return in refrigeration system designs |
| Very good anti-wear properties | Reduced compressor wear resulting in lower maintenance costs |
| High Viscosity Index and wax-free | Excellent low temperature fluidity, no waxy deposits and improved evaporator efficiency |
| Wide viscosity range | Can meet specific viscosity requirements of a wide range of equipment and applications |

Applications

Application considerations: Mobil EAL Arctic Series oils are hygroscopic and care must be taken to avoid moisture absorption during handling. Packages should be tightly closed when not in use, and small packaging preferred. Product should not be transferred to plastic containers that may allow moisture ingress.

Mobil EAL Arctic Series oils are recommended for refrigeration systems where HFC or carbon dioxide refrigerants are used. Specific applications include:

- Household refrigeration such as refrigerators, freezers, air conditioners and heat pumps
- Commercial refrigeration applications such as business, shopping mall and hotel air conditioning, and low temperature transportation
- Industrial applications such as food preparation and freezing, as well as cryogenic applications

Typical Properties

| Mobil EAL Arctic Series | 15 | 22 | 22 CC | 32 | 46 | 68 | 100 | 220 |
|--------------------------------|-----------|-----------|--------------|-----------|-----------|-----------|------------|------------|
| ISO Viscosity Grade | 15 | 22 | 22 | 32 | 46 | 68 | 100 | 220 |
| Viscosity, ASTM D 445 | | | | | | | | |
| cSt @ 40° C | 15.9 | 23.2 | 24 | 34.2 | 49.2 | 68.0 | 105.0 | 226 |
| cSt @ 100° C | 3.6 | 4.6 | 4.8 | 5.8 | 7.3 | 8.7 | 11.6 | 18.5 |
| Viscosity Index, ASTM D 2270 | 108 | 130 | 129 | 115 | 115 | 95 | - | 90 |
| Pour Point, °C, ASTM D 97 | -60 | -57 | -54 | -48 | -42 | -36 | -30 | -21 |
| | | | | | | | | |

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|--------------------------------------|------|------|-------|------|------|------|------|------|
| Flash Point, °C, ASTM D 92 | 236 | 236 | 236 | 236 | 230 | 230 | - | 290 |
| Specific Gravity @15° C, ASTM D 1298 | 1.02 | 1.00 | 0.991 | 0.98 | 0.97 | 0.96 | 0.96 | 0.96 |

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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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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