

PHỤ LỤC 7: BẢNG TRA MÔI CHẤT R134a
HFC-134a Saturation Properties—Temperature Table

TEMP. °C	PRESSURE kPa (abs)	VOLUME m ³ /kg		DENSITY kg/m ³		ENTHALPY kJ/kg			ENTROPY kJ/(kg)(K)		TEMP. °C
		LIQUID v _f	VAPOR v _g	LIQUID 1/v _f	VAPOR 1/v _g	LIQUID h _f	LATENT h _{fg}	VAPOR h _g	LIQUID s _f	VAPOR s _g	
-100	0.57	0.0006	25.0000	1580.5	0.040	77.3	259.9	337.2	0.4448	1.9460	-100
-99	0.63	0.0006	22.7273	1577.8	0.044	78.4	259.4	337.8	0.4514	1.9407	-99
-98	0.70	0.0006	20.4082	1575.0	0.049	79.6	258.8	338.4	0.4581	1.9356	-98
-97	0.77	0.0006	18.5185	1572.3	0.054	80.7	258.2	339.0	0.4646	1.9306	-97
-96	0.86	0.0006	16.9492	1569.5	0.059	81.9	257.7	339.6	0.4711	1.9257	-96
-95	0.95	0.0006	15.3846	1566.8	0.065	83.0	257.1	340.1	0.4776	1.9209	-95
-94	1.04	0.0006	13.8889	1564.1	0.072	84.2	256.6	340.7	0.4841	1.9161	-94
-93	1.15	0.0006	12.6582	1561.3	0.079	85.3	256.0	341.3	0.4905	1.9115	-93
-92	1.27	0.0006	11.6279	1558.6	0.086	86.5	255.4	341.9	0.4968	1.9070	-92
-91	1.40	0.0006	10.6383	1555.8	0.094	87.6	254.9	342.5	0.5032	1.9025	-91
-90	1.53	0.0006	9.7087	1553.1	0.103	88.8	254.3	343.1	0.5095	1.8982	-90
-89	1.68	0.0006	8.9286	1550.4	0.112	89.9	253.8	343.7	0.5158	1.8939	-89
-88	1.84	0.0006	8.1967	1547.6	0.122	91.1	253.2	344.3	0.5220	1.8898	-88
-87	2.02	0.0006	7.5188	1544.9	0.133	92.3	252.7	344.9	0.5282	1.8857	-87
-86	2.20	0.0006	6.8966	1542.1	0.145	93.4	252.1	345.5	0.5344	1.8817	-86
-85	2.41	0.0006	6.3291	1539.4	0.158	94.6	251.6	346.2	0.5406	1.8778	-85
-84	2.63	0.0007	5.8480	1536.7	0.171	95.7	251.0	346.8	0.5467	1.8739	-84
-83	2.86	0.0007	5.4054	1533.9	0.185	96.9	250.5	347.4	0.5528	1.8702	-83
-82	3.11	0.0007	4.9751	1531.2	0.201	98.0	249.9	348.0	0.5589	1.8665	-82
-81	3.39	0.0007	4.6083	1528.5	0.217	99.2	249.4	348.6	0.5650	1.8629	-81
-80	3.68	0.0007	4.2553	1525.7	0.235	100.4	248.8	349.2	0.5710	1.8594	-80
-79	3.99	0.0007	3.9526	1523.0	0.253	101.5	248.3	349.8	0.5770	1.8559	-79
-78	4.33	0.0007	3.6630	1520.2	0.273	102.7	247.7	350.4	0.5830	1.8525	-78
-77	4.69	0.0007	3.3898	1517.5	0.295	103.9	247.2	351.1	0.5890	1.8492	-77
-76	5.07	0.0007	3.1546	1514.8	0.317	105.0	246.6	351.7	0.5949	1.846	-76
-75	5.48	0.0007	2.9326	1512.0	0.341	106.2	246.1	352.3	0.6009	1.8428	-75
-74	5.92	0.0007	2.7248	1509.3	0.367	107.4	245.5	352.9	0.6068	1.8397	-74
-73	6.39	0.0007	2.5381	1506.5	0.394	108.6	245.0	353.5	0.6126	1.8366	-73
-72	6.89	0.0007	2.3641	1503.8	0.423	109.7	244.4	354.2	0.6185	1.8336	-72
-71	7.42	0.0007	2.2075	1501.0	0.453	110.9	243.9	354.8	0.6243	1.8307	-71
-70	7.98	0.0007	2.0576	1498.3	0.486	112.1	243.3	355.4	0.6302	1.8279	-70
-69	8.58	0.0007	1.9231	1495.5	0.520	113.3	242.8	356.0	0.6360	1.8251	-69
-68	9.22	0.0007	1.7986	1492.8	0.556	114.5	242.2	356.6	0.6417	1.8223	-68
-67	9.89	0.0007	1.6835	1490.0	0.594	115.6	241.6	357.3	0.6475	1.8196	-67
-66	10.61	0.0007	1.5773	1487.3	0.634	116.8	241.1	357.9	0.6532	1.817	-66
-65	11.37	0.0007	1.4771	1484.5	0.677	118.0	240.5	358.5	0.6590	1.8144	-65
-64	12.18	0.0007	1.3850	1481.8	0.722	119.2	239.9	359.2	0.6647	1.8119	-64
-63	13.03	0.0007	1.3004	1479.0	0.769	120.4	239.4	359.8	0.6704	1.8095	-63
-62	13.93	0.0007	1.2210	1476.3	0.819	121.6	238.8	360.4	0.6760	1.8071	-62
-61	14.88	0.0007	1.1481	1473.5	0.871	122.8	238.2	361.0	0.6817	1.8047	-61
-60	15.89	0.0007	1.0799	1470.7	0.926	124.0	237.7	361.7	0.6873	1.8024	-60
-59	16.95	0.0007	1.0163	1468.0	0.984	125.2	237.1	362.3	0.6929	1.8001	-59
-58	18.07	0.0007	0.9579	1465.2	1.044	126.4	236.5	362.9	0.6985	1.7979	-58
-57	19.25	0.0007	0.9025	1462.4	1.108	127.6	236.0	363.6	0.7041	1.7958	-57
-56	20.49	0.0007	0.8511	1459.6	1.175	128.8	235.4	364.2	0.7097	1.7937	-56
-55	21.80	0.0007	0.8032	1456.9	1.245	130.0	234.8	364.8	0.7152	1.7916	-55
-54	23.17	0.0007	0.7587	1454.1	1.318	131.2	234.2	365.4	0.7208	1.7896	-54
-53	24.62	0.0007	0.7168	1451.3	1.395	132.4	233.6	366.1	0.7263	1.7876	-53
-52	26.14	0.0007	0.6775	1448.5	1.476	133.7	233.1	366.7	0.7318	1.7857	-52
-51	27.73	0.0007	0.6410	1445.7	1.560	134.9	232.5	367.3	0.7373	1.7838	-51
-50	29.41	0.0007	0.6068	1442.9	1.648	136.1	231.9	368.0	0.7428	1.7819	-50
-49	31.16	0.0007	0.5747	1440.1	1.740	137.3	231.3	368.6	0.7482	1.7801	-49
-48	33.00	0.0007	0.5447	1437.3	1.836	138.5	230.7	369.2	0.7537	1.7783	-48
-47	34.93	0.0007	0.5165	1434.5	1.936	139.8	230.1	369.9	0.7591	1.7766	-47
-46	36.95	0.0007	0.4902	1431.6	2.040	141.0	229.5	370.5	0.7645	1.7749	-46
-45	39.06	0.0007	0.4653	1428.8	2.149	142.2	228.9	371.1	0.7699	1.7732	-45
-44	41.27	0.0007	0.4419	1426.0	2.263	143.5	228.3	371.8	0.7753	1.7716	-44
-43	43.58	0.0007	0.4198	1423.2	2.382	144.7	227.7	372.4	0.7806	1.77	-43
-42	45.99	0.0007	0.3992	1420.3	2.505	145.9	227.1	373.0	0.7860	1.7685	-42
-41	48.51	0.0007	0.3798	1417.5	2.633	147.2	226.5	373.7	0.7913	1.767	-41

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		LIQUID v _f	VAPOR v _g	LIQUID 1/v _f	VAPOR 1/v _g	LIQUID h _f	LATENT h _{fg}	VAPOR h _g	LIQUID s _f	VAPOR s _g	
-40	51.14	0.0007	0.3614	1414.6	2.767	148.4	225.9	374.3	0.7967	1.7655	-40
-39	53.88	0.0007	0.3441	1411.8	2.906	149.6	225.3	374.9	0.8020	1.7641	-39
-38	56.74	0.0007	0.3279	1408.9	3.050	150.9	224.7	375.5	0.8073	1.7627	-38
-37	59.72	0.0007	0.3125	1406.0	3.200	152.1	224.0	376.2	0.8126	1.7613	-37
-36	62.83	0.0007	0.2980	1403.1	3.356	153.4	223.4	376.8	0.8178	1.7599	-36
-35	66.07	0.0007	0.2843	1400.2	3.518	154.6	222.8	377.4	0.8231	1.7586	-35
-34	69.43	0.0007	0.2713	1397.4	3.686	155.9	222.2	378.1	0.8283	1.7573	-34
-33	72.93	0.0007	0.2590	1394.5	3.861	157.1	221.5	378.7	0.8336	1.7561	-33
-32	76.58	0.0007	0.2474	1391.5	4.042	158.4	220.9	379.3	0.8388	1.7548	-32
-31	80.36	0.0007	0.2365	1388.6	4.229	159.7	220.3	379.9	0.8440	1.7536	-31
-30	84.29	0.0007	0.2260	1385.7	4.424	160.9	219.6	380.6	0.8492	1.7525	-30
-29	88.37	0.0007	0.2162	1382.8	4.625	162.2	219.0	381.2	0.8544	1.7513	-29
-28	92.61	0.0007	0.2069	1379.8	4.833	163.5	218.3	381.8	0.8595	1.7502	-28
-27	97.02	0.0007	0.1981	1376.9	5.049	164.7	217.7	382.4	0.8647	1.7491	-27
-26	101.58	0.0007	0.1896	1373.9	5.273	166.0	217.1	383.1	0.8698	1.7481	-26
-25	106.32	0.0007	0.1817	1371.0	5.504	167.3	216.4	383.7	0.8750	1.747	-25
-24	111.22	0.0007	0.1741	1368.0	5.743	168.6	215.7	384.3	0.8801	1.746	-24
-23	116.31	0.0007	0.1669	1365.0	5.991	169.8	215.1	384.9	0.8852	1.745	-23
-22	121.57	0.0007	0.1601	1362.0	6.247	171.1	214.4	385.5	0.8903	1.744	-22
-21	127.02	0.0007	0.1536	1359.0	6.511	172.4	213.7	386.2	0.8954	1.7431	-21
-20	132.67	0.0007	0.1474	1356.0	6.784	173.7	213.1	386.8	0.9005	1.7422	-20
-19	138.50	0.0007	0.1415	1353.0	7.066	175.0	212.4	387.4	0.9055	1.7413	-19
-18	144.54	0.0007	0.1359	1349.9	7.357	176.3	211.7	388.0	0.9106	1.7404	-18
-17	150.78	0.0007	0.1306	1346.9	7.658	177.6	211.0	388.6	0.9157	1.7395	-17
-16	157.23	0.0007	0.1255	1343.8	7.968	178.9	210.4	389.2	0.9207	1.7387	-16
-15	163.90	0.0007	0.1207	1340.8	8.288	180.2	209.7	389.8	0.9257	1.7379	-15
-14	170.78	0.0007	0.1160	1337.7	8.618	181.5	209.0	390.4	0.9307	1.7371	-14
-13	177.89	0.0007	0.1116	1334.6	8.958	182.8	208.3	391.1	0.9357	1.7363	-13
-12	185.22	0.0008	0.1074	1331.5	9.309	184.1	207.6	391.7	0.9407	1.7356	-12
-11	192.79	0.0008	0.1034	1328.4	9.671	185.4	206.9	392.3	0.9457	1.7348	-11
-10	200.60	0.0008	0.0996	1325.3	10.044	186.7	206.2	392.9	0.9507	1.7341	-10
-9	208.65	0.0008	0.0959	1322.1	10.428	188.0	205.4	393.5	0.9557	1.7334	-9
-8	216.95	0.0008	0.0924	1319.0	10.823	189.3	204.7	394.1	0.9606	1.7327	-8
-7	225.50	0.0008	0.0890	1315.8	11.231	190.7	204.0	394.7	0.9656	1.7321	-7
-6	234.32	0.0008	0.0858	1312.6	11.650	192.0	203.3	395.3	0.9705	1.7314	-6
-5	243.39	0.0008	0.0828	1309.4	12.082	193.3	202.5	395.9	0.9755	1.7308	-5
-4	252.74	0.0008	0.0798	1306.2	12.526	194.6	201.8	396.4	0.9804	1.7302	-4
-3	262.36	0.0008	0.0770	1303.0	12.983	196.0	201.1	397.0	0.9853	1.7295	-3
-2	272.26	0.0008	0.0743	1299.8	13.454	197.3	200.3	397.6	0.9902	1.729	-2
-1	282.45	0.0008	0.0718	1296.5	13.937	198.7	199.6	398.2	0.9951	1.7284	-1
0	292.93	0.0008	0.0693	1293.3	14.435	200.0	198.8	398.8	1.0000	1.7278	0
1	303.70	0.0008	0.0669	1290.0	14.946	201.3	198.0	399.4	1.0049	1.7273	1
2	314.77	0.0008	0.0646	1286.7	15.472	202.7	197.3	400.0	1.0098	1.7267	2
3	326.16	0.0008	0.0624	1283.4	16.013	204.0	196.5	400.5	1.0146	1.7262	3
4	337.85	0.0008	0.0604	1280.1	16.569	205.4	195.7	401.1	1.0195	1.7257	4
5	349.87	0.0008	0.0583	1276.7	17.140	206.8	194.9	401.7	1.0244	1.7252	5
6	362.21	0.0008	0.0564	1273.4	17.726	208.1	194.2	402.3	1.0292	1.7247	6
7	374.88	0.0008	0.0546	1270.0	18.329	209.5	193.4	402.8	1.0340	1.7242	7
8	387.88	0.0008	0.0528	1266.6	18.948	210.8	192.6	403.4	1.0389	1.7238	8
9	401.23	0.0008	0.0511	1263.2	19.583	212.2	191.8	404.0	1.0437	1.7233	9
10	414.92	0.0008	0.0494	1259.8	20.236	213.6	190.9	404.5	1.0485	1.7229	10
11	428.97	0.0008	0.0478	1256.3	20.906	215.0	190.1	405.1	1.0533	1.7224	11
12	443.37	0.0008	0.0463	1252.9	21.594	216.4	189.3	405.6	1.0582	1.722	12
13	458.11	0.0008	0.0448	1249.4	22.301	217.7	188.5	406.2	1.0630	1.7216	13
14	473.25	0.0008	0.0434	1245.9	23.026	219.1	187.6	406.8	1.0678	1.7212	14
15	488.78	0.0008	0.0421	1242.3	23.770	220.5	186.8	407.3	1.0726	1.7208	15
16	504.68	0.0008	0.0408	1238.8	24.533	221.9	185.9	407.8	1.0773	1.7204	16
17	520.98	0.0008	0.0395	1235.2	25.317	223.3	185.1	408.4	1.0821	1.72	17
18	537.67	0.0008	0.0383	1231.6	26.121	224.7	184.2	408.9	1.0869	1.7196	18
19	554.76	0.0008	0.0371	1228.0	26.945	226.1	183.3	409.5	1.0917	1.7192	19

