

Mobil Gargoyle Arctic SHC 200 Series

supreme-performance synthetic lubricants for refrigeration compressors and heat pumps

Features and Benefits:

Superb low-temperature capability provides excellent fluidity at low temperatures; resistance to viscosity loss due to refrigerant absorption under pressure for excellent bearing-film thickness and shaft-sealing properties.

N°	Lubricant	Technology	ISO VG
1	Mobil Gargoyle Arctic SHC 224	PAO (Polyalphaolefin)	32
2*	Mobil Gargoyle Arctic SHC 226 E	PAO (Polyalphaolefin)	68
3	Mobil Gargoyle Arctic SHC 228	PAO (Polyalphaolefin)	100
4	Mobil Gargoyle Arctic SHC 230	PAO (Polyalphaolefin)	220
5	Mobil Gargoyle Arctic SHC 234	PAO (Polyalphaolefin)	400 cSt at 40°C

Mobil Gargoyle Arctic SHC NH 68

supreme-performance synthetic lubricant for refrigeration compressors with ammonia refrigerant

Features and Benefits:

Wax-free for excellent low-temperature fluidity and evaporator efficiency. Outstanding thermal/oxidative and chemical stability for long oil life, extended drain intervals, less routine maintenance. Compatibility with seals previously used with mineral lubricant for limited risk of oil leakage.

N°	Lubricant	Technology	ISO VG
6**	Mobil Gargoyle Arctic SHC NH 68	PAO/AB (Alkylbenzene)	68

Mobil Gargoyle Arctic 155 & 300

high-performance naphthenic mineral oils for refrigeration compressors

Features and Benefits:

Low pour point and good fluidity at very low temperatures. Good chemical stability. Suitable for both cylinder and bearing lubrication.

N°	Lubricant	Technology	ISO VG
7	Mobil Gargoyle Arctic Oil 155	MN (Mineral Naphthenic)	32
8	Mobil Gargoyle Arctic Oil 300	MN (Mineral Naphthenic)	68

Mobil EAL Arctic Series

high-performance Polyol Ester (POE) for refrigeration compressors and systems

Features and Benefits:

Specifically designed for use with ozone-friendly HFC refrigerant fluids; formulated from synthesized Polyol Esters to provide outstanding lubricity and wear protection, as well as chemical and thermal stability.

N°	Lubricant	Technology	ISO VG
9	Mobil EAL Arctic 22 or 22CC***	POE (Polyol Ester)	22
10	Mobil EAL Arctic 32	POE (Polyol Ester)	32
11	Mobil EAL Arctic 46	POE (Polyol Ester)	46
12	Mobil EAL Arctic 68	POE (Polyol Ester)	68
13	Mobil EAL Arctic 100	POE (Polyol Ester)	100
14	Mobil EAL Arctic 220	POE (Polyol Ester)	220

Mobil Glygoyle 22

synthetic Polyalkylene Glycol–based (PAG) lubricant suitable for specific refrigeration applications

Features and Benefits:

Polyalkylene Glycol–based. Shear-stable lubricant with outstanding resistance to thermal degradation and the formation of sludge and deposits. Suitable for HC (hydrocarbon) or CO₂ refrigerant fluid applications.

N°	Lubricant	Technology	ISO VG
15	Mobil Glygoyle 22	PG (Polyglycol)	150

Mobil Zerice S Series

premium synthetic refrigeration compressor lubricants for ultralow temperature applications

Features and Benefits:

Outstanding solubility with halocarbon refrigerants, helping avoid oil separation and congealing on the valve and heat-transfer surfaces of the refrigeration system. Very low pour and floc points prevent harmful wax precipitation blocking expansion valves and heat-transfer surfaces.

N°	Lubricant	Technology	ISO VG
16	Mobil Zerice S 32	AB (Alkylbenzene)	32
17	Mobil Zerice S 68	AB (Alkylbenzene)	68
18	Mobil Zerice S 100	AB (Alkylbenzene)	100

Mobil-branded Refrigeration Lubricant Selection Guide for Industrial Systems

Listed here are some of the high-performance Mobil Industrial Lubricants for refrigeration applications, each one formulated to offer outstanding equipment protection and extended oil life. These charts will help you determine which lubricant is most suitable for your system, based on the type of refrigerant fluid, evaporator temperature, and compressor type. For a complete list of Mobil Industrial Lubricants, go to **www.mobilindustrial.com**.

See other side for additional charts.

