

DuPont™ ISCEON® 9 Series

REFRIGERANTS

Technical Information

Thermodynamic Properties of DuPont™ ISCEON® M079 (R-422A) SI Units



The miracles of science™

Thermodynamic Properties of DuPont™ ISCEON® MO79 (R-422A) Refrigerant (R-125/R-134a/R-600a – 85.1/11.5/3.4% by weight)

SI Units

Tables of the thermodynamic properties of ISCEON® MO79 (R-422A) have been developed and are presented here. This information is based on values calculated using the NIST REFPROP Database (McLinden, M.O., Klein, S.A., Lemmon, E.W., and Peskin, A.P., NIST Standard Reference Database 23, NIST thermodynamic and transport properties of refrigerants and refrigerant mixtures – REFPROP version 7.0, Standard Reference Data Program, National Institute of Standards and Technology, 2005).

Units

P = Pressure in kPa. Absolute

T = Temperature in Celsius

V_f = Fluid (liquid) specific volume in cubic meters per kilogram

V_g = Vapour (gas) specific volume in cubic meters per kilogram

d_f = Density of saturated vapour in kilograms per cubic meter

d_g = Density of saturated liquid in kilograms per cubic meter

h = Enthalpy (kJ/kg)

s = Entropy (kJ/kg·K)

Reference points for Enthalpy and Entropy:

h_f = 200 kJ/kg at 0°C

s_f = 1 kJ/kg·K at 0°C

Physical Properties

Chemical Formula	CHF ₂ CF ₃ /CH ₂ FCF ₃ /(CH ₃) ₃ CH (85.1/11.5/3.4% by weight)
Molecular mass	113.6
Boiling Point At one atmosphere	-46.5°C
Critical Temperature	71.75°C
Critical Pressure	3747 kPa
Critical Density	538.5 kg/m ³
Critical Volume	0.0019 m ³ /kg

Table 1
DuPont™ ISCEON® MO79 (R-422A) Saturation Properties—Temperature Table

TEMP. °C	PRESSURE (kPa)		VOLUME (m ³ /kg)		DENSITY (kg/m ³)		ENTHALPY (kJ/kg)			ENTROPY (kJ/K·kg)		TEMP. °C
	LIQUID	VAPOUR	LIQUID v _l	VAPOUR v _g	LIQUID d _l	VAPOUR d _g	LIQUID h _l	LATENT h _{lg}	VAPOUR h _g	LIQUID s _l	VAPOUR s _g	
-105	1.8	1.2	0.0006	10.3200	1608.6	0.097	76.9	206.5	283.4	0.4370	1.6867	-105
-104	2.0	1.3	0.0006	9.3283	1605.5	0.107	78.0	206.0	284.0	0.4435	1.6823	-104
-103	2.2	1.5	0.0006	8.4449	1602.4	0.118	79.1	205.4	284.6	0.4500	1.6780	-103
-102	2.4	1.6	0.0006	7.6570	1599.3	0.131	80.2	204.9	285.1	0.4565	1.6738	-102
-101	2.7	1.8	0.0006	6.9531	1596.2	0.144	81.3	204.4	285.7	0.4629	1.6697	-101
-100	2.9	2.0	0.0006	6.3233	1593.1	0.158	82.4	203.9	286.3	0.4692	1.6657	-100
-99	3.2	2.2	0.0006	5.7589	1590.0	0.174	83.5	203.3	286.9	0.4756	1.6618	-99
-98	3.5	2.4	0.0006	5.2522	1587.0	0.190	84.6	202.8	287.5	0.4819	1.6580	-98
-97	3.8	2.7	0.0006	4.7968	1583.9	0.208	85.7	202.3	288.0	0.4882	1.6543	-97
-96	4.2	2.9	0.0006	4.3868	1580.8	0.228	86.8	201.8	288.6	0.4944	1.6507	-96
-95	4.5	3.2	0.0006	4.0171	1577.7	0.249	87.9	201.3	289.2	0.5006	1.6472	-95
-94	4.9	3.5	0.0006	3.6834	1574.6	0.271	89.0	200.8	289.8	0.5068	1.6438	-94
-93	5.3	3.9	0.0006	3.3817	1571.6	0.296	90.1	200.2	290.4	0.5129	1.6404	-93
-92	5.8	4.2	0.0006	3.1086	1568.5	0.322	91.2	199.7	291.0	0.5190	1.6372	-92
-91	6.3	4.6	0.0006	2.8610	1565.4	0.350	92.3	199.2	291.6	0.5251	1.6340	-91
-90	6.8	5.1	0.0006	2.6363	1562.3	0.379	93.5	198.7	292.2	0.5312	1.6309	-90
-89	7.4	5.5	0.0006	2.4320	1559.2	0.411	94.6	198.2	292.7	0.5372	1.6279	-89
-88	8.0	6.0	0.0006	2.2462	1556.2	0.445	95.7	197.7	293.3	0.5432	1.6249	-88
-87	8.6	6.5	0.0006	2.0768	1553.1	0.482	96.8	197.2	293.9	0.5492	1.6220	-87
-86	9.3	7.1	0.0006	1.9224	1550.0	0.520	97.9	196.6	294.5	0.5551	1.6193	-86
-85	10.0	7.7	0.0006	1.7813	1546.9	0.561	99.0	196.1	295.1	0.5610	1.6165	-85
-84	10.8	8.3	0.0006	1.6523	1543.8	0.605	100.1	195.6	295.7	0.5669	1.6139	-84
-83	11.6	9.0	0.0006	1.5342	1540.7	0.652	101.2	195.1	296.3	0.5728	1.6113	-83
-82	12.5	9.7	0.0007	1.4260	1537.6	0.701	102.3	194.6	296.9	0.5786	1.6088	-82
-81	13.4	10.5	0.0007	1.3268	1534.5	0.754	103.5	194.1	297.5	0.5844	1.6063	-81
-80	14.4	11.3	0.0007	1.2356	1531.4	0.809	104.6	193.5	298.1	0.5902	1.6039	-80
-79	15.5	12.2	0.0007	1.1518	1528.3	0.868	105.7	193.0	298.7	0.5960	1.6016	-79
-78	16.6	13.2	0.0007	1.0747	1525.2	0.930	106.8	192.5	299.3	0.6017	1.5993	-78
-77	17.7	14.2	0.0007	1.0037	1522.1	0.996	107.9	192.0	299.9	0.6074	1.5971	-77
-76	19.0	15.2	0.0007	0.9382	1519.0	1.066	109.0	191.5	300.5	0.6131	1.5950	-76
-75	20.3	16.3	0.0007	0.8777	1515.9	1.139	110.2	191.0	301.1	0.6188	1.5929	-75
-74	21.6	17.5	0.0007	0.8218	1512.8	1.217	111.3	190.4	301.7	0.6245	1.5908	-74
-73	23.1	18.8	0.0007	0.7702	1509.6	1.298	112.4	189.9	302.3	0.6301	1.5889	-73
-72	24.6	20.1	0.0007	0.7223	1506.5	1.384	113.5	189.4	302.9	0.6357	1.5869	-72
-71	26.2	21.5	0.0007	0.6780	1503.4	1.475	114.7	188.9	303.5	0.6413	1.5850	-71
-70	27.9	23.0	0.0007	0.6369	1500.2	1.570	115.8	188.4	304.1	0.6468	1.5832	-70
-69	29.7	24.6	0.0007	0.5988	1497.1	1.670	116.9	187.8	304.8	0.6524	1.5814	-69
-68	31.6	26.2	0.0007	0.5634	1493.9	1.775	118.1	187.3	305.4	0.6579	1.5797	-68
-67	33.6	28.0	0.0007	0.5304	1490.8	1.885	119.2	186.8	306.0	0.6634	1.5780	-67
-66	35.6	29.8	0.0007	0.4998	1487.6	2.001	120.3	186.3	306.6	0.6689	1.5764	-66
-65	37.8	31.7	0.0007	0.4713	1484.4	2.122	121.5	185.7	307.2	0.6744	1.5748	-65
-64	40.1	33.8	0.0007	0.4447	1481.2	2.249	122.6	185.2	307.8	0.6798	1.5733	-64
-63	42.5	35.9	0.0007	0.4199	1478.1	2.382	123.7	184.7	308.4	0.6852	1.5717	-63
-62	45.0	38.1	0.0007	0.3967	1474.9	2.521	124.9	184.1	309.0	0.6906	1.5703	-62
-61	47.6	40.5	0.0007	0.3751	1471.7	2.666	126.0	183.6	309.6	0.6960	1.5689	-61
-60	50.3	42.9	0.0007	0.3549	1468.4	2.818	127.2	183.0	310.2	0.7014	1.5675	-60
-59	53.2	45.5	0.0007	0.3360	1465.2	2.977	128.3	182.5	310.8	0.7068	1.5661	-59
-58	56.2	48.2	0.0007	0.3183	1462.0	3.142	129.5	182.0	311.4	0.7121	1.5648	-58
-57	59.3	51.1	0.0007	0.3017	1458.8	3.315	130.6	181.4	312.0	0.7174	1.5636	-57
-56	62.6	54.0	0.0007	0.2861	1455.5	3.495	131.8	180.9	312.6	0.7227	1.5624	-56
-55	66.0	57.1	0.0007	0.2715	1452.3	3.683	132.9	180.3	313.2	0.7280	1.5612	-55
-54	69.6	60.4	0.0007	0.2578	1449.0	3.879	134.1	179.8	313.8	0.7333	1.5600	-54
-53	73.3	63.8	0.0007	0.2450	1445.8	4.083	135.2	179.2	314.4	0.7385	1.5589	-53
-52	77.1	67.3	0.0007	0.2329	1442.5	4.295	136.4	178.7	315.0	0.7438	1.5578	-52
-51	81.1	71.0	0.0007	0.2215	1439.2	4.515	137.5	178.1	315.7	0.7490	1.5567	-51
-50	85.3	74.8	0.0007	0.2108	1435.9	4.745	138.7	177.5	316.3	0.7542	1.5557	-50
-49	89.7	78.8	0.0007	0.2007	1432.6	4.983	139.9	177.0	316.9	0.7594	1.5547	-49
-48	94.2	83.0	0.0007	0.1912	1429.3	5.231	141.0	176.4	317.5	0.7646	1.5538	-48
-47	98.9	87.4	0.0007	0.1822	1425.9	5.488	142.2	175.9	318.1	0.7698	1.5528	-47
-46	103.8	91.9	0.0007	0.1738	1422.6	5.755	143.4	175.3	318.7	0.7749	1.5519	-46

Table 1 (continued)
DuPont™ ISCEON® MO79 (R-422A) Saturation Properties—Temperature Table

TEMP. °C	PRESSURE (kPa)		VOLUME (m ³ /kg)		DENSITY (kg/m ³)		ENTHALPY (kJ/kg)			ENTROPY (kJ/K·kg)		TEMP. °C
	LIQUID	VAPOUR	LIQUID v _l	VAPOUR v _g	LIQUID d _l	VAPOUR d _g	LIQUID h _l	LATENT h _{lg}	VAPOUR h _g	LIQUID s _l	VAPOUR s _g	
-45	108.8	96.6	0.0007	0.1658	1419.3	6.032	144.6	174.7	319.3	0.7801	1.5511	-45
-44	114.1	101.5	0.0007	0.1582	1415.9	6.320	145.7	174.1	319.9	0.7852	1.5502	-44
-43	119.6	106.6	0.0007	0.1511	1412.5	6.618	146.9	173.5	320.5	0.7903	1.5494	-43
-42	125.2	111.9	0.0007	0.1444	1409.2	6.927	148.1	173.0	321.1	0.7954	1.5486	-42
-41	131.1	117.3	0.0007	0.1380	1405.8	7.247	149.3	172.4	321.7	0.8005	1.5478	-41
-40	137.2	123.0	0.0007	0.1320	1402.4	7.579	150.5	171.8	322.2	0.8055	1.5471	-40
-39	143.5	128.9	0.0007	0.1262	1398.9	7.922	151.6	171.2	322.8	0.8106	1.5464	-39
-38	150.0	135.1	0.0007	0.1208	1395.5	8.277	152.8	170.6	323.4	0.8156	1.5457	-38
-37	156.8	141.4	0.0007	0.1157	1392.1	8.645	154.0	170.0	324.0	0.8207	1.5450	-37
-36	163.8	148.0	0.0007	0.1108	1388.6	9.025	155.2	169.4	324.6	0.8257	1.5444	-36
-35	171.0	154.8	0.0007	0.1062	1385.1	9.418	156.4	168.8	325.2	0.8307	1.5437	-35
-34	178.5	161.8	0.0007	0.1018	1381.7	9.825	157.6	168.2	325.8	0.8357	1.5431	-34
-33	186.2	169.1	0.0007	0.0976	1378.2	10.245	158.8	167.6	326.4	0.8407	1.5425	-33
-32	194.2	176.7	0.0007	0.0936	1374.6	10.679	160.0	167.0	327.0	0.8457	1.5420	-32
-31	202.4	184.5	0.0007	0.0899	1371.1	11.127	161.2	166.3	327.6	0.8506	1.5414	-31
-30	210.9	192.6	0.0007	0.0863	1367.6	11.590	162.4	165.7	328.1	0.8556	1.5409	-30
-29	219.7	200.9	0.0007	0.0829	1364.0	12.068	163.6	165.1	328.7	0.8605	1.5404	-29
-28	228.8	209.5	0.0007	0.0796	1360.5	12.561	164.8	164.5	329.3	0.8654	1.5399	-28
-27	238.1	218.4	0.0007	0.0765	1356.9	13.070	166.1	163.8	329.9	0.8704	1.5395	-27
-26	247.8	227.6	0.0007	0.0736	1353.3	13.594	167.3	163.2	330.5	0.8753	1.5390	-26
-25	257.7	237.0	0.0007	0.0707	1349.6	14.135	168.5	162.5	331.0	0.8802	1.5386	-25
-24	267.9	246.8	0.0007	0.0681	1346.0	14.693	169.7	161.9	331.6	0.8851	1.5382	-24
-23	278.5	256.9	0.0007	0.0655	1342.4	15.269	170.9	161.2	332.2	0.8899	1.5377	-23
-22	289.3	267.3	0.0007	0.0630	1338.7	15.861	172.2	160.6	332.7	0.8948	1.5374	-22
-21	300.5	278.0	0.0007	0.0607	1335.0	16.472	173.4	159.9	333.3	0.8997	1.5370	-21
-20	312.0	289.0	0.0008	0.0585	1331.3	17.101	174.6	159.2	333.9	0.9045	1.5366	-20
-19	323.8	300.4	0.0008	0.0563	1327.6	17.749	175.9	158.6	334.4	0.9094	1.5363	-19
-18	336.0	312.0	0.0008	0.0543	1323.8	18.416	177.1	157.9	335.0	0.9142	1.5360	-18
-17	348.5	324.1	0.0008	0.0523	1320.0	19.103	178.4	157.2	335.6	0.9190	1.5356	-17
-16	361.4	336.5	0.0008	0.0505	1316.3	19.810	179.6	156.5	336.1	0.9239	1.5353	-16
-15	374.6	349.2	0.0008	0.0487	1312.4	20.538	180.9	155.8	336.7	0.9287	1.5350	-15
-14	388.2	362.3	0.0008	0.0470	1308.6	21.287	182.1	155.1	337.2	0.9335	1.5348	-14
-13	402.2	375.8	0.0008	0.0453	1304.8	22.057	183.4	154.4	337.8	0.9383	1.5345	-13
-12	416.5	389.6	0.0008	0.0438	1300.9	22.850	184.6	153.7	338.3	0.9430	1.5342	-12
-11	431.3	403.8	0.0008	0.0423	1297.0	23.666	185.9	153.0	338.9	0.9478	1.5340	-11
-10	446.4	418.4	0.0008	0.0408	1293.1	24.504	187.2	152.3	339.4	0.9526	1.5337	-10
-9	461.9	433.5	0.0008	0.0394	1289.1	25.367	188.4	151.5	340.0	0.9574	1.5335	-9
-8	477.8	448.9	0.0008	0.0381	1285.2	26.254	189.7	150.8	340.5	0.9621	1.5333	-8
-7	494.1	464.7	0.0008	0.0368	1281.2	27.165	191.0	150.1	341.0	0.9669	1.5331	-7
-6	510.9	480.9	0.0008	0.0356	1277.2	28.103	192.3	149.3	341.6	0.9716	1.5329	-6
-5	528.1	497.6	0.0008	0.0344	1273.1	29.066	193.5	148.6	342.1	0.9764	1.5327	-5
-4	545.7	514.7	0.0008	0.0333	1269.1	30.056	194.8	147.8	342.6	0.9811	1.5325	-4
-3	563.7	532.2	0.0008	0.0322	1265.0	31.074	196.1	147.0	343.2	0.9858	1.5323	-3
-2	582.2	550.2	0.0008	0.0311	1260.9	32.120	197.4	146.3	343.7	0.9906	1.5321	-2
-1	601.1	568.6	0.0008	0.0301	1256.7	33.195	198.7	145.5	344.2	0.9953	1.5319	-1
0	620.5	587.5	0.0008	0.0292	1252.5	34.299	200.0	144.7	344.7	1.0000	1.5318	0
1	640.3	606.8	0.0008	0.0282	1248.3	35.434	201.3	143.9	345.2	1.0047	1.5316	1
2	660.7	626.6	0.0008	0.0273	1244.1	36.600	202.6	143.1	345.7	1.0094	1.5314	2
3	681.5	646.9	0.0008	0.0265	1239.8	37.798	203.9	142.3	346.2	1.0141	1.5313	3
4	702.8	667.7	0.0008	0.0256	1235.5	39.028	205.3	141.5	346.7	1.0188	1.5311	4
5	724.6	689.0	0.0008	0.0248	1231.2	40.293	206.6	140.6	347.2	1.0235	1.5310	5
6	746.8	710.8	0.0008	0.0240	1226.8	41.592	207.9	139.8	347.7	1.0282	1.5308	6
7	769.6	733.1	0.0008	0.0233	1222.4	42.926	209.2	139.0	348.2	1.0329	1.5307	7
8	793.0	755.9	0.0008	0.0226	1217.9	44.297	210.6	138.1	348.7	1.0376	1.5305	8
9	816.8	779.2	0.0008	0.0219	1213.4	45.705	211.9	137.2	349.1	1.0423	1.5303	9
10	841.2	803.1	0.0008	0.0212	1208.9	47.152	213.2	136.4	349.6	1.0470	1.5302	10
11	866.1	827.5	0.0008	0.0206	1204.4	48.639	214.6	135.5	350.1	1.0516	1.5300	11
12	891.5	852.5	0.0008	0.0199	1199.8	50.166	216.0	134.6	350.5	1.0563	1.5299	12
13	917.5	878.0	0.0008	0.0193	1195.1	51.735	217.3	133.7	351.0	1.0610	1.5297	13
14	944.1	904.1	0.0008	0.0187	1190.4	53.348	218.7	132.8	351.4	1.0657	1.5295	14

