



# R-407C

# Technical Guidelines

Physical Properties of Refrigerants	R-407C
Environmental Classification	HFC
Molecular Weight	86.2
Boiling Point (1 atm, °F)	-43.6
Critical Pressure (psia)	672.1
Critical Temperature (°F)	187
Critical Density, (lb./ft <sup>3</sup> )	32
Liquid Density (70 °F, lb./ft <sup>3</sup> )	72.4
Vapor Density (bp, lb./ft <sup>3</sup> )	0.289
Heat of Vaporization (bp, BTU/lb.)	106.7
Specific Heat Liquid (70 °F, BTU/lb. °F)	0.3597
Specific Heat Vapor (1 atm, 70 °F, BTU/lb. °F)	0.1987
Ozone Depletion Potential (CFC 11 = 1.0)	0
Global Warming Potential (CO <sub>2</sub> = 1.0)	1770
ASHRAE Standard 34 Safety Rating	A1
Temperature Glide (°F) (see section 2)	10

Available in the following sizes

- R-407C
- 25 LB. CYLINDER
- 115 LB. CYLINDER
- 925 LB. CYLINDER
- 1550 LB. CYLINDER

## R-407C

(R-32 /125 /134a)  
(23 / 25 / 52 wt%)

**Replaces:** R-22

**Applications:** Medium temperature commercial and industrial direct expansion refrigeration and A/C

**Performance:**

- Slightly lower discharge temperature
- Closest capacity match
- Similar PT and flow properties = no component changes

### Lubricant

**Recommendation:** Compatible with polyolester lubricant

**Retrofitting to:** R-407C in R-22 Refrigeration page 94  
R-407C in R-22 Air Conditioning page 94

### Pressure-Temp Chart

Temp (°F)	R-407C	
	Liquid (psig)	Vapor (psig)
-40	3.0	4.4"
-35	5.4	0.6"
-30	8.0	1.8
-25	10.9	4.1
-20	14.1	6.6
-15	17.6	9.4
-10	21.3	12.5
-5	25.4	15.9
0	29.9	19.6
5	34.7	23.6
10	39.9	28.0
15	45.6	32.8
20	51.6	38.0
25	58.2	43.6
30	65.2	49.6
35	72.6	56.1
40	80.7	63.1
45	89.2	70.6
50	98.3	78.7
55	108	87.3
60	118	96.8
65	129	106
70	141	117
75	153	128
80	166	140
85	180	153
90	195	166
95	210	181
100	226	196
105	243	211
110	261	229
115	280	247
120	300	266
125	321	286
130	342	307
135	365	329
140	389	353



## THERMODYNAMIC PROPERTIES OF R-407C

Temp [°F]	Pressure Liquid [psia]	Pressure Vapor [psia]	Density Liquid [lb/ft <sup>3</sup> ]	Density Vapor [lb/ft <sup>3</sup> ]	Enthalpy Liquid [Btu/lb]	Enthalpy Vapor [Btu/lb]	Entropy Liquid [Btu/R-lb]	Entropy Vapor [Btu/R-lb]
-60	10.2	6.9	87.66	0.1418	-6.192	100.9	-0.01508	0.2575
-55	11.8	8.0	87.14	0.1641	-4.653	101.6	-0.01126	0.2558
-50	13.5	9.4	86.61	0.1890	-3.108	102.3	-0.00747	0.2542
-45	15.4	10.8	86.08	0.2169	-1.557	103.0	-0.00372	0.2527
-40	17.6	12.5	85.55	0.2480	0.000	103.7	-0.00000	0.2512
-35	19.9	14.3	85.01	0.2825	1.564	104.4	0.00369	0.2498
-30	22.6	16.4	84.46	0.3206	3.134	105.1	0.00735	0.2484
-25	25.4	18.7	83.91	0.3628	4.711	105.8	0.01099	0.2472
-20	28.6	21.2	83.36	0.4092	6.296	106.5	0.01460	0.2459
-15	32.0	24.0	82.80	0.4602	7.888	107.2	0.01818	0.2448
-10	35.8	27.1	82.23	0.5160	9.488	107.9	0.02174	0.2437
-5	39.9	30.5	81.66	0.5771	11.10	108.5	0.02528	0.2426
0	44.3	34.2	81.08	0.6438	12.71	109.2	0.02879	0.2416
5	49.1	38.3	80.50	0.7164	14.34	109.8	0.03229	0.2406
10	54.3	42.7	79.90	0.7954	15.97	110.5	0.03576	0.2396
15	59.9	47.4	79.30	0.8812	17.62	111.1	0.03922	0.2387
20	66.0	52.6	78.70	0.9742	19.27	111.7	0.04265	0.2378
25	72.5	58.3	78.08	1.075	20.94	112.3	0.04608	0.2370
30	79.4	64.3	77.46	1.184	22.62	112.9	0.04948	0.2361
35	86.9	70.9	76.82	1.302	24.30	113.5	0.05288	0.2353
40	94.9	77.9	76.18	1.429	26.00	114.1	0.05626	0.2346
45	103.4	85.4	75.52	1.566	27.72	114.6	0.05963	0.2338
50	112.5	93.5	74.85	1.714	29.44	115.1	0.06298	0.2331
55	122.2	102.2	74.18	1.873	31.18	115.7	0.06633	0.2323
60	132.4	111.5	73.48	2.044	32.94	116.2	0.06968	0.2316
65	143.4	121.4	72.78	2.229	34.71	116.7	0.07301	0.2309
70	154.9	131.9	72.06	2.428	36.49	117.1	0.07635	0.2302
75	167.2	143.1	71.32	2.642	38.30	117.6	0.07968	0.2295
80	180.2	155.1	70.57	2.872	40.12	118.0	0.08301	0.2288
85	193.8	167.7	69.80	3.120	41.96	118.4	0.08634	0.2281
90	208.3	181.2	69.00	3.387	43.82	118.8	0.08967	0.2274
95	223.5	195.4	68.19	3.675	45.71	119.1	0.09301	0.2266
100	239.6	210.5	67.35	3.985	47.62	119.4	0.09636	0.2259
105	256.5	226.5	66.48	4.321	49.55	119.7	0.09972	0.2251
110	274.3	243.4	65.59	4.684	51.52	120.0	0.1031	0.2243
115	292.9	261.2	64.66	5.078	53.51	120.2	0.1065	0.2235
120	312.5	280.0	63.70	5.505	55.54	120.3	0.1099	0.2226
125	333.0	299.9	62.70	5.971	57.60	120.4	0.1133	0.2217
130	354.6	320.8	61.65	6.479	59.71	120.5	0.1168	0.2208
135	377.1	342.9	60.55	7.037	61.86	120.5	0.1203	0.2197
140	400.7	366.1	59.39	7.652	64.06	120.4	0.1239	0.2186