LUBE OILS REFERENCE

Lube oils are now available in a wide variety of types and viscosity grades. Following is a reference for the various YORK lube oils used for refrigeration. For additional lube oil application information (E.G. natural gas, etc.), refer to AES 0700.02 Synthetic Lube Oils.

REFRIG	LUBRICANT			
	FRICK # (MSO#)	CPI #	TYPE	APPLICATION RANGE[1] (EVAP TEMP)
R-13, 503	N/A	CP-4214-32	Polyol Ester	All
R-22	2A (4)	N/A	Mineral oil (Napthenic base)	Above -20°F (-29°C)
	7 (6)	CP-4700-68	Alkyl Benzene	-20°F to -80°F (-29°C to -62°C)
	N/A	CP-4214-68	Polyol Ester	Below -80°F (-62°C)
R-134a	13	Solest-68	Polyol Ester	All[2]
R-23	N/A	Solest-LT-32	Polyol Ester	All[2]
R-502	N/A	CP-4214	Polyol Ester	All[3]
R-507	13	Solest-68	Polyol Ester	All[2]
R-600a	N/A	CP-1507-100	Polyglycol	High Temp Heat Pumps
R-717[4] (Ammonia)	3 (1)	N/A	Mineral oil (Paraffinic base)	Above 0°F (-18°C)
	9	CP-1009-68	Hydrotreated Semi-synthetic	0°F to -30°F (-18°C to -34°C)
	11	CP-4619-46	Polyalphaolefin[5]	Below -30°F (-34°C)
R-744 (Carbon Dioxide)	14	CP-4624-68-F	Polyalphaolefin[5]	All[2]
R-290 (Propane)	12b	CP-1516-100	Polyglycol	All[2]
R-1270 (Propylene)	14	CP-4624-68-F	Polyalphaolefin	All[2, 6]
R-1150 (Ethylene)	14	CP-4624-68-F	Polyalphaolefin	All

Properties of most of these oils are available from the Widgets module of CoolWare. Some information regarding content is available in the MSO section of the Material Specifications Manual. Safety information is available in the material safety data sheets that are on file. Additional information is available from CPI. The standard bulletin, E160-802 SPC, is available for customer inquiries.

[1] In compound refrigeration systems, booster and high-stage compressors should use the same lubricant

[2] The pour point of the lubricant should be below the evaporating temperature of the refrigerant, especially for immiscible or partially miscible oils.

[3] For the CP-4214 Series fluids, if the machine is a liquid injected screw, the 150 ISO fluid should be used. Otherwise, the 100 ISO should be used.

[4] Direct expansion ammonia systems above 0°F should use the ammonia-soluble lubricant (Frick # 10 / CPI CP-0412-100). Below 0°F, use Frick #9 or #11 (Ref: AES 0200.06)

[5] Frick standard HNBR seal OK. PAO oil will shrink elastomers with plasticizer component.

[6] Frick 14 and CP-4600 are soluble with propylene. CP-1507-100 is recommended only when the dilution level of the gas in the lubricant exceeds 15% (consult CPI). CP-1507 is insoluble with propylene. CP-1516-150 will foam in the presence of propylene.

Differences between the above application limits and other documents are primarily based on oil recovery aspects in closed systems. The above is intended to permit recovery of oil from evaporators at the specified temperature using oil distillers. Refer to footnote 2 below.