Table 1 (continued)
DuPont™ ISCEON® MO79 (R-422A) Saturation Properties—Temperature Table

TEMP. °C	PRESSURE (kPa)		VOLUME (m ³ /kg)		DENSITY (kg/m ³)		ENTHALPY (kJ/kg)			ENTROPY (kJ/K·kg)		TEMP. °C
	LIQUID	VAPOUR	LIQUID v _l	VAPOUR v _g	LIQUID d _l	VAPOUR d _g	LIQUID h _l	LATENT h _{lg}	VAPOUR h _g	LIQUID s _l	VAPOUR s _g	
15	971.2	930.8	0.0008	0.0182	1185.7	55.005	220.0	131.8	351.9	1.0704	1.5294	15
16	998.9	958.0	0.0008	0.0176	1180.9	56.707	221.4	130.9	352.3	1.0750	1.5292	16
17	1027.2	985.9	0.0009	0.0171	1176.1	58.457	222.8	130.0	352.7	1.0797	1.5290	17
18	1056.1	1014.3	0.0009	0.0166	1171.2	60.256	224.2	129.0	353.2	1.0844	1.5288	18
19	1085.6	1043.3	0.0009	0.0161	1166.3	62.105	225.6	128.0	353.6	1.0891	1.5286	19
20	1115.7	1073.0	0.0009	0.0156	1161.3	64.005	227.0	127.0	354.0	1.0938	1.5284	20
21	1146.4	1103.3	0.0009	0.0152	1156.3	65.959	228.4	126.0	354.4	1.0985	1.5282	21
22	1177.8	1134.2	0.0009	0.0147	1151.2	67.968	229.8	125.0	354.8	1.1031	1.5280	22
23	1209.8	1165.8	0.0009	0.0143	1146.1	70.035	231.2	124.0	355.2	1.1078	1.5277	23
24	1242.4	1198.0	0.0009	0.0139	1140.9	72.160	232.6	122.9	355.6	1.1125	1.5275	24
25	1275.7	1230.8	0.0009	0.0135	1135.6	74.347	234.0	121.9	355.9	1.1172	1.5272	25
26	1309.6	1264.4	0.0009	0.0131	1130.3	76.597	235.5	120.8	356.3	1.1219	1.5269	26
27	1344.2	1298.6	0.0009	0.0127	1124.9	78.912	236.9	119.7	356.7	1.1266	1.5267	27
28	1379.5	1333.5	0.0009	0.0123	1119.5	81.296	238.4	118.6	357.0	1.1314	1.5264	28
29	1415.4	1369.1	0.0009	0.0119	1113.9	83.750	239.8	117.5	357.3	1.1361	1.5261	29
30	1452.1	1405.4	0.0009	0.0116	1108.3	86.278	241.3	116.4	357.7	1.1408	1.5257	30
31	1489.5	1442.4	0.0009	0.0113	1102.6	88.881	242.8	115.2	358.0	1.1455	1.5254	31
32	1527.5	1480.2	0.0009	0.0109	1096.9	91.564	244.2	114.1	358.3	1.1503	1.5250	32
33	1566.3	1518.7	0.0009	0.0106	1091.0	94.330	245.7	112.9	358.6	1.1550	1.5246	33
34	1605.9	1557.9	0.0009	0.0103	1085.1	97.182	247.2	111.7	358.9	1.1598	1.5242	34
35	1646.1	1597.9	0.0009	0.0100	1079.1	100.120	248.7	110.4	359.1	1.1646	1.5238	35
36	1687.2	1638.7	0.0009	0.0097	1073.0	103.160	250.2	109.2	359.4	1.1694	1.5234	36
37	1728.9	1680.2	0.0009	0.0094	1066.7	106.290	251.8	107.9	359.7	1.1742	1.5229	37
38	1771.5	1722.6	0.0009	0.0091	1060.4	109.530	253.3	106.6	359.9	1.1790	1.5224	38
39	1814.8	1765.7	0.0009	0.0089	1054.0	112.870	254.9	105.3	360.1	1.1838	1.5219	39
40	1858.9	1809.7	0.0010	0.0086	1047.4	116.330	256.4	103.9	360.3	1.1886	1.5213	40
41	1903.9	1854.4	0.0010	0.0083	1040.8	119.910	258.0	102.6	360.5	1.1935	1.5207	41
42	1949.6	1900.0	0.0010	0.0081	1034.0	123.610	259.6	101.2	360.7	1.1984	1.5201	42
43	1996.2	1946.5	0.0010	0.0078	1027.0	127.450	261.1	99.7	360.9	1.2033	1.5194	43
44	2043.6	1993.8	0.0010	0.0076	1020.0	131.420	262.8	98.3	361.0	1.2082	1.5187	44
45	2091.8	2042.0	0.0010	0.0074	1012.7	135.550	264.4	96.8	361.1	1.2132	1.5180	45
46	2140.9	2091.1	0.0010	0.0072	1005.3	139.830	266.0	95.2	361.2	1.2181	1.5172	46
47	2190.9	2141.1	0.0010	0.0069	997.8	144.280	267.7	93.7	361.3	1.2232	1.5164	47
48	2241.8	2192.0	0.0010	0.0067	990.1	148.910	269.3	92.1	361.4	1.2282	1.5155	48
49	2293.5	2243.9	0.0010	0.0065	982.1	153.740	271.0	90.4	361.4	1.2333	1.5145	49
50	2346.2	2296.7	0.0010	0.0063	974.0	158.770	272.7	88.7	361.4	1.2384	1.5135	50
51	2399.8	2350.5	0.0010	0.0061	965.6	164.020	274.4	87.0	361.4	1.2435	1.5124	51
52	2454.3	2405.2	0.0010	0.0059	957.0	169.520	276.2	85.2	361.4	1.2487	1.5113	52
53	2509.8	2461.0	0.0011	0.0057	948.1	175.280	277.9	83.4	361.3	1.2540	1.5101	53
54	2566.2	2517.8	0.0011	0.0055	938.9	181.320	279.7	81.4	361.2	1.2593	1.5087	54
55	2623.7	2575.6	0.0011	0.0053	929.4	187.680	281.6	79.5	361.0	1.2647	1.5073	55
56	2682.1	2634.5	0.0011	0.0051	919.5	194.390	283.4	77.4	360.8	1.2701	1.5058	56
57	2741.6	2694.5	0.0011	0.0050	909.2	201.480	285.3	75.3	360.6	1.2756	1.5041	57
58	2802.1	2755.7	0.0011	0.0048	898.5	209.010	287.2	73.1	360.3	1.2812	1.5023	58
59	2863.7	2818.0	0.0011	0.0046	887.3	217.030	289.2	70.8	359.9	1.2869	1.5004	59
60	2926.3	2881.4	0.0011	0.0044	875.5	225.610	291.2	68.3	359.5	1.2928	1.4982	60
61	2990.1	2946.1	0.0012	0.0043	863.1	234.840	293.3	65.7	359.0	1.2988	1.4959	61
62	3054.9	3012.1	0.0012	0.0041	849.8	244.820	295.4	63.0	358.4	1.3049	1.4933	62
63	3121.0	3079.4	0.0012	0.0039	835.6	255.710	297.6	60.1	357.7	1.3112	1.4903	63
64	3188.2	3148.0	0.0012	0.0037	820.3	267.710	299.9	57.0	356.9	1.3178	1.4871	64
65	3256.6	3218.2	0.0012	0.0036	803.5	281.100	302.3	53.5	355.9	1.3247	1.4833	65
66	3326.3	3289.9	0.0013	0.0034	784.8	296.300	304.9	49.8	354.6	1.3321	1.4790	66
67	3397.2	3363.3	0.0013	0.0032	763.5	314.000	307.7	45.5	353.1	1.3400	1.4738	67
68	3469.4	3438.6	0.0014	0.0030	738.1	335.430	310.8	40.4	351.2	1.3488	1.4674	68
69	3542.8	3516.2	0.0014	0.0028	705.5	363.280	314.5	34.0	348.5	1.3593	1.4588	69
70	3616.8	3597.1	0.0015	0.0025	655.3	406.140	319.6	24.5	344.1	1.3740	1.4455	70

Table 2 DuPont™ ISCEON® MO79 (R-422A) Superheated Vapour—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/kg·K (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, kPa													
TEMP. °C	10			20			30			40			TEMP. °C
	(−81.65°C)			(−72.08°C)			(−65.89°C)			(−61.12°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(1.3903)	(297.1)	(1.6079)	(0.7260)	(302.9)	(1.5871)	(0.4966)	(306.6)	(1.5762)	(0.3793)	(309.5)	(1.5691)	
−80	1.4027	298.2	1.6133	−	−	−	−	−	−	−	−	−	−80
−75	1.4400	301.4	1.6297	−	−	−	−	−	−	−	−	−	−75
−70	1.4774	304.6	1.6459	0.7339	304.3	1.5939	−	−	−	−	−	−	−70
−65	1.5146	307.9	1.6620	0.7528	307.6	1.6100	0.7528	307.6	1.6100	−	−	−	−65
−60	1.5517	311.3	1.6778	0.7717	311.0	1.6260	0.7717	311.0	1.6260	0.3816	310.3	1.5730	−60
−55	1.5889	314.7	1.6935	0.7905	314.4	1.6418	0.7905	314.4	1.6418	0.3913	313.76	1.5890	−55
−50	1.6259	318.1	1.7091	0.8093	317.8	1.6574	0.8093	317.8	1.6574	0.4009	317.25	1.6049	−50
−45	1.6629	321.6	1.7245	0.8280	321.3	1.6729	0.8280	321.3	1.6729	0.4105	320.78	1.6205	−45
−40	1.6999	325.1	1.7397	0.8467	324.8	1.6883	0.8467	324.8	1.6883	0.4201	324.35	1.6360	−40
−35	1.7369	328.6	1.7549	0.8654	328.4	1.7035	0.8654	328.4	1.7035	0.4296	327.96	1.6513	−35
−30	1.7738	332.3	1.7699	0.8840	332.0	1.7185	0.8840	332.0	1.7185	0.4391	331.61	1.6665	−30
−25	1.8107	335.9	1.7848	0.9026	335.7	1.7334	0.9026	335.7	1.7334	0.4485	335.31	1.6815	−25
−20	1.8476	339.6	1.7995	0.9212	339.4	1.7482	0.9212	339.4	1.7482	0.4580	339.04	1.6964	−20
−15	1.8844	343.4	1.8142	0.9397	343.2	1.7629	0.9397	343.2	1.7629	0.4674	342.82	1.7112	−15
−10	1.9213	347.1	1.8287	0.9583	347.0	1.7775	0.9583	347.0	1.7775	0.4768	346.63	1.7258	−10
−5	1.9581	351.0	1.8431	0.9768	350.8	1.7920	0.9768	350.8	1.7920	0.4861	350.49	1.7404	−5
0	1.9949	354.9	1.8575	0.9953	354.7	1.8063	0.9953	354.7	1.8063	0.4955	354.39	1.7548	0
5	2.0317	358.8	1.8717	1.0138	358.6	1.8206	1.0138	358.6	1.8206	0.5049	358.34	1.7691	5
10	2.0684	362.7	1.8858	1.0323	362.6	1.8347	1.0323	362.6	1.8347	0.5142	362.32	1.7833	10
15	2.1052	366.7	1.8998	1.0507	366.6	1.8488	1.0507	366.6	1.8488	0.5235	366.35	1.7974	15
20	2.1419	370.8	1.9138	1.0692	370.7	1.8627	1.0692	370.7	1.8627	0.5328	370.42	1.8114	20
25	2.1787	374.9	1.9276	1.0876	374.8	1.8766	1.0876	374.8	1.8766	0.5421	374.53	1.8253	25
30	2.2154	379.0	1.9414	1.1061	378.9	1.8904	1.1061	378.9	1.8904	0.5514	378.68	1.8391	30
35	2.2521	383.2	1.9550	1.1245	383.1	1.9041	1.1245	383.1	1.9041	0.5607	382.87	1.8528	35
40	2.2889	387.4	1.9686	1.1429	387.3	1.9177	1.1429	387.3	1.9177	0.5700	387.1	1.8664	40
45	2.3256	391.7	1.9821	1.1613	391.6	1.9312	1.1613	391.6	1.9312	0.5792	391.38	1.8800	45
50	2.3623	396.0	1.9956	1.1797	395.9	1.9446	1.1797	395.9	1.9446	0.5885	395.7	1.8934	50
55	2.3990	400.3	2.0089	1.1981	400.2	1.9580	1.1981	400.2	1.9580	0.5977	400.05	1.9068	55
60	2.4357	404.7	2.0222	1.2165	404.6	1.9712	1.2165	404.6	1.9712	0.6070	404.45	1.9201	60
65	2.4724	409.2	2.0354	1.2349	409.1	1.9844	1.2349	409.1	1.9844	0.6162	408.88	1.9333	65
70	2.509	413.6	2.0485	1.2533	413.5	1.9976	1.2533	413.5	1.9976	0.6255	413.36	1.9465	70

