

# DuPont™ ISCEON® 9 Series

## REFRIGERANTS

### Pressure-Temperature Guide – ENG

**Superheat – Saturated Vapor Pressures**

Typical PH Diagram Superheat–Reference Point



#### Dew Point — Saturated Vapor (psig)

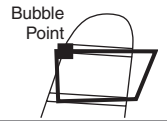
Temp. °F	ISCEON® MO29 R-422D	ISCEON® 39TC® R-423A	ISCEON® MO49 R-413A	ISCEON® MO49Plus™ R-437A*	ISCEON® MO59 R-417A	ISCEON® MO79 R-422A	Temp °C
-40	2.3	16.5	13.3	12.5	7.6	3.1	-40
-38	0.8	15.7	12.3	11.5	6.3	4.1	-39
-36	0.4	14.9	11.3	10.4	4.9	5.1	-38
-34	1.2	14.0	10.2	9.3	3.5	6.1	-37
-32	2.1	13.1	9.1	8.1	2.1	7.2	-36
-30	3.0	12.1	7.9	6.9	0.5	8.3	-34
-28	3.9	11.1	6.6	5.6	0.5	9.5	-33
-26	4.9	10.0	5.3	4.2	1.3	10.7	-32
-24	5.9	8.9	4.0	2.8	2.2	11.9	-31
-22	7.0	7.8	2.6	1.4	3.1	13.2	-30
-20	8.1	6.6	1.1	0.1	4.0	14.6	-29
-18	9.2	5.3	0.2	0.8	5.0	16.0	-28
-16	10.4	4.0	1.0	1.6	6.0	17.4	-27
-14	11.7	2.6	1.8	2.5	7.0	18.9	-26
-12	12.9	1.2	2.6	3.4	8.1	20.5	-24
-10	14.3	0.1	3.5	4.3	9.2	22.1	-23
-8	15.6	0.9	4.4	5.2	10.4	23.7	-22
-6	17.1	1.7	5.4	6.2	11.6	25.4	-21
-4	18.5	2.5	6.4	7.2	12.8	27.2	-20
-2	20.1	3.3	7.4	8.3	14.1	29.1	-19
0	21.7	4.2	8.5	9.4	15.5	30.9	-18
2	23.3	5.1	9.6	10.5	16.9	32.9	-17
4	25.0	6.0	10.7	11.7	18.3	34.9	-16
6	26.7	7.0	11.9	12.9	19.8	37.0	-14
8	28.5	8.0	13.1	14.2	21.3	39.1	-13
10	30.4	9.1	14.4	15.5	22.9	41.4	-12
12	32.3	10.2	15.7	16.9	24.6	43.6	-11
14	34.3	11.3	17.1	18.3	26.3	46.0	-10
16	36.4	12.5	18.5	19.7	28.1	48.4	-9
18	38.5	13.7	19.9	21.2	29.9	50.9	-8
20	40.7	14.9	21.4	22.8	31.7	53.5	-7
22	42.9	16.2	23.0	24.4	33.7	56.1	-6
24	45.2	17.5	24.6	26.0	35.7	58.8	-4
26	47.6	18.9	26.2	27.8	37.7	61.6	-3
28	50.1	20.3	28.0	29.5	39.9	64.5	-2
30	52.6	21.8	29.7	31.3	42.0	67.5	-1
32	55.2	23.3	31.5	33.2	44.3	70.5	0
34	57.9	24.9	33.4	35.1	46.6	73.6	1
36	60.6	26.5	35.4	37.1	49.0	76.8	2
38	63.5	28.2	37.3	39.2	51.5	80.1	3
40	66.4	29.9	39.4	41.3	54.0	83.5	4
42	69.4	31.6	41.5	43.5	56.6	87.0	6
44	72.5	33.5	43.7	45.7	59.3	90.5	7
46	75.6	35.3	45.9	48.0	62.0	94.2	8
48	78.9	37.2	48.2	50.4	64.8	97.9	9
50	82.2	39.2	50.6	52.9	67.8	101.8	10

Blue is – inches of Mercury

\* Properties calculated using REFPROP Ver 8.0, Std Ref Data Program, NIST 2007.

