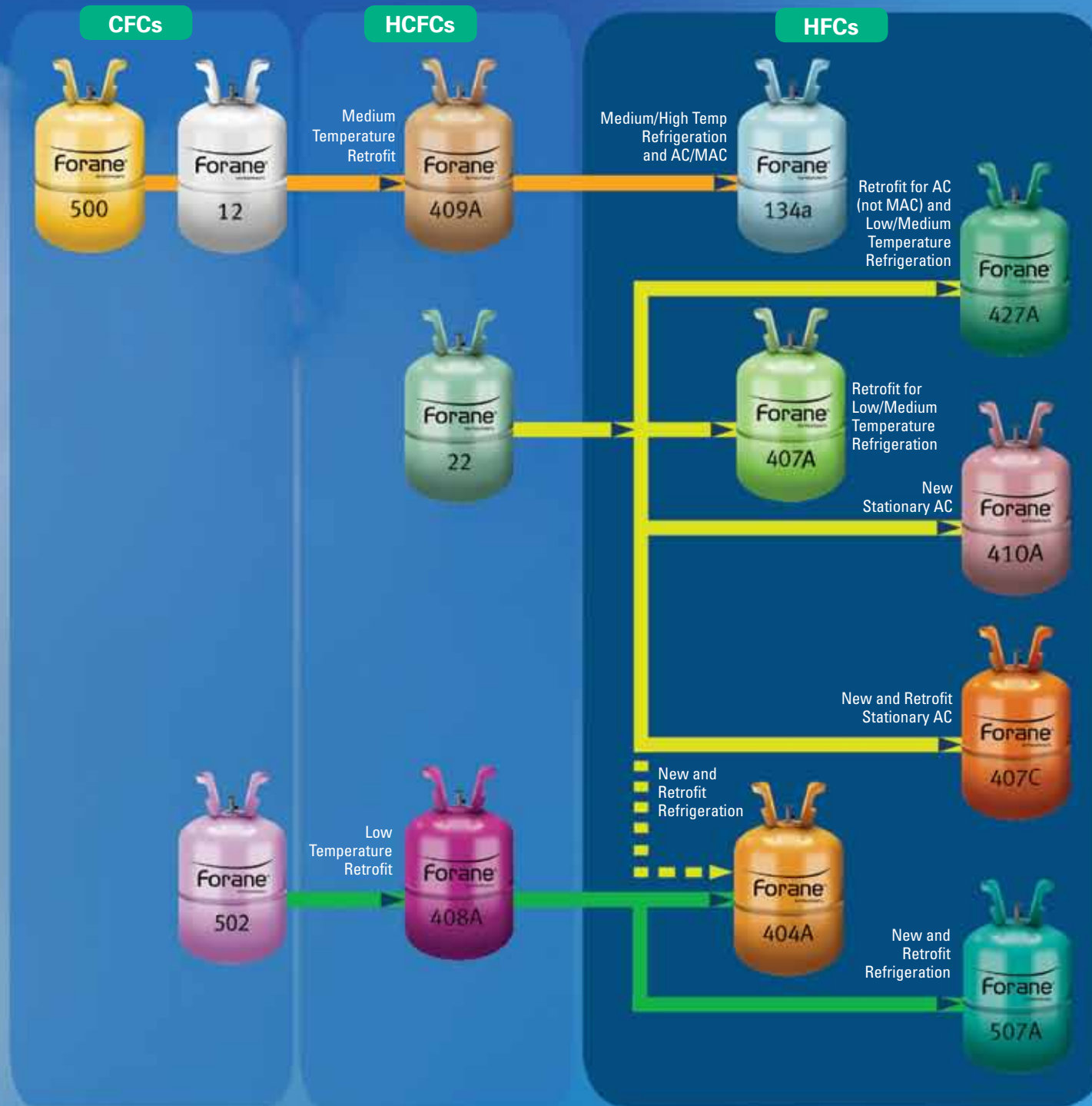
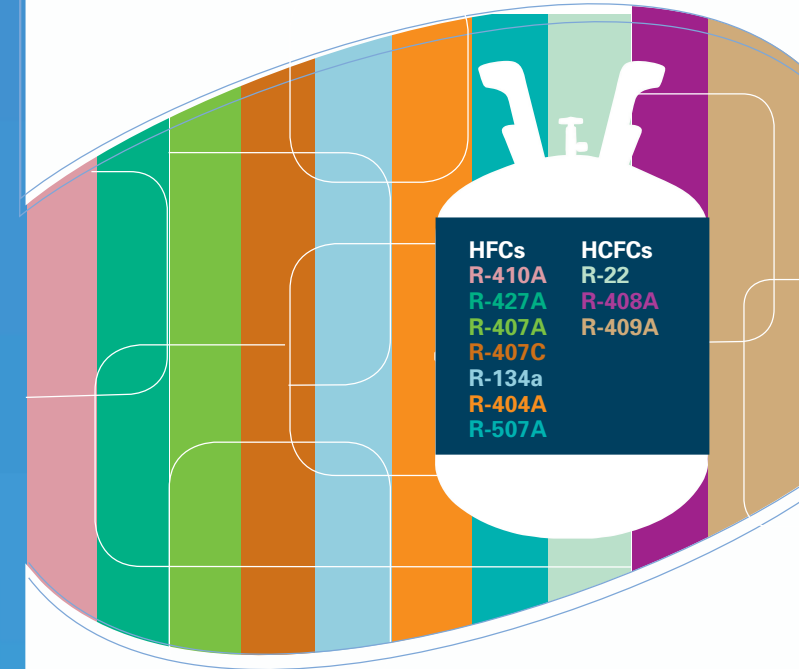