ABSOLUTE PRESSURE, kPa													
TEMP. °C	50			60			70			80			TEMP. °C
	(−57.37°C)			(−54.12°C)			(−51.26°C)			(−48.72°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.3077)	(311.8)	(1.564)	(0.2593)	(313.8)	(1.5601)	(0.2244)	(315.5)	(1.5570)	(0.1979)	(317.0)	(1.5545)	
−55	0.3114	313.5	1.5717	−	−	−	−	−	−	−	−	−	−55
−50	0.3192	317.0	1.5876	0.2648	316.7	1.5733	0.2258	316.4	1.5611	−	−	−	−50
−45	0.3270	320.5	1.6033	0.2713	320.3	1.5891	0.2315	320.0	1.5770	0.2017	319.7	1.5663	−45
−40	0.3347	324.1	1.6189	0.2778	323.9	1.6048	0.2372	323.6	1.5927	0.2067	323.4	1.5821	−40
−35	0.3424	327.7	1.6343	0.2843	327.5	1.6202	0.2428	327.3	1.6082	0.2116	327.0	1.5977	−35
−30	0.3501	331.4	1.6495	0.2907	331.2	1.6355	0.2484	331.0	1.6236	0.2166	330.7	1.6131	−30
−25	0.3577	335.1	1.6646	0.2972	334.9	1.6507	0.2539	334.7	1.6388	0.2215	334.5	1.6284	−25
−20	0.3653	338.9	1.6796	0.3035	338.7	1.6657	0.2594	338.5	1.6538	0.2263	338.3	1.6435	−20
−15	0.3729	342.6	1.6944	0.3099	342.5	1.6805	0.2649	342.3	1.6687	0.2312	342.1	1.6584	−15
−10	0.3805	346.5	1.7090	0.3163	346.3	1.6952	0.2704	346.1	1.6835	0.2360	345.9	1.6732	−10
−5	0.3880	350.3	1.7236	0.3226	350.2	1.7098	0.2758	350.0	1.6981	0.2408	349.8	1.6879	−5
0	0.3955	354.2	1.7381	0.3289	354.1	1.7243	0.2813	353.9	1.7126	0.2456	353.8	1.7024	0
5	0.4031	358.2	1.7524	0.3352	358.0	1.7387	0.2867	357.9	1.7270	0.2504	357.8	1.7168	5
10	0.4106	362.2	1.7666	0.3415	362.0	1.7529	0.2921	361.9	1.7413	0.2551	361.8	1.7311	10
15	0.4181	366.2	1.7807	0.3477	366.1	1.7671	0.2975	366.0	1.7554	0.2599	365.8	1.7453	15
20	0.4255	370.3	1.7947	0.3540	370.2	1.7811	0.3029	370.0	1.7695	0.2646	369.9	1.7594	20
25	0.4330	374.4	1.8087	0.3603	374.3	1.7950	0.3083	374.2	1.7835	0.2693	374.0	1.7734	25
30	0.4405	378.6	1.8225	0.3665	378.5	1.8089	0.3137	378.3	1.7973	0.2740	378.2	1.7873	30
35	0.4479	382.8	1.8362	0.3727	382.7	1.8226	0.3190	382.5	1.8111	0.2788	382.4	1.8010	35
40	0.4554	387.0	1.8499	0.3790	386.9	1.8363	0.3244	386.8	1.8248	0.2835	386.7	1.8147	40
45	0.4628	391.3	1.8634	0.3852	391.2	1.8499	0.3297	391.1	1.8383	0.2881	391.0	1.8283	45
50	0.4702	395.6	1.8769	0.3914	395.5	1.8633	0.3351	395.4	1.8518	0.2928	395.3	1.8418	50
55	0.4776	400.0	1.8903	0.3976	399.9	1.8767	0.3404	399.8	1.8652	0.2975	399.7	1.8553	55
60	0.4851	404.4	1.9036	0.4038	404.3	1.8901	0.3457	404.2	1.8786	0.3022	404.1	1.8686	60
65	0.4925	408.8	1.9168	0.4100	408.7	1.9033	0.3511	408.6	1.8918	0.3069	408.5	1.8819	65
70	0.49989	413.28	1.93	0.4162	413.2	1.9165	0.3564	413.1	1.9050	0.3115	413.0	1.8950	70
75	0.5073	417.8	1.9430	0.4224	417.7	1.9295	0.3617	417.6	1.9181	0.3162	417.6	1.9081	75
80	0.5147	422.4	1.9560	0.4285	422.3	1.9425	0.3670	422.2	1.9311	0.3208	422.1	1.9212	80
85	0.5221	427.0	1.9690	0.4347	426.9	1.9555	0.3723	426.8	1.9440	0.3255	426.7	1.9341	85
90	0.5295	431.6	1.9818	0.4409	431.5	1.9683	0.3776	431.4	1.9569	0.3301	431.4	1.9470	90
95	0.53687	436.26	1.9946	0.4471	436.2	1.9811	0.3829	436.1	1.9697	0.3348	436.0	1.9598	95

Table 2 (continued)
DuPont™ ISCEON® MO79 (R-422A) Superheated Vapour—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/kg-K (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, kPa													
TEMP. °C	90			100			101.325			110			TEMP. °C
	(-46.41°C)			(-44.30°C)			(-44.03°C)			(-42.35°C)			
	V (0.1772)	H (318.4)	S (1.5523)	V (0.1604)	H (319.7)	S (1.5505)	V (0.1585)	H (319.8)	S (1.5502)	V (0.1467)	H (320.8)	S (1.5489)	
-45	0.1785	319.4	1.5568	—	—	—	—	—	—	—	—	—	-45
-40	0.1829	323.1	1.5727	0.1640	322.8	1.5642	0.1617	322.8	1.5631	0.1484	322.6	1.5564	-40
-35	0.1874	326.8	1.5884	0.1680	326.6	1.5799	0.1657	326.5	1.5789	0.1521	326.3	1.5722	-35
-30	0.1918	330.5	1.6039	0.1720	330.3	1.5955	0.1697	330.3	1.5944	0.1558	330.1	1.5878	-30
-25	0.1962	334.3	1.6192	0.1760	334.1	1.6108	0.1736	334.0	1.6098	0.1595	333.9	1.6032	-25
-20	0.2006	338.1	1.6343	0.1800	337.9	1.6260	0.1775	337.9	1.6250	0.1631	337.7	1.6185	-20
-15	0.2049	341.9	1.6493	0.1839	341.7	1.6410	0.1814	341.7	1.6400	0.1667	341.5	1.6335	-15
-10	0.2092	345.8	1.6641	0.1878	345.6	1.6559	0.1853	345.6	1.6549	0.1703	345.4	1.6485	-10
-5	0.2135	349.7	1.6788	0.1917	349.5	1.6707	0.1891	349.5	1.6696	0.1739	349.3	1.6632	-5
0	0.2178	353.6	1.6934	0.1956	353.5	1.6853	0.1930	353.4	1.6842	0.1774	353.3	1.6779	0
5	0.2221	357.6	1.7078	0.1994	357.5	1.6997	0.1968	357.4	1.6987	0.1809	357.3	1.6924	5
10	0.2263	361.6	1.7222	0.2033	361.5	1.7141	0.2006	361.5	1.7131	0.1844	361.3	1.7067	10
15	0.2306	365.7	1.7364	0.2071	365.5	1.7283	0.2044	365.5	1.7273	0.1880	365.4	1.7210	15
20	0.2348	369.8	1.7505	0.2110	369.7	1.7424	0.2081	369.6	1.7414	0.1914	369.5	1.7352	20
25	0.2390	373.9	1.7645	0.2148	373.8	1.7565	0.2119	373.8	1.7555	0.1949	373.7	1.7492	25
30	0.2432	378.1	1.7784	0.2186	378.0	1.7704	0.2157	378.0	1.7694	0.1984	377.9	1.7631	30
35	0.2474	382.3	1.7922	0.2224	382.2	1.7842	0.2194	382.2	1.7832	0.2019	382.1	1.7770	35
40	0.2516	386.6	1.8059	0.2262	386.5	1.7979	0.2232	386.5	1.7969	0.2053	386.4	1.7907	40
45	0.2558	390.9	1.8195	0.2299	390.8	1.8115	0.2269	390.8	1.8105	0.2088	390.7	1.8043	45
50	0.2600	395.2	1.8330	0.2337	395.1	1.8251	0.2306	395.1	1.8241	0.2122	395.0	1.8179	50
55	0.2642	399.6	1.8464	0.2375	399.5	1.8385	0.2343	399.5	1.8375	0.2156	399.4	1.8313	55
60	0.2683	404.0	1.8598	0.2412	403.9	1.8519	0.2380	403.9	1.8509	0.2191	403.8	1.8447	60
65	0.2725	408.4	1.8731	0.2450	408.4	1.8652	0.2418	408.3	1.8642	0.2225	408.3	1.8580	65
70	0.2766	412.9	1.8862	0.2487	412.9	1.8784	0.2455	412.8	1.8774	0.2259	412.8	1.8712	70
75	0.2808	417.5	1.8994	0.2525	417.4	1.8915	0.2492	417.4	1.8905	0.2293	417.3	1.8843	75
80	0.2849	422.0	1.9124	0.2562	422.0	1.9045	0.2528	422.0	1.9035	0.2327	421.9	1.8974	80
85	0.2891	426.6	1.9253	0.2600	426.6	1.9175	0.2565	426.6	1.9165	0.2361	426.5	1.9103	85
90	0.2932	431.3	1.9382	0.2637	431.2	1.9304	0.2602	431.2	1.9294	0.2395	431.1	1.9232	90
95	0.2974	436.0	1.9510	0.2674	435.9	1.9432	0.2639	435.9	1.9422	0.2429	435.8	1.9361	95
100	0.3015	440.7	1.9638	0.2712	440.6	1.9559	0.2676	440.6	1.9549	0.2463	440.6	1.9488	100

ABSOLUTE PRESSURE, kPa													
TEMP. °C	120			130			140			150			TEMP. °C
	(-40.53°C)			(-38.82°C)			(-37.22°C)			(-35.70)			
	V (0.1351)	H (321.9)	S (1.5475)	V (0.1253)	H (322.9)	S (1.5462)	V (0.1168)	H (323.9)	S (1.5452)	V (0.1094)	H (324.8)	S (1.5442)	
-40	0.1355	322.3	1.5492	—	—	—	—	—	—	—	—	—	-40
-35	0.1389	326.1	1.5651	0.1277	325.8	1.5584	0.1181	325.6	1.5522	0.1098	325.3	1.5464	-35
-30	0.1423	329.8	1.5807	0.1309	329.6	1.5742	0.1211	329.4	1.5681	0.1126	329.2	1.5623	-30
-25	0.1457	333.6	1.5962	0.1340	333.4	1.5897	0.1240	333.2	1.5837	0.1154	333.0	1.5780	-25
-20	0.1491	337.5	1.6115	0.1372	337.3	1.6051	0.1270	337.1	1.5991	0.1181	336.9	1.5934	-20
-15	0.1524	341.3	1.6266	0.1403	341.2	1.6202	0.1299	341.0	1.6143	0.1209	340.8	1.6087	-15
-10	0.1557	345.2	1.6416	0.1433	345.1	1.6352	0.1327	344.9	1.6293	0.1236	344.7	1.6238	-10
-5	0.1590	349.2	1.6564	0.1464	349.0	1.6501	0.1356	348.8	1.6442	0.1262	348.7	1.6387	-5
0	0.1622	353.1	1.6711	0.1494	353.0	1.6648	0.1384	352.8	1.6589	0.1289	352.7	1.6535	0
5	0.1655	357.2	1.6856	0.1524	357.0	1.6794	0.1413	356.9	1.6735	0.1316	356.7	1.6681	5
10	0.1687	361.2	1.7000	0.1555	361.1	1.6938	0.1441	360.9	1.6880	0.1342	360.8	1.6826	10
15	0.1720	365.3	1.7143	0.1584	365.1	1.7081	0.1469	360.7	1.7023	0.1368	360.6	1.6969	15
20	0.1752	369.4	1.7285	0.1614	369.3	1.7223	0.1496	369.1	1.7165	0.1394	369.0	1.7112	20
25	0.1784	373.6	1.7425	0.1644	373.4	1.7364	0.1524	373.3	1.7306	0.1420	373.2	1.7253	25
30	0.1816	377.7	1.7565	0.1674	377.6	1.7503	0.1552	377.5	1.7446	0.1446	377.4	1.7393	30
35	0.1848	382.0	1.7703	0.1703	381.9	1.7642	0.1579	381.8	1.7585	0.1472	381.6	1.7532	35
40	0.1879	386.3	1.7841	0.1733	386.1	1.7780	0.1607	386.0	1.7723	0.1497	385.9	1.7670	40
45	0.1911	390.6	1.7977	0.1762	390.5	1.7916	0.1634	390.4	1.7860	0.1523	390.2	1.7807	45
50	0.1943	394.9	1.8113	0.1791	394.8	1.8052	0.1661	394.7	1.7996	0.1549	394.6	1.7943	50
55	0.1974	399.3	1.8248	0.1820	399.2	1.8187	0.1688	399.1	1.8131	0.1574	399.0	1.8078	55
60	0.2006	403.7	1.8381	0.1850	403.6	1.8321	0.1716	403.5	1.8265	0.1599	403.4	1.8212	60
65	0.2037	408.2	1.8514	0.1879	408.1	1.8454	0.1743	408.0	1.8398	0.1625	407.9	1.8345	65
70	0.2069	412.7	1.8647	0.1908	412.6	1.8586	0.1770	412.5	1.8530	0.1650	412.4	1.8478	70
75	0.2100	417.2	1.8778	0.1937	417.1	1.8718	0.1797	417.1	1.8662	0.1675	417.0	1.8609	75
80	0.2131	421.8	1.8908	0.1966	421.7	1.8848	0.1824	421.6	1.8792	0.1701	421.6	1.8740	80
85	0.2163	426.4	1.9038	0.1995	426.3	1.8978	0.1851	426.3	1.8922	0.1726	426.2	1.8870	85
90	0.2194	431.1	1.9167	0.2024	431.0	1.9107	0.1878	430.9	1.9051	0.1751	430.8	1.8999	90
95	0.2225	435.8	1.9295	0.2052	435.7	1.9235	0.1904	435.6	1.9180	0.1776	435.5	1.9128	95
100	0.2256	440.5	1.9423	0.2081	440.4	1.9363	0.1931	440.3	1.9307	0.1801	440.3	1.9256	100
105	0.2288	445.3	1.9550	0.2110	445.2	1.9490	0.1958	445.1	1.9434	0.1826	445.0	1.9383	105
110	0.2319	450.1	1.9676	0.2139	450.0	1.9616	0.1985	449.9	1.9561	0.1851	449.9	1.9509	110