**Subcooling – Saturated Liquid Pressures**

Typical PH Diagram Subcooling–Reference Point



#### Bubble Point — Saturated Liquid (psig)

Temp. °F	ISCEON® MO29 R-422D	ISCEON® 39TC® R-423A	ISCEON® MO49 R-413A	ISCEON® MO49Plus™ R-437A*	ISCEON® MO59 R-417A	ISCEON® MO79 R-422A	Temp °C
50	92.6	40.5	58.2	59.0	77.9	107.3	10
52	96.1	42.6	60.7	61.6	81.1	111.3	11
54	99.8	44.7	63.4	64.4	84.4	115.4	12
56	103.6	46.9	66.0	67.1	87.7	119.7	13
58	107.4	49.2	68.8	70.0	91.1	124.0	14
60	111.4	51.5	71.6	72.9	94.6	128.4	16
62	115.4	53.9	74.5	75.9	98.2	132.9	17
64	119.6	56.3	77.5	79.0	101.9	137.5	18
66	123.8	58.8	80.5	82.1	105.6	142.3	19
68	128.1	61.4	83.7	85.4	109.5	147.1	20
70	132.6	64.0	86.9	88.7	113.4	152.1	21
72	137.1	66.7	90.2	92.1	117.5	157.2	22
74	141.7	69.5	93.5	95.5	121.6	162.3	23
76	146.5	72.4	96.9	99.1	125.8	167.6	24
78	151.3	75.3	100.5	102.8	130.1	173.0	26
80	156.3	78.3	104.1	106.5	134.5	178.6	27
82	161.4	81.4	107.8	110.3	139.1	184.2	28
84	166.5	84.5	111.5	114.2	143.7	190.0	29
86	171.8	87.8	115.4	118.2	148.4	195.9	30
88	177.2	91.1	119.4	122.3	153.2	201.9	31
90	182.8	94.5	123.4	126.5	158.2	208.1	32
92	188.4	97.9	127.5	130.8	163.2	214.4	33
94	194.2	101.5	131.8	135.2	168.4	220.8	34
96	200.0	105.1	136.1	139.7	173.6	227.3	36
98	206.0	108.8	140.5	144.3	179.0	234.0	37
100	212.2	112.6	145.0	149.0	184.5	240.9	38
102	218.4	116.5	149.7	153.7	190.1	247.8	39
104	224.8	120.5	154.4	158.6	195.8	254.9	40
106	231.3	124.6	159.2	163.6	201.6	262.2	41
108	237.9	128.7	164.1	168.7	207.6	269.6	42
110	244.7	133.0	169.1	173.9	213.7	277.1	43
112	251.6	137.3	174.3	179.3	219.9	284.8	44
114	258.7	141.8	179.5	184.7	226.2	292.6	46
116	265.9	146.3	184.9	190.2	232.6	300.6	47
118	273.2	150.9	190.3	195.9	239.2	308.8	48
120	280.7	155.7	195.9	201.7	245.9	317.1	49
122	288.3	160.5	201.6	207.6	252.8	325.6	50
124	296.0	165.4	207.4	213.6	259.7	334.2	51
126	303.9	170.5	213.3	219.7	266.8	343.0	52
128	312.0	175.6	219.3	226.0	274.1	352.0	53
130	320.2	180.9	225.5	232.4	281.5	361.2	54
132	328.6	186.2	231.8	238.9	289.0	370.5	56
134	337.1	191.7	238.2	245.5	296.7	380.0	57
136	345.8	197.3	244.7	252.3	304.5	389.7	58
138	354.7	202.9	251.4	259.2	312.5	399.6	59
140	363.7	208.7	258.1	266.2	320.6	409.7	60
142	372.9	214.7	265.1	273.4	328.9	420.0	61
144	382.3	220.7	272.1	280.7	337.3	430.5	62
146	391.8	226.9	279.3	288.1	345.9	441.2	63
148	401.5	233.1	286.6	295.7	354.6	452.1	64
150	411.4	239.5	294.1	303.5	363.5	463.2	65

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