TABLE 1: Refrigeration Lubricant Selector

REFRIGERANT FLUID			EVAPORATOR TEMPERATURE		COMPRESSOR TYPE								
ASHRAE Name	Type	Transition or Substitute of	From (°C)	To (°C)	Piston			Screw			Centrifugal		
R12	CFC		-40	+40	7			8	5				
R502	CFC		-50	-20	7	16		8	18				
R22	HCFC		-25	+10	7	16	2*	8	18		8		
R22	HCFC		-30	+10		16	2*		18		8		
R22	HCFC		-40	+10		16			18		8		
R22	HCFC		-50	+10		16			17		8		
R123	HCFC	R11	0	+20							8		
R124	HCFC	R114	0	+80	8			18					
R401a	HCFC	R12	-20	+10	7	16							
R402a	HCFC	R502	-50	-30	16								
R408a	HCFC	R502	-50	-30	16			18					
R409a	HCFC	R12	-20	+10	7	16							
R290	C ₃ H ₈ (propane)		-30	+20	8			15			15		
R600/600a	Butane & Iso But.		-30	+20	8			15			15		
R717	NH ₃ (ammonia)		-30	+10	8	2*	6**	8	2*	6**	8		
R717	NH ₃ (ammonia)		-50	+10		2*	6**		2*	6**	8		
R744	CO ₂		-55	-10									
R23	HFC		-100	-40	9								
R134a	HFC	R12	-20	+10	10			14			12		
R134a	HFC	R12	-30	+10	9			13			12		
R404a	HFC	R502	-40	-30	10			14			12		
R404a	HFC	R502	-50	-30	9			13			12		
R407c	HFC	R22	0	+10	12			14					
R410a	HFC		-45	+10	9			13			12		
R410a	HFC		-25	+10	10			14			12		
R410b	HFC		-25	+10	10			14			12		
R417a (Isceon M059)	HFC	R22	-15	+15	12			14			12		
R422a (Isceon M079)	HFC	R22	-45	-5	9			13			12		
R422a (Isceon M079)	HFC	R22	-25	-5	10			14			12		
R422d (Isceon M029)	HFC	R22	-45	+10	9			13			12		
R422d (Isceon M029)	HFC	R22	-25	+10	10			14			12		
R427a (FX 100)	HFC	R22	-40	+10	9			13			12		
R427a (FX 100)	HFC	R22	-20	+10	11			14			12		
R507/507a	HFC		-40	0	9			13			12		
R507/507a	HFC		-20	0	11			14			12		

This guide is for refrigeration lubricant selection for industrial systems with dry type evaporators (i.e., oil carryover into evaporator less than 15%). To select a lubricant for other types of refrigeration systems, please contact your local representative or the ExxonMobil technical help line for assistance.



HOW TO USE THIS REFRIGERATION LUBRICANT SELECTOR

- Obtain/confirm the following information on the application:
 - REFRIGERANT FLUID** in use (ASHRAE designation)
 - Evaporator is of dry type (oil carryover less than 15%) and **EVAPORATOR TEMPERATURE** in °C
 - COMPRESSOR TYPE** and outlet temperature
- To identify the Mobil-branded lubricant(s) suitable for use in the type of compressor, please refer to the row that corresponds to the refrigerant fluid and the evaporator temperature.
- If mineral and synthetic lubricants are both indicated, synthetic lubricants will in general offer a higher level of performance than mineral oils with respect to equipment protection, particularly at high- and low-operating temperatures, compressor efficiency, and oil life.
- For information on builder approvals for Mobil-branded refrigeration lubricants, please refer to Table 2 on the back page.
- For further clarification or assistance, please contact your local representative or ExxonMobil technical help line.

NOTE:

- For equipment under warranty, please refer to equipment builder recommendations.
- In changing refrigeration oil technology or brands, ensure thorough flushing of the system to minimize contamination with the old technology or brand.

*For new units **For existing units ***For Emerson Copeland pistons compressors or where indicated with ***, use only 22CC grade



TABLE 2: Builder Approvals for Mobil-branded Refrigeration Oils

Mobil-branded refrigeration lubricant product recommendations, according to equipment builder approvals and refrigerant type.

Builder	Country	BUILDER-APPROVED REFRIGERATION OIL TECHNOLOGY (COLOR) AND MOBIL-BRANDED REFRIGERATION OIL(S) (TEXT)							
		HCFC		HFC	NH ₃			HC	CO ₂
Johnson Controls-Sabroe Bitzer GEA Grasso Carrier Frascold Dorin Emerson Copeland Carrier Wuhan McQuay	Denmark	18	3	12,13,14	6	2, 3, 4			
	Germany	8(P)	17(P)	9***,10,12(P)	8(P)	1, 2(S)			
	Netherlands	8(S, P)	16(S) 17(S,P)	6(S)	12(S,P),13(S)	8(S)	16(S)	2(S)	6
	France	7(P),8(P)	16(P)		12(P)				
	Italy			10,12(P)					
	Italy			10,11					
	USA		(S)	(S)	9***				
	USA			9***(Scr),12					
	China			12					

TABLE 3: Builders with Specific Lubricant Technology Requirements

Mobil-branded refrigeration lubricant product technology recommendations, according to equipment builder.
When under warranty, please refer to equipment manual.

Builder	Country	BUILDER-APPROVED REFRIGERATION OIL TECHNOLOGY (COLOR)				
		HCFC	HFC	NH ₃	HC	CO ₂
Johnson Controls — York	Denmark					
Johnson Controls — Frick	Denmark					
Danfoss	Denmark					
Howden	UK					
Bristol	USA					
Mycom	USA					
Vilter	USA					
Daikin	Japan					
MHI	Japan					
Kobe Steel	Japan					
Chongqing General Industry Co	China					

P = Piston Compressor **S** = Screw Compressor **Scr** = Scroll
*For new units **For existing units ***For Emerson Copeland pistons compressors or where indicated with ***, use only 22CC grade

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For more information on all Mobil Industrial Lubricants and services, call your local company representative or the ExxonMobil technical help line at XXX-XXX-XXXX. Also visit www.mobilindustrial.com.