Table 2 (continued)
DuPont™ ISCEON® MO79 (R-422A) Superheated Vapour—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/kg-K (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, kPa													
TEMP. °C	160			170			180			190			TEMP. °C
	(-34.26°C)			(-32.88°C)			(-31.57°C)			(-30.31°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.1029)	(325.6)	(1.5433)	(0.0971)	(326.5)	(1.5425)	(0.0920)	(327.2)	(1.5417)	(0.0874)	(327.9)	(1.5411)	
-30	0.1052	328.9	1.5569	0.0986	328.7	1.5517	0.0928	328.4	1.5468	0.0875	328.2	1.5421	-30
-25	0.1078	332.8	1.5726	0.1011	332.6	1.5675	0.0951	332.3	1.5626	0.0898	332.1	1.5580	-25
-20	0.1104	336.7	1.5881	0.1036	336.5	1.5831	0.0975	336.3	1.5783	0.0921	336.0	1.5737	-20
-15	0.1130	340.6	1.6034	0.1060	340.4	1.5984	0.0998	340.2	1.5937	0.0943	340.0	1.5892	-15
-10	0.1155	344.5	1.6185	0.1084	344.3	1.6136	0.1021	344.2	1.6089	0.0965	344.0	1.6044	-10
-5	0.1181	348.5	1.6335	0.1108	348.3	1.6286	0.1044	348.2	1.6239	0.0986	348.0	1.6195	-5
0	0.1206	352.5	1.6483	0.1132	352.3	1.6434	0.1067	352.2	1.6388	0.1008	352.0	1.6344	0
5	0.1231	356.5	1.6630	0.1156	356.4	1.6581	0.1089	356.2	1.6535	0.1029	356.1	1.6492	5
10	0.1255	360.6	1.6775	0.1179	360.5	1.6727	0.1111	360.3	1.6681	0.1051	360.2	1.6638	10
15	0.1280	364.7	1.6919	0.1202	364.6	1.6871	0.1134	364.4	1.6825	0.1072	364.3	1.6782	15
20	0.1305	368.9	1.7061	0.1226	368.7	1.7014	0.1156	368.6	1.6968	0.1093	368.5	1.6926	20
25	0.1329	373.1	1.7203	0.1249	372.9	1.7155	0.1177	372.8	1.7110	0.1114	372.7	1.7068	25
30	0.1353	377.3	1.7343	0.1272	377.1	1.7296	0.1199	377.0	1.7251	0.1134	376.9	1.7208	30
35	0.1378	381.5	1.7482	0.1295	381.4	1.7435	0.1221	381.3	1.7390	0.1155	381.2	1.7348	35
40	0.1402	385.8	1.7620	0.1318	385.7	1.7573	0.1243	385.6	1.7529	0.1176	385.5	1.7487	40
45	0.1426	390.1	1.7757	0.1340	390.0	1.7710	0.1264	389.9	1.7666	0.1196	389.8	1.7624	45
50	0.1450	394.5	1.7893	0.1363	394.4	1.7847	0.1286	394.3	1.7803	0.1217	394.2	1.7761	50
55	0.1474	398.9	1.8029	0.1386	398.8	1.7982	0.1307	398.7	1.7938	0.1237	398.6	1.7896	55
60	0.1498	403.3	1.8163	0.1408	403.3	1.8116	0.1328	403.2	1.8073	0.1257	403.1	1.8031	60
65	0.1522	407.8	1.8296	0.1431	407.7	1.8250	0.1350	407.6	1.8206	0.1277	407.6	1.8165	65
70	0.1545	412.3	1.8429	0.1453	412.3	1.8383	0.1371	412.2	1.8339	0.1298	412.1	1.8298	70
75	0.1569	416.9	1.8560	0.1476	416.8	1.8514	0.1392	416.7	1.8471	0.1318	416.6	1.8430	75
80	0.1593	421.5	1.8691	0.1498	421.4	1.8645	0.1413	421.3	1.8602	0.1338	421.2	1.8561	80
85	0.1617	426.1	1.8821	0.1520	426.0	1.8776	0.1435	426.0	1.8732	0.1358	425.9	1.8691	85
90	0.1640	430.8	1.8951	0.1543	430.7	1.8905	0.1456	430.6	1.8862	0.1378	430.5	1.8821	90
95	0.1664	435.5	1.9079	0.1565	435.4	1.9033	0.1477	435.3	1.8990	0.1398	435.3	1.8949	95
100	0.1687	440.2	1.9207	0.1587	440.1	1.9161	0.1498	440.1	1.9118	0.1418	440.0	1.9077	100
105	0.1711	445.0	1.9334	0.1609	444.9	1.9288	0.1519	444.8	1.9245	0.1438	444.8	1.9204	105
110	0.1734	449.8	1.9460	0.1631	449.7	1.9415	0.1540	449.7	1.9372	0.1458	449.6	1.9331	110
115	0.1758	454.6	1.9586	0.1653	454.6	1.9540	0.1561	454.5	1.9497	0.1478	454.4	1.9457	115
120	0.1781	459.5	1.9711	0.1676	459.5	1.9665	0.1582	459.4	1.9622	0.1497	459.3	1.9582	120

ABSOLUTE PRESSURE, kPa													
TEMP. °C	200			210			220			230			TEMP. °C
	(-29.11°C)			(-27.94°C)			(-26.82°C)			(-25.74°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0832)	(328.7)	(1.5405)	(0.0794)	(329.3)	(1.5399)	(0.0759)	(329.8)	(1.5394)	(0.0728)	(330.6)	(1.5389)	
-25	0.0850	331.9	1.5536	0.0807	331.7	1.5493	0.0767	331.4	1.5452	0.0731	331.2	1.5413	-25
-20	0.0872	335.8	1.5693	0.0827	335.6	1.5651	0.0787	335.4	1.5611	0.0750	335.2	1.5572	-20
-15	0.0893	339.8	1.5848	0.0848	339.6	1.5807	0.0807	339.4	1.5767	0.0769	339.2	1.5729	-15
-10	0.0914	343.8	1.6002	0.0868	343.6	1.5961	0.0826	343.4	1.5921	0.0788	343.2	1.5884	-10
-5	0.0935	347.8	1.6153	0.0888	347.6	1.6112	0.0845	347.5	1.6073	0.0806	347.3	1.6036	-5
0	0.0955	351.9	1.6302	0.0908	351.7	1.6262	0.0864	351.5	1.6224	0.0825	351.4	1.6187	0
5	0.0976	355.9	1.6450	0.0927	355.8	1.6410	0.0883	355.6	1.6372	0.0843	355.5	1.6335	5
10	0.0996	360.0	1.6596	0.0947	359.9	1.6557	0.0902	359.7	1.6519	0.0861	359.6	1.6483	10
15	0.1016	364.2	1.6741	0.0966	364.0	1.6702	0.0920	363.9	1.6664	0.0878	363.7	1.6628	15
20	0.1036	368.3	1.6885	0.0985	368.2	1.6846	0.0939	368.1	1.6808	0.0896	367.9	1.6772	20
25	0.1056	372.5	1.7027	0.1004	372.4	1.6988	0.0957	372.3	1.6951	0.0914	372.2	1.6915	25
30	0.1076	376.8	1.7168	0.1023	376.7	1.7129	0.0975	376.5	1.7092	0.0931	376.4	1.7057	30
35	0.1096	381.1	1.7308	0.1042	380.9	1.7269	0.0993	380.8	1.7233	0.0948	380.7	1.7197	35
40	0.1115	385.4	1.7447	0.1061	385.3	1.7408	0.1011	385.2	1.7372	0.0966	385.0	1.7337	40
45	0.1135	389.7	1.7584	0.1079	389.6	1.7546	0.1029	389.5	1.7510	0.0983	389.4	1.7475	45
50	0.1154	394.1	1.7721	0.1098	394.0	1.7683	0.1047	393.9	1.7647	0.1000	393.8	1.7612	50
55	0.1174	398.5	1.7857	0.1116	398.4	1.7819	0.1064	398.3	1.7783	0.1017	398.2	1.7748	55
60	0.1193	403.0	1.7991	0.1135	402.9	1.7954	0.1082	402.8	1.7918	0.1034	402.7	1.7883	60
65	0.1212	407.5	1.8125	0.1153	407.4	1.8088	0.1100	407.3	1.8052	0.1051	407.2	1.8017	65
70	0.1231	412.0	1.8258	0.1172	411.9	1.8221	0.1117	411.8	1.8185	0.1068	411.7	1.8150	70
75	0.1251	416.6	1.8390	0.1190	416.5	1.8353	0.1135	416.4	1.8317	0.1084	416.3	1.8283	75
80	0.1270	421.2	1.8522	0.1208	421.1	1.8484	0.1152	421.0	1.8448	0.1101	420.9	1.8414	80
85	0.1289	425.8	1.8652	0.1227	425.7	1.8615	0.1170	425.6	1.8579	0.1118	425.6	1.8545	85
90	0.1308	430.5	1.8781	0.1245	430.4	1.8744	0.1187	430.3	1.8709	0.1135	430.2	1.8675	90
95	0.1327	435.2	1.8910	0.1263	435.1	1.8873	0.1205	435.0	1.8838	0.1151	435.0	1.8804	95
100	0.1346	439.9	1.9038	0.1281	439.9	1.9001	0.1222	439.8	1.8966	0.1168	439.7	1.8932	100
105	0.1365	444.7	1.9166	0.1299	444.6	1.9129	0.1239	444.6	1.9093	0.1184	444.5	1.9059	105
110	0.1384	449.5	1.9292	0.1317	449.5	1.9255	0.1256	449.4	1.9220	0.1201	449.3	1.9186	110
115	0.1403	454.4	1.9418	0.1335	454.3	1.9381	0.1274	454.2	1.9346	0.1218	454.2	1.9312	115
120	0.1422	459.3	1.9543	0.1353	459.2	1.9506	0.1291	459.1	1.9471	0.1234	459.1	1.9437	120
125	0.1441	464.2	1.9667	0.1371	464.1	1.9631	0.1308	464.1	1.9596	0.1250	464.0	1.9562	125

Table 2 (continued)
DuPont™ ISCEON® MO79 (R-422A) Superheated Vapour—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/kg·K (Saturation Properties in parentheses)

TEMP. °C	ABSOLUTE PRESSURE, kPa												TEMP. °C
	240			250			260			270			
	(-24.69°C)			(-23.68°C)			(-22.70°C)			(-21.74°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
(0.0699)	(331.2)	(1.5384)	(0.0672)	(331.8)	(1.5380)	(0.0647)	(332.3)	(1.5376)	(0.0624)	(332.9)	(1.5373)		
-20	0.0717	335.0	1.5535	0.0686	334.8	1.5498	0.0657	334.5	1.5463	0.0630	334.3	1.5429	-20
-15	0.0735	339.0	1.5692	0.0703	338.8	1.5656	0.0674	338.6	1.5622	0.0647	338.4	1.5588	-15
-10	0.0753	343.0	1.5847	0.0721	342.8	1.5812	0.0691	342.7	1.5778	0.0663	342.5	1.5745	-10
-5	0.0771	347.1	1.6000	0.0738	346.9	1.5965	0.0708	346.7	1.5931	0.0680	346.6	1.5899	-5
0	0.0788	351.2	1.6151	0.0755	351.0	1.6116	0.0724	350.8	1.6083	0.0696	350.7	1.6051	0
5	0.0806	355.3	1.6300	0.0772	355.1	1.6266	0.0740	355.0	1.6233	0.0711	354.8	1.6201	5
10	0.0823	359.4	1.6448	0.0788	359.3	1.6414	0.0756	359.1	1.6381	0.0727	359.0	1.6350	10
15	0.0840	363.6	1.6593	0.0805	363.5	1.6560	0.0772	363.3	1.6528	0.0742	363.2	1.6496	15
20	0.0857	367.8	1.6738	0.0821	367.7	1.6705	0.0788	367.5	1.6673	0.0758	367.4	1.6642	20
25	0.0874	372.0	1.6881	0.0838	371.9	1.6848	0.0804	371.8	1.6816	0.0773	371.6	1.6785	25
30	0.0891	376.3	1.7023	0.0854	376.2	1.6990	0.0820	376.1	1.6958	0.0788	375.9	1.6928	30
35	0.0907	380.6	1.7163	0.0870	380.5	1.7131	0.0835	380.4	1.7099	0.0803	380.2	1.7069	35
40	0.0924	384.9	1.7303	0.0886	384.8	1.7270	0.0851	384.7	1.7239	0.0818	384.6	1.7209	40
45	0.0941	389.3	1.7441	0.0902	389.2	1.7409	0.0866	389.1	1.7378	0.0833	389.0	1.7348	45
50	0.0957	393.7	1.7578	0.0918	393.6	1.7546	0.0881	393.5	1.7515	0.0847	393.4	1.7485	50
55	0.0973	398.1	1.7715	0.0933	398.0	1.7683	0.0896	397.9	1.7652	0.0862	397.8	1.7622	55
60	0.0990	402.6	1.7850	0.0949	402.5	1.7818	0.0911	402.4	1.7787	0.0877	402.3	1.7758	60
65	0.1006	407.1	1.7984	0.0965	407.0	1.7952	0.0927	406.9	1.7922	0.0891	406.8	1.7892	65
70	0.1022	411.6	1.8117	0.0980	411.6	1.8086	0.0942	411.5	1.8055	0.0906	411.4	1.8026	70
75	0.1038	416.2	1.8250	0.0996	416.1	1.8218	0.0957	416.1	1.8188	0.0920	416.0	1.8158	75
80	0.1054	420.8	1.8381	0.1011	420.8	1.8350	0.0971	420.7	1.8320	0.0935	420.6	1.8290	80
85	0.1070	425.5	1.8512	0.1027	425.4	1.8481	0.0986	425.3	1.8450	0.0949	425.3	1.8421	85
90	0.1086	430.2	1.8642	0.1042	430.1	1.8611	0.1001	430.0	1.8580	0.0963	429.9	1.8551	90
95	0.1102	434.9	1.8771	0.1058	434.8	1.8740	0.1016	434.7	1.8710	0.0978	434.7	1.8681	95
100	0.1118	439.6	1.8899	0.1073	439.6	1.8868	0.1031	439.5	1.8838	0.0992	439.4	1.8809	100
105	0.1134	444.4	1.9027	0.1088	444.4	1.8996	0.1046	444.3	1.8966	0.1006	444.2	1.8937	105
110	0.1150	449.3	1.9154	0.1103	449.2	1.9123	0.1060	449.1	1.9093	0.1020	449.1	1.9064	110
115	0.1166	454.1	1.9280	0.1119	454.1	1.9249	0.1075	454.0	1.9219	0.1035	453.9	1.9190	115
120	0.1182	459.0	1.9405	0.1134	459.0	1.9374	0.1090	458.9	1.9344	0.1049	458.8	1.9315	120
125	0.1198	463.9	1.9530	0.1149	463.9	1.9499	0.1104	463.8	1.9469	0.1063	463.8	1.9440	125
130	0.1213	468.9	1.9654	0.1164	468.9	1.9623	0.1119	468.8	1.9593	0.1077	468.7	1.9564	130

