

# Product Data Sheet

## Mobil Gargoyle Arctic SHC 200 Series Refrigeration Oils

### Product Description

Mobil Gargoyle Arctic SHC 200 Series are fully synthetic, supreme 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 index and low temperature fluidity, they are able to perform in severe service conditions that are beyond the capabilities of conventional mineral oils. Their solubility and miscibility with refrigerants is low, resulting in higher film thickness in the presence of refrigerants under pressure and reduced shaft seal leakage. Their stability and low volatility eliminates "light end stripping" which can occur with conventional mineral oils. Mobil Gargoyle Arctic SHC 200 Series lubricants help reduce frictional losses and improve machine operating efficiency.

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; they have enjoyed excellent experience with CFC refrigerants such as R-12. They are compatible with all refrigerants except sulphur dioxide and have been particularly successful with systems using ammonia as the refrigerant. Gargoyle Arctic SHC 200 Series are fully miscible with conventional mineral oils but admixture may detract from the superior performance properties of the Mobil synthetic product.

### Features & Benefits

The Mobil SHC brand of lubricants are recognised and appreciated around the world for their innovation and outstanding performance. These molecular design PAO synthetic products, pioneered by our research scientists, symbolise the continuing commitment to using advanced technology to provide outstanding lubricant products.

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 providing excellent bearing film thickness and shaft sealing properties.

By its nature, the PAO base oil 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 minimises volatility and reduces oil carryover. Mobil Gargoyle Arctic SHC 200 Series oils offer the following features and potential benefits:

<b>Features</b>	<b>Advantages and Potential Benefits</b>
High oil film thickness in the presence of refrigerant	Improved compressor antiwear 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 drain intervals and less routine maintenance
	Reduced lacquer and deposit formation for longer filter life and reduced shaft seal leakage
Low volatility	Avoids viscosity build-up, 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.

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, R-22 and other HCFCs and Carbon Dioxide

## Specifications & Approvals

The Mobil Gargoyle Arctic SHC 200 Series meets or exceeds the following industry and builder specifications:

USDA H1 Quality Level

## Typical Properties

---

Mobil Gargoyle Arctic SHC	Test Method	224	226E	228	230
ISO Viscosity Grade		--	68	100	220
Viscosity, cSt at 40°C	ASTM D 445	29.0	68.0	97	220
Viscosity, cSt at 100°C	ASTM D 445	5.6	10.2	13.7	25.0
Viscosity Index	ASTM D	132	136	147	149
Pour Point, °C	ASTM D	<-54	-45	-45	-39
Flash Point COC °C	ASTM D	230	266	255	260
Specific Gravity 15°C/15°C	ASTM D 1298	0.82	0.83	0.84	0.85
Foam Test, Sequence I, Tendency/Stability, ml/ml	ASTM D 892	10/0	10/0	10/0	10/0
Copper Strip Corrosion, 3 hrs at 100°C	ASTM D 130	1A	1A	1A	1A

## 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 Esso Petroleum Company, Ltd., by telephoning 01372 222000. This product should not be used for purposes other than its intended use. If disposing of used product, take care to protect the environment.

The Mobil logotype, the Pegasus design are trademarks of Exxon Mobil Corporation, or one of its subsidiaries.

Due to continual product research and development, the information contained herein is subject to change without notification. Typical Properties may vary slightly. All products may not be available locally.

© 2001 Exxon Mobil Corporation. All rights reserved.

**Esso Petroleum Company, Limited**  
**ExxonMobil House, Ermyn Way**  
**Leatherhead, Surrey, KT22 8UX**  
**Telephone: 01372 22 2000**

