# Mobil EAL Arctic Series

Mobil Industrial , United States

Supreme Performance Synthetic Refrigeration Oils

**Product Description**

Mobil EAL Arctic Series are high performance fully synthetic lubricants specifically designed for the lubrication of refrigeration compressors and systems using ozone-friendly synthetic HFC refrigerants as well as recently developed HFO refrigerants and HFO/HFC blends with lower Global Warming Potential than HFC's, including A1 and A2L refrigerants as per ASHRAE 34/ISO 817 safety classification.

Mobil EAL Arctic Series oils are formulated with 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, HFO and HFO/HFC refrigerants and have well-defined viscosity / temperature / pressure relationships with a wide range of those refrigerants. Performance of the Mobil EAL Arctic Series has been well documented with HFC, HFO and HFO/HFC blends 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 Artic Series are recommended for use in HVAC (Heating, Ventilation, Air Conditioning), Commercial and Industrial Refrigeration.

**Features and Benefits**

Mobil EAL Arctic Series Lubricants are recognised and appreciated around the world for their excellent performance with a wide range of refrigerants and operating conditions. Mobil EAL Arctic Series was designed to complement the new generation of ozone-friendly and lower Global Warming refrigerants mandated by the Montreal and Kyoto Protocols followed by even more stringent regional agreements such European F-gas regulation. A key factor in the development of Mobil EAL Arctic Series of lubricants was our close contacts with 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. This cooperative work allowed an optimum design of synthetic POE molecules for each viscosity grade in the series and the development of an additive package to meet the stability and compatibility requirements for refrigeration applications.

| Features | Advantages and Potential Benefits |
|---|---|
| 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 are recommended for refrigeration systems where HFC, HFO and HFO/FHC blends refrigerants are used. The application range is wide from Domestic/Tertiary applications (Heating, Ventilation, Air Conditioning HVAC) to commercial applications (food conservation, transportation) and industrial applications (food processing, freezing).

Mobil EAL Arctic Series must not be used in ammonia systems (NH3 / R-717).

**Properties and Specifications**

| Property | 22 | 32 | 46 | 68 | 100 | 170 | 220 | 22 CC |
|---|---|---|---|---|---|---|---|---|
| Grade | ISO 22 | ISO 32 | ISO 46 | ISO 68 | ISO 100 | | ISO 220 | ISO 22 |
| Density @ 15 C, kg/l, ASTM D4052 | | | | | | | | 0.989 |
| Flash Point, Cleveland Open Cup, °C, ASTM D92 | 252 | 250 | 258 | 256 | 271 | 279 | 285 | 259 |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445 | 4.7 | 5.6 | 6.9 | 8.3 | 10.6 | 15.3 | 18.1 | 4.9 |
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445 | 23.5 | 31.6 | 46.2 | 65 | 96 | 168 | 221 | 23.6 |
| Pour Point, °C, ASTM D5950 | -59 | -55 | -46 | -40 | -34 | -29 | -28 | -58 |
| Specific Gravity, 15.6 C/15.6 C, ASTM D4052 | 0.993 | 0.985 | 0.976 | 0.967 | 0.967 | 0.969 | 0.966 | 0.991 |
| Total Acid Number, mgKOH/g, ASTM D974(mod) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | 0.05 | 0.03 | 0.03 |
| Viscosity Index, ASTM D2270 | 114 | 115 | 104 | 96 | 93 | 91 | 88 | 134 |

**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.aspx

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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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