TABLE 1 (continued)
HFC–134a Saturation Properties—Temperature Table

TEMP. °C	PRESSURE kPa (abs)	VOLUME m ³ /kg		DENSITY kg/m ³		ENTHALPY kJ/kg			ENTROPY kJ/(kg)(K)		TEMP. °C
		LIQUID v _f	VAPOR v _g	LIQUID 1/v _f	VAPOR 1/v _g	LIQUID h _f	LATENT h _{fg}	VAPOR h _g	LIQUID s _f	VAPOR s _g	
20	572.25	0.0008	0.0360	1224.4	27.791	227.5	182.5	410.0	1.0964	1.7189	20
21	590.16	0.0008	0.0349	1220.7	28.659	228.9	181.6	410.5	1.1012	1.7185	21
22	608.49	0.0008	0.0338	1217.0	29.549	230.4	180.7	411.0	1.1060	1.7182	22
23	627.25	0.0008	0.0328	1213.3	30.462	231.8	179.8	411.6	1.1107	1.7178	23
24	646.44	0.0008	0.0318	1209.6	31.399	233.2	178.9	412.1	1.1155	1.7175	24
25	666.06	0.0008	0.0309	1205.9	32.359	234.6	178.0	412.6	1.1202	1.7171	25
26	686.13	0.0008	0.0300	1202.1	33.344	236.1	177.0	413.1	1.1250	1.7168	26
27	706.66	0.0008	0.0291	1198.3	34.354	237.5	176.1	413.6	1.1297	1.7165	27
28	727.64	0.0008	0.0283	1194.4	35.389	238.9	175.2	414.1	1.1345	1.7161	28
29	749.04	0.0008	0.0274	1190.6	36.451	240.4	174.2	414.6	1.1392	1.7158	29
30	771.02	0.0008	0.0266	1186.7	37.540	241.8	173.3	415.1	1.1439	1.7155	30
31	793.43	0.0008	0.0259	1182.8	38.657	243.3	172.3	415.6	1.1487	1.7151	31
32	816.28	0.0008	0.0251	1178.8	39.802	244.8	171.3	416.1	1.1534	1.7148	32
33	839.66	0.0009	0.0244	1174.9	40.975	246.2	170.3	416.6	1.1581	1.7145	33
34	863.53	0.0009	0.0237	1170.8	42.179	247.7	169.3	417.0	1.1628	1.7142	34
35	887.91	0.0009	0.0230	1166.8	43.413	249.2	168.3	417.5	1.1676	1.7138	35
36	912.80	0.0009	0.0224	1162.7	44.679	250.6	167.3	418.0	1.1723	1.7135	36
37	938.20	0.0009	0.0218	1158.6	45.977	252.1	166.3	418.4	1.1770	1.7132	37
38	964.14	0.0009	0.0211	1154.5	47.308	253.6	165.3	418.9	1.1817	1.7129	38
39	990.60	0.0009	0.0205	1150.3	48.672	255.1	164.2	419.3	1.1864	1.7125	39
40	1017.61	0.0009	0.0200	1146.1	50.072	256.6	163.2	419.8	1.1912	1.7122	40
41	1045.16	0.0009	0.0194	1141.9	51.508	258.1	162.1	420.2	1.1959	1.7119	41
42	1073.26	0.0009	0.0189	1137.6	52.980	259.6	161.0	420.6	1.2006	1.7115	42
43	1101.93	0.0009	0.0184	1133.3	54.490	261.1	159.9	421.1	1.2053	1.7112	43
44	1131.16	0.0009	0.0178	1128.9	56.040	262.7	158.8	421.5	1.2101	1.7108	44
45	1161.01	0.0009	0.0174	1124.5	57.630	264.2	157.7	421.9	1.2148	1.7105	45
46	1191.41	0.0009	0.0169	1120.0	59.261	265.7	156.6	422.3	1.2195	1.7101	46
47	1222.41	0.0009	0.0164	1115.6	60.934	267.3	155.4	422.7	1.2242	1.7097	47
48	1253.95	0.0009	0.0160	1111.0	62.652	268.8	154.3	423.1	1.2290	1.7093	48
49	1286.17	0.0009	0.0155	1106.4	64.415	270.4	153.1	423.5	1.2337	1.709	49
50	1319.00	0.0009	0.0151	1101.8	66.225	271.9	151.9	423.8	1.2384	1.7086	50
51	1352.44	0.0009	0.0147	1097.1	68.084	273.5	150.7	424.2	1.2432	1.7082	51
52	1386.52	0.0009	0.0143	1092.4	69.992	275.1	149.5	424.6	1.2479	1.7077	52
53	1421.23	0.0009	0.0139	1087.6	71.952	276.6	148.3	424.9	1.2527	1.7073	53
54	1456.58	0.0009	0.0135	1082.8	73.966	278.2	147.0	425.3	1.2574	1.7069	54
55	1492.59	0.0009	0.0132	1077.9	76.035	279.8	145.8	425.6	1.2622	1.7064	55
56	1529.26	0.0009	0.0128	1072.9	78.162	281.4	144.5	425.9	1.2670	1.7059	56
57	1566.61	0.0009	0.0124	1067.9	80.348	283.0	143.2	426.2	1.2717	1.7055	57
58	1604.63	0.0009	0.0121	1062.8	82.596	284.6	141.9	426.5	1.2765	1.705	58
59	1643.35	0.0009	0.0118	1057.7	84.908	286.3	140.5	426.8	1.2813	1.7044	59
60	1682.76	0.0010	0.0115	1052.5	87.287	287.9	139.2	427.1	1.2861	1.7039	60
61	1722.88	0.0010	0.0111	1047.2	89.735	289.5	137.8	427.4	1.2909	1.7033	61
62	1763.72	0.0010	0.0108	1041.8	92.255	291.2	136.4	427.6	1.2957	1.7028	62
63	1805.28	0.0010	0.0105	1036.4	94.851	292.9	135.0	427.9	1.3006	1.7021	63
64	1847.47	0.0010	0.0103	1030.9	97.526	294.5	133.6	428.1	1.3054	1.7015	64
65	1890.54	0.0010	0.0100	1025.3	100.283	296.2	132.1	428.3	1.3102	1.7009	65
66	1934.36	0.0010	0.0097	1019.6	103.125	297.9	130.6	428.5	1.3151	1.7002	66
67	1978.94	0.0010	0.0094	1013.8	106.058	299.6	129.1	428.7	1.3200	1.6995	67
68	2024.28	0.0010	0.0092	1008.0	109.085	301.3	127.5	428.8	1.3249	1.6987	68
69	2070.42	0.0010	0.0089	1002.0	112.212	303.0	126.0	429.0	1.3298	1.6979	69
70	2117.34	0.0010	0.0087	995.9	115.442	304.8	124.4	429.1	1.3347	1.6971	70
71	2165.08	0.0010	0.0084	989.7	118.783	306.5	122.7	429.2	1.3397	1.6963	71
72	2213.63	0.0010	0.0082	983.4	122.239	308.3	121.1	429.3	1.3446	1.6954	72
73	2263.01	0.0010	0.0079	977.0	125.818	310.1	119.4	429.4	1.3496	1.6945	73
74	2313.23	0.0010	0.0077	970.4	129.527	311.8	117.6	429.5	1.3547	1.6935	74
75	2364.31	0.0010	0.0075	963.7	133.373	313.7	115.8	429.5	1.3597	1.6924	75
76	2416.25	0.0010	0.0073	956.9	137.366	315.5	114.0	429.5	1.3648	1.6913	76
77	2469.08	0.0011	0.0071	949.9	141.514	317.3	112.2	429.5	1.3699	1.6902	77
78	2522.79	0.0011	0.0069	942.7	145.830	319.2	110.3	429.4	1.3750	1.689	78
79	2577.42	0.0011	0.0067	935.4	150.324	321.0	108.3	429.3	1.3801	1.6877	79