TEMP. °C	ABSOLUTE PRESSURE, kPa												TEMP. °C
	280			290			300			310			
	(-20.81°C)			(-19.91°C)			(-19.03°C)			(-18.17°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
(0.0603)	(333.4)	(1.5369)	(0.0583)	(333.9)	(1.5366)	(0.0564)	(334.4)	(1.5363)	(0.0546)	(334.9)	(1.5360)		
-20	0.0606	334.1	1.5396	-	-	-	-	-	-	-	-	-	-20
-15	0.0622	338.2	1.5555	0.0598	338.0	1.5524	0.0576	337.7	1.5493	0.0556	337.5	1.5462	-15
-10	0.0638	342.3	1.5712	0.0614	342.1	1.5681	0.0592	341.9	1.5651	0.0571	341.7	1.5621	-10
-5	0.0653	346.4	1.5867	0.0629	346.2	1.5836	0.0606	346.0	1.5806	0.0585	345.8	1.5777	-5
0	0.0669	350.5	1.6020	0.0644	350.3	1.5989	0.0621	350.2	1.5960	0.0600	350.0	1.5931	0
5	0.0684	354.7	1.6170	0.0659	354.5	1.6140	0.0636	354.3	1.6111	0.0614	354.2	1.6083	5
10	0.0699	358.8	1.6319	0.0674	358.7	1.6289	0.0650	358.5	1.6260	0.0628	358.4	1.6232	10
15	0.0714	363.0	1.6466	0.0688	362.9	1.6437	0.0664	362.7	1.6408	0.0641	362.6	1.6380	15
20	0.0729	367.3	1.6612	0.0703	367.1	1.6582	0.0678	367.0	1.6554	0.0655	366.8	1.6527	20
25	0.0744	371.5	1.6756	0.0717	371.4	1.6727	0.0692	371.3	1.6699	0.0668	371.1	1.6671	25
30	0.0759	375.8	1.6898	0.0731	375.7	1.6870	0.0706	375.6	1.6842	0.0682	375.4	1.6815	30
35	0.0773	380.1	1.7040	0.0745	380.0	1.7011	0.0719	379.9	1.6983	0.0695	379.8	1.6957	35
40	0.0788	384.5	1.7180	0.0759	384.4	1.7151	0.0733	384.2	1.7124	0.0708	384.1	1.7097	40
45	0.0802	388.9	1.7319	0.0773	388.8	1.7290	0.0746	388.6	1.7263	0.0721	388.5	1.7237	45
50	0.0816	393.3	1.7456	0.0787	393.2	1.7428	0.0760	393.1	1.7401	0.0734	393.0	1.7375	50
55	0.0830	397.7	1.7593	0.0801	397.6	1.7565	0.0773	397.5	1.7538	0.0747	397.4	1.7512	55
60	0.0844	402.2	1.7729	0.0814	402.1	1.7701	0.0786	402.0	1.7674	0.0760	401.9	1.7648	60
65	0.0859	406.7	1.7864	0.0828	406.6	1.7836	0.0800	406.6	1.7809	0.0773	406.5	1.7783	65
70	0.0873	411.3	1.7997	0.0842	411.2	1.7970	0.0813	411.1	1.7943	0.0786	411.0	1.7917	70
75	0.0887	415.9	1.8130	0.0855	415.8	1.8103	0.0826	415.7	1.8076	0.0798	415.6	1.8050	75
80	0.0900	420.5	1.8262	0.0869	420.4	1.8235	0.0839	420.3	1.8208	0.0811	420.3	1.8182	80
85	0.0914	425.2	1.8393	0.0882	425.1	1.8366	0.0852	425.0	1.8339	0.0824	424.9	1.8314	85
90	0.0928	429.9	1.8523	0.0895	429.8	1.8496	0.0865	429.7	1.8470	0.0836	429.6	1.8444	90
95	0.0942	434.6	1.8653	0.0909	434.5	1.8625	0.0878	434.5	1.8599	0.0849	434.4	1.8574	100
100	0.0956	439.4	1.8781	0.0922	439.3	1.8754	0.0891	439.2	1.8728	0.0861	439.1	1.8702	105
105	0.0969	444.2	1.8909	0.0935	444.1	1.8882	0.0904	444.0	1.8856	0.0874	444.0	1.8830	110
110	0.0983	449.0	1.9036	0.0949	448.9	1.9009	0.0916	448.9	1.8983	0.0886	448.8	1.8958	115
115	0.0997	453.9	1.9162	0.0962	453.8	1.9135	0.0929	453.7	1.9109	0.0899	453.7	1.9084	120
120	0.1011	458.8	1.9288	0.0975	458.7	1.9261	0.0942	458.6	1.9235	0.0911	458.6	1.9210	125
125	0.1024	463.7	1.9412	0.0988	463.6	1.9386	0.0955	463.6	1.9360	0.0923	463.5	1.9335	130
130	0.1038	468.7	1.9536	0.1001	468.6	1.9510	0.0968	468.6	1.9484	0.0936	468.5	1.9459	135

Table 2 (continued)
DuPont™ ISCEON® MO79 (R-422A) Superheated Vapour—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/kg·K (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, kPa													
TEMP. °C	320			330			340			350			TEMP. °C
	(-17.34°C)			(-16.52°C)			(-15.72°C)			(-14.94°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0530)	(335.4)	(1.5357)	(0.0514)	(335.8)	(1.5355)	(0.0500)	(336.3)	(1.5353)	(0.0483)	(336.7)	(1.5350)	
-15	0.0537	337.3	1.5433	0.0519	337.1	1.5404	0.0502	336.9	1.5376	-	-	-	-15
-10	0.0551	341.5	1.5592	0.0533	341.3	1.5564	0.0516	341.1	1.5536	0.0499	340.9	1.5509	-10
-5	0.0565	345.6	1.5749	0.0547	345.4	1.5721	0.0529	345.3	1.5694	0.0512	345.1	1.5668	-5
0	0.0579	349.8	1.5903	0.0560	349.6	1.5876	0.0542	349.5	1.5849	0.0525	349.3	1.5823	0
5	0.0593	354.0	1.6055	0.0574	353.8	1.6028	0.0555	353.7	1.6002	0.0538	353.5	1.5976	5
10	0.0607	358.2	1.6205	0.0587	358.1	1.6179	0.0568	357.9	1.6153	0.0551	357.7	1.6127	10
15	0.0620	362.4	1.6353	0.0600	362.3	1.6327	0.0581	362.1	1.6301	0.0563	362.0	1.6276	15
20	0.0633	366.7	1.6500	0.0613	366.6	1.6474	0.0594	366.4	1.6449	0.0576	366.3	1.6424	20
25	0.0646	371.0	1.6645	0.0626	370.9	1.6619	0.0606	370.7	1.6594	0.0588	370.6	1.6570	25
30	0.0659	375.3	1.6788	0.0638	375.2	1.6763	0.0618	375.1	1.6738	0.0600	374.9	1.6714	30
35	0.0672	379.6	1.6931	0.0651	379.5	1.6905	0.0631	379.4	1.6880	0.0612	379.3	1.6856	35
40	0.0685	384.0	1.7071	0.0663	383.9	1.7046	0.0643	383.8	1.7022	0.0624	383.7	1.6998	40
45	0.0698	388.4	1.7211	0.0676	388.3	1.7186	0.0655	388.2	1.7162	0.0635	388.1	1.7138	45
50	0.0710	392.9	1.7349	0.0688	392.8	1.7324	0.0667	392.7	1.7300	0.0647	392.5	1.7277	50
55	0.0723	397.3	1.7487	0.0700	397.2	1.7462	0.0679	397.1	1.7438	0.0659	397.0	1.7414	55
60	0.0736	401.8	1.7623	0.0712	401.7	1.7598	0.0691	401.6	1.7574	0.0670	401.5	1.7551	60
65	0.0748	406.4	1.7758	0.0725	406.3	1.7733	0.0702	406.2	1.7710	0.0682	406.1	1.7686	65
70	0.0760	410.9	1.7892	0.0737	410.9	1.7868	0.0714	410.8	1.7844	0.0693	410.7	1.7821	70
75	0.0773	415.5	1.8025	0.0749	415.5	1.8001	0.0726	415.4	1.7977	0.0704	415.3	1.7954	75
80	0.0785	420.2	1.8158	0.0761	420.1	1.8133	0.0737	420.0	1.8110	0.0716	419.9	1.8087	80
85	0.0797	424.9	1.8289	0.0772	424.8	1.8265	0.0749	424.7	1.8241	0.0727	424.6	1.8219	85
90	0.0809	429.6	1.8419	0.0784	429.5	1.8395	0.0761	429.4	1.8372	0.0738	429.3	1.8349	90
95	0.0822	434.3	1.8549	0.0796	434.2	1.8525	0.0772	434.2	1.8502	0.0749	434.1	1.8479	95
100	0.0834	439.1	1.8678	0.0808	439.0	1.8654	0.0784	438.9	1.8631	0.0761	438.9	1.8608	100
105	0.0846	443.9	1.8806	0.0820	443.8	1.8782	0.0795	443.7	1.8759	0.0772	443.7	1.8736	105
110	0.0858	448.7	1.8933	0.0831	448.7	1.8909	0.0806	448.6	1.8886	0.0783	448.5	1.8864	110
115	0.0870	453.6	1.9060	0.0843	453.5	1.9036	0.0818	453.5	1.9013	0.0794	453.4	1.8990	115
120	0.0882	458.5	1.9185	0.0855	458.5	1.9162	0.0829	458.4	1.9139	0.0805	458.3	1.9116	120
125	0.0894	463.5	1.9310	0.0866	463.4	1.9287	0.0841	463.3	1.9264	0.0816	463.3	1.9241	125
130	0.0906	468.4	1.9434	0.0878	468.4	1.9411	0.0852	468.3	1.9388	0.0827	468.3	1.9366	130
135	0.0918	473.5	1.9558	0.0890	473.4	1.9534	0.0863	473.3	1.9512	0.0838	473.3	1.9489	135

ABSOLUTE PRESSURE, kPa													
TEMP. °C	360			370			380			390			TEMP. °C
	(-14.17°C)			(-13.43°C)			(-12.69°C)			(-11.97°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0473)	(337.1)	(1.5348)	(0.0460)	(337.6)	(1.5346)	(0.0448)	(338.0)	(1.5344)	(0.0437)	(338.4)	(1.5342)	
-10	0.0484	340.7	1.5483	0.0469	340.5	1.5457	0.0455	340.2	1.5431	0.0442	340.0	1.5406	-10
-5	0.0497	344.9	1.5642	0.0482	344.7	1.5616	0.0468	344.5	1.5591	0.0454	344.3	1.5567	-5
0	0.0509	349.1	1.5798	0.0494	348.9	1.5773	0.0480	348.7	1.5748	0.0466	348.6	1.5724	0
5	0.0522	353.3	1.5951	0.0507	353.2	1.5927	0.0492	353.0	1.5903	0.0478	352.8	1.5879	5
10	0.0534	357.6	1.6103	0.0519	357.4	1.6078	0.0504	357.3	1.6055	0.0490	357.1	1.6031	10
15	0.0546	361.8	1.6252	0.0531	361.7	1.6228	0.0515	361.5	1.6205	0.0501	361.4	1.6182	15
20	0.0558	366.1	1.6400	0.0542	366.0	1.6376	0.0527	365.9	1.6353	0.0512	365.7	1.6330	20
25	0.0570	370.5	1.6546	0.0554	370.3	1.6522	0.0538	370.2	1.6499	0.0524	370.0	1.6477	25
30	0.0582	374.8	1.6690	0.0565	374.7	1.6667	0.0550	374.5	1.6644	0.0535	374.4	1.6622	30
35	0.0594	379.2	1.6833	0.0577	379.0	1.6810	0.0561	378.9	1.6788	0.0545	378.8	1.6766	35
40	0.0605	383.6	1.6974	0.0588	383.4	1.6952	0.0572	383.3	1.6929	0.0556	383.2	1.6908	40
45	0.0617	388.0	1.7115	0.0599	387.9	1.7092	0.0583	387.8	1.7070	0.0567	387.7	1.7048	45
50	0.0628	392.4	1.7254	0.0610	392.3	1.7231	0.0594	392.2	1.7209	0.0578	392.1	1.7188	50
55	0.0640	396.9	1.7391	0.0621	396.8	1.7369	0.0604	396.7	1.7347	0.0588	396.6	1.7326	55
60	0.0651	401.5	1.7528	0.0632	401.4	1.7506	0.0615	401.3	1.7484	0.0599	401.2	1.7463	60
65	0.0662	406.0	1.7664	0.0643	405.9	1.7642	0.0626	405.8	1.7620	0.0609	405.7	1.7599	65
70	0.0673	410.6	1.7798	0.0654	410.5	1.7776	0.0636	410.4	1.7755	0.0619	410.3	1.7734	70
75	0.0684	415.2	1.7932	0.0665	415.1	1.7910	0.0647	415.0	1.7889	0.0630	414.9	1.7868	75
80	0.0695	419.9	1.8065	0.0676	419.8	1.8043	0.0657	419.7	1.8022	0.0640	419.6	1.8001	80
85	0.0706	424.5	1.8196	0.0687	424.5	1.8175	0.0668	424.4	1.8153	0.0650	424.3	1.8133	85
90	0.0717	429.3	1.8327	0.0697	429.2	1.8305	0.0678	429.1	1.8284	0.0660	429.0	1.8264	90
95	0.0728	434.0	1.8457	0.0708	433.9	1.8435	0.0689	433.9	1.8415	0.0670	433.8	1.8394	95
100	0.0739	438.8	1.8586	0.0718	438.7	1.8565	0.0699	438.6	1.8544	0.0681	438.6	1.8523	100
105	0.0750	443.6	1.8714	0.0729	443.5	1.8693	0.0709	443.5	1.8672	0.0691	443.4	1.8652	105
110	0.0761	448.5	1.8842	0.0740	448.4	1.8820	0.0720	448.3	1.8800	0.0701	448.3	1.8779	110
115	0.0771	453.3	1.8968	0.0750	453.3	1.8947	0.0730	453.2	1.8926	0.0711	453.2	1.8906	115
120	0.0782	458.3	1.9094	0.0761	458.2	1.9073	0.0740	458.1	1.9053	0.0721	458.1	1.9032	120
125	0.0793	463.2	1.9220	0.0771	463.2	1.9198	0.0750	463.1	1.9178	0.0731	463.0	1.9158	125
130	0.0804	468.2	1.9344	0.0781	468.1	1.9323	0.0760	468.1	1.9302	0.0741	468.0	1.9282	130
135	0.0814	473.2	1.9468	0.0792	473.2	1.9447	0.0771	473.1	1.9426	0.0750	473.0	1.9406	135
140	0.0825	478.3	1.9591	0.0802	478.2	1.9570	0.0781	478.2	1.9549	0.0760	478.1	1.9529	140

