

DuPont™ ISCEON® 9 Series

REFRIGERANTS

Pressure-Temperature Guide – SI

Superheat – Saturated Vapor Pressures

Typical PH Diagram Superheat-Reference Point

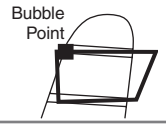


Dew Point — Saturated Vapor (kPa – abs)

Temp. °C	ISCEON® MO29 R-422D	ISCEON® 397C® R-423A	ISCEON® MO49 R-413A	ISCEON® MO49Plus™ R-437A*	ISCEON® MO59 R-417A	ISCEON® MO79 R-422A	Temp °F
-40	93	45	56	59	76	123	-40
-39	98	48	59	62	80	129	-38
-38	103	50	62	65	84	135	-36
-37	108	53	66	69	88	141	-35
-36	113	56	69	72	92	148	-33
-35	119	59	73	76	97	155	-31
-34	125	62	76	80	102	162	-29
-33	131	65	80	84	107	169	-27
-32	137	68	84	88	112	177	-26
-31	143	72	88	92	117	184	-24
-30	150	75	93	97	123	193	-22
-29	156	79	97	101	128	201	-20
-28	163	82	102	106	134	210	-18
-27	171	86	106	111	140	218	-17
-26	178	90	111	116	147	228	-15
-25	186	95	117	122	153	237	-13
-24	194	99	122	127	160	247	-11
-23	203	104	127	133	167	257	-9
-22	211	108	133	139	175	267	-8
-21	220	113	139	145	182	278	-6
-20	229	118	145	151	190	289	-4
-19	239	124	152	158	198	300	-2
-18	248	129	158	165	206	312	0
-17	258	135	165	172	215	324	1
-16	269	140	172	179	224	336	3
-15	280	146	179	186	233	349	5
-14	291	153	187	194	242	362	7
-13	302	159	194	202	252	376	9
-12	314	165	202	210	262	390	10
-11	326	172	210	219	272	404	12
-10	338	179	219	227	283	418	14
-9	351	186	228	236	294	433	16
-8	364	194	237	246	305	449	18
-7	377	202	246	255	316	465	19
-6	391	210	255	265	328	481	21
-5	405	218	265	275	340	498	23
-4	420	226	275	286	353	515	25
-3	435	235	286	296	366	532	27
-2	450	244	296	307	379	550	28
-1	466	253	307	319	393	569	30
0	482	262	319	330	407	587	32
1	499	272	330	342	421	607	34
2	516	282	342	355	436	627	36
3	533	292	355	367	451	647	37
4	551	303	367	380	467	668	39
5	569	313	380	394	482	689	41
6	588	324	394	407	499	711	43
7	607	336	407	421	516	733	45
8	627	347	421	436	533	756	46
9	647	359	436	451	550	779	48
10	668	372	450	466	568	803	50

Subcooling – Saturated Liquid Pressures

Typical PH Diagram Subcooling-Reference Point



Bubble Point — Saturated Liquid (kPa – abs)

Temp. °C	ISCEON® MO29 R-422D	ISCEON® 397C® R-423A	ISCEON® MO49 R-413A	ISCEON® MO49Plus™ R-437A*	ISCEON® MO59 R-417A	ISCEON® MO79 R-422A	Temp °F
10	740	381	503	508	639	841	50
11	762	393	518	525	658	866	52
12	784	407	535	541	678	892	54
13	808	420	551	558	699	918	55
14	831	434	568	576	720	944	57
15	856	448	585	594	742	971	59
16	880	463	603	612	763	999	61
17	906	478	621	631	786	1027	63
18	931	493	640	650	809	1056	64
19	958	509	659	670	832	1086	66
20	985	525	678	690	856	1116	68
21	1012	541	698	710	881	1146	70
22	1040	558	718	731	906	1178	72
23	1069	575	739	753	931	1210	73
24	1098	592	760	775	957	1242	75
25	1128	610	782	797	984	1276	77
26	1158	629	804	820	1011	1310	79
27	1189	648	826	843	1038	1344	81
28	1221	667	850	867	1067	1380	82
29	1253	686	873	892	1095	1415	84
30	1286	706	897	917	1125	1452	86
31	1320	727	922	942	1155	1490	88
32	1354	748	947	968	1185	1528	90
33	1389	769	972	994	1216	1566	91
34	1424	791	998	1021	1248	1606	93
35	1460	813	1025	1049	1280	1646	95
36	1497	836	1052	1077	1313	1687	97
37	1535	859	1080	1106	1347	1729	99
38	1573	883	1108	1135	1381	1772	100
39	1612	907	1136	1165	1416	1815	102
40	1651	932	1166	1195	1451	1859	104
41	1692	957	1196	1226	1487	1904	106
42	1733	983	1226	1258	1524	1950	108
43	1775	1009	1257	1290	1562	1996	109
44	1817	1036	1289	1323	1600	2044	111
45	1860	1063	1321	1356	1639	2092	113
46	1905	1091	1354	1390	1679	2141	115
47	1949	1120	1387	1425	1719	2191	117
48	1995	1148	1421	1460	1760	2242	118
49	2042	1178	1456	1496	1802	2294	120
50	2089	1208	1491	1533	1844	2346	122
51	2137	1238	1527	1570	1887	2400	124
52	2186	1270	1564	1608	1931	2454	126
53	2236	1301	1601	1646	1976	2510	127
54	2286	1334	1639	1686	2022	2566	129
55	2338	1367	1678	1726	2068	2624	131
56	2390	1400	1717	1767	2115	2682	133
57	2444	1434	1757	1808	2163	2742	135
58	2498	1469	1798	1850	2212	2802	136
59	2553	1505	1839	1893	2261	2864	138
60	2609	1541	1881	1937	2312	2926	140
61	2666	1577	1924	1981	2363	2990	142
62	2724	1615	1968	2027	2415	3055	144
63	2783	1653	2012	2073	2468	3121	145
64	2843	1691	2057	2119	2522	3188	147
65	2904	1731	2103	2167	2577	3257	149

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



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