TEMP. °C	PRESSURE kPa (abs)	VOLUME m ³ /kg		DENSITY kg/m ³		ENTHALPY kJ/kg			ENTROPY kJ/(kg)(K)		TEMP. °C
		LIQUID v _f	VAPOR v _g	LIQUID 1/v _f	VAPOR 1/v _g	LIQUID h _f	LATENT h _{fg}	VAPOR h _g	LIQUID s _f	VAPOR s _g	
80	2632.97	0.0011	0.0065	927.8	155.010	322.9	106.3	429.2	1.3854	1.6863	80
81	2689.46	0.0011	0.0063	920.1	159.904	324.9	104.2	429.1	1.3906	1.6849	81
82	2746.90	0.0011	0.0061	912.1	165.022	326.8	102.1	428.9	1.3959	1.6834	82
83	2805.31	0.0011	0.0059	903.9	170.383	328.8	99.9	428.7	1.4012	1.6818	83
84	2864.70	0.0011	0.0057	895.5	176.010	330.7	97.7	428.4	1.4066	1.68	84
85	2925.11	0.0011	0.0055	886.7	181.929	332.8	95.3	428.1	1.4121	1.6782	85
86	2986.54	0.0011	0.0053	877.6	188.169	334.8	92.9	427.7	1.4176	1.6762	86
87	3049.01	0.0012	0.0051	868.2	194.766	336.9	90.4	427.3	1.4232	1.6741	87
88	3112.55	0.0012	0.0050	858.4	201.761	339.0	87.7	426.8	1.4289	1.6719	88
89	3177.10	0.0012	0.0048	848.1	209.206	341.2	85.0	426.2	1.4347	1.6694	89
90	3242.87	0.0012	0.0046	837.3	217.162	343.4	82.1	425.5	1.4406	1.6668	90
91	3309.78	0.0012	0.0044	826.0	225.706	345.7	79.1	424.8	1.4466	1.6639	91
92	3377.85	0.0012	0.0043	814.0	234.936	348.0	75.9	423.9	1.4528	1.6607	92
93	3447.13	0.0012	0.0041	801.1	244.978	350.4	72.5	422.9	1.4592	1.6572	93
94	3517.65	0.0013	0.0039	787.4	256.005	353.0	68.9	421.8	1.4658	1.6533	94
95	3589.44	0.0013	0.0037	772.3	268.255	355.6	64.9	420.5	1.4727	1.6489	95
96	3662.57	0.0013	0.0035	755.8	282.079	358.4	60.5	418.9	1.4799	1.6439	96
97	3737.09	0.0014	0.0034	737.1	298.029	361.3	55.7	417.0	1.4877	1.6381	97
98	3813.08	0.0014	0.0032	715.4	317.065	364.6	50.0	414.6	1.4963	1.6311	98
99	3890.64	0.0015	0.0029	688.6	341.133	368.4	43.2	411.5	1.5061	1.6221	99
100	3969.94	0.0015	0.0027	651.4	375.503	373.2	33.8	407.0	1.5187	1.6092	100
101	4051.35	0.0018	0.0022	566.4	457.594	383.0	13.0	396.0	1.5447	1.5794	101

TABLE 2 **HFC-134a Superheated Vapor—Constant Pressure Tables**

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 10.00 kPa (abs)							PRESSURE = 20.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-66.85	0.00067	115.8	0.6484	1.1863	1.5234	938.7	SATLIQ	0.00068	128.3	0.7075	1.2068	1.5130	887.7	-56.39
-66.85	1.66667	357.4	1.8192	0.6695	1.1477	137.7	SATVAP	0.87032	363.9	1.7945	0.6968	1.1466	140.3	-56.39
-65	1.68067	358.6	1.8252	0.6727	1.1465	138.3		—	—	—	—	—	—	-65
-60	1.72414	362.0	1.8413	0.6816	1.1434	139.9		—	—	—	—	—	—	-60
-55	1.76678	365.4	1.8572	0.6906	1.1405	141.4		0.87642	364.9	1.7999	0.6990	1.1456	140.7	-55
-50	1.80832	368.9	1.8730	0.6996	1.1378	142.9		0.89767	368.4	1.8149	0.7071	1.1423	142.3	-50
-45	1.84843	372.4	1.8886	0.7087	1.1352	144.4		0.91912	372.0	1.8306	0.7154	1.1392	143.9	-45
-40	1.89036	376.0	1.9040	0.7178	1.1328	145.9		0.93985	375.6	1.8462	0.7238	1.1364	145.4	-40
-35	1.93050	379.6	1.9193	0.7269	1.1304	147.4		0.96061	379.2	1.8617	0.7323	1.1337	146.9	-35
-30	1.97239	383.3	1.9345	0.7360	1.1283	148.9		0.98232	382.9	1.8770	0.7409	1.1311	148.4	-30
-25	2.01207	387.0	1.9496	0.7451	1.1262	150.3		1.00301	386.6	1.8921	0.7495	1.1288	149.8	-25
-20	2.05339	390.7	1.9646	0.7541	1.1242	151.7		1.02354	390.4	1.9072	0.7582	1.1265	151.3	-20
-15	2.09644	394.5	1.9794	0.7632	1.1223	153.1		1.04493	394.2	1.9221	0.7669	1.1244	152.7	-15
-10	2.13675	398.3	1.9941	0.7722	1.1204	154.5		1.06496	398.1	1.9369	0.7756	1.1224	154.1	-10
-5	2.17865	402.2	2.0087	0.7813	1.1187	155.9		1.08578	402.0	1.9516	0.7843	1.1205	155.5	-5
0	2.21729	406.2	2.0233	0.7902	1.1170	157.2		1.10619	405.9	1.9661	0.7930	1.1186	156.9	0
5	2.26244	410.1	2.0377	0.7992	1.1154	158.6		1.12740	409.9	1.9806	0.8017	1.1169	158.3	5
10	2.30415	414.1	2.0520	0.8081	1.1139	159.9		1.14811	413.9	1.9950	0.8104	1.1152	159.6	10
15	2.34192	418.2	2.0662	0.8169	1.1124	161.2		1.16822	418.0	2.0092	0.8191	1.1136	161.0	15
20	2.38095	422.3	2.0803	0.8257	1.1109	162.6		1.18905	422.1	2.0234	0.8277	1.1121	162.3	20
25	2.42718	426.5	2.0944	0.8345	1.1095	163.9		1.20919	426.3	2.0375	0.8363	1.1106	163.6	25
30	2.46305	430.7	2.1083	0.8432	1.1082	165.1		1.23001	430.5	2.0514	0.8449	1.1092	164.9	30
35	2.50627	434.9	2.1222	0.8518	1.1069	166.4		1.25155	434.7	2.0653	0.8534	1.1078	166.2	35
40	2.54453	439.2	2.1360	0.8605	1.1056	167.7		1.27225	439.0	2.0791	0.8619	1.1065	167.5	40
45	2.59067	443.5	2.1497	0.8690	1.1044	168.9		1.29199	443.3	2.0929	0.8704	1.1052	168.7	45
50	2.63158	447.9	2.1633	0.8775	1.1033	170.2		1.31234	447.7	2.1065	0.8788	1.1040	170.0	50
55	2.67380	452.3	2.1768	0.8860	1.1021	171.4		1.33338	452.1	2.1200	0.8871	1.1028	171.2	55
60	2.71003	456.7	2.1903	0.8943	1.1010	172.7		1.35318	456.6	2.1335	0.8954	1.1017	172.5	60
65	2.75482	461.2	2.2037	0.9027	1.1000	173.9		1.37368	461.1	2.1469	0.9037	1.1006	173.7	65
70	2.79330	465.8	2.2170	0.9110	1.0989	175.1		1.39470	465.6	2.1603	0.9119	1.0995	174.9	70
75	2.83286	470.3	2.2302	0.9192	1.0979	176.3		1.41448	470.2	2.1735	0.9201	1.0984	176.1	75
80	2.87356	474.9	2.2434	0.9273	1.0969	177.5		1.43678	474.8	2.1867	0.9282	1.0974	177.3	80
85	2.91545	479.6	2.2565	0.9354	1.0960	178.7		1.45560	479.5	2.1998	0.9362	1.0965	178.5	85

TEMP °C	PRESSURE = 30.00 kPa (abs)							PRESSURE = 40.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-49.66	0.00069	136.5	0.7446	1.2205	1.5084	855.4	SATLIQ	0.00070	142.8	0.7722	1.2311	1.5059	831.3	-44.57
-49.66	0.59559	368.2	1.7813	0.7154	1.1468	141.8	SATVAP	0.45496	371.4	1.7725	0.7301	1.1475	142.8	-44.57
-45	0.60901	371.5	1.7961	0.7224	1.1434	143.3		—	—	—	—	—	—	-45
-40	0.62344	375.2	1.8118	0.7300	1.1401	144.8		0.46490	374.8	1.7871	0.7364	1.1440	144.3	-40
-35	0.63735	378.8	1.8274	0.7379	1.1370	146.4		0.47574	378.5	1.8028	0.7437	1.1404	145.9	-35
-30	0.65189	382.6	1.8428	0.7459	1.1341	147.9		0.48662	382.2	1.8183	0.7511	1.1372	147.4	-30
-25	0.66578	386.3	1.8581	0.7541	1.1315	149.4		0.49727	386.0	1.8336	0.7587	1.1342	148.9	-25
-20	0.67981	390.1	1.8732	0.7623	1.1289	150.9		0.50787	389.8	1.8489	0.7665	1.1314	150.4	-20
-15	0.69396	393.9	1.8882	0.7707	1.1266	152.3		0.51867	393.6	1.8639	0.7745	1.1288	151.9	-15
-10	0.70771	397.8	1.9031	0.7790	1.1244	153.8		0.52910	397.5	1.8789	0.7825	1.1264	153.4	-10
-5	0.72202	401.7	1.9178	0.7874	1.1223	155.2		0.53967	401.5	1.8937	0.7906	1.1241	154.8	-5
0	0.73584	405.7	1.9324	0.7959	1.1203	156.6		0.55036	405.4	1.9083	0.7988	1.1219	156.2	0
5	0.74963	409.7	1.9470	0.8043	1.1184	158.0		0.56086	409.4	1.9229	0.8070	1.1199	157.7	5
10	0.76336	413.7	1.9614	0.8128	1.1166	159.3		0.57110	413.5	1.9374	0.8152	1.1180	159.0	10
15	0.77760	417.8	1.9757	0.8213	1.1149	160.7		0.58178	417.6	1.9517	0.8235	1.1161	160.4	15
20	0.79114	421.9	1.9899	0.8297	1.1132	162.0		0.59207	421.7	1.9659	0.8318	1.1144	161.8	20
25	0.80515	426.1	2.0040	0.8382	1.1117	163.4		0.60241	425.9	1.9801	0.8401	1.1128	163.1	25
30	0.81900	430.3	2.0180	0.8466	1.1102	164.7		0.61312	430.1	1.9941	0.8484	1.1112	164.4	30
35	0.83264	434.6	2.0319	0.8550	1.1087	166.0		0.62344	434.4	2.0081	0.8566	1.1097	165.7	35
40	0.84602	438.9	2.0457	0.8634	1.1073	167.3		0.63371	438.7	2.0219	0.8649	1.1082	167.0	40
45	0.85985	443.2	2.0595	0.8717	1.1060	168.5		0.64392	443.0	2.0357	0.8731	1.1068	168.3	45
50	0.87413	447.6	2.0731	0.8800	1.1047	169.8		0.65445	447.4	2.0494	0.8813	1.1055	169.6	50
55	0.88731	452.0	2.0867	0.8883	1.1035	171.1		0.66489	451.9	2.0630	0.8895	1.1042	170.9	55
60	0.90171	456.5	2.1002	0.8965	1.1023	172.3		0.67522	456.3	2.0765	0.8977	1.1030	172.1	60
65	0.91491	461.0	2.1136	0.9047	1.1012	173.5		0.68540	460.8	2.0899	0.9058	1.1018	173.4	65
70	0.92851	465.5	2.1270	0.9129	1.1001	174.8		0.69589	465.4	2.1033	0.9138	1.1006	174.6	70
75	0.94251	470.1	2.1402	0.9210	1.0990	176.0		0.70621	470.0	2.1165	0.9219	1.0995	175.8	75
80	0.95602	474.7	2.1534	0.9290	1.0979	177.2		0.71638	474.6	2.1297	0.9299	1.0985	177.0	80
85	0.96993	479.4	2.1665	0.9370	1.0969	178.4		0.72674	479.3	2.1429	0.9378	1.0974	178.2	85
90	0.98328	484.1	2.1796	0.9449	1.0960	179.6		0.73692	484.0	2.1559	0.9457	1.0964	179.4	90
95	0.99701	488.8	2.1925	0.9528	1.0950	180.7		0.74738	488.7	2.1689	0.9535	1.0954	180.6	95
100	1.01112	493.6	2.2054	0.9607	1.0941	181.9		0.75758	493.5	2.1818	0.9613	1.0945	181.8	100
105	1.02459	498.4	2.2183	0.9685	1.0932	183.1		0.76805	498.3	2.1947	0.9691	1.0936	183.0	105
110	—	—	—	—	—	—		0.77821	503.2	2.2074	0.9768	1.0927	184.1	110