PROGRESSION TOWARD SUSTAINABLE REFRIGERATION PRODUCTS



QUICK REFERENCE GUIDE



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ADV-06 PPC-08/09



APPLICATION REFERENCE GUIDE

ASHRAE #	Trade Name	Manufacturer	Replaces	Type	Composition	GWP	Recommended Lubricant	Applications
R-410A	Forane® 410A	Arkema	R-22	HFC Near-azeotropic blend	R-32 - 50% R-125 - 50%	2,100	POE	Replacement for R-22 in smaller size chillers, and residential and light commercial A/C systems. Never used as a retrofit for R-22.
	Genetron® AZ-20 Suva® 410A Puron®	Honeywell Dupont						
R-427A	Forane® 427A	Arkema	R-22	HFC Zeotropic blend	R-32 - 15% R-125 - 25% R-143a - 10% R-134a - 50%	2,130	MO or AB (with oil separator) POE	Recommended retrofit for R-22 DX systems. Used in A/C, medium, and low temperature systems.
R-407A	Forane® 407A	Arkema	R-22	HFC Zeotropic blend	R-32 - 20% R-125 - 40% R-134a - 40%	2,100	POE	Replacement/retrofit for R-22 in DX systems. Used in medium and low temperature systems.
	Suva® 407A Klea® 407A	Dupont Ineos						
R-407C	Forane® 407C	Arkema	R-22	HFC Zeotropic blend	R-32 - 23% R-125 - 25% R-134a - 52%	1,800	POE	Replacement/retrofit for R-22 in DX systems. Used in residential A/C, medium, and low temperature systems.
	Suva® 407C Genetron® 407C	Dupont Honeywell						
R-134a	Forane® 134a	Arkema	R-12	HFC Single component fluid	R-134a - 100%	1,430	POE PAG (auto)	Replacement/retrofit for R-12 and R-500 systems. Recommended retrofit for R-12 automotive A/C systems.
	Suva® 134a Genetron® 134a Klea® 134a	Dupont Honeywell Ineos						
R-404A	Forane® 404A	Arkema	R-502 R-22 R-402A R-408A	HFC Near-azeotropic blend	R-125 - 44% R-143a - 52% R-134a - 4%	3,900	POE	Replacement/retrofit for R-502 and R-22. Used in medium and low temperature systems.
	Suva® 404A Genetron® 404A	Dupont Honeywell						
R-507A	Forane® 507A	Arkema	R-502 R-22 R-402A R-408A	HFC Azeotropic blend	R-125 - 50% R-143a - 50%	4,000	POE	Replacement/retrofit for R-502 and R-22. Used in medium and low temperature refrigeration systems.
	Suva® 507 Genetron® AZ-50	Dupont Honeywell						
R-22	Forane® 22	Arkema		HCFC Single component fluid	R-22 - 100%	1,810	MO AB	Used in A/C, medium, and low temperature systems. Scheduled for phase-out.
	Freon® 22 Genetron® 22	Dupont Honeywell						
R-408A	Forane® 408A	Arkema	R-502	HCFC Near-azeotropic blend	R-125 - 7% R-143a - 46% R-22 - 47%	2,650	MO AB POE	Recommended retrofit for R-502 systems. Used in medium and low temperature systems.
	Suva® 408A Genetron® 408A	Dupont Honeywell						
R-409A	Forane® 409A	Arkema	R-12 R-500	HCFC Zeotropic blend	R-22 - 60% R-124 - 25% R-142b - 15%	1,290	MO AB POE	Recommended retrofit for R-12/R-500 stationary DX systems. Used in medium and low temperature systems.
	Suva® 409A Genetron® 409A	Dupont Honeywell						
R-123	Forane® 123	Arkema	R-11	HCFC Single component fluid	R-123 - 100%	77	MO AB POE	Used in Centrifugal Chillers. Scheduled for phase-out.
	Suva® 123 Genetron® 123	Dupont Honeywell						

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Puron® is a registered trademark of Carrier Corporation

