R-417C

R-417C

Composition: (R-125 / 134a / 600) • (19.5 / 78.8 / 1.7 wt%)

Replaces: R-12 and HCFC-based R-12 retrofit blends

Application:
Medium and low temperature refrigeration

Performance:
- Capacity will be slightly higher than R-12; pressures will run higher than R-12 and similar to R-401A/B and R-409A

Lubricant:
Polyolester lubricant; a hydrocarbon additive is designed to circulate mineral oil or alkylbenzene, but addition of POE may be required if there is a problem with circulation.

Retrofitting:
- Consult the comments on Pages 9 and 10
- See Section II, pages 92-98 for detailed discussion

[PRESSURE-TEMP CHART]

	R417C	
TEMP. (˚F)	Liquid (psig)	Vapor (psig)
-40	*8.8″*	*12.4″*
-35	*5.9″*	*9.8″*
-30	*2.5″*	*6.7″*
-25	0.6	*3.5″*
-20	2.7	0.2
-15	4.9	2.2
-10	7.3	4.4
-5	10.0	6.9
0	13.0	9.5
5	16.1	12.5
10	19.6	15.7
15	23.4	19.2
20	27.5	23.0
25	31.9	27.2
30	36.6	31.7
35	41.8	36.5
40	47.3	41.7
45	53.2	47.3
50	59.5	53.3
55	66.2	59.8
60	73.4	66.7
65	81.1	74.1
70	89.3	82.0
75	98.0	90.4
80	107	99.3
85	117	109
90	127	119
95	138	130
100	150	141
105	162	153
110	175	166
115	189	179
120	203	193
125	218	208
130	234	223
135	250	240
140	268	257
145	286	275
150	305	294

[PHYSICAL PROPERTIES OF REFRIGERANTS]	National R-417C
Environmental Classification	HCFC
Molecular Weight	103.7
Boiling Point (1atm, ˚F)	-26.7
Critical Pressure (psia)	591
Critical Temperature (˚F)	204
Critical Density (lb./ft^3)	32.12
Liquid Density (70˚F, lb./ft^3)	74.6
Vapor Density (bp.lb./ft^3)	0.2893
Heat of Vaporization (bp, BTU/lb.)	91.2
Specific Heat Liquid (70˚F, BTU/lb.˚F)	0.3387
Specific Heat Vapor (1atm, 70 ˚F, BTU/lb.˚F)	0.2030
Ozone Depletion Potential (CFC 11 = 1.0)	0
Global Warming Potential (CO_2 = 1.0)	1820
ASHRAE Standard 34 Safety Rating	A1
Temperature Glide (˚F) (see section 2)	6

[AVAILABLE IN SIZES]

REFRIGERANT	Type	Size
R-417C	Cylinder	25 lb.

Thermodynamic Properties of R-417C

TEMP. (˚F)	Pressure Liquid (psia)	Pressure Vapor (psia)	Density Liquid (lb/ft^3)	Density Vapor (lb/ft^3)	Enthalpy Liquid (Btu/lb)	Enthalpy Vapor (Btu/lb)	Entropy Liquid (Btu/R-lb)	Entropy Vapor (Btu/R-lb)
-60	5.81	4.66	89.34	0.1150	-5.966	89.23	-0.01454	0.2253
-55	6.76	5.47	88.83	0.1336	-4.481	90.00	-0.01086	0.2242
-50	7.82	6.39	88.32	0.1545	-2.993	90.76	-0.00720	0.2232
-45	9.01	7.43	87.81	0.1779	-1.499	91.52	-0.00359	0.2222
-40	10.4	8.60	87.30	0.2041	0.000	92.28	0.00000	0.2213
-35	11.8	9.92	86.78	0.2333	1.504	93.03	0.00356	0.2204
-30	13.5	11.4	86.26	0.2657	3.014	93.79	0.00708	0.2196
-25	15.3	13.0	85.74	0.3016	4.530	94.54	0.01058	0.2189
-20	17.4	14.9	85.21	0.3412	6.052	95.29	0.01405	0.2182
-15	19.6	16.9	84.68	0.3847	7.580	96.04	0.01750	0.2176
-10	22.0	19.1	84.14	0.4326	9.115	96.78	0.02092	0.2170
-5	24.7	21.6	83.60	0.4851	10.66	97.52	0.02432	0.2164
0	27.7	24.2	83.05	0.5424	12.21	98.26	0.02769	0.2159
5	30.8	27.2	82.49	0.6050	13.76	98.99	0.03104	0.2154
10	34.3	30.4	81.93	0.6731	15.33	99.71	0.03438	0.2150
15	38.1	33.9	81.37	0.7472	16.90	100.4	0.03769	0.2146
20	42.2	37.7	80.80	0.8276	18.48	101.1	0.04098	0.2142
25	46.6	41.9	80.22	0.9148	20.07	101.9	0.04426	0.2138
30	51.3	46.4	79.63	1.009	21.67	102.6	0.04752	0.2135
35	56.5	51.2	79.03	1.111	23.28	103.2	0.05076	0.2132
40	62.0	56.4	78.43	1.221	24.90	103.9	0.05399	0.2129
45	67.9	62.0	77.82	1.340	26.53	104.6	0.05721	0.2126
50	74.2	68.0	77.20	1.468	28.17	105.3	0.06041	0.2123
55	80.9	74.5	76.57	1.605	29.82	105.9	0.06360	0.2121
60	88.1	81.4	75.92	1.753	31.48	106.6	0.06678	0.2118
65	95.8	88.8	75.27	1.912	33.15	107.2	0.06995	0.2116
70	104	96.7	74.61	2.083	34.84	107.8	0.07311	0.2114
75	113	105	73.93	2.267	36.54	108.4	0.07627	0.2112
80	122	114	73.23	2.464	38.26	109.0	0.07942	0.2110
85	132	124	72.53	2.676	39.99	109.6	0.08256	0.2108
90	142	134	71.80	2.904	41.73	110.1	0.08570	0.2106
95	153	144	71.06	3.149	43.49	110.7	0.08884	0.2104
100	165	156	70.30	3.411	45.27	111.2	0.09198	0.2102
105	177	168	69.52	3.694	47.07	111.7	0.09513	0.2099
110	190	180	68.72	3.998	48.89	112.2	0.09827	0.2097
115	203	194	67.89	4.326	50.73	112.6	0.1014	0.2094
120	218	208	67.04	4.679	52.60	113.0	0.1046	0.2091
125	233	222	66.16	5.061	54.49	113.4	0.1078	0.2088
130	248	238	65.24	5.474	56.40	113.8	0.1110	0.2085
135	265	255	64.29	5.923	58.35	114.1	0.1142	0.2081
140	282	272	63.30	6.411	60.33	114.3	0.1174	0.2077
145	301	290	62.26	6.943	62.35	114.6	0.1207	0.2072
150	320	309	61.17	7.527	64.41	114.7	0.1240	0.2067
155	340	329	60.02	8.170	66.51	114.8	0.1273	0.2061