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 50.00 kPa (abs)							PRESSURE = 60.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-40.43	0.00071	147.9	0.7944	1.2399	1.5046	811.8	SATLIQ	0.00071	152.2	0.8130	1.2476	1.5040	795.3	-36.91
-40.43	0.36914	374.0	1.7661	0.7424	1.1483	143.6	SATVAP	0.31114	376.2	1.7611	0.7533	1.1493	144.2	-36.91
-40	0.36982	374.3	1.7675	0.7430	1.1480	143.7		—	—	—	—	—	—	-40
-35	0.37864	378.1	1.7833	0.7495	1.1440	145.3		0.31397	377.7	1.7672	0.7555	1.1477	144.8	-35
-30	0.38745	381.8	1.7990	0.7564	1.1404	146.9		0.32134	381.5	1.7830	0.7618	1.1436	146.4	-30
-25	0.39604	385.6	1.8144	0.7635	1.1370	148.5		0.32873	385.3	1.7986	0.7683	1.1400	148.0	-25
-20	0.40469	389.5	1.8297	0.7708	1.1340	150.0		0.33591	389.2	1.8140	0.7752	1.1366	149.6	-20
-15	0.41339	393.3	1.8449	0.7784	1.1311	151.5		0.34317	393.0	1.8292	0.7823	1.1334	151.1	-15
-10	0.42194	397.3	1.8599	0.7860	1.1284	153.0		0.35039	397.0	1.8443	0.7896	1.1306	152.6	-10
-5	0.43048	401.2	1.8748	0.7938	1.1260	154.5		0.35758	400.9	1.8592	0.7971	1.1279	154.1	-5
0	0.43898	405.2	1.8895	0.8017	1.1236	155.9		0.36470	404.9	1.8740	0.8047	1.1254	155.6	0
5	0.44743	409.2	1.9041	0.8097	1.1215	157.3		0.37189	409.0	1.8887	0.8124	1.1230	157.0	5
10	0.45579	413.3	1.9186	0.8177	1.1194	158.7		0.37893	413.1	1.9032	0.8202	1.1208	158.4	10
15	0.46425	417.4	1.9330	0.8257	1.1175	160.1		0.38595	417.2	1.9176	0.8280	1.1188	159.8	15
20	0.47259	421.5	1.9473	0.8338	1.1156	161.5		0.39308	421.3	1.9319	0.8359	1.1168	161.2	20
25	0.48100	425.7	1.9614	0.8420	1.1139	162.8		0.40000	425.5	1.9461	0.8439	1.1150	162.6	25
30	0.48948	430.0	1.9755	0.8501	1.1122	164.2		0.40700	429.8	1.9602	0.8519	1.1132	163.9	30
35	0.49776	434.2	1.9895	0.8582	1.1106	165.5		0.41403	434.1	1.9742	0.8599	1.1116	165.3	35
40	0.50607	438.5	2.0034	0.8664	1.1091	166.8		0.42105	438.4	1.9881	0.8679	1.1100	166.6	40
45	0.51440	442.9	2.0172	0.8745	1.1076	168.1		0.42808	442.7	2.0020	0.8759	1.1085	167.9	45
50	0.52274	447.3	2.0309	0.8826	1.1062	169.4		0.43497	447.1	2.0157	0.8839	1.1070	169.2	50
55	0.53107	451.7	2.0445	0.8907	1.1049	170.7		0.44189	451.6	2.0293	0.8919	1.1056	170.5	55
60	0.53937	456.2	2.0580	0.8988	1.1036	171.9		0.44883	456.1	2.0429	0.8999	1.1043	171.8	60
65	0.54765	460.7	2.0715	0.9068	1.1024	173.2		0.45579	460.6	2.0563	0.9079	1.1030	173.0	65
70	0.55586	465.3	2.0848	0.9148	1.1012	174.4		0.46275	465.1	2.0697	0.9158	1.1018	174.3	70
75	0.56402	469.9	2.0981	0.9228	1.1001	175.7		0.46970	469.7	2.0830	0.9237	1.1006	175.5	75
80	0.57241	474.5	2.1113	0.9307	1.0990	176.9		0.47642	474.4	2.0962	0.9316	1.0995	176.7	80
85	0.58072	479.2	2.1245	0.9386	1.0979	178.1		0.48335	479.1	2.1094	0.9394	1.0984	177.9	85
90	0.58893	483.9	2.1375	0.9464	1.0969	179.3		0.49020	483.8	2.1225	0.9472	1.0973	179.1	90
95	0.59737	488.6	2.1505	0.9543	1.0959	180.5		0.49727	488.5	2.1355	0.9550	1.0963	180.3	95
100	0.60533	493.4	2.1635	0.9620	1.0949	181.7		0.50403	493.3	2.1484	0.9627	1.0953	181.5	100
105	0.61387	498.3	2.1763	0.9697	1.0940	182.8		0.51099	498.2	2.1613	0.9703	1.0944	182.7	105
110	0.62189	503.1	2.1891	0.9774	1.0931	184.0		0.51787	503.0	2.1741	0.9780	1.0934	183.9	110
115	—	—	—	—	—	—		0.52466	507.9	2.1868	0.9855	1.0925	185.0	115

TEMP °C	PRESSURE = 70.00 kPa (abs)							PRESSURE = 80.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-33.83	0.00072	156.1	0.8292	1.2544	1.5038	781.0	SATLIQ	0.00072	159.5	0.8435	1.2606	1.5038	768.3	-31.09
-33.83	0.26918	378.2	1.7571	0.7630	1.1504	144.6	SATVAP	0.23747	379.9	1.7538	0.7718	1.1515	145.0	-31.09
-30	0.27412	381.1	1.7693	0.7673	1.1470	145.9		0.23872	380.7	1.7572	0.7729	1.1505	145.4	-30
-25	0.28050	385.0	1.7850	0.7733	1.1430	147.6		0.24438	384.6	1.7730	0.7783	1.1460	147.1	-25
-20	0.28678	388.8	1.8004	0.7797	1.1392	149.1		0.24994	388.5	1.7886	0.7842	1.1420	148.7	-20
-15	0.29308	392.7	1.8158	0.7863	1.1359	150.7		0.25549	392.4	1.8040	0.7904	1.1383	150.3	-15
-10	0.29931	396.7	1.8309	0.7932	1.1327	152.2		0.26103	396.4	1.8192	0.7969	1.1349	151.9	-10
-5	0.30553	400.7	1.8459	0.8004	1.1298	153.8		0.26645	400.4	1.8343	0.8037	1.1318	153.4	-5
0	0.31172	404.7	1.8608	0.8077	1.1271	155.2		0.27196	404.5	1.8492	0.8107	1.1290	154.9	0
5	0.31786	408.8	1.8755	0.8151	1.1246	156.7		0.27732	408.5	1.8640	0.8179	1.1263	156.4	5
10	0.32394	412.9	1.8901	0.8227	1.1223	158.1		0.28273	412.6	1.8786	0.8252	1.1238	157.8	10
15	0.33003	417.0	1.9045	0.8303	1.1201	159.6		0.28810	416.8	1.8931	0.8326	1.1215	159.3	15
20	0.33613	421.2	1.9189	0.8380	1.1180	161.0		0.29348	421.0	1.9075	0.8402	1.1193	160.7	20
25	0.34211	425.4	1.9331	0.8458	1.1161	162.3		0.29879	425.2	1.9218	0.8478	1.1172	162.1	25
30	0.34819	429.6	1.9473	0.8537	1.1143	163.7		0.30404	429.4	1.9359	0.8555	1.1153	163.5	30
35	0.35423	433.9	1.9613	0.8615	1.1125	165.0		0.30941	433.7	1.9500	0.8632	1.1135	164.8	35
40	0.36023	438.2	1.9752	0.8694	1.1109	166.4		0.31465	438.1	1.9640	0.8709	1.1118	166.2	40
45	0.36630	442.6	1.9890	0.8773	1.1093	167.7		0.32000	442.4	1.9778	0.8787	1.1101	167.5	45
50	0.37230	447.0	2.0028	0.8852	1.1078	169.0		0.32520	446.9	1.9916	0.8865	1.1085	168.8	50
55	0.37821	451.4	2.0164	0.8931	1.1063	170.3		0.33047	451.3	2.0053	0.8944	1.1071	170.1	55
60	0.38417	455.9	2.0300	0.9010	1.1050	171.6		0.33568	455.8	2.0188	0.9022	1.1056	171.4	60
65	0.39017	460.5	2.0435	0.9089	1.1036	172.8		0.34095	460.3	2.0323	0.9100	1.1043	172.7	65
70	0.39620	465.0	2.0569	0.9168	1.1024	174.1		0.34614	464.9	2.0457	0.9178	1.1030	173.9	70
75	0.40209	469.6	2.0702	0.9246	1.1012	175.3		0.35137	469.5	2.0591	0.9255	1.1017	175.2	75
80	0.40800	474.3	2.0834	0.9324	1.1000	176.6		0.35663	474.2	2.0723	0.9333	1.1005	176.4	80
85	0.41391	478.9	2.0966	0.9402	1.0989	177.8		0.36179	478.8	2.0855	0.9410	1.0994	177.6	85
90	0.41982	483.7	2.1097	0.9480	1.0978	179.0		0.36697	483.6	2.0986	0.9487	1.0982	178.9	90
95	0.42589	488.4	2.1227	0.9557	1.0967	180.2		0.37215	488.3	2.1116	0.9564	1.0972	180.1	95
100	0.43178	493.2	2.1357	0.9633	1.0957	181.4		0.37736	493.1	2.1246	0.9640	1.0961	181.3	100
105	0.43764	498.1	2.1485	0.9710	1.0948	182.6		0.38256	498.0	2.1375	0.9716	1.0951	182.5	105
110	0.44346	502.9	2.1613	0.9786	1.0938	183.8		0.38775	502.8	2.1503	0.9792	1.0942	183.6	110
115	0.44944	507.8	2.1741	0.9861	1.0929	184.9		0.39293	507.8	2.1630	0.9867	1.0932	184.8	115
120	0.45537	512.8	2.1867	0.9936	1.0920	186.1		0.39809	512.7	2.1757	0.9941	1.0923	186.0	120

