

Refrigeration Lubricant Selection Guide

Product Information

Summit Series	Base Oil	Product Name	ISO Grade	Kin. Viscosity at 40°C [cSt]	Kin. Viscosity at 100°C [cSt]	Viscosity Index (VI)	Flash Point °F (°C)	Pour Point °F (°C)	NSF Food Grade Registered
RHT Series	HTMO	RHT-32	32	31.18	5.32	103	455 (229)	-53 (-47)	H2
		RHT-46	46	42.55	6.44	100	460 (238)	-49 (-45)	
		RHT-68	68	70	8.8	98	475 (246)	-45 (-43)	
		RHT-100	100	100.94	11.26	97	515 (268)	-40 (-40)	
RHT FG-68	HTMO	RHT FG-68 ^{1,2}	68	67.97	8.66	98	470 (243)	-33 (-36)	H1
R Series	PAO	R-100 ^{1,2}	32	31	5.9	135	485 (252)	-87 (-66)	H1
		R-150 ^{1,2}	46	45.8	7.8	136	510 (266)	-78 (-61)	
		R-200 ^{1,2}	68	68.9	10.7	145	525 (274)	-71 (-57)	
		R-300 ^{1,2}	100	104.3	15	146	530 (277)	-45 (-43)	
		R-400	150	153.8	20	147	540 (282)	-53 (-47)	
		R-500 ^{1,2}	220	218	25.2	146	540 (282)	-53 (-47)	
RHB Series	HTMO / AB Blend	RHB-68	68	67.8	8.4	93	470 (243)	-51 (-46)	H2
		RHB-100	100	100.6	10.6	86	480 (249)	-44 (-42)	
RPA-68	PAO / AB Blend	RPA-68	68	61.8	8.89	119	465 (241)	-65 (-54)	H2
RPS Series	PAG	RPS-52		52	11.1	213	430 (221)	-60 (-51)	H1
		RPS-100	100	96.3	19.2	223	500 (260)	-55 (-48)	
RPE-744 Series	POE	RPE-744-68	68	69	9.48	116	470 (243)	-40 (-40)	
		RPE-744-85		82.4	11	121	530 (277)	-45 (-43)	
		RPE-744-100	100	97	11.6	108	465 (241)	-43 (-42)	
PGI Series	PAG	PGI-68	68	69	12.7	186	480 (249)	-54 (-48)	
		PGI-100	100	102	18	195	485 (252)	-49 (-45)	
		PGI-150	150	156	26.2	205	495 (257)	-44 (-42)	
PGS Series	PAG	PGS-68	68	68	14.8	230	495 (257)	-60 (-51)	
		PGS-100	100	100	19.4	218	500 (260)	-49 (-45)	
		PGS-150	150	148	27.8	227	505 (263)	-49 (-45)	
RAB Series	AB	RAB-32	32	31.6	5.6	117	505 (263)	-58 (-50)	H2
		RAB-68	68	70	9.5	115	525 (274)	-42 (-41)	
RPE Series	POE	RPE-15	15	15.1	3.65	130	442 (228)	-96 (-71)	
		RPE-32	32	33	5.8	118	471 (244)	-58 (-50)	
		RPE-46	46	45.1	7.2	121	493 (256)	-54 (-48)	
		RPE-68	68	68.5	9.5	117	520 (271)	-44 (-42)	
		RPE-100	100	98.4	11.3	101	525 (274)	-38 (-39)	
		RPE-120		121.4	12.6	95	545 (285)	-29 (-34)	
		RPE-170		171.5	16.5	101	585 (307)	-27 (-33)	
		RPE-220	220	215	18.8	98	536 (280)	-13 (-25)	