Klea® is a registered trademark of INEOS Fluor Holdings Ltd.
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PRESSURE (PSIG) TEMPERATURE CHART

Sat. Temp (°F)	R-22	R-134a	R-427A Liquid Pressure	R-427A Vapor Pressure	R-407A Liquid Pressure	R-407A Vapor Pressure	R-410A Liquid Pressure	R-407C Liquid Pressure	R-407C Vapor Pressure	R-404A Liquid Pressure
-50	6.2	18.7	3.8	11.9	0.8	9.0	5.3	2.9	11.4	0.6
-45	2.7	16.9	0.1	9.0	1.7	5.7	8.0	0.4	8.5	2.7
-40	0.5	14.8	1.9	5.9	3.9	2.0	11.0	2.5	5.2	5.0
-35	2.6	12.5	4.1	2.4	6.4	1.0	14.2	4.8	1.5	7.6
-30	4.9	9.8	6.6	0.8	9.2	3.3	17.8	7.3	1.3	10.4
-25	7.4	6.9	9.3	2.9	12.2	5.8	21.8	10.1	3.6	13.4
-20	10.1	3.7	12.2	5.3	15.6	8.5	26.1	13.1	6.1	16.8
-15	13.2	0.1	15.4	7.9	19.2	11.5	30.8	16.5	8.8	20.5
-10	16.5	1.9	18.9	10.8	23.2	14.9	35.9	20.1	11.9	24.5
-5	20.0	4.1	22.8	14.0	27.5	18.5	41.5	24.0	15.2	28.8
0	23.9	6.5	26.9	17.5	32.2	22.5	47.5	28.3	18.9	33.5
5	28.2	9.1	31.4	21.2	37.3	26.9	54.1	33.0	22.9	38.6
10	32.8	11.9	36.3	25.4	42.8	31.6	61.2	38.0	27.3	44.0
15	37.7	15.0	41.5	29.9	48.7	36.7	68.8	43.5	32.0	49.9
20	43.0	18.4	47.2	34.7	55.1	42.3	77.1	49.3	37.2	56.2
25	48.7	22.1	53.3	40.0	62.0	48.3	86.0	55.7	42.7	63.0
30	54.9	26.0	59.8	45.7	69.3	54.8	95.5	62.5	48.7	70.3
35	61.5	30.3	66.8	51.9	77.2	61.8	105.7	69.8	55.2	78.1
40	68.5	35.0	74.3	58.7	85.6	69.4	116.6	77.6	62.1	86.4
45	76.0	40.0	82.3	65.6	94.6	77.4	128.3	86.0	69.5	95.2
50	84.0	45.4	90.8	73.3	104.2	86.1	140.8	94.9	77.5	104.7
55	92.5	51.1	99.9	81.5	114.4	95.3	154.1	104.5	86.0	114.7
60	101.6	57.3	109.6	90.3	125.2	105.2	168.2	114.6	95.1	125.3
65	111.2	63.9	119.9	99.6	136.7	115.7	183.2	125.4	104.8	136.6
70	121.4	71.0	130.8	109.6	148.8	127.0	199.2	136.9	115.2	148.6
75	132.2	78.6	142.4	120.3	161.7	138.9	216.1	149.1	126.2	161.2
80	143.6	86.6	154.6	131.6	175.3	151.6	234.0	162.1	137.8	174.6
85	155.7	95.1	167.6	143.7	189.7	165.1	253.0	175.8	150.2	188.8
90	168.4	104.2	181.2	156.4	204.8	179.3	273.0	190.2	163.4	203.7
95	181.8	113.8	195.6	170.0	220.8	194.4	294.1	205.5	177.4	219.4
100	195.9	124.1	210.8	184.4	237.6	210.4	316.4	221.6	192.1	235.9
105	210.7	134.9	226.8	199.6	255.3	227.4	339.9	238.5	207.8	253.4
110	226.3	146.3	243.6	215.7	273.9	245.2	364.6	256.4	224.4	271.7
115	242.7	158.4	261.2	232.7	293.5	264.1	390.5	275.1	241.9	290.9
120	259.9	171.1	279.7	250.6	314.0	284.0	417.7	294.7	260.5	311.1
125	277.9	184.5	299.1	269.5	335.4	305.0	446.3	315.2	280.1	332.3
130	296.8	198.7	319.4	289.5	357.9	327.1	476.3	336.7	300.9	354.5
135	316.5	213.6	340.7	310.5	381.5	350.5	507.6	359.2	322.9	377.8
140	337.2	229.3	362.9	332.6	406.2	375.1	540.5	382.6	346.2	402.2
145	358.8	245.7	386.1	355.9	431.9	401.0	574.8	407.0	370.8	427.7
150	381.5	263.0	410.3	380.4	458.9	428.3	610.6	432.4	396.9	454.4

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