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 90.00 kPa (abs)							PRESSURE = 100.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-28.61	0.00072	162.7	0.8564	1.2662	1.5041	756.7	SATLIQ	0.00073	165.6	0.8681	1.2715	1.5046	746.2	-26.34
-28.61	0.21254	381.4	1.7509	0.7800	1.1527	145.4	SATVAP	0.19246	382.8	1.7484	0.7876	1.1539	145.7	-26.34
-25	0.21622	384.3	1.7624	0.7835	1.1492	146.6		0.19372	383.9	1.7527	0.7888	1.1525	146.1	-25
-20	0.22129	388.2	1.7780	0.7888	1.1448	148.3		0.19829	387.9	1.7685	0.7935	1.1477	147.8	-20
-15	0.22624	392.1	1.7935	0.7946	1.1408	149.9		0.20284	391.8	1.7840	0.7988	1.1434	149.5	-15
-10	0.23121	396.1	1.8088	0.8007	1.1372	151.5		0.20734	395.8	1.7994	0.8045	1.1395	151.1	-10
-5	0.23613	400.2	1.8240	0.8071	1.1339	153.0		0.21182	399.9	1.8146	0.8106	1.1359	152.7	-5
0	0.24102	404.2	1.8389	0.8138	1.1308	154.5		0.21626	404.0	1.8297	0.8169	1.1327	154.2	0
5	0.24588	408.3	1.8538	0.8207	1.1279	156.0		0.22065	408.1	1.8445	0.8235	1.1296	155.7	5
10	0.25069	412.4	1.8684	0.8278	1.1253	157.5		0.22502	412.2	1.8593	0.8304	1.1269	157.2	10
15	0.25549	416.6	1.8830	0.8350	1.1229	159.0		0.22941	416.4	1.8739	0.8373	1.1243	158.7	15
20	0.26028	420.8	1.8974	0.8423	1.1206	160.4		0.23370	420.6	1.8883	0.8445	1.1218	160.1	20
25	0.26504	425.0	1.9117	0.8498	1.1184	161.8		0.23804	424.8	1.9027	0.8517	1.1196	161.6	25
30	0.26976	429.3	1.9259	0.8573	1.1164	163.2		0.24231	429.1	1.9169	0.8591	1.1175	163.0	30
35	0.27450	433.6	1.9400	0.8649	1.1145	164.6		0.24661	433.4	1.9310	0.8665	1.1155	164.3	35
40	0.27925	437.9	1.9540	0.8725	1.1127	165.9		0.25088	437.7	1.9450	0.8741	1.1136	165.7	40
45	0.28393	442.3	1.9679	0.8802	1.1110	167.3		0.25517	442.1	1.9589	0.8816	1.1118	167.1	45
50	0.28860	446.7	1.9816	0.8879	1.1093	168.6		0.25940	446.6	1.9727	0.8892	1.1101	168.4	50
55	0.29334	451.2	1.9953	0.8956	1.1078	169.9		0.26364	451.0	1.9864	0.8968	1.1085	169.7	55
60	0.29797	455.7	2.0089	0.9033	1.1063	171.2		0.26788	455.5	2.0001	0.9045	1.1070	171.0	60
65	0.30266	460.2	2.0225	0.9110	1.1049	172.5		0.27203	460.1	2.0136	0.9121	1.1055	172.3	65
70	0.30731	464.8	2.0359	0.9188	1.1036	173.8		0.27624	464.7	2.0270	0.9198	1.1042	173.6	70
75	0.31201	469.4	2.0492	0.9265	1.1023	175.0		0.28043	469.3	2.0404	0.9274	1.1028	174.9	75
80	0.31666	474.0	2.0625	0.9342	1.1010	176.3		0.28465	473.9	2.0537	0.9350	1.1016	176.1	80
85	0.32123	478.7	2.0757	0.9418	1.0999	177.5		0.28885	478.6	2.0669	0.9427	1.1004	177.4	85
90	0.32595	483.5	2.0888	0.9495	1.0987	178.7		0.29300	483.4	2.0800	0.9503	1.0992	178.6	90
95	0.33058	488.2	2.1018	0.9571	1.0976	179.9		0.29713	488.1	2.0930	0.9578	1.0981	179.8	95
100	0.33523	493.0	2.1148	0.9647	1.0966	181.1		0.30139	492.9	2.1060	0.9654	1.0970	181.0	100
105	0.33979	497.9	2.1277	0.9722	1.0955	182.3		0.30553	497.8	2.1189	0.9729	1.0959	182.2	105
110	0.34447	502.8	2.1405	0.9798	1.0946	183.5		0.30969	502.7	2.1318	0.9804	1.0949	183.4	110
115	0.34904	507.7	2.1533	0.9872	1.0936	184.7		0.31387	507.6	2.1445	0.9878	1.0940	184.6	115
120	0.35361	512.6	2.1659	0.9947	1.0927	185.9		0.31797	512.5	2.1572	0.9952	1.0930	185.8	120
125	0.35817	517.6	2.1786	1.0021	1.0918	187.0		0.32216	517.5	2.1698	1.0026	1.0921	186.9	125

TEMP °C	PRESSURE = 101.325 kPa (abs)							PRESSURE = 110.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-26.06	0.00073	165.9	0.8696	1.2722	1.5046	744.9	SATLIQ	0.00073	168.2	0.8788	1.2765	1.5051	736.6	-24.25
-26.06	0.19011	383.0	1.7481	0.7886	1.1540	145.7	SATVAP	0.17593	384.1	1.7462	0.7948	1.1551	145.9	-24.25
-25	0.19106	383.9	1.7515	0.7895	1.1530	146.1		—	—	—	—	—	—	-25
-20	0.19562	387.8	1.7673	0.7942	1.1481	147.7		0.17958	387.5	1.7597	0.7984	1.1507	147.4	-20
-15	0.20012	391.8	1.7829	0.7994	1.1438	149.4		0.18369	391.5	1.7754	0.8031	1.1461	149.0	-15
-10	0.20454	395.8	1.7982	0.8050	1.1398	151.0		0.18788	395.6	1.7908	0.8084	1.1419	150.7	-10
-5	0.20894	399.9	1.8135	0.8110	1.1362	152.6		0.19194	399.6	1.8061	0.8141	1.1381	152.3	-5
0	0.21336	403.9	1.8285	0.8173	1.1329	154.2		0.19600	403.7	1.8212	0.8201	1.1346	153.9	0
5	0.21768	408.0	1.8434	0.8239	1.1299	155.7		0.20004	407.8	1.8361	0.8264	1.1314	155.4	5
10	0.22202	412.2	1.8581	0.8307	1.1271	157.2		0.20404	412.0	1.8509	0.8330	1.1284	156.9	10
15	0.22630	416.3	1.8727	0.8377	1.1244	158.6		0.20803	416.2	1.8656	0.8397	1.1257	158.4	15
20	0.23057	420.5	1.8872	0.8448	1.1220	160.1		0.21200	420.4	1.8801	0.8467	1.1231	159.9	20
25	0.23485	424.8	1.9015	0.8520	1.1197	161.5		0.21598	424.6	1.8945	0.8538	1.1208	161.3	25
30	0.23906	429.1	1.9158	0.8594	1.1176	162.9		0.21988	428.9	1.9087	0.8610	1.1186	162.7	30
35	0.24331	433.4	1.9299	0.8668	1.1156	164.3		0.22376	433.2	1.9228	0.8683	1.1165	164.1	35
40	0.24759	437.7	1.9439	0.8743	1.1137	165.7		0.22769	437.6	1.9369	0.8756	1.1145	165.5	40
45	0.25176	442.1	1.9578	0.8818	1.1119	167.0		0.23154	442.0	1.9508	0.8831	1.1127	166.9	45
50	0.25595	446.5	1.9716	0.8894	1.1102	168.4		0.23546	446.4	1.9646	0.8905	1.1109	168.2	50
55	0.26015	451.0	1.9853	0.8970	1.1086	169.7		0.23929	450.9	1.9784	0.8981	1.1093	169.5	55
60	0.26427	455.5	1.9989	0.9046	1.1071	171.0		0.24318	455.4	1.9920	0.9056	1.1077	170.8	60
65	0.26846	460.1	2.0125	0.9123	1.1056	172.3		0.24697	459.9	2.0055	0.9132	1.1062	172.1	65
70	0.27263	464.6	2.0259	0.9199	1.1042	173.6		0.25088	464.5	2.0190	0.9208	1.1048	173.4	70
75	0.27678	469.3	2.0393	0.9275	1.1029	174.8		0.25466	469.2	2.0324	0.9283	1.1034	174.7	75
80	0.28090	473.9	2.0526	0.9352	1.1016	176.1		0.25853	473.8	2.0457	0.9359	1.1021	176.0	80
85	0.28506	478.6	2.0658	0.9428	1.1004	177.3		0.26238	478.5	2.0589	0.9435	1.1009	177.2	85
90	0.28918	483.3	2.0789	0.9504	1.0992	178.6		0.26610	483.2	2.0720	0.9510	1.0997	178.4	90
95	0.29326	488.1	2.0919	0.9579	1.0981	179.8		0.26998	488.0	2.0851	0.9586	1.0985	179.7	95
100	0.29735	492.9	2.1049	0.9655	1.0970	181.0		0.27375	492.8	2.0981	0.9661	1.0974	180.9	100
105	0.30157	497.8	2.1178	0.9730	1.0960	182.2		0.27755	497.7	2.1110	0.9735	1.0963	182.1	105
110	0.30562	502.6	2.1306	0.9804	1.0950	183.4		0.28129	502.6	2.1238	0.9810	1.0953	183.3	110
115	0.30969	507.6	2.1434	0.9879	1.0940	184.6		0.28514	507.5	2.1366	0.9884	1.0943	184.5	115
120	0.31377	512.5	2.1561	0.9953	1.0931	185.7		0.28893	512.5	2.1493	0.9958	1.0934	185.6	120
125	0.31797	517.5	2.1687	1.0026	1.0922	186.9		0.29265	517.5	2.1619	1.0031	1.0924	186.8	125
130	—	—	—	—	—	—		0.29647	522.5	2.1745	1.0104	1.0915	188.0	130

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 120.00 kPa (abs)							PRESSURE = 130.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-22.29	0.00073	170.7	0.8888	1.2812	1.5058	727.6	SAT LIQ	0.00074	173.1	0.8981	1.2856	1.5065	719.1	-20.47
-22.29	0.16207	385.4	1.7443	0.8016	1.1563	146.1	SAT VAP	0.15026	386.5	1.7426	0.8080	1.1575	146.3	-20.47
-20	0.16385	387.2	1.7516	0.8033	1.1538	146.9		0.15060	386.9	1.7441	0.8083	1.1570	146.4	-20
-15	0.16773	391.2	1.7674	0.8075	1.1488	148.6		0.15423	390.9	1.7600	0.8120	1.1516	148.2	-15
-10	0.17156	395.3	1.7829	0.8124	1.1443	150.3		0.15780	395.0	1.7756	0.8164	1.1468	149.9	-10
-5	0.17535	399.3	1.7983	0.8177	1.1402	151.9		0.16134	399.1	1.7910	0.8213	1.1425	151.5	-5
0	0.17912	403.5	1.8134	0.8233	1.1365	153.5		0.16488	403.2	1.8062	0.8266	1.1385	153.1	0
5	0.18285	407.6	1.8284	0.8294	1.1331	155.1		0.16829	407.3	1.8212	0.8323	1.1349	154.7	5
10	0.18657	411.7	1.8432	0.8356	1.1300	156.6		0.17173	411.5	1.8361	0.8383	1.1316	156.3	10
15	0.19022	415.9	1.8579	0.8422	1.1271	158.1		0.17516	415.7	1.8509	0.8446	1.1286	157.8	15
20	0.19387	420.2	1.8725	0.8489	1.1245	159.6		0.17857	420.0	1.8654	0.8511	1.1258	159.3	20
25	0.19751	424.4	1.8869	0.8558	1.1220	161.0		0.18195	424.2	1.8799	0.8578	1.1232	160.8	25
30	0.20113	428.7	1.9012	0.8628	1.1197	162.5		0.18529	428.5	1.8942	0.8647	1.1208	162.2	30
35	0.20475	433.1	1.9153	0.8700	1.1175	163.9		0.18864	432.9	1.9084	0.8717	1.1185	163.6	35
40	0.20833	437.4	1.9294	0.8772	1.1155	165.3		0.19198	437.3	1.9225	0.8788	1.1164	165.0	40
45	0.21191	441.8	1.9434	0.8845	1.1135	166.6		0.19531	441.7	1.9365	0.8860	1.1144	166.4	45
50	0.21552	446.3	1.9572	0.8919	1.1117	168.0		0.19861	446.1	1.9504	0.8933	1.1125	167.8	50
55	0.21906	450.7	1.9710	0.8993	1.1100	169.3		0.20190	450.6	1.9641	0.9006	1.1108	169.1	55
60	0.22262	455.3	1.9846	0.9068	1.1084	170.7		0.20521	455.1	1.9778	0.9080	1.1091	170.5	60
65	0.22614	459.8	1.9982	0.9143	1.1068	172.0		0.20846	459.7	1.9914	0.9154	1.1075	171.8	65
70	0.22967	464.4	2.0117	0.9218	1.1054	173.3		0.21173	464.3	2.0049	0.9228	1.1060	173.1	70
75	0.23321	469.0	2.0251	0.9293	1.1040	174.5		0.21501	468.9	2.0183	0.9302	1.1045	174.4	75
80	0.23669	473.7	2.0384	0.9368	1.1026	175.8		0.21825	473.6	2.0316	0.9377	1.1032	175.7	80
85	0.24021	478.4	2.0516	0.9443	1.1014	177.1		0.22148	478.3	2.0448	0.9451	1.1019	176.9	85
90	0.24372	483.1	2.0647	0.9518	1.1001	178.3		0.22477	483.0	2.0580	0.9526	1.1006	178.2	90
95	0.24722	487.9	2.0778	0.9593	1.0989	179.5		0.22800	487.8	2.0711	0.9600	1.0994	179.4	95
100	0.25069	492.7	2.0908	0.9667	1.0978	180.8		0.23116	492.6	2.0841	0.9674	1.0982	180.6	100
105	0.25419	497.6	2.1037	0.9742	1.0967	182.0		0.23447	497.5	2.0970	0.9748	1.0971	181.8	105
110	0.25767	502.5	2.1165	0.9816	1.0957	183.2		0.23764	502.4	2.1098	0.9822	1.0961	183.0	110
115	0.26116	507.4	2.1293	0.9890	1.0947	184.4		0.24091	507.3	2.1226	0.9895	1.0950	184.2	115
120	0.26462	512.4	2.1420	0.9963	1.0937	185.5		0.24414	512.3	2.1353	0.9968	1.0940	185.4	120
125	0.26810	517.4	2.1547	1.0036	1.0928	186.7		0.24728	517.3	2.1480	1.0041	1.0931	186.6	125
130	0.27152	522.4	2.1672	1.0109	1.0919	187.9		0.25050	522.3	2.1606	1.0114	1.0922	187.8	130