Table 2 (continued)
DuPont™ ISCEON® MO79 (R-422A) Superheated Vapour—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/kg-K (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, kPa													
TEMP. °C	400			425			450			475			TEMP. °C
	(-11.27°C)			(-9.56°C)			(-7.93°C)			(-6.36°C)			
	V (0.0427)	H (338.7)	S (1.5340)	V (0.0401)	H (339.7)	S (1.5336)	V (0.0380)	H (-340.5)	S (1.5333)	V (0.0360)	H (341.4)	S (1.5329)	
-10	0.0430	339.8	1.5382	-	-	-	-	-	-	-	-	-	-10
-5	0.0442	344.1	1.5543	0.0412	343.6	1.5484	0.0386	343.1	1.5428	0.0363	342.6	1.5374	-5
0	0.0453	348.4	1.5701	0.0424	347.9	1.5644	0.0397	347.4	1.5589	0.0374	347.0	1.5536	0
5	0.0465	352.6	1.5856	0.0435	352.2	1.5800	0.0408	351.8	1.5746	0.0384	351.3	1.5695	5
10	0.0476	356.9	1.6009	0.0446	356.5	1.5954	0.0418	356.1	1.5901	0.0394	355.7	1.5850	10
15	0.0488	361.2	1.6159	0.0456	360.9	1.6105	0.0429	360.5	1.6053	0.0404	360.1	1.6004	15
20	0.0499	365.6	1.6308	0.0467	365.2	1.6255	0.0439	364.8	1.6204	0.0413	364.5	1.6155	20
25	0.0510	369.9	1.6455	0.0477	369.6	1.6402	0.0449	369.2	1.6352	0.0423	368.9	1.6304	25
30	0.0520	374.3	1.6600	0.0488	374.0	1.6548	0.0458	373.6	1.6498	0.0432	373.3	1.6451	30
35	0.0531	378.7	1.6744	0.0498	378.4	1.6692	0.0468	378.1	1.6643	0.0442	377.7	1.6596	35
40	0.0542	383.1	1.6886	0.0508	382.8	1.6835	0.0478	382.5	1.6786	0.0451	382.2	1.6740	40
45	0.0552	387.5	1.7027	0.0518	387.3	1.6977	0.0487	387.0	1.6928	0.0460	386.7	1.6882	45
50	0.0562	392.0	1.7167	0.0528	391.8	1.7117	0.0497	391.5	1.7069	0.0469	391.2	1.7023	50
55	0.0573	396.5	1.7305	0.0537	396.3	1.7255	0.0506	396.0	1.7208	0.0478	395.8	1.7162	55
60	0.0583	401.1	1.7443	0.0547	400.8	1.7393	0.0515	400.6	1.7346	0.0487	400.3	1.7301	60
65	0.0593	405.6	1.7579	0.0557	405.4	1.7529	0.0524	405.2	1.7482	0.0495	404.9	1.7438	65
70	0.0603	410.2	1.7714	0.0566	410.0	1.7665	0.0533	409.8	1.7618	0.0504	409.5	1.7573	70
75	0.0613	414.9	1.7848	0.0576	414.6	1.7799	0.0542	414.4	1.7752	0.0513	414.2	1.7708	75
80	0.0623	419.5	1.7981	0.0585	419.3	1.7932	0.0551	419.1	1.7886	0.0521	418.9	1.7842	80
85	0.0633	424.2	1.8113	0.0595	424.0	1.8064	0.0560	423.8	1.8018	0.0530	423.6	1.7975	85
90	0.0643	428.9	1.8244	0.0604	428.8	1.8196	0.0569	428.6	1.8150	0.0538	428.4	1.8106	90
95	0.0653	433.7	1.8374	0.0614	433.5	1.8326	0.0578	433.3	1.8280	0.0547	433.1	1.8237	95
100	0.0663	438.5	1.8503	0.0623	438.3	1.8456	0.0587	438.1	1.8410	0.0555	438.0	1.8367	100
105	0.0673	443.3	1.8632	0.0632	443.2	1.8584	0.0596	443.0	1.8539	0.0564	442.8	1.8496	105
110	0.0683	448.2	1.8760	0.0641	448.0	1.8712	0.0605	447.9	1.8667	0.0572	447.7	1.8624	110
115	0.0692	453.1	1.8887	0.0651	452.9	1.8839	0.0614	452.8	1.8794	0.0580	452.6	1.8752	115
120	0.0702	458.0	1.9013	0.0660	457.9	1.8965	0.0622	457.7	1.8921	0.0589	457.5	1.8878	120
125	0.0712	463.0	1.9138	0.0669	462.8	1.9091	0.0631	462.7	1.9046	0.0597	462.5	1.9004	125
130	0.0722	468.0	1.9263	0.0678	467.8	1.9216	0.0640	467.7	1.9171	0.0605	467.5	1.9129	130
135	0.0731	473.0	1.9386	0.0687	472.8	1.9340	0.0648	472.7	1.9295	0.0613	472.6	1.9253	135
140	0.0741	478.0	1.9510	0.0696	477.9	1.9463	0.0657	477.8	1.9418	0.0622	477.6	1.9376	140

ABSOLUTE PRESSURE, kPa													
TEMP. °C	500			525			550			575			TEMP. °C
	(-4.86°C)			(-3.41°C)			(-2.01°C)			(-0.66°C)			
	V (0.0342)	H (335.4)	S (1.5357)	V (0.0326)	H (335.8)	S (1.5355)	V (0.0311)	H (336.3)	S (1.5353)	V (0.0298)	H (336.7)	S (1.5350)	
0	0.0352	346.5	1.5485	0.0333	346.0	1.5436	0.0315	345.5	1.5387	0.0299	345.0	1.5341	0
5	0.0362	350.9	1.5645	0.0343	350.4	1.5597	0.0325	350.0	1.5550	0.0308	349.5	1.5504	5
10	0.0372	355.3	1.5802	0.0352	354.8	1.5755	0.0334	354.4	1.5709	0.0317	354.0	1.5665	10
15	0.0381	359.7	1.5956	0.0361	359.3	1.5910	0.0343	358.9	1.5865	0.0326	358.5	1.5822	15
20	0.0391	364.1	1.6108	0.0370	363.7	1.6062	0.0351	363.3	1.6018	0.0334	362.9	1.5976	20
25	0.0400	368.5	1.6257	0.0379	368.2	1.6213	0.0360	367.8	1.6170	0.0342	367.4	1.6128	25
30	0.0409	373.0	1.6405	0.0388	372.6	1.6361	0.0368	372.3	1.6319	0.0351	371.9	1.6278	30
35	0.0418	377.4	1.6551	0.0396	377.1	1.6508	0.0376	376.8	1.6466	0.0359	376.5	1.6426	35
40	0.0427	381.9	1.6695	0.0405	381.6	1.6652	0.0385	381.3	1.6611	0.0366	381.0	1.6571	40
45	0.0435	386.4	1.6838	0.0413	386.1	1.6796	0.0393	385.8	1.6755	0.0374	385.5	1.6716	45
50	0.0444	390.9	1.6979	0.0421	390.7	1.6937	0.0401	390.4	1.6897	0.0382	390.1	1.6858	50
55	0.0452	395.5	1.7119	0.0429	395.2	1.7077	0.0409	395.0	1.7038	0.0389	394.7	1.6999	55
60	0.0461	400.1	1.7258	0.0438	399.8	1.7216	0.0416	399.6	1.7177	0.0397	399.3	1.7139	60
65	0.0469	404.7	1.7395	0.0446	404.4	1.7354	0.0424	404.2	1.7315	0.0404	404.0	1.7277	65
70	0.0477	409.3	1.7531	0.0454	409.1	1.7490	0.0432	408.9	1.7451	0.0412	408.6	1.7414	70
75	0.0486	414.0	1.7666	0.0461	413.8	1.7626	0.0439	413.5	1.7587	0.0419	413.3	1.7550	75
80	0.0494	418.7	1.7800	0.0469	418.5	1.7760	0.0447	418.3	1.7722	0.0426	418.0	1.7685	80
85	0.0502	423.4	1.7933	0.0477	423.2	1.7893	0.0454	423.0	1.7855	0.0434	422.8	1.7818	85
90	0.0510	428.2	1.8065	0.0485	428.0	1.8025	0.0462	427.8	1.7987	0.0441	427.6	1.7951	90
95	0.0518	433.0	1.8196	0.0493	432.8	1.8156	0.0469	432.6	1.8119	0.0448	432.4	1.8082	95
100	0.0526	437.8	1.8326	0.0500	437.6	1.8287	0.0477	437.4	1.8249	0.0455	437.2	1.8213	100
105	0.0534	442.6	1.8455	0.0508	442.5	1.8416	0.0484	442.3	1.8379	0.0462	442.1	1.8343	105
110	0.0542	447.5	1.8583	0.0516	447.3	1.8544	0.0491	447.2	1.8507	0.0469	447.0	1.8471	110
115	0.0550	452.4	1.8711	0.0523	452.3	1.8672	0.0499	452.1	1.8635	0.0476	451.9	1.8599	115
120	0.0558	457.4	1.8838	0.0531	457.2	1.8799	0.0506	457.1	1.8762	0.0483	456.9	1.8726	120
125	0.0566	462.4	1.8963	0.0538	462.2	1.8925	0.0513	462.0	1.8888	0.0490	461.9	1.8853	125
130	0.0574	467.4	1.9088	0.0546	467.2	1.9050	0.0520	467.1	1.9013	0.0497	466.9	1.8978	130
135	0.0582	472.4	1.9213	0.0553	472.3	1.9174	0.0528	472.1	1.9138	0.0504	472.0	1.9103	135
140	0.0590	477.5	1.9336	0.0561	477.3	1.9298	0.0535	477.2	1.9262	0.0511	477.1	1.9227	140
145	0.0598	482.6	1.9459	0.0568	482.5	1.9421	0.0542	482.3	1.9385	0.0518	482.2	1.9350	145
150	0.0605	487.7	1.9581	0.0576	487.6	1.9543	0.0549	487.5	1.9507	0.0525	487.3	1.9472	150

Table 2 (continued)
DuPont™ ISCEON® MO79 (R-422A) Superheated Vapour—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/kg-K (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, kPa													
TEMP. °C	600			625			650			675			TEMP. °C
	(0.65°C)			(1.92°C)			(3.15°C)			(4.35°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0285)	(345.0)	(1.5317)	(0.0274)	(345.7)	(1.5315)	(0.0263)	(346.3)	(1.5313)	(0.0253)	(346.9)	(1.5311)	
5	0.0293	349.0	1.5460	0.0279	348.5	1.5417	0.0266	348.0	1.5374	0.0255	347.5	1.5333	5
10	0.0302	353.5	1.5621	0.0288	353.1	1.5579	0.0275	352.6	1.5538	0.0263	352.1	1.5498	10
15	0.0310	358.0	1.5780	0.0296	357.6	1.5739	0.0283	357.2	1.5699	0.0270	356.8	1.5660	15
20	0.0318	362.6	1.5935	0.0304	362.2	1.5895	0.0291	361.8	1.5856	0.0278	361.4	1.5818	20
25	0.0326	367.1	1.6088	0.0312	366.7	1.6048	0.0298	366.3	1.6010	0.0286	365.9	1.5973	25
30	0.0334	371.6	1.6238	0.0319	371.2	1.6200	0.0306	370.9	1.6162	0.0293	370.5	1.6126	30
35	0.0342	376.1	1.6386	0.0327	375.8	1.6349	0.0313	375.5	1.6312	0.0300	375.1	1.6276	35
40	0.0350	380.7	1.6533	0.0334	380.4	1.6496	0.0320	380.0	1.6459	0.0307	379.7	1.6424	40
45	0.0357	385.2	1.6678	0.0342	384.9	1.6641	0.0327	384.6	1.6605	0.0314	384.3	1.6570	45
50	0.0365	389.8	1.6821	0.0349	389.5	1.6784	0.0334	389.3	1.6749	0.0321	389.0	1.6715	50
55	0.0372	394.4	1.6962	0.0356	394.2	1.6926	0.0341	393.9	1.6891	0.0327	393.6	1.6857	55
60	0.0379	399.1	1.7102	0.0363	398.8	1.7066	0.0348	398.5	1.7032	0.0334	398.3	1.6999	60
65	0.0386	403.7	1.7241	0.0370	403.5	1.7205	0.0355	403.2	1.7171	0.0340	403.0	1.7138	65
70	0.0394	408.4	1.7378	0.0377	408.2	1.7343	0.0361	407.9	1.7309	0.0347	407.7	1.7277	70
75	0.0401	413.1	1.7514	0.0384	412.9	1.7479	0.0368	412.6	1.7446	0.0353	412.4	1.7414	75
80	0.0408	417.8	1.7649	0.0390	417.6	1.7615	0.0374	417.4	1.7581	0.0360	417.2	1.7549	80
85	0.0415	422.6	1.7783	0.0397	422.4	1.7749	0.0381	422.2	1.7716	0.0366	422.0	1.7684	85
90	0.0422	427.4	1.7916	0.0404	427.2	1.7882	0.0387	427.0	1.7849	0.0372	426.8	1.7817	90
95	0.0428	432.2	1.8047	0.0410	432.0	1.8014	0.0394	431.8	1.7981	0.0378	431.6	1.7950	95
100	0.0435	437.0	1.8178	0.0417	436.9	1.8145	0.0400	436.7	1.8112	0.0385	436.5	1.8081	100
105	0.0442	441.9	1.8308	0.0424	441.7	1.8275	0.0407	441.6	1.8242	0.0391	441.4	1.8211	105
110	0.0449	446.8	1.8437	0.0430	446.7	1.8404	0.0413	446.5	1.8372	0.0397	446.3	1.8341	110
115	0.0456	451.8	1.8565	0.0437	451.6	1.8532	0.0419	451.4	1.8500	0.0403	451.3	1.8469	115
120	0.0462	456.7	1.8692	0.0443	456.6	1.8659	0.0425	456.4	1.8628	0.0409	456.3	1.8597	120
125	0.0469	461.7	1.8819	0.0450	461.6	1.8786	0.0432	461.4	1.8754	0.0415	461.3	1.8724	125
130	0.0476	466.8	1.8944	0.0456	466.6	1.8911	0.0438	466.5	1.8880	0.0421	466.3	1.8850	130
135	0.0482	471.8	1.9069	0.0462	471.7	1.9036	0.0444	471.5	1.9005	0.0427	471.4	1.8975	135
140	0.0489	476.9	1.9193	0.0469	476.8	1.9160	0.0450	476.6	1.9129	0.0433	476.5	1.9099	140
145	0.0496	482.0	1.9316	0.0475	481.9	1.9284	0.0456	481.8	1.9253	0.0439	481.6	1.9223	145
150	0.0502	487.2	1.9439	0.0481	487.1	1.9406	0.0462	486.9	1.9375	0.0445	486.8	1.9345	150
155	0.0509	492.4	1.9560	0.0488	492.2	1.9528	0.0468	492.1	1.9497	0.0451	492.0	1.9467	155