1. Kosher Approved
2. Halal Certified

Compatible Lubricants by Refrigerant

Refrigerant Type	Refrigerant Number	Refrigerant Safety Group	General Refrigerant Notes	Compatible Lubricants
Natural Refrigerants	R717 (Ammonia)	B2L	1. Ammonia is <u>Not</u> compatible with copper, brass, zinc and certain alloys 2. Ammonia is <u>Not</u> compatible with Esters 3. Ammonia is <u>Not</u> compatible with Varnasolv 4. Additional Code / Regulations for system design using Toxic / Mildly Flammable Refrigerant	RHT Series RHT FG-68 R Series RHB Series RPA-68 RAB Series RPS Series ¹
	R744 (Carbon Dioxide)	A1	1. Carbon Dioxide (CO ₂) is a high density / high pressure refrigerant with a low critical point	RPE-744 Series ² R Series
	R290 (Propane)	A3	1. Additional Code / Regulations for system design using highly Flammable Refrigerant	PGI Series R Series
	R600 (Butane)	A3	1. Additional Code / Regulations for system design using highly Flammable Refrigerant	PGS Series R Series
	R600a (Isobutane)	A3	1. Additional Code / Regulations for system design using highly Flammable Refrigerant	PGS Series R Series
	R1270 (Propylene)	A3	1. Additional Code / Regulations for system design using highly Flammable Refrigerant	PGI Series R Series
Hydrofluorocarbons (HFCs)	R23	A1		RPE Series
	R134a	A1		
	R404A	A1	1. Zeotropic ³ Blend of R-125/R-143a/R-134a	
	R407A	A1	1. Zeotropic ³ Blend of R-32/R-125/R-134a	
	R407C	A1	1. Zeotropic ³ Blend of R-32/R-125/R-134a	
	R410A	A1	1. Zeotropic ³ Blend of R-32/R-125	
	R410B	A1	1. Zeotropic ³ Blend of R-32/R-125	RPE Series RHB Series ⁴
	R417A	A1	1. Zeotropic ³ Blend of R-125/R-134a/R-600	
	R422A	A1	1. Zeotropic ³ Blend of R-125/R-134a/R-600a	
	R422B	A1	1. Zeotropic ³ Blend of R-125/R-134a/R-600a	
	R422C	A1	1. Zeotropic ³ Blend of R-125/R-134a/R-600a	
	R422D	A1	1. Zeotropic ³ Blend of R-125/R-134a/R-600a	
	R427A	A1	1. Zeotropic ³ Blend of R-32/R-125/R-143a/R-134a	
R507A	A1	1. Azeotropic ³ Blend of R-125/R-143a	RPE Series	
R508B	A1	1. Azeotropic ³ Blend of R-23/R-116		
Hydrofluoro-olefins (HFOs)	R1233zd(E)	A1		RPE Series
	R1234yf	A2L	1. Additional Code / Regulations for system design using mildly Flammable Refrigerant	
	R1234ze(E)	A2L	1. Additional Code / Regulations for system design using mildly Flammable Refrigerant	
	R1336mzz(Z)	A1		
Hydrochlorofluorocarbons (HCFCs) ⁵	R22	A1		RHB Series RAB Series RPE Series
	R123	B1		
	R124	A1		
	R401A	A1	1. Zeotropic ³ Blend of R-22/R-152a/R-124	
	R401B	A1	1. Zeotropic ³ Blend of R-22/R-152a/R-124	
	R402A	A1	1. Zeotropic ³ Blend of R-125/R-290/R-22	
	R402B	A1	1. Zeotropic ³ Blend of R-125/R-290/R-22	
	R403B	A1	1. Zeotropic ³ Blend of R-290/R-22/R-218	
	R408A	A1	1. Zeotropic ³ Blend of R-125/R-143a/R-22	
	R409A	A1	1. Zeotropic ³ Blend of R-22/R-124/R-142b	
R414B	A1	1. Zeotropic ³ Blend of R-22/R-124/R-600a/R-142b		

*Above list is not comprehensive of all available refrigerants

- Summit RPS Series is a PAG-based lubricant which is Miscible with Ammonia.
- Summit RPE-744 Series is a POE-based lubricant specifically designed for use with Carbon Dioxide Refrigerant Systems.
- Zeotropic Refrigerant Blends are subject to Glide (where refrigerant components boil at different temperatures).
- Some specific HFC refrigerants include a small concentration of Hydrocarbon

- aiding in the circulation of mineral oil and alkylbenzene
- Full Phaseout of production/import for all HCFC refrigerants to conclude on Jan. 1, 2030
- Full Phaseout of production/import for all CFC refrigerants concluded in 1996