TEMP °C	PRESSURE = 140.00 kPa (abs)							PRESSURE = 150.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-18.75	0.00074	175.3	0.9068	1.2899	1.5072	711.2	SAT LIQ	0.00074	177.4	0.9150	1.2939	1.5081	703.7	-17.12
-18.75	0.14010	387.5	1.7411	0.8142	1.1587	146.4	SAT VAP	0.13123	388.5	1.7397	0.8201	1.1599	146.5	-17.12
-15	0.14263	390.6	1.7530	0.8166	1.1549	147.7		0.13259	390.3	1.7464	0.8213	1.1574	147.3	-15
-10	0.14599	394.7	1.7687	0.8205	1.1493	149.5		0.13576	394.4	1.7622	0.8247	1.1519	149.1	-10
-5	0.14930	398.8	1.7842	0.8250	1.1447	151.2		0.13889	398.5	1.7778	0.8287	1.1470	150.8	-5
0	0.15258	402.9	1.7995	0.8299	1.1405	152.8		0.14196	402.7	1.7931	0.8333	1.1426	152.4	0
5	0.15584	407.1	1.8146	0.8353	1.1368	154.4		0.14508	406.9	1.8083	0.8384	1.1386	154.1	5
10	0.15906	411.3	1.8295	0.8411	1.1333	156.0		0.14806	411.1	1.8233	0.8438	1.1350	155.7	10
15	0.16226	415.5	1.8443	0.8471	1.1301	157.5		0.15106	415.3	1.8381	0.8496	1.1316	157.2	15
20	0.16543	419.8	1.8589	0.8534	1.1272	159.0		0.15404	419.6	1.8528	0.8557	1.1285	158.7	20
25	0.16858	424.1	1.8734	0.8599	1.1245	160.5		0.15701	423.9	1.8673	0.8620	1.1257	160.2	25
30	0.17173	428.4	1.8877	0.8666	1.1219	162.0		0.15995	428.2	1.8817	0.8685	1.1231	161.7	30
35	0.17486	432.7	1.9020	0.8735	1.1196	163.4		0.16289	432.5	1.8959	0.8752	1.1206	163.2	35
40	0.17794	437.1	1.9161	0.8804	1.1174	164.8		0.16581	436.9	1.9101	0.8820	1.1183	164.6	40
45	0.18106	441.5	1.9301	0.8875	1.1153	166.2		0.16869	441.4	1.9241	0.8890	1.1162	166.0	45
50	0.18413	446.0	1.9440	0.8946	1.1134	167.6		0.17155	445.8	1.9380	0.8960	1.1142	167.4	50
55	0.18720	450.5	1.9578	0.9019	1.1115	168.9		0.17449	450.3	1.9518	0.9032	1.1123	168.7	55
60	0.19026	455.0	1.9715	0.9091	1.1098	170.3		0.17734	454.9	1.9656	0.9103	1.1105	170.1	60
65	0.19331	459.6	1.9851	0.9165	1.1082	171.6		0.18018	459.4	1.9792	0.9176	1.1088	171.4	65
70	0.19635	464.2	1.9986	0.9238	1.1066	172.9		0.18305	464.0	1.9927	0.9249	1.1072	172.8	70
75	0.19936	468.8	2.0120	0.9312	1.1051	174.2		0.18587	468.7	2.0061	0.9322	1.1057	174.1	75
80	0.20243	473.5	2.0253	0.9386	1.1037	175.5		0.18875	473.4	2.0195	0.9395	1.1043	175.3	80
85	0.20547	478.2	2.0386	0.9460	1.1024	176.8		0.19157	478.1	2.0327	0.9468	1.1029	176.6	85
90	0.20851	482.9	2.0517	0.9534	1.1011	178.0		0.19440	482.8	2.0459	0.9541	1.1016	177.9	90
95	0.21146	487.7	2.0648	0.9607	1.0998	179.3		0.19720	487.6	2.0590	0.9615	1.1003	179.1	95
100	0.21450	492.5	2.0778	0.9681	1.0987	180.5		0.20000	492.4	2.0720	0.9688	1.0991	180.4	100
105	0.21753	497.4	2.0908	0.9755	1.0975	181.7		0.20284	497.3	2.0850	0.9761	1.0979	181.6	105
110	0.22051	502.3	2.1036	0.9828	1.0964	182.9		0.20563	502.2	2.0978	0.9834	1.0968	182.8	110
115	0.22351	507.2	2.1164	0.9901	1.0954	184.1		0.20846	507.1	2.1106	0.9907	1.0958	184.0	115
120	0.22650	512.2	2.1291	0.9974	1.0944	185.3		0.21124	512.1	2.1234	0.9979	1.0947	185.2	120
125	0.22946	517.2	2.1418	1.0046	1.0934	186.5		0.21404	517.1	2.1360	1.0052	1.0937	186.4	125
130	0.23245	522.2	2.1544	1.0118	1.0925	187.7		0.21683	522.2	2.1486	1.0123	1.0928	187.6	130
135	0.23546	527.3	2.1669	1.0190	1.0916	188.8		0.21964	527.2	2.1611	1.0195	1.0919	188.7	135

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 160.00 kPa (abs)							PRESSURE = 170.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-15.58	0.00074	179.4	0.9228	1.2979	1.5089	696.6	SATLIQ	0.00075	181.3	0.9302	1.3017	1.5098	689.9	-14.11
-15.58	0.12344	389.5	1.7384	0.8258	1.1612	146.6	SATVAP	0.11655	390.4	1.7372	0.8313	1.1524	146.7	-14.11
-15	0.12379	390.0	1.7402	0.8261	1.1605	146.9		—	—	—	—	—	—	-15
-10	0.12679	394.1	1.7561	0.8289	1.1546	148.6		0.11889	393.8	1.7503	0.8333	1.1574	148.2	-10
-5	0.12975	398.3	1.7717	0.8325	1.1494	150.4		0.12170	398.0	1.7650	0.8364	1.1518	150.0	-5
0	0.13268	402.4	1.7872	0.8367	1.1447	152.1		0.12447	402.2	1.7815	0.8402	1.1469	151.7	0
5	0.13556	406.6	1.8024	0.8415	1.1405	153.7		0.12721	406.4	1.7958	0.8446	1.1424	153.4	5
10	0.13843	410.8	1.8174	0.8466	1.1367	155.3		0.12994	410.6	1.8119	0.8495	1.1384	155.0	10
15	0.14126	415.1	1.8323	0.8522	1.1332	156.9		0.13263	414.9	1.8258	0.8548	1.1347	156.6	15
20	0.14407	419.4	1.8470	0.8580	1.1299	158.5		0.13528	419.2	1.8415	0.8604	1.1314	158.2	20
25	0.14686	423.7	1.8616	0.8641	1.1270	160.0		0.13793	423.5	1.8561	0.8663	1.1283	159.7	25
30	0.14966	428.0	1.8760	0.8705	1.1242	161.5		0.14055	427.8	1.8706	0.8724	1.1254	161.2	30
35	0.15242	432.4	1.8903	0.8770	1.1217	162.9		0.14315	432.2	1.8849	0.8788	1.1228	162.7	35
40	0.15516	436.8	1.9044	0.8837	1.1193	164.4		0.14577	436.6	1.8991	0.8853	1.1203	164.1	40
45	0.15790	441.2	1.9185	0.8905	1.1171	165.8		0.14835	441.1	1.9132	0.8920	1.1180	165.6	45
50	0.16059	445.7	1.9324	0.8974	1.1150	167.2		0.15092	445.5	1.9272	0.8988	1.1159	167.0	50
55	0.16329	450.2	1.9463	0.9044	1.1131	168.6		0.15347	450.0	1.9410	0.9057	1.1139	168.4	55
60	0.16600	454.7	1.9600	0.9115	1.1112	169.9		0.15603	454.6	1.9548	0.9127	1.1120	169.7	60
65	0.16869	459.3	1.9736	0.9187	1.1095	171.3		0.15853	459.2	1.9684	0.9198	1.1102	171.1	65
70	0.17141	463.9	1.9872	0.9259	1.1079	172.6		0.16108	463.8	1.9820	0.9269	1.1085	172.4	70
75	0.17406	468.6	2.0006	0.9331	1.1063	173.9		0.16364	468.4	1.9954	0.9341	1.1069	173.7	75
80	0.17674	473.2	2.0140	0.9404	1.1048	175.2		0.16617	473.1	2.0088	0.9413	1.1054	175.0	80
85	0.17940	478.0	2.0272	0.9477	1.1034	176.5		0.16863	477.9	2.0221	0.9485	1.1039	176.3	85
90	0.18205	482.7	2.0404	0.9549	1.1020	177.7		0.17117	482.6	2.0353	0.9557	1.1025	177.6	90
95	0.18471	487.5	2.0535	0.9622	1.1008	179.0		0.17367	487.4	2.0484	0.9630	1.1012	178.9	95
100	0.18734	492.3	2.0666	0.9695	1.0995	180.2		0.17613	492.2	2.0614	0.9702	1.1000	180.1	100
105	0.19001	497.2	2.0795	0.9768	1.0983	181.5		0.17867	497.1	2.0744	0.9774	1.0988	181.3	105
110	0.19260	502.1	2.0924	0.9840	1.0972	182.7		0.18113	502.0	2.0873	0.9847	1.0976	182.6	110
115	0.19524	507.0	2.1052	0.9913	1.0961	183.9		0.18362	507.0	2.1001	0.9919	1.0965	183.8	115
120	0.19790	512.0	2.1179	0.9985	1.0951	185.1		0.18612	511.9	2.1128	0.9990	1.0954	185.0	120
125	0.20052	517.0	2.1306	1.0057	1.0941	186.3		0.18857	516.9	2.1255	1.0062	1.0944	186.2	125
130	0.20313	522.1	2.1432	1.0128	1.0931	187.5		0.19106	522.0	2.1381	1.0133	1.0934	187.4	130
135	0.20576	527.2	2.1557	1.0200	1.0922	188.6		0.19354	527.1	2.1506	1.0204	1.0925	188.5	135
140	—	—	—	—	—	—		0.19600	532.2	2.1631	1.0275	1.0915	189.7	140

