# Mobil Gargoyle Arctic SHC™ 200 Series

Mobil industrial · United States

Refrigeration Oils

## Product Description

The Mobil Gargoyle Arctic SHC™ 200 Series are fully synthetic, superior performance lubricants, specifically designed for use in refrigeration compressors and heat pumps. They are formulated from wax-free, synthesised hydrocarbon polyalphaolefin (PAO) fluids, which have outstanding resistance to thermal/oxidative degradation. With their naturally high shear stable viscosity indexes and low temperature fluidity, they are able to perform in severe service conditions that are beyond the capabilities of many conventional mineral oils. Their solubility and miscibility with commonly used refrigerants is low, resulting in higher film thickness in the presence of refrigerants under pressure. This can help to reduce shaft seal leakage. Their stability and low volatility characteristics reduces the "light end stripping" which can occur with conventional mineral oils. Mobil Gargoyle Arctic SHC 200 Series lubricants may help reduce frictional losses and improve machine operating efficiencies.

Mobil Gargoyle Arctic SHC 200 Series lubricants are recommended for the lubrication of refrigeration compressors operating at very high temperatures, and for systems with very low evaporator temperatures. They are suitable for compressor systems using refrigerants such as ammonia and carbon dioxide. Their low miscibility with carbon dioxide makes them a suitable choice for screw compressors using carbon dioxide. They are compatible with most common refrigerants, except sulphur dioxide, and have been particularly successful in systems using ammonia as the refrigerant. Mobil Gargoyle Arctic SHC 200 Series are fully miscible with most conventional mineral refrigeration oils. Any mixture with mineral oils may detract from the outstanding performance properties of the Mobil synthetic product.

## Features and Benefits

The Mobil Gargoyle Arctic SHC brand of lubricants are recognized and appreciated for their innovation and outstanding performance.

Our work with equipment builders has helped confirm the results from our own laboratory tests showing the exceptional performance of the Mobil Gargoyle Arctic SHC 200 Series lubricants. Not least among the benefits shown in work with OEMs is the superb low temperature capability providing excellent fluidity at low temperatures, as well as the resistance to viscosity loss due to refrigerant absorption under pressure, along with providing excellent bearing film thickness and shaft sealing properties.

By its nature, the PAO base stock used in Mobil Gargoyle Arctic SHC 200 Series oils provides exceptional thermal/oxidative resistance critical for high temperature applications. The narrow molecular weight distribution of the PAO base stocks also minimizes volatility and can help to reduce oil carryover. Mobil Gargoyle Arctic SHC 200 Series oils offer the following features and potential benefits:

| Features | Advantages and Potential Benefits |
|---|---|
| High oil film thickness in the presence of refrigerant | Improved compressor protection for extended compressor life as well as better shaft sealing, reduced bearing fatigue and less unscheduled downtime |

| | |
|---|---|
| Excellent thermal/oxidative and chemical stability | Long oil life and reduced frequency of drain intervals and routine maintenance Reduced lacquer and deposit formation |
| Low volatility | Viscosity remains consistent with reduced oil consumption |
| High Viscosity Index and wax-free | Excellent low temperature fluidity, no waxy deposits and improved evaporator efficiency |
| Low traction coefficient | Potential for improved system efficiency and reduced power consumption |
| Seal compatibility | Long seal life, reduced shaft seal leakage |

## Applications

Mobil Gargoyle Arctic SHC 200 Series are fully synthetic lubricants specifically designed for use in refrigeration compressors and heat pumps.

Application Considerations: While Mobil Gargoyle Arctic SHC 200 Series are compatible with mineral oil products, a mixture will detract from their performance.  Systems should be thoroughly flushed and cleaned when replacing a mineral product with a Mobil Gargoyle Arctic SHC 200 Series product. In the case of R22 refrigerants, guidance from the supplier of the refrigeration unit must always be sought to ensure compressor operation is suitable for efficient separation of the oil and refrigerant.

Typical applications are indicated below:

- Commercial, industrial, heat pump applications and marine refrigeration systems
- Commercial, industrial and residential heat pump applications
- Recommended for both reciprocating and rotary compressor designs
- Recommended for use with the following refrigerants: Ammonia and Carbon Dioxide

## Specifications and Approvals

| This product is registered to the requirements of: | 224 | 226E | 228 | 230 | 234 |
|---|---|---|---|---|---|
| NSF H1 | X | X | X | X | X |
| NSF HT1 | X | | | | |

| This product meets or exceeds the requirements of: | 224 | 226E | 228 | 230 | 234 |
|---|---|---|---|---|---|
| FDA 21 CFR 178.3570 | X | X | X | X | X |

## Properties and Specifications

| Property | 224 | 228 | 230 | 234 | 226E |
|---|---|---|---|---|---|
| Grade | | ISO 100 | ISO 220 | | ISO 68 |
| Copper Strip Corrosion, 3 h, 100 C, Rating, ASTM D130 | 1A | 1A | 1A | 1A | 1A |
| Flash Point, Cleveland Open Cup, °C, ASTM D92 | 230 | 255 | 260 | 280 | 266 |

| | | | | | |
|---|---|---|---|---|---|
| Foam, Sequence I, Stability, ml, ASTM D892 | 0 | 0 | 0 | 0 | 0 |
| Foam, Sequence I, Tendency, ml, ASTM D892 | 10 | 10 | 10 | 10 | 10 |
| Kinematic Viscosity @ 100 C, mm2/s, ASTM D445 | 5.6 | 13.7 | 25.0 | 40.0 | 10.1 |
| Kinematic Viscosity @ 40 C, mm2/s, ASTM D445 | 29.0 | 97.0 | 220 | 399 | 69.0 |
| Pour Point, °C, ASTM D97 | <-54 | -45 | -39 | -39 | -45 |
| Specific Gravity, 15 C/15 C, ASTM D1298 | 0.82 | 0.84 | 0.85 | 0.85 | 0.83 |
| Viscosity Index, ASTM D2270 | 132 | 147 | 149 | 150 | 136 |

## Health and Safety

Health and Safety recommendations for this product can be found on the Material Safety Data Sheet (MSDS) @

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