

# DuPont™ ISCEON® 9 Series

## REFRIGERANTS

### Pressure-Temperature Guide – ENG

**Superheat – Saturated Vapor Pressures**

Typical PH Diagram Superheat-Reference Point



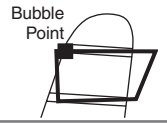
**Dew Point — Saturated Vapor (psig)**

Temp. °F	ISCEON® MO29 R-422D	ISCEON® 39TC® R-423A	ISCEON® MO49 R-413A	ISCEON® MO59 R-417A	ISCEON® MO79 R-422A	ISCEON® MO89	Temp °C
-40	2.3	16.5"	13.3"	7.5"	3.1	9.2	-40
-38	0.8	15.7"	12.3"	6.2"	4.1	10.4	-39
-36	0.4	14.9"	11.3"	4.9"	5.1	11.7	-38
-34	1.2	14.0"	10.2"	3.5"	6.1	13.0	-37
-32	2.1	13.1"	9.1"	2.0"	7.2	14.3	-36
-30	3.0	12.1"	7.9"	0.5"	8.3	15.7	-34
-28	3.9	11.1"	6.6"	0.6	9.5	17.2	-33
-26	4.9	10.1"	5.3"	1.4	10.7	18.7	-32
-24	5.9	9.0"	4.0"	2.2	11.9	20.3	-31
-22	7.0	7.8"	2.6"	3.1	13.2	21.9	-30
-20	8.1	6.6"	1.1"	4.1	14.6	23.5	-29
-18	9.2	5.4"	0.2	5.0	16.0	25.3	-28
-16	10.4	4.0"	1.0	6.0	17.4	27.1	-27
-14	11.7	2.7"	1.8	7.1	18.9	28.9	-26
-12	12.9	1.3"	2.6	8.2	20.5	30.8	-24
-10	14.3	0.1	3.5	9.3	22.1	32.8	-23
-8	15.6	0.8	4.4	10.4	23.7	34.8	-22
-6	17.1	1.6	5.4	11.7	25.4	36.9	-21
-4	18.5	2.4	6.4	12.9	27.2	39.1	-20
-2	20.1	3.3	7.4	14.2	29.1	41.4	-19
0	21.7	4.2	8.5	15.6	30.9	43.7	-18
2	23.3	5.1	9.6	17.0	32.9	46.0	-17
4	25.0	6.0	10.7	18.4	34.9	48.5	-16
6	26.7	7.0	11.9	19.9	37.0	51.0	-14
8	28.5	8.0	13.1	21.4	39.1	53.6	-13
10	30.4	9.0	14.4	23.0	41.4	56.3	-12
12	32.3	10.1	15.7	24.7	43.6	59.1	-11
14	34.3	11.3	17.1	26.4	46.0	61.9	-10
16	36.4	12.4	18.5	28.2	48.4	64.8	-9
18	38.5	13.6	19.9	30.0	50.9	67.8	-8
20	40.7	14.9	21.4	31.9	53.5	70.9	-7
22	42.9	16.2	23.0	33.8	56.1	74.1	-6
24	45.2	17.5	24.6	35.8	58.8	77.3	-4
26	47.6	18.9	26.2	37.9	61.6	80.6	-3
28	50.1	20.3	28.0	40.0	64.5	84.1	-2
30	52.6	21.7	29.7	42.2	67.5	87.6	-1
32	55.2	23.3	31.5	44.4	70.5	91.2	0
34	57.9	24.8	33.4	46.8	73.6	94.9	1
36	60.6	26.4	35.4	49.2	76.8	98.7	2
38	63.5	28.1	37.3	51.6	80.1	102.7	3
40	66.4	29.8	39.4	54.2	83.5	106.7	4
42	69.4	31.6	41.5	56.8	87.0	110.8	6
44	72.5	33.4	43.7	59.5	90.5	115.0	7
46	75.6	35.2	45.9	62.2	94.2	119.3	8
48	78.9	37.2	48.2	65.1	97.9	123.7	9
50	82.2	39.1	50.6	68.0	101.8	128.2	10

"Denotes inches of mercury ("Hg)