TEMP °C	PRESSURE = 180.00 kPa (abs)							PRESSURE = 190.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-12.71	0.00075	183.2	0.9372	1.3053	1.5107	683.4	SATLIQ	0.00075	184.9	0.9439	1.3089	1.5116	677.3	-11.37
-12.71	0.11039	391.2	1.7361	0.8366	1.1637	146.8	SATVAP	0.10484	392.0	1.7351	0.8418	1.1549	146.9	-11.37
-10	0.11186	393.5	1.7448	0.8377	1.1602	147.8		0.10555	393.2	1.7395	0.8422	1.1531	147.4	-10
-5	0.11453	397.7	1.7606	0.8404	1.1543	149.6		0.10812	397.4	1.7554	0.8444	1.1569	149.2	-5
0	0.11718	401.9	1.7761	0.8438	1.1491	151.3		0.11066	401.6	1.7710	0.8474	1.1514	151.0	0
5	0.11979	406.1	1.7915	0.8478	1.1444	153.0		0.11315	405.9	1.7864	0.8510	1.1464	152.7	5
10	0.12237	410.4	1.8066	0.8524	1.1402	154.7		0.11562	410.1	1.8016	0.8553	1.1420	154.4	10
15	0.12494	414.7	1.8216	0.8574	1.1363	156.3		0.11805	414.4	1.8166	0.8600	1.1380	156.0	15
20	0.12747	419.0	1.8364	0.8628	1.1328	157.9		0.12047	418.7	1.8314	0.8652	1.1343	157.6	20
25	0.12999	423.3	1.8510	0.8685	1.1296	159.4		0.12287	423.1	1.8461	0.8706	1.1309	159.2	25
30	0.13247	427.6	1.8655	0.8744	1.1266	160.9		0.12525	427.5	1.8606	0.8764	1.1278	160.7	30
35	0.13495	432.0	1.8798	0.8806	1.1239	162.4		0.12760	431.9	1.8750	0.8824	1.1250	162.2	35
40	0.13742	436.4	1.8941	0.8870	1.1213	163.9		0.12995	436.3	1.8893	0.8887	1.1223	163.7	40
45	0.13988	440.9	1.9082	0.8936	1.1190	165.3		0.13229	440.7	1.9034	0.8951	1.1199	165.1	45
50	0.14231	445.4	1.9222	0.9003	1.1167	166.8		0.13461	445.2	1.9174	0.9017	1.1176	166.6	50
55	0.14474	449.9	1.9360	0.9071	1.1147	168.2		0.13698	449.8	1.9313	0.9084	1.1155	168.0	55
60	0.14717	454.5	1.9498	0.9140	1.1127	169.5		0.13922	454.3	1.9451	0.9152	1.1134	169.4	60
65	0.14957	459.0	1.9635	0.9209	1.1109	170.9		0.14152	458.9	1.9588	0.9221	1.1115	170.7	65
70	0.15195	463.7	1.9770	0.9280	1.1091	172.2		0.14380	463.5	1.9724	0.9290	1.1098	172.1	70
75	0.15434	468.3	1.9905	0.9351	1.1075	173.6		0.14607	468.2	1.9859	0.9360	1.1081	173.4	75
80	0.15674	473.0	2.0039	0.9422	1.1059	174.9		0.14832	472.9	1.9993	0.9431	1.1065	174.7	80
85	0.15911	477.7	2.0172	0.9494	1.1044	176.2		0.15060	477.6	2.0126	0.9502	1.1050	176.0	85
90	0.16150	482.5	2.0304	0.9565	1.1030	177.5		0.15284	482.4	2.0258	0.9573	1.1035	177.3	90
95	0.16385	487.3	2.0435	0.9637	1.1017	178.7		0.15509	487.2	2.0389	0.9645	1.1021	178.6	95
100	0.16622	492.1	2.0566	0.9709	1.1004	180.0		0.15733	492.0	2.0520	0.9716	1.1008	179.8	100
105	0.16858	497.0	2.0696	0.9781	1.0992	181.2		0.15957	496.9	2.0650	0.9788	1.0996	181.1	105
110	0.17094	501.9	2.0825	0.9853	1.0980	182.4		0.16181	501.8	2.0779	0.9859	1.0984	182.3	110
115	0.17328	506.9	2.0953	0.9924	1.0969	183.7		0.16404	506.8	2.0907	0.9930	1.0972	183.6	115
120	0.17562	511.8	2.1080	0.9996	1.0958	184.9		0.16625	511.8	2.1034	1.0001	1.0961	184.8	120
125	0.17797	516.9	2.1207	1.0067	1.0947	186.1		0.16849	516.8	2.1161	1.0072	1.0951	186.0	125
130	0.18031	521.9	2.1333	1.0138	1.0937	187.3		0.17071	521.8	2.1288	1.0143	1.0940	187.2	130
135	0.18265	527.0	2.1458	1.0209	1.0928	188.4		0.17292	526.9	2.1413	1.0214	1.0931	188.3	135
140	0.18498	532.1	2.1583	1.0279	1.0918	189.6		0.17515	532.0	2.1538	1.0284	1.0921	189.5	140

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 200.00 kPa (abs)							PRESSURE = 210.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-10.08	0.00075	186.6	0.9503	1.3124	1.5125	671.3	SATLIQ	0.00076	188.2	0.9565	1.3157	1.5135	665.6	-8.84
-10.08	0.09985	392.8	1.7342	0.8468	1.1661	146.9	SATVAP	0.09531	393.6	1.7333	0.8517	1.1574	147.0	-8.84
-10	0.09989	392.9	1.7344	0.8468	1.1660	146.9		—	—	—	—	—	—	-10
-5	0.10235	397.1	1.7504	0.8485	1.1595	148.8		0.09713	396.8	1.7456	0.8527	1.1621	148.4	-5
0	0.10478	401.4	1.7661	0.8510	1.1537	150.6		0.09945	401.1	1.7613	0.8548	1.1560	150.2	0
5	0.10717	405.6	1.7815	0.8543	1.1485	152.3		0.10175	405.4	1.7769	0.8577	1.1506	152.0	5
10	0.10953	409.9	1.7968	0.8583	1.1438	154.0		0.10401	409.7	1.7922	0.8613	1.1457	153.7	10
15	0.11186	414.2	1.8118	0.8627	1.1396	155.7		0.10626	414.0	1.8073	0.8654	1.1413	155.4	15
20	0.11417	418.5	1.8267	0.8676	1.1358	157.3		0.10847	418.3	1.8222	0.8700	1.1373	157.0	20
25	0.11647	422.9	1.8414	0.8729	1.1323	158.9		0.11067	422.7	1.8370	0.8751	1.1336	158.6	25
30	0.11874	427.3	1.8560	0.8784	1.1291	160.4		0.11284	427.1	1.8516	0.8805	1.1303	160.2	30
35	0.12099	431.7	1.8704	0.8843	1.1261	162.0		0.11501	431.5	1.8660	0.8862	1.1272	161.7	35
40	0.12324	436.1	1.8847	0.8904	1.1234	163.4		0.11715	435.9	1.8803	0.8921	1.1244	163.2	40
45	0.12547	440.6	1.8989	0.8967	1.1208	164.9		0.11927	440.4	1.8945	0.8982	1.1218	164.7	45
50	0.12767	445.1	1.9129	0.9031	1.1185	166.3		0.12139	444.9	1.9086	0.9046	1.1193	166.1	50
55	0.12989	449.6	1.9268	0.9097	1.1163	167.8		0.12350	449.5	1.9225	0.9110	1.1171	167.6	55
60	0.13207	454.2	1.9406	0.9164	1.1142	169.2		0.12560	454.0	1.9363	0.9176	1.1149	169.0	60
65	0.13425	458.8	1.9543	0.9232	1.1122	170.5		0.12768	458.6	1.9501	0.9244	1.1129	170.4	65
70	0.13643	463.4	1.9679	0.9301	1.1104	171.9		0.12975	463.3	1.9637	0.9312	1.1111	171.7	70
75	0.13860	468.1	1.9814	0.9370	1.1087	173.2		0.13184	468.0	1.9772	0.9380	1.1093	173.1	75
80	0.14075	472.8	1.9948	0.9440	1.1070	174.6		0.13390	472.7	1.9906	0.9450	1.1076	174.4	80
85	0.14290	477.5	2.0082	0.9511	1.1055	175.9		0.13596	477.4	2.0040	0.9519	1.1060	175.7	85
90	0.14505	482.3	2.0214	0.9581	1.1040	177.2		0.13799	482.2	2.0172	0.9589	1.1045	177.0	90
95	0.14719	487.1	2.0345	0.9652	1.1026	178.4		0.14004	487.0	2.0304	0.9660	1.1031	178.3	95
100	0.14932	491.9	2.0476	0.9723	1.1013	179.7		0.14209	491.8	2.0434	0.9730	1.1017	179.6	100
105	0.15145	496.8	2.0606	0.9794	1.1000	181.0		0.14413	496.7	2.0564	0.9801	1.1004	180.8	105
110	0.15359	501.7	2.0735	0.9865	1.0988	182.2		0.14616	501.6	2.0694	0.9872	1.0992	182.1	110
115	0.15571	506.7	2.0864	0.9936	1.0976	183.4		0.14819	506.6	2.0822	0.9942	1.0980	183.3	115
120	0.15783	511.7	2.0991	1.0007	1.0965	184.7		0.15020	511.6	2.0950	1.0013	1.0968	184.5	120
125	0.15995	516.7	2.1118	1.0078	1.0954	185.9		0.15223	516.6	2.1077	1.0083	1.0957	185.8	125
130	0.16207	521.8	2.1244	1.0148	1.0944	187.1		0.15423	521.7	2.1203	1.0153	1.0947	187.0	130
135	0.16418	526.8	2.1370	1.0218	1.0934	188.2		0.15623	526.8	2.1329	1.0223	1.0937	188.1	135
140	0.16628	532.0	2.1495	1.0288	1.0924	189.4		0.15825	531.9	2.1454	1.0293	1.0927	189.3	140
145	—	—	—	—	—	—		0.16028	537.1	2.1578	1.0362	1.0917	190.5	145

