



SUBCOOLING

Procedure:

- Use gauges to determine the pressure at the condenser coil outlet, and a thermometer to get the actual temperature at the same point.
- Use the Bubble column to get the bubble temperature
- Subcooling = Bubble Temperature - Actual Temperature

Example: Find the amount of subcooling on a system using

Genetron® R-407C when the liquid line temperature reads 85°F and the liquid line pressure is 200 psig.

- ✓ 200 psig yields ~ 92°F (using Bubble temp)

✓ Degree of Subcooling = $92^{\circ}\text{F} - 85^{\circ}\text{F} = 7^{\circ}\text{F}$



SUPERHEAT

Procedure:

- Use gauges to determine the pressure at the evaporator coil outlet, and a thermometer to get the actual temperature at the same point.
- Get the Dew temperature from the "Dew" column
- Superheat = Actual Temperature - Dew Temperature

Example: Find the superheat on a system which uses Genetron® R-407C when the pressure at the evaporator outlet reads 40 psig and your surface thermometer reads 32°F

- ✓ 40 psig yields ~ 22°F (using dew point)
- ✓ Degree of Superheat = $32^{\circ}\text{F} - 22^{\circ}\text{F} = 10^{\circ}\text{F}$



Contact Honeywell

To learn more about the benefits of Honeywell refrigerants for your next project, call 1-800-631-8138 or visit www.honeywell-refrigerants.com.

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PT CHART FOR GENETRON® 407C

New Pressure-based Charts
Make Calculating Glide Easier

GENETRON® 407C (R-407C)								
PRESSURE BASED PT CHART								
Pressure (psig)	Temperature				Pressure (psig)	Temperature		
	°F					°F		
	Avg	Bubble	Dew			Avg	Bubble	Dew
0.0	-40.2	-46.5	-33.9		215.0	101.3	96.8	105.9
5.0	-29.0	-35.2	-22.8		220.0	102.8	98.3	107.4
10.0	-19.9	-26.0	-13.8		225.0	104.3	99.9	108.8
15.0	-12.1	-18.1	-6.0		230.0	105.8	101.4	110.3
20.0	-5.2	-11.2	0.7		235.0	107.3	102.8	111.7
25.0	0.9	-5.1	6.8		240.0	108.7	104.3	113.1
30.0	6.4	0.6	12.3		245.0	110.1	105.7	114.5
35.0	11.5	5.7	17.3		250.0	111.5	107.2	115.8
40.0	16.2	10.4	21.9		255.0	112.9	108.6	117.2
45.0	20.6	14.9	26.3		260.0	114.2	109.9	118.5
50.0	24.7	19.0	30.3		265.0	115.5	111.3	119.8
55.0	28.6	22.9	34.2		270.0	116.9	112.6	121.1
60.0	32.2	26.7	37.8		275.0	118.2	114.0	122.4
65.0	35.7	30.2	41.3		280.0	119.4	115.3	123.6
70.0	39.0	33.6	44.5		285.0	120.7	116.6	124.8
75.0	42.2	36.8	47.7		290.0	121.9	117.8	126.1
80.0	45.3	39.9	50.7		295.0	123.2	119.1	127.3
85.0	48.2	42.8	53.6		300.0	124.4	120.4	128.4
90.0	51.0	45.7	56.4		305.0	125.6	121.6	129.6
95.0	53.7	48.4	59.1		310.0	126.8	122.8	130.8
100.0	56.4	51.1	61.6		315.0	128.0	124.0	131.9
105.0	58.9	53.7	64.2		320.0	129.1	125.2	133.1
110.0	61.4	56.2	66.6		325.0	130.3	126.4	134.2
115.0	63.8	58.6	68.9		330.0	131.4	127.5	135.3
120.0	66.1	61.0	71.2		335.0	132.5	128.7	136.4
125.0	68.4	63.3	73.5		340.0	133.6	129.8	137.4
130.0	70.6	65.5	75.6		345.0	134.7	131.0	138.5
135.0	72.7	67.7	77.7		350.0	135.8	132.1	139.6
140.0	74.8	69.8	79.8		355.0	136.9	133.2	140.6
145.0	76.8	71.9	81.8		360.0	138.0	134.3	141.7
150.0	78.8	73.9	83.8		365.0	139.0	135.4	142.7
155.0	80.8	75.9	85.7		370.0	140.1	136.4	143.7
160.0	82.7	77.8	87.6		375.0	141.1	137.5	144.7
165.0	84.5	79.7	89.4		380.0	142.1	138.6	145.7
170.0	86.4	81.5	91.2		385.0	143.1	139.6	146.7
175.0	88.2	83.4	92.9		390.0	144.1	140.6	147.6
180.0	89.9	85.2	94.7		395.0	145.1	141.7	148.6
185.0	91.6	86.9	96.4		400.0	146.1	142.7	149.5
190.0	93.3	88.6	98.0		405.0	147.1	143.7	150.5
195.0	95.0	90.3	99.6		410.0	148.0	144.7	151.4
200.0	96.6	92.0	101.2		415.0	149.0	145.7	152.3
205.0	98.2	93.6	102.8		420.0	149.9	146.6	153.2
210.0	99.8	95.2	104.4		425.0	150.9	147.6	154.1

Charge Calculation

Product	ASHRAE Number	Refrigerant Type	Refrigerant Class	Lubricant Used*	Liquid Density (lbs/ft3)** at 80°F
Genetron 407C	407C	Blend	HFC	POE	70.6
Genetron® 22	R-22	Single Component	HCFC	MO	73.9

* POE = polyol ester, MO = mineral oil, AB = Alkylbenzene ** Divide by 7.48 to convert to lbs/gal.

† U.S. production stopped Dec. 31, 1995.

When retrofitting a system with a new refrigerant, use this formula to determine amount needed:
Pounds of new refrigerant = $\frac{\text{Pounds of original refrigerant} \times \text{density of new refrigerant (at 80°F)}}{\text{density of original refrigerant (at 80°F F)}}$

EXAMPLE

If you were using 1,000 pounds of R-22, you'll need about 955 pounds of 407C, as follows:

$$\text{Pounds of 407C} = \frac{1,000 \times 70.6}{73.9} = 955$$



Scan to learn more about our new PT Chart.



Scan to learn more about calculating Glide.