**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® MO59 R-417A	ISCEON® MO79 R-422A	ISCEON® MO89	Temp °C
50	92.6	40.4	58.2	78.1	107.3	134.0	10
52	96.1	42.5	60.7	81.3	111.3	138.7	11
54	99.8	44.6	63.4	84.5	115.4	143.5	12
56	103.6	46.8	66.0	87.9	119.7	148.4	13
58	107.4	49.0	68.8	91.3	124.0	153.4	14
60	111.4	51.4	71.6	94.8	128.4	158.5	16
62	115.4	53.7	74.5	98.4	132.9	163.8	17
64	119.6	56.2	77.5	102.1	137.5	169.1	18
66	123.8	58.7	80.5	105.8	142.3	174.6	19
68	128.1	61.2	83.7	109.7	147.1	180.2	20
70	132.6	63.9	86.9	113.6	152.1	185.9	21
72	137.1	66.6	90.2	117.7	157.2	191.7	22
74	141.7	69.4	93.5	121.8	162.3	197.7	23
76	146.5	72.2	96.9	126.0	167.6	203.8	24
78	151.3	75.1	100.5	130.4	173.1	210.0	26
80	156.3	78.1	104.1	134.8	178.6	216.4	27
82	161.4	81.2	107.8	139.3	184.2	222.9	28
84	166.5	84.4	111.6	144.0	190.0	229.5	29
86	171.8	87.6	115.4	148.7	195.9	236.3	30
88	177.2	90.9	119.4	153.5	201.9	243.2	31
90	182.8	94.3	123.4	158.5	208.1	250.2	32
92	188.4	97.7	127.6	163.5	214.4	257.4	33
94	194.2	101.3	131.8	168.7	220.8	264.8	34
96	200.0	104.9	136.1	173.9	227.4	272.3	36
98	206.0	108.6	140.5	179.3	234.0	279.9	37
100	212.2	112.4	145.0	184.8	240.9	287.7	38
102	218.4	116.3	149.7	190.4	247.8	295.6	39
104	224.8	120.2	154.4	196.1	254.9	303.8	40
106	231.3	124.3	159.2	202.0	262.2	312.0	41
108	237.9	128.4	164.1	207.9	269.6	320.5	42
110	244.7	132.7	169.1	214.0	277.1	329.1	43
112	251.6	137.0	174.3	220.2	284.8	337.9	44
114	258.7	141.5	179.5	226.6	292.6	346.8	46
116	265.9	146.0	184.9	233.0	300.6	355.9	47
118	273.2	150.6	190.3	239.6	308.8	365.3	48
120	280.7	155.3	195.9	246.3	317.1	374.7	49
122	288.3	160.2	201.6	253.2	325.6	384.4	50
124	296.0	165.1	207.4	260.2	334.2	394.3	51
126	304.0	170.1	213.3	267.3	343.1	404.4	52
128	312.0	175.2	219.3	274.6	352.0	414.7	53
130	320.2	180.5	225.5	282.0	361.2	425.2	54
132	328.6	185.8	231.8	289.5	370.5	435.9	56
134	337.1	191.3	238.2	297.2	380.1	446.8	57
136	345.8	196.9	244.7	305.0	389.8	458.0	58
138	354.7	202.5	251.4	313.0	399.6	469.4	59
140	363.7	208.3	258.1	321.1	409.7	481.0	60
142	372.9	214.2	265.1	329.4	420.0		61
144	382.3	220.3	272.1	337.8	430.5		62
146	391.8	226.4	279.3	346.4	441.2		63
148	401.5	232.7	286.6	355.2	452.1		64
150	411.4	239.1	294.1	364.1	463.2		66

---

**For Further Information: (800) 235-7882**

**[www.refrigerants.dupont.com](http://www.refrigerants.dupont.com)**

**DuPont Fluorochemicals  
Wilmington, DE 19880-0711**

Copyright © 2006 DuPont or its affiliates. All rights reserved. The DuPont Oval Logo, DuPont™, The miracles of science™, and ISCEON®, are registered trademarks or trademarks of E. I. du Pont de Nemours and Company or its affiliates.

NO PART OF THIS MATERIAL MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS ELECTRONIC, MECHANICAL, PHOTOCOPYING, RECORDING OR OTHERWISE WITHOUT PERMISSION OF DUPONT.

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable. It is intended for use by persons having technical skill, at their own discretion and risk. The handling precaution information contained herein is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Because conditions of product use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any material, evaluation of any compound under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate under or a recommendation to infringe any patents.

