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Application Engineering Europe

REFRIGERANTS / LUBRICANTS APPROVED WITH COPELAND™ COMPRESSORS

	ODP	GWP	Refrigerant	Replaces	Application	Lubricant				
						Preferred	Alternative			
CFC	1	2400	R12		LM	Phased out	MO, AB			
	0.283	4100	R502		LM		MO, AB			
HCFC	0.05	1810	R22		LMH	Service only	MO, AB			
	0.03	1100	R401A (MP39)	R12	MH		AB & MO or POE & MO			
	0.04	1200	R401B (MP66)	R12	LM					
	0.02	2700	R402A (HP80)	R502	LM					
	0.03	2300	R402B (HP81)	R502	LM					
	0.016	3000	R408A (FX10)	R502	LM					
0.05	1500	R409A (FX56)	R12	LM						
HFC / HFO	0	1430	R134a	R12	MH	New and retrofit	POE			
	0	3922	R404A	R502	LM					
	0	3980	R507	R502	LM					
	0	2107	R407A	R22/R502	LM					
	0	1770	R407C	R22	MH					
	0	1824	R407F	R22/R404A	LM					
	0	1386	R448A (N40)	R22/R404A	LM					
	0	1397	R449A (XP40)	R22/R404A	LM					
	0	601	R450A (N13)	R134a	MH					
	0	621	R513A (XP10)	R134a	MH					
	0	2090	R410A		MH			New		
	0	3140	R422A (MO79)	R22/R502	LM			Retrofit	MO	AB, POE
	0	2730	R422D (MO29)	R22	MH					
	0	2350	R417A (MO59)	R22	MH					
Natural	0	1	R744, CO2		Subcritical / Transcritical		POE*			
	0	3	R290, Propane		MH	New	Hatcol 4467			

Legend:

ODP: ... Ozone Depleting Potential

GWP: ... Global Warming Potential

MO: Mineral oil = Suniso 3GS, Texaco Capella WF32, FUCHS Reniso KM32, Copeland White oil

AB: Alkyl benzene oil = Shell 22-12, Zerol 200TD

AB & MO, POE & Mo: .Minimum 50% POE or AB

POE: .. Polyolester oil = Emkarate RL32-3MAF, MOBIL Arctic 22CC (only "top off")

POE*: . Polyolester oil for CO₂ = Emkarate RL 68 HB

PAG: Zerol RFL 68EP

L: Low temperature application (refrigeration)

M: Medium temperature application (refrigeration)

H: High temperature application (air-conditioning, heat pump, refrigeration)

Spectronics AR-GLO 4/E Fluorescent Leak Detection Dye is approved for HFC/POE and HCFC/MO usage at the manufacturer's recommended concentrations.



CAUTION: POE must be handled carefully and the proper protective equipment (gloves, eye protection, etc.) must be used when handling POE lubricant. POE must not come into contact with any surface or material that it might damage, including without limitation, certain polymers.

Technical Information is available for refrigerant changeover:

- CC7.26.1 "Refrigerant Changeover From HCFC To HFC"
- CC7.26.2 "Refrigerant Changeover From HCFC R22 To HFC R422A/D"

For specific product availability and performance data, refer to Emerson Climate Technologies Literature.