Where and Why Selection Guide

Natural Refrigerants

Refrigerant	Summit Product	Base Oil	Top Off Compatible with...	Where / Why Selection Notes
R717 (Ammonia)	RHT Series	HTMO	Naphthenic MO, HTMO, PAO, AB	1. Superior Replacement for Naphthenic Mineral Oils. 2. Suitable for most Ammonia Applications.
	RHT FG-68	HTMO	Naphthenic MO, HTMO, PAO, AB	Selected for ammonia applications which require the use of NSF H1 Food Grade lubricants.
	R Series	PAO	Naphthenic MO, HTMO, PAO, AB	1. Provides Significant Energy Savings over Mineral Oils. 2. Selected for low temp ammonia applications which require the use of NSF H1 Food Grade Lubricants.
	RHB Series	HTMO / AB Blend	Naphthenic MO, HTMO, PAO, AB	Often used as a Transitional Fluid when replacing a Naphthenic product as RHB provides seal conditioning for elastomers previously exposed to Naphthenic oil.
	RPA-68	PAO / AB Blend	Naphthenic MO, HTMO, PAO, AB	1. Provides Significant Energy Savings over Mineral Oils. 2. Provides seal conditioning of elastomers to prevent elastomer shrinking tendency with PAO oils.
	RAB Series	AB	Naphthenic MO, HTMO, PAO, AB	Utilized predominantly in low temperature applications.
R717 (DX) ¹ (Ammonia)	RPS Series ²	PAG	PAG	1. Provides a Miscible lubricant solution for Ammonia. 2. Commonly utilized for DX Ammonia applications.
R744 (Carbon Dioxide)	RPE-744 Series ³	POE	POE	1. Superior hydrolytic stability compared to other POE oils. 2. Provides a Miscible lubricant solution for CO ₂ .
	R Series	PAO	PAO	Compatible with both CO ₂ and Ammonia as solution for both sides of Ammonia/CO ₂ Cascade System.
R290 (Propane)	PGI Series	PAG	PAG	Preferred choice when replacing PAG-based product.
	R Series	PAO	PAO	Preferred choice when replacing PAO-based product.
R600 (Butane)	PGS Series	PAG	PAG	PGS Series utilized for Refrigerants with Sp. Gravity > 1.5.
	R Series	PAO	PAO	Preferred choice when replacing PAO-based product.
R600a (Isobutane)	PGS Series	PAG	PAG	PGS Series utilized for Refrigerants with Sp. Gravity > 1.5.
	R Series	PAO	PAO	Preferred choice when replacing PAO-based product.
R1270 (Propylene)	PGI Series	PAG	PAG	Preferred choice when replacing PAG-based product.
	R Series	PAO	PAO	Preferred choice when replacing PAO-based product.

HFC Refrigerants

Refrigerant	Summit Product	Base Oil	Top Off Compatible with...	Where / Why Selection Notes
Hydrofluorocarbons (HFCs)	RPE Series	POE	POE	Preferred choice when replacing POE-based product.
	RHB Series	HTMO / AB Blend	Naphthenic MO, HTMO, AB	See "Compatible Lubricants - By Refrigerant" for list of HFC refrigerants which are suitable with RHB Series.

HFO Refrigerants

Refrigerant	Summit Product	Base Oil	Top Off Compatible with...	Where / Why Selection Notes
Hydrofluoro-olefins (HFOs)	RPE Series	POE	POE	Preferred choice when replacing POE-based product.

HCFC Refrigerants

Refrigerant	Summit Product	Base Oil	Top Off Compatible with...	Where / Why Selection Notes
Hydrochlorofluorocarbons (HCFCs)	RAB Series	AB	Naphthenic MO, HTMO, AB	Preferred choice when replacing pure Alkylbenzene products.
	RHB Series	HTMO / AB Blend	Naphthenic MO, HTMO, AB	Preferred choice when replacing Naphthenic products.
	RPE Series	POE	POE	Preferred choice when replacing POE-based products.

1. "DX" refers to Direct Expansion system design.
2. It is essential to verify the existing lubricant before introducing Summit RPS Series to the system. If the existing system does not currently utilize a PAG-based lubricant the system must be thoroughly cleaned / flushed to remove any existing product to avoid product incompatibility concerns.
3. POE oils are very hygroscopic. Proper storage in a dry / cool environment is especially important. Once open, the entire contents of the container should be utilized or disgarded to avoid excessive moisture contamination as prone with storing partially used containers.
4. Mixing Summit RTC Series with other POE-based formulations should be avoided. A simple drain of existing product is recommended without necessity for flushing.

HTMO = Hydrotreated Mineral Oil
 PAO = Polyalphaolefin
 AB = Alkylbenzene
 POE = Polyol Ester
 PAG = Polyalkylene Glycol