ABSOLUTE PRESSURE, kPa													
TEMP. °C	700			725			750			775			TEMP. °C
	(5.51°C)			(6.64°C)			(7.74°C)			(8.82°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0244)	(347.5)	(1.5309)	(0.0236)	(348.0)	(1.5307)	(0.0228)	(348.5)	(1.5305)	(0.0220)	(349.1)	(1.5304)	
10	0.0251	351.7	1.5459	0.0241	351.2	1.5420	0.0231	350.68	1.5381	0.0222	350.2	1.5344	10
15	0.0259	356.3	1.5621	0.0248	355.9	1.5584	0.0238	355.4	1.5547	0.0229	354.9	1.5510	15
20	0.0267	360.9	1.5780	0.0256	360.5	1.5744	0.0246	360.1	1.5708	0.0236	359.7	1.5673	20
25	0.0274	365.6	1.5937	0.0263	365.2	1.5901	0.0253	364.8	1.5866	0.0243	364.4	1.5832	25
30	0.0281	370.2	1.6090	0.0270	369.8	1.6055	0.0260	369.4	1.6021	0.0250	369.1	1.5988	30
35	0.0288	374.8	1.6241	0.0277	374.4	1.6207	0.0266	374.1	1.6174	0.0256	373.7	1.6141	35
40	0.0295	379.4	1.6390	0.0283	379.1	1.6357	0.0273	378.8	1.6324	0.0263	378.4	1.6292	40
45	0.0301	384.0	1.6537	0.0290	383.7	1.6504	0.0279	383.4	1.6472	0.0269	383.1	1.6440	45
50	0.0308	388.7	1.6682	0.0296	388.4	1.6649	0.0285	388.1	1.6618	0.0275	387.8	1.6587	50
55	0.0315	393.3	1.6825	0.0303	393.1	1.6793	0.0292	392.8	1.6762	0.0281	392.5	1.6731	55
60	0.0321	398.0	1.6966	0.0309	397.8	1.6935	0.0298	397.5	1.6904	0.0287	397.2	1.6874	60
65	0.0327	402.7	1.7106	0.0315	402.5	1.7075	0.0304	402.2	1.7045	0.0293	402.0	1.7015	65
70	0.0334	407.4	1.7245	0.0321	407.2	1.7214	0.0310	407.0	1.7184	0.0299	406.7	1.7155	70
75	0.0340	412.2	1.7382	0.0327	412.0	1.7352	0.0315	411.7	1.7322	0.0304	411.5	1.7293	75
80	0.0346	417.0	1.7518	0.0333	416.7	1.7488	0.0321	416.5	1.7458	0.0310	416.3	1.7430	80
85	0.0352	421.8	1.7653	0.0339	421.5	1.7623	0.0327	421.3	1.7594	0.0316	421.1	1.7565	85
90	0.0358	426.6	1.7787	0.0345	426.4	1.7757	0.0333	426.2	1.7728	0.0321	426.0	1.7700	90
95	0.0364	431.4	1.7919	0.0351	431.2	1.7890	0.0338	431.0	1.7861	0.0327	430.8	1.7833	95
100	0.0370	436.3	1.8051	0.0357	436.1	1.8021	0.0344	435.9	1.7993	0.0332	435.7	1.7965	100
105	0.0376	441.2	1.8181	0.0362	441.0	1.8152	0.0350	440.8	1.8124	0.0338	440.7	1.8096	105
110	0.0382	446.1	1.8311	0.0368	446.0	1.8282	0.0355	445.8	1.8254	0.0343	445.6	1.8226	110
115	0.0388	451.1	1.8440	0.0374	450.9	1.8411	0.0361	450.8	1.8383	0.0349	450.6	1.8355	115
120	0.0394	456.1	1.8567	0.0380	455.9	1.8539	0.0366	455.8	1.8511	0.0354	455.6	1.8484	120
125	0.0400	461.1	1.8694	0.0385	461.0	1.8666	0.0372	460.8	1.8638	0.0359	460.6	1.8611	125
130	0.0405	466.2	1.8820	0.0391	466.0	1.8792	0.0377	465.9	1.8764	0.0365	465.7	1.8737	130
135	0.0411	471.2	1.8945	0.0396	471.1	1.8917	0.0383	470.9	1.8890	0.0370	470.8	1.8863	135
140	0.0417	476.4	1.9070	0.0402	476.2	1.9042	0.0388	476.1	1.9014	0.0375	475.9	1.8988	140
145	0.0423	481.5	1.9194	0.0408	481.4	1.9165	0.0393	481.2	1.9138	0.0380	481.1	1.9112	145
150	0.0428	486.7	1.9316	0.0413	486.5	1.9288	0.0399	486.4	1.9261	0.0386	486.3	1.9235	150
155	0.0434	491.9	1.9439	0.0419	491.7	1.9411	0.0404	491.6	1.9383	0.0391	491.5	1.9357	155
160	0.0440	497.1	1.9560	0.0424	497.0	1.9532	0.0410	496.8	1.9505	0.0396	496.7	1.9479	160

Table 2 (continued)
DuPont™ ISCEON® MO79 (R-422A) Superheated Vapour—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/kg-K (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, kPa													
TEMP. °C	800			850			900			950			TEMP. °C
	(9.87°C)			(11.90°C)			(13.84°C)			(15.71°C)			
	V (0.0213)	H (349.5)	S (1.5302)	V (0.0200)	H (350.5)	S (1.5299)	V (0.0188)	H (351.4)	S (1.5296)	V (0.0178)	H (352.2)	S (1.5292)	
10	0.0213	349.7	1.5306	—	—	—	—	—	—	—	—	—	10
15	0.0220	354.5	1.5475	0.0204	353.5	1.5404	0.0190	352.5	1.5335	—	—	—	15
20	0.0227	359.2	1.5638	0.0211	358.3	1.5571	0.0197	357.4	1.5505	0.0184	356.5	1.5440	20
25	0.0234	364.0	1.5799	0.0218	363.1	1.5733	0.0203	362.3	1.5669	0.0190	361.4	1.5607	25
30	0.0241	368.7	1.5955	0.0224	367.9	1.5892	0.0209	367.1	1.5830	0.0196	366.3	1.5770	30
35	0.0247	373.4	1.6109	0.0230	372.7	1.6047	0.0215	371.9	1.5987	0.0202	371.2	1.5929	35
40	0.0253	378.1	1.6261	0.0236	377.4	1.6200	0.0221	376.7	1.6142	0.0207	376.0	1.6085	40
45	0.0259	382.8	1.6410	0.0242	382.2	1.6350	0.0227	381.5	1.6293	0.0213	380.9	1.6238	45
50	0.0265	387.5	1.6557	0.0248	386.9	1.6499	0.0232	386.3	1.6443	0.0218	385.7	1.6389	50
55	0.0271	392.2	1.6702	0.0254	391.7	1.6644	0.0238	391.1	1.6589	0.0223	390.5	1.6537	55
60	0.0277	397.0	1.6845	0.0259	396.4	1.6788	0.0243	395.9	1.6734	0.0229	395.3	1.6682	60
65	0.0283	401.7	1.6986	0.0265	401.2	1.6931	0.0248	400.7	1.6877	0.0234	400.2	1.6826	65
70	0.0289	406.5	1.7126	0.0270	406.0	1.7071	0.0253	405.5	1.7019	0.0239	405.0	1.6968	70
75	0.0294	411.3	1.7265	0.0275	410.8	1.7211	0.0259	410.3	1.7159	0.0244	409.9	1.7109	75
80	0.0300	416.1	1.7402	0.0281	415.6	1.7348	0.0264	415.2	1.7297	0.0248	414.7	1.7248	80
85	0.0305	420.9	1.7538	0.0286	420.5	1.7485	0.0269	420.0	1.7434	0.0253	419.6	1.7385	85
90	0.0311	425.8	1.7672	0.0291	425.4	1.7620	0.0274	424.9	1.7569	0.0258	424.5	1.7521	90
95	0.0316	430.6	1.7806	0.0296	430.2	1.7754	0.0278	429.8	1.7704	0.0263	429.4	1.7656	95
100	0.0321	435.5	1.7938	0.0301	435.2	1.7886	0.0283	434.8	1.7837	0.0267	434.4	1.7790	100
105	0.0327	440.5	1.8069	0.0306	440.1	1.8018	0.0288	439.7	1.7969	0.0272	439.4	1.7922	105
110	0.0332	445.4	1.8200	0.0311	445.1	1.8149	0.0293	444.7	1.8100	0.0276	444.4	1.8053	110
115	0.0337	450.4	1.8329	0.0316	450.1	1.8278	0.0298	449.7	1.8230	0.0281	449.4	1.8184	115
120	0.0342	455.4	1.8457	0.0321	455.1	1.8407	0.0302	454.8	1.8359	0.0285	454.4	1.8313	120
125	0.0348	460.5	1.8585	0.0326	460.2	1.8535	0.0307	459.8	1.8487	0.0290	459.5	1.8441	125
130	0.0353	465.5	1.8711	0.0331	465.2	1.8661	0.0312	464.9	1.8614	0.0294	464.6	1.8569	130
135	0.0358	470.6	1.8837	0.0336	470.3	1.8787	0.0316	470.1	1.8740	0.0299	469.7	1.8695	135
140	0.0363	475.8	1.8962	0.0341	475.5	1.8912	0.0321	475.2	1.8865	0.0303	474.9	1.8821	140
145	0.0368	480.9	1.9086	0.0345	480.7	1.9037	0.0325	480.4	1.8990	0.0308	480.1	1.8945	145
150	0.0373	486.1	1.9209	0.0350	485.8	1.9160	0.0330	485.6	1.9113	0.0312	485.3	1.9069	150
155	0.0378	491.3	1.9332	0.0355	491.1	1.9283	0.0335	490.8	1.9236	0.0316	490.5	1.9192	155
160	0.0383	496.6	1.9453	0.0360	496.3	1.9405	0.0339	496.1	1.9358	0.0321	495.8	1.9314	160

ABSOLUTE PRESSURE, kPa													
TEMP. °C	1000			1100			1200			1300			TEMP. °C
	(17.5°C)			(20.89°C)			(24.06°C)			(27.04°C)			
	V (0.0168)	H (353.0)	S (1.529)	V (0.0152)	H (354.4)	S (1.5282)	V (0.0138)	H (355.6)	S (1.5275)	V (0.0127)	H (356.7)	S (1.5267)	
20	0.0172	355.5	1.5376	—	—	—	—	—	—	—	—	—	20
25	0.0178	360.5	1.5546	0.0157	358.6	1.5427	0.0139	356.6	1.5309	—	—	—	25
30	0.0184	365.5	1.5711	0.0163	363.8	1.5597	0.0145	361.9	1.5486	0.0130	359.9	1.5375	30
35	0.0190	370.4	1.5873	0.0168	368.8	1.5763	0.0151	367.1	1.5656	0.0135	365.3	1.5552	35
40	0.0195	375.3	1.6030	0.0174	373.8	1.5924	0.0156	372.3	1.5822	0.0140	370.6	1.5723	40
45	0.0200	380.2	1.6185	0.0179	378.8	1.6082	0.0161	377.4	1.5983	0.0145	375.9	1.5888	45
50	0.0206	385.1	1.6336	0.0184	383.8	1.6236	0.0165	382.4	1.6141	0.0150	381.0	1.6049	50
55	0.0211	389.9	1.6485	0.0189	388.7	1.6388	0.0170	387.4	1.6295	0.0154	386.1	1.6206	55
60	0.0216	394.8	1.6632	0.0193	393.6	1.6537	0.0174	392.4	1.6446	0.0158	391.2	1.6360	60
65	0.0221	399.6	1.6777	0.0198	398.5	1.6683	0.0179	397.4	1.6595	0.0163	396.3	1.6510	65
70	0.0225	404.5	1.6920	0.0202	403.5	1.6828	0.0183	402.4	1.6741	0.0167	401.3	1.6658	70
75	0.0230	409.4	1.7061	0.0207	408.4	1.6970	0.0187	407.4	1.6885	0.0171	406.4	1.6804	75
80	0.0235	414.3	1.7201	0.0211	413.3	1.7111	0.0191	412.4	1.7027	0.0175	411.4	1.6948	80
85	0.0239	419.2	1.7339	0.0215	418.3	1.7250	0.0195	417.4	1.7168	0.0178	416.4	1.7090	85
90	0.0244	424.1	1.7475	0.0220	423.2	1.7388	0.0199	422.4	1.7306	0.0182	421.5	1.7230	90
95	0.0248	429.0	1.7610	0.0224	428.2	1.7524	0.0203	427.4	1.7444	0.0186	426.6	1.7368	95
100	0.0253	434.0	1.7744	0.0228	433.2	1.7659	0.0207	432.4	1.7580	0.0190	431.6	1.7505	100
105	0.0257	439.0	1.7877	0.0232	438.2	1.7793	0.0211	437.5	1.7714	0.0193	436.7	1.7640	105
110	0.0262	444.0	1.8009	0.0236	443.3	1.7925	0.0215	442.6	1.7847	0.0197	441.8	1.7774	110
115	0.0266	449.0	1.8140	0.0240	448.3	1.8056	0.0219	447.6	1.7979	0.0200	446.9	1.7907	115
120	0.0270	454.1	1.8269	0.0244	453.4	1.8187	0.0222	452.8	1.8110	0.0204	452.1	1.8039	120
125	0.0275	459.2	1.8398	0.0248	458.5	1.8316	0.0226	457.9	1.8240	0.0207	457.2	1.8169	125
130	0.0279	464.3	1.8525	0.0252	463.7	1.8444	0.0230	463.0	1.8369	0.0211	462.4	1.8298	130
135	0.0283	469.4	1.8652	0.0256	468.8	1.8571	0.0233	468.2	1.8496	0.0214	467.6	1.8426	135
140	0.0287	474.6	1.8778	0.0260	474.0	1.8697	0.0237	473.4	1.8623	0.0217	472.8	1.8554	140
145	0.0291	479.8	1.8903	0.0264	479.2	1.8823	0.0240	478.7	1.8749	0.0221	478.1	1.8680	145
150	0.0296	485.0	1.9027	0.0267	484.5	1.8947	0.0244	483.9	1.8874	0.0224	483.4	1.8805	150
155	0.0300	490.3	1.9150	0.0271	489.7	1.9071	0.0247	489.2	1.8998	0.0227	488.7	1.8930	155
160	0.0304	495.5	1.9272	0.0275	495.0	1.9194	0.0251	494.5	1.9121	0.0231	494.0	1.9053	160
165	0.0308	500.8	1.9394	0.0279	500.3	1.9316	0.0254	499.8	1.9243	0.0234	499.3	1.9176	165
170	0.0312	506.2	1.9515	0.0283	505.7	1.9437	0.0258	505.2	1.9365	0.0237	504.7	1.9298	170

Table 2 (continued)
DuPont™ ISCEON® MO79 (R-422A) Superheated Vapour—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/kg·K (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, kPa													
TEMP. °C	1400			1500			1600			1700			TEMP. °C
	(29.85°C)			(32.52°C)			(35.05°C)			(37.47°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0116)	(357.6)	(1.5258)	(0.0108)	(358.4)	(1.5248)	(0.0100)	(359.2)	(1.5238)	(0.0093)	(359.8)	(1.5227)	
30	0.0117	357.8	1.5263	—	—	—	—	—	—	—	—	—	30
35	0.0122	363.4	1.5448	0.0110	361.4	1.5343	—	—	—	—	—	—	35
40	0.0127	368.9	1.5625	0.0115	367.1	1.5527	0.0105	365.1	1.5429	0.0095	362.9	1.5328	40
45	0.0132	374.3	1.5795	0.0120	372.6	1.5703	0.0110	370.9	1.5612	0.0100	369.0	1.5519	45
50	0.0136	379.6	1.5960	0.0124	378.1	1.5872	0.0114	376.5	1.5786	0.0105	374.8	1.5700	50
55	0.0141	384.8	1.6120	0.0129	383.4	1.6036	0.0118	381.9	1.5954	0.0109	380.4	1.5873	55
60	0.0145	390.0	1.6276	0.0133	388.7	1.6196	0.0122	387.3	1.6117	0.0113	385.9	1.6040	60
65	0.0149	395.1	1.6429	0.0137	393.9	1.6351	0.0126	392.6	1.6276	0.0117	391.3	1.6201	65
70	0.0153	400.2	1.6580	0.0140	399.1	1.6504	0.0130	397.9	1.6430	0.0120	396.7	1.6359	70
75	0.0157	405.3	1.6727	0.0144	404.2	1.6653	0.0133	403.1	1.6582	0.0124	402.0	1.6513	75
80	0.0160	410.4	1.6872	0.0148	409.4	1.6800	0.0137	408.4	1.6731	0.0127	407.3	1.6663	80
85	0.0164	415.5	1.7016	0.0151	414.5	1.6945	0.0140	413.6	1.6877	0.0130	412.6	1.6811	85
90	0.0167	420.6	1.7157	0.0155	419.7	1.7087	0.0143	418.7	1.7021	0.0134	417.8	1.6956	90
95	0.0171	425.7	1.7296	0.0158	424.8	1.7228	0.0147	423.9	1.7163	0.0137	423.0	1.7100	95
100	0.0174	430.8	1.7434	0.0161	430.0	1.7367	0.0150	429.1	1.7303	0.0140	428.3	1.7241	100
105	0.0178	435.9	1.7570	0.0165	435.1	1.7504	0.0153	434.3	1.7441	0.0143	433.5	1.7380	105
110	0.0181	441.1	1.7705	0.0168	440.3	1.7640	0.0156	439.5	1.7578	0.0146	438.7	1.7518	110
115	0.0185	446.2	1.7839	0.0171	445.5	1.7774	0.0159	444.7	1.7713	0.0149	444.0	1.7654	115
120	0.0188	451.4	1.7971	0.0174	450.7	1.7907	0.0162	450.0	1.7846	0.0151	449.2	1.7788	120
125	0.0191	456.6	1.8102	0.0177	455.9	1.8039	0.0165	455.2	1.7979	0.0154	454.5	1.7921	125
130	0.0194	461.8	1.8232	0.0180	461.1	1.8169	0.0168	460.5	1.8110	0.0157	459.8	1.8053	130
135	0.0198	467.0	1.8361	0.0183	466.4	1.8299	0.0171	465.7	1.8240	0.0160	465.1	1.8184	135
140	0.0201	472.2	1.8489	0.0186	471.6	1.8427	0.0174	471.0	1.8369	0.0163	470.4	1.8313	140
145	0.0204	477.5	1.8615	0.0189	476.9	1.8554	0.0177	476.3	1.8497	0.0165	475.7	1.8442	145
150	0.0207	482.8	1.8741	0.0192	482.2	1.8681	0.0179	481.7	1.8623	0.0168	481.1	1.8569	150
155	0.0210	488.1	1.8866	0.0195	487.6	1.8806	0.0182	487.0	1.8749	0.0171	486.5	1.8695	155
160	0.0213	493.4	1.8990	0.0198	492.9	1.8930	0.0185	492.4	1.8874	0.0173	491.8	1.8820	160
165	0.0216	498.8	1.9113	0.0201	498.3	1.9054	0.0188	497.8	1.8998	0.0176	497.3	1.8944	165
170	0.0219	504.2	1.9235	0.0204	503.7	1.9176	0.0190	503.2	1.9121	0.0178	502.7	1.9068	170
175	0.0222	509.6	1.9357	0.0207	509.1	1.9298	0.0193	508.6	1.9243	0.0181	508.1	1.9190	175
180	0.0225	515.0	1.9477	0.0210	514.6	1.9419	0.0196	514.1	1.9364	0.0184	513.6	1.9312	180

ABSOLUTE PRESSURE, kPa													
TEMP. °C	1800			1900			2000			2200			TEMP. °C
	(39.78°C)			(42.00°C)			(44.13°C)			(48.16)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0087)	(360.3)	(1.5214)	(0.0081)	(360.7)	(1.5201)	(0.0078)	(361.0)	(1.5186)	(0.0067)	(361.4)	(1.5153)	
40	0.0087	360.6	1.5224	—	—	—	—	—	—	—	—	—	40
45	0.0092	366.9	1.5425	0.0084	364.7	1.5328	0.0077	362.3	1.5225	—	—	—	45
50	0.0096	373.0	1.5614	0.0089	371.1	1.5526	0.0082	369.0	1.5435	0.0069	364.2	1.5241	50
55	0.0101	378.8	1.5792	0.0093	377.1	1.5711	0.0086	375.3	1.5629	0.0074	371.3	1.5458	55
60	0.0104	384.5	1.5963	0.0097	382.9	1.5887	0.0090	381.3	1.5811	0.0078	377.8	1.5656	60
65	0.0108	390.0	1.6128	0.0101	388.6	1.6056	0.0094	387.2	1.5985	0.0082	384.0	1.5841	65
70	0.0112	395.5	1.6289	0.0104	394.2	1.6220	0.0097	392.8	1.6152	0.0085	390.0	1.6017	70
75	0.0115	400.9	1.6445	0.0107	399.7	1.6379	0.0100	398.4	1.6314	0.0088	395.9	1.6185	75
80	0.0118	406.2	1.6598	0.0111	405.1	1.6534	0.0104	404.0	1.6471	0.0091	401.6	1.6348	80
85	0.0122	411.5	1.6747	0.0114	410.5	1.6685	0.0107	409.4	1.6625	0.0094	407.2	1.6507	85
90	0.0125	416.8	1.6894	0.0117	415.8	1.6834	0.0110	414.8	1.6775	0.0097	412.8	1.6661	90
95	0.0128	422.1	1.7039	0.0120	421.2	1.6980	0.0113	420.2	1.6923	0.0100	418.3	1.6812	95
100	0.0131	427.4	1.7181	0.0123	426.5	1.7124	0.0115	425.6	1.7068	0.0103	423.8	1.6960	100
105	0.0134	432.7	1.7322	0.0125	431.8	1.7265	0.0118	431.0	1.7210	0.0105	429.2	1.7105	105
110	0.0136	437.9	1.7460	0.0128	437.1	1.7405	0.0121	436.3	1.7351	0.0108	434.7	1.7248	110
115	0.0139	443.2	1.7597	0.0131	442.5	1.7543	0.0123	441.7	1.7490	0.0110	440.1	1.7389	115
120	0.0142	448.5	1.7733	0.0134	447.8	1.7679	0.0126	447.0	1.7627	0.0113	445.5	1.7528	120
125	0.0145	453.8	1.7866	0.0136	453.1	1.7813	0.0128	452.4	1.7762	0.0115	451.0	1.7665	125
130	0.0147	459.1	1.7999	0.0139	458.4	1.7947	0.0131	457.8	1.7896	0.0117	456.4	1.7800	130
135	0.0150	464.4	1.8130	0.0141	463.8	1.8079	0.0133	463.1	1.8029	0.0120	461.8	1.7934	135
140	0.0153	469.8	1.8260	0.0144	469.2	1.8209	0.0136	468.5	1.8160	0.0122	467.2	1.8067	140
145	0.0155	475.1	1.8389	0.0146	474.5	1.8338	0.0138	473.9	1.8290	0.0124	472.7	1.8198	145
150	0.0158	480.5	1.8517	0.0149	479.9	1.8467	0.0141	479.3	1.8419	0.0126	478.2	1.8328	150
155	0.0160	485.9	1.8643	0.0151	485.3	1.8594	0.0143	484.8	1.8546	0.0129	483.6	1.8456	155
160	0.0163	491.3	1.8769	0.0154	490.8	1.8720	0.0145	490.2	1.8673	0.0131	489.1	1.8584	160
165	0.0165	496.7	1.8893	0.0156	496.2	1.8845	0.0148	495.7	1.8798	0.0133	494.6	1.8710	165
170	0.0168	502.2	1.9017	0.0158	501.7	1.8969	0.0150	501.2	1.8923	0.0135	500.1	1.8835	170
175	0.0170	507.7	1.9140	0.0161	507.2	1.9092	0.0152	506.7	1.9046	0.0137	505.7	1.8959	175
180	0.0173	513.1	1.9262	0.0163	512.7	1.9214	0.0154	512.2	1.9169	0.0139	511.2	1.9083	180
185	0.0175	518.7	1.9383	0.0165	518.2	1.9336	0.0157	517.7	1.9290	0.0141	516.8	1.9205	185
190	0.0178	524.2	1.9503	0.0168	523.7	1.9456	0.0159	523.3	1.9411	0.0143	522.4	1.9326	190

Table 2 (continued)
DuPont™ ISCEON® MO79 (R-422A) Superheated Vapour—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/kg-K (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, kPa

TEMP. °C	2400			2600			2800			3000			TEMP. °C
	(51.91°C)			(55.42°C)			(58.71°C)			(61.82°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0059)	(361.4)	(1.5114)	(0.0053)	(361.0)	(1.5067)	(0.0047)	(360.0)	(1.5009)	(0.0041)	(358.5)	(1.4938)	
50	—	—	—	—	—	—	—	—	—	—	—	—	50
55	0.0063	366.5	1.5270	—	—	—	—	—	—	—	—	—	55
60	0.0067	373.9	1.5493	0.0058	369.1	1.5313	0.0048	362.9	1.5095	—	—	—	60
65	0.0071	380.6	1.5694	0.0062	376.7	1.5539	0.0054	372.0	1.5368	0.0046	366.2	1.5165	65
70	0.0075	387.0	1.5881	0.0066	383.6	1.5742	0.0058	379.8	1.5595	0.0050	375.3	1.5434	70
75	0.0078	393.1	1.6058	0.0069	390.1	1.5930	0.0061	386.8	1.5798	0.0054	383.1	1.5660	75
80	0.0081	399.0	1.6228	0.0072	396.3	1.6108	0.0065	393.4	1.5987	0.0058	390.2	1.5862	80
85	0.0084	404.9	1.6392	0.0075	402.4	1.6278	0.0067	399.8	1.6165	0.0061	396.9	1.6050	85
90	0.0087	410.6	1.6550	0.0078	408.3	1.6442	0.0070	405.9	1.6335	0.0063	403.4	1.6228	90
95	0.0090	416.2	1.6705	0.0081	414.1	1.6601	0.0073	411.9	1.6499	0.0066	409.6	1.6398	95
100	0.0092	421.9	1.6856	0.0083	419.9	1.6756	0.0075	417.8	1.6659	0.0069	415.6	1.6562	100
105	0.0095	427.4	1.7005	0.0086	425.6	1.6908	0.0078	423.6	1.6813	0.0071	421.6	1.6721	105
110	0.0097	433.0	1.7150	0.0088	431.2	1.7056	0.0080	429.4	1.6965	0.0073	427.5	1.6876	110
115	0.0099	438.5	1.7293	0.0090	436.8	1.7201	0.0082	435.1	1.7113	0.0075	433.3	1.7027	115
120	0.0102	444.0	1.7434	0.0092	442.4	1.7344	0.0084	440.8	1.7258	0.0077	439.1	1.7175	120
125	0.0104	449.5	1.7573	0.0095	448.0	1.7485	0.0086	446.4	1.7401	0.0079	444.8	1.7320	125
130	0.0106	455.0	1.7710	0.0097	453.5	1.7624	0.0088	452.1	1.7542	0.0081	450.6	1.7462	130
135	0.0108	460.5	1.7845	0.0099	459.1	1.7761	0.0090	457.7	1.7680	0.0083	456.2	1.7603	135
140	0.0111	465.9	1.7979	0.0101	464.6	1.7896	0.0092	463.3	1.7817	0.0085	461.9	1.7741	140
145	0.0113	471.4	1.8111	0.0103	470.2	1.8030	0.0094	468.9	1.7952	0.0087	467.6	1.7877	145
150	0.0115	477.0	1.8242	0.0105	475.7	1.8162	0.0096	474.5	1.8085	0.0089	473.3	1.8012	150
155	0.0117	482.5	1.8372	0.0107	481.3	1.8292	0.0098	480.1	1.8217	0.0091	478.9	1.8145	155
160	0.0119	488.0	1.8500	0.0109	486.9	1.8422	0.0100	485.7	1.8347	0.0092	484.6	1.8276	160
165	0.0121	493.5	1.8627	0.0111	492.4	1.8550	0.0102	491.3	1.8476	0.0094	490.2	1.8406	165
170	0.0123	499.1	1.8754	0.0112	498.0	1.8677	0.0104	497.0	1.8604	0.0096	495.9	1.8535	170
175	0.0125	504.7	1.8879	0.0114	503.6	1.8803	0.0105	502.6	1.8731	0.0097	501.6	1.8663	175
180	0.0127	510.2	1.9002	0.0116	509.3	1.8927	0.0107	508.3	1.8856	0.0099	507.3	1.8789	180
185	0.0129	515.8	1.9125	0.0118	514.9	1.9051	0.0109	513.9	1.8981	0.0101	513.0	1.8914	185
190	0.0131	521.5	1.9247	0.0120	520.5	1.9174	0.0110	519.6	1.9104	0.0102	518.7	1.9038	190
195	0.0132	527.1	1.9369	0.0121	526.2	1.9295	0.0112	525.3	1.9226	0.0104	524.4	1.9161	195
200	0.0134	532.8	1.9489	0.0123	531.9	1.9416	0.0114	531.0	1.9348	0.0106	530.1	1.9283	200

ABSOLUTE PRESSURE, kPa

TEMP. °C	3200			3400			()			()			TEMP. °C
	(64.74°C)			(67.49°C)			()			()			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0036)	(356.1)	(1.4843)	(0.0031)	(352.2)	(1.4708)	()	()	()	()	()	()	
65	0.0037	357.1	1.4872	—	—	—							65
70	0.0043	369.9	1.5248	0.0036	362.3	1.5004							70
75	0.0048	378.9	1.5510	0.0042	373.9	1.5340							75
80	0.0051	386.7	1.5732	0.0046	382.8	1.5593							80
85	0.0055	393.9	1.5933	0.0049	390.6	1.5812							85
90	0.0057	400.6	1.6120	0.0052	397.7	1.6010							90
95	0.0060	407.1	1.6297	0.0055	404.5	1.6196							95
100	0.0063	413.4	1.6467	0.0057	411.0	1.6372							100
105	0.0065	419.5	1.6630	0.0060	417.4	1.6540							105
110	0.0067	425.6	1.6789	0.0062	423.6	1.6703							110
115	0.0069	431.5	1.6943	0.0064	429.6	1.6860							115
120	0.0071	437.4	1.7094	0.0066	435.6	1.7014							120
125	0.0073	443.2	1.7241	0.0068	441.6	1.7164							125
130	0.0075	449.0	1.7386	0.0070	447.5	1.7311							130
135	0.0077	454.8	1.7528	0.0071	453.3	1.7455							135
140	0.0079	460.5	1.7668	0.0073	459.1	1.7597							140
145	0.0081	466.3	1.7806	0.0075	464.9	1.7736							145
150	0.0082	472.0	1.7942	0.0077	470.7	1.7874							150
155	0.0084	477.7	1.8076	0.0078	476.5	1.8009							155
160	0.0086	483.4	1.8208	0.0080	482.2	1.8143							160
165	0.0087	489.1	1.8339	0.0082	488.0	1.8275							165
170	0.0089	494.8	1.8469	0.0083	493.7	1.8406							170
175	0.0091	500.5	1.8597	0.0085	499.5	1.8535							175
180	0.0092	506.3	1.8724	0.0086	505.3	1.8663							180
185	0.0094	512.0	1.8850	0.0088	511.0	1.8789							185
190	0.0095	517.7	1.8975	0.0089	516.8	1.8915							190
195	0.0097	523.5	1.9098	0.0091	522.6	1.9039							195
200	0.0098	529.3	1.9221	0.0092	528.4	1.9162							200
205	0.0100	535.0	1.9342	0.0093	534.2	1.9284							205
210	0.0101	540.8	1.9463	0.0095	540.0	1.9405							210
215	0.0103	546.7	1.9583	0.0096	545.8	1.9525							215



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