TEMP °C	PRESSURE = 220.00 kPa (abs)							PRESSURE = 230.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-7.64	0.00076	189.8	0.9624	1.3190	1.5144	660.2	SATLIQ	0.00076	191.3	0.9681	1.3222	1.5154	654.9	-6.49
-7.64	0.09117	394.3	1.7325	0.8564	1.1686	147.0	SATVAP	0.08737	395.0	1.7317	0.8611	1.1599	147.0	-6.49
-5	0.09237	396.5	1.7410	0.8569	1.1649	148.0		0.08803	396.3	1.7365	0.8612	1.1677	147.6	-5
0	0.09462	400.8	1.7568	0.8585	1.1584	149.8		0.09020	400.6	1.7524	0.8624	1.1609	149.5	0
5	0.09683	405.1	1.7724	0.8611	1.1527	151.6		0.09234	404.9	1.7681	0.8645	1.1549	151.3	5
10	0.09901	409.4	1.7878	0.8643	1.1476	153.4		0.09444	409.2	1.7835	0.8674	1.1495	153.0	10
15	0.10116	413.8	1.8029	0.8682	1.1430	155.1		0.09651	413.6	1.7987	0.8709	1.1447	154.8	15
20	0.10330	418.1	1.8179	0.8725	1.1388	156.7		0.09855	417.9	1.8137	0.8751	1.1404	156.4	20
25	0.10540	422.5	1.8327	0.8774	1.1350	158.3		0.10059	422.3	1.8286	0.8796	1.1364	158.1	25
30	0.10749	426.9	1.8473	0.8825	1.1316	159.9		0.10260	426.7	1.8433	0.8846	1.1329	159.7	30
35	0.10957	431.3	1.8618	0.8880	1.1284	161.5		0.10459	431.2	1.8578	0.8900	1.1296	161.2	35
40	0.11162	435.8	1.8762	0.8938	1.1255	163.0		0.10655	435.6	1.8721	0.8956	1.1265	162.7	40
45	0.11365	440.3	1.8904	0.8998	1.1228	164.5		0.10853	440.1	1.8864	0.9014	1.1237	164.2	45
50	0.11569	444.8	1.9044	0.9060	1.1202	165.9		0.11047	444.6	1.9005	0.9075	1.1211	165.7	50
55	0.11772	449.3	1.9184	0.9124	1.1179	167.4		0.11242	449.2	1.9145	0.9138	1.1187	167.2	55
60	0.11970	453.9	1.9322	0.9189	1.1157	168.8		0.11435	453.8	1.9283	0.9202	1.1165	168.6	60
65	0.12171	458.5	1.9460	0.9255	1.1136	170.2		0.11627	458.4	1.9421	0.9267	1.1144	170.0	65
70	0.12370	463.2	1.9596	0.9322	1.1117	171.6		0.11818	463.0	1.9557	0.9333	1.1124	171.4	70
75	0.12569	467.8	1.9732	0.9390	1.1099	172.9		0.12003	467.7	1.9693	0.9400	1.1105	172.7	75
80	0.12765	472.6	1.9866	0.9459	1.1082	174.3		0.12193	472.4	1.9827	0.9468	1.1088	174.1	80
85	0.12962	477.3	1.9999	0.9528	1.1066	175.6		0.12387	477.2	1.9961	0.9537	1.1071	175.4	85
90	0.13158	482.1	2.0132	0.9598	1.1050	176.9		0.12574	482.0	2.0094	0.9606	1.1055	176.7	90
95	0.13355	486.9	2.0264	0.9667	1.1035	178.2		0.12768	486.8	2.0225	0.9675	1.1040	178.0	95
100	0.13550	491.7	2.0395	0.9737	1.1022	179.5		0.12950	491.6	2.0356	0.9745	1.1026	179.3	100
105	0.13746	496.6	2.0525	0.9808	1.1008	180.7		0.13135	496.5	2.0487	0.9814	1.1012	180.6	105
110	0.13939	501.6	2.0654	0.9878	1.0996	182.0		0.13323	501.5	2.0616	0.9884	1.1000	181.8	110
115	0.14132	506.5	2.0782	0.9948	1.0983	183.2		0.13503	506.4	2.0745	0.9954	1.0987	183.1	115
120	0.14327	511.5	2.0910	1.0018	1.0972	184.4		0.13693	511.4	2.0872	1.0024	1.0975	184.3	120
125	0.14520	516.5	2.1037	1.0088	1.0961	185.7		0.13879	516.4	2.1000	1.0094	1.0964	185.5	125
130	0.14712	521.6	2.1164	1.0158	1.0950	186.9		0.14063	521.5	2.1126	1.0163	1.0953	186.8	130
135	0.14905	526.7	2.1289	1.0228	1.0940	188.0		0.14247	526.6	2.1252	1.0233	1.0943	188.0	135
140	0.15099	531.8	2.1414	1.0297	1.0930	189.2		0.14430	531.7	2.1377	1.0302	1.0933	189.1	140
145	0.15288	537.0	2.1538	1.0366	1.0920	190.4		0.14615	536.9	2.1501	1.0371	1.0923	190.3	145

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 240.00 kPa (abs)							PRESSURE = 250.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-5.37	0.00076	192.8	0.9736	1.3254	1.5164	649.7	SATLIQ	0.00077	194.3	0.9790	1.3285	1.5174	644.8	-4.29
-5.37	0.08389	395.6	1.7310	0.8656	1.1711	147.0	SATVAP	0.08067	396.3	1.7303	0.8701	1.1724	147.0	-4.29
-5	0.08405	396.0	1.7322	0.8657	1.1706	147.2		—	—	—	—	—	—	-5
0	0.08615	400.3	1.7482	0.8663	1.1634	149.1		0.08241	400.0	1.7441	0.8703	1.1660	148.7	0
5	0.08821	404.6	1.7639	0.8680	1.1571	150.9		0.08442	404.4	1.7599	0.8715	1.1594	150.6	5
10	0.09024	409.0	1.7794	0.8705	1.1515	152.7		0.08638	408.7	1.7754	0.8737	1.1535	152.4	10
15	0.09224	413.3	1.7947	0.8738	1.1465	154.4		0.08832	413.1	1.7908	0.8766	1.1483	154.1	15
20	0.09422	417.7	1.8097	0.8776	1.1420	156.1		0.09028	417.5	1.8059	0.8802	1.1436	155.8	20
25	0.09618	422.1	1.8246	0.8820	1.1379	157.8		0.09212	421.9	1.8208	0.8843	1.1393	157.5	25
30	0.09812	426.5	1.8393	0.8867	1.1341	159.4		0.09399	426.3	1.8355	0.8889	1.1355	159.1	30
35	0.10004	431.0	1.8539	0.8919	1.1307	161.0		0.09584	430.8	1.8501	0.8938	1.1319	160.7	35
40	0.10194	435.4	1.8683	0.8973	1.1276	162.5		0.09768	435.3	1.8645	0.8991	1.1287	162.3	40
45	0.10383	439.9	1.8825	0.9030	1.1247	164.0		0.09951	439.8	1.8788	0.9047	1.1257	163.8	45
50	0.10571	444.5	1.8967	0.9090	1.1220	165.5		0.10131	444.3	1.8930	0.9105	1.1230	165.3	50
55	0.10757	449.0	1.9107	0.9151	1.1196	167.0		0.10310	448.9	1.9070	0.9165	1.1204	166.8	55
60	0.10942	453.6	1.9245	0.9214	1.1172	168.4		0.10489	453.5	1.9209	0.9227	1.1180	168.2	60
65	0.11127	458.3	1.9383	0.9278	1.1151	169.8		0.10668	458.1	1.9347	0.9290	1.1158	169.6	65
70	0.11311	462.9	1.9520	0.9344	1.1130	171.2		0.10845	462.8	1.9484	0.9355	1.1137	171.0	70
75	0.11494	467.6	1.9656	0.9410	1.1111	172.6		0.11019	467.5	1.9620	0.9421	1.1118	172.4	75
80	0.11675	472.3	1.9790	0.9478	1.1093	173.9		0.11197	472.2	1.9755	0.9487	1.1099	173.8	80
85	0.11857	477.1	1.9924	0.9546	1.1076	175.3		0.11371	477.0	1.9888	0.9554	1.1082	175.1	85
90	0.12038	481.9	2.0057	0.9614	1.1060	176.6		0.11545	481.8	2.0021	0.9622	1.1065	176.5	90
95	0.12219	486.7	2.0189	0.9683	1.1045	177.9		0.11718	486.6	2.0153	0.9690	1.1050	177.8	95
100	0.12398	491.5	2.0320	0.9752	1.1030	179.2		0.11891	491.4	2.0285	0.9759	1.1035	179.1	100
105	0.12577	496.4	2.0450	0.9821	1.1017	180.5		0.12064	496.3	2.0415	0.9828	1.1021	180.3	105
110	0.12755	501.4	2.0579	0.9891	1.1004	181.7		0.12235	501.3	2.0544	0.9897	1.1008	181.6	110
115	0.12935	506.3	2.0708	0.9960	1.0991	183.0		0.12407	506.2	2.0673	0.9966	1.0995	182.9	115
120	0.13111	511.3	2.0836	1.0030	1.0979	184.2		0.12579	511.2	2.0801	1.0035	1.0983	184.1	120
125	0.13291	516.4	2.0963	1.0099	1.0967	185.4		0.12750	516.3	2.0928	1.0104	1.0971	185.3	125
130	0.13466	521.4	2.1090	1.0168	1.0956	186.7		0.12920	521.3	2.1055	1.0173	1.0960	186.5	130
135	0.13646	526.5	2.1216	1.0237	1.0946	187.9		0.13092	526.4	2.1181	1.0242	1.0949	187.8	135
140	0.13824	531.7	2.1341	1.0306	1.0936	189.0		0.13261	531.6	2.1306	1.0311	1.0938	189.0	140
145	0.13998	536.8	2.1465	1.0375	1.0926	190.2		0.13432	536.8	2.1430	1.0379	1.0929	190.1	145
150	—	—	—	—	—	—		0.13600	542.0	2.1554	1.0448	1.0919	191.3	150

TEMP °C	PRESSURE = 260.00 kPa (abs)							PRESSURE = 270.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-3.24	0.00077	195.7	0.9841	1.3315	1.5184	640.0	SATLIQ	0.00077	197.0	0.9891	1.3345	1.5194	635.3	-2.23
-3.24	0.07769	396.9	1.7297	0.8745	1.1737	147.0	SATVAP	0.07498	397.5	1.7281	0.8787	1.1749	147.0	-2.23
0	0.07897	399.7	1.7401	0.8744	1.1687	148.3		0.07578	399.5	1.7363	0.8785	1.1714	147.1	0
5	0.08091	404.1	1.7560	0.8752	1.1617	150.2		0.07766	403.8	1.7522	0.8788	1.1641	149.8	5
10	0.08282	408.5	1.7716	0.8769	1.1556	152.0		0.07951	408.2	1.7679	0.8802	1.1577	151.7	10
15	0.08469	412.9	1.7870	0.8795	1.1501	153.8		0.08138	412.6	1.7833	0.8825	1.1520	153.5	15
20	0.08654	417.3	1.8021	0.8828	1.1452	155.5		0.08318	417.1	1.7985	0.8855	1.1469	155.2	20
25	0.08837	421.7	1.8171	0.8867	1.1408	157.2		0.08490	421.5	1.8135	0.8891	1.1423	156.9	25
30	0.09018	426.1	1.8319	0.8910	1.1368	158.9		0.08666	426.0	1.8283	0.8932	1.1381	158.6	30
35	0.09197	430.6	1.8465	0.8958	1.1331	160.5		0.08839	430.4	1.8430	0.8978	1.1344	160.2	35
40	0.09375	435.1	1.8610	0.9009	1.1298	162.0		0.09011	434.9	1.8575	0.9027	1.1309	161.8	40
45	0.09550	439.6	1.8753	0.9063	1.1267	163.6		0.09181	439.5	1.8718	0.9080	1.1277	163.4	45
50	0.09725	444.2	1.8894	0.9120	1.1239	165.1		0.09350	444.0	1.8860	0.9135	1.1248	164.9	50
55	0.09899	448.7	1.9035	0.9179	1.1213	166.6		0.09517	448.6	1.9001	0.9193	1.1221	166.4	55
60	0.10073	453.4	1.9174	0.9240	1.1188	168.0		0.09686	453.2	1.9140	0.9253	1.1196	167.8	60
65	0.10243	458.0	1.9312	0.9302	1.1165	169.5		0.09851	457.9	1.9279	0.9314	1.1173	169.3	65
70	0.10414	462.7	1.9449	0.9366	1.1144	170.9		0.10016	462.5	1.9416	0.9377	1.1151	170.7	70
75	0.10583	467.4	1.9585	0.9431	1.1124	172.3		0.10180	467.2	1.9552	0.9441	1.1130	172.1	75
80	0.10753	472.1	1.9720	0.9497	1.1105	173.6		0.10342	472.0	1.9687	0.9506	1.1111	173.5	80
85	0.10921	476.8	1.9854	0.9563	1.1087	175.0		0.10505	476.7	1.9821	0.9572	1.1093	174.8	85
90	0.11089	481.6	1.9987	0.9630	1.1071	176.3		0.10668	481.5	1.9954	0.9639	1.1076	176.2	90
95	0.11256	486.5	2.0119	0.9698	1.1055	177.6		0.10830	486.4	2.0087	0.9706	1.1059	177.5	95
100	0.11425	491.3	2.0251	0.9766	1.1040	178.9		0.10990	491.2	2.0218	0.9774	1.1044	178.8	100
105	0.11590	496.2	2.0381	0.9835	1.1025	180.2		0.11151	496.1	2.0348	0.9842	1.1029	180.1	105
110	0.11755	501.2	2.0511	0.9903	1.1012	181.5		0.11311	501.1	2.0478	0.9910	1.1016	181.4	110
115	0.11922	506.1	2.0640	0.9972	1.0999	182.7		0.11471	506.1	2.0607	0.9978	1.1002	182.6	115
120	0.12086	511.2	2.0768	1.0041	1.0986	184.0		0.11629	511.1	2.0735	1.0047	1.0990	183.9	120
125	0.12249	516.2	2.0895	1.0110	1.0974	185.2		0.11788	516.1	2.0863	1.0115	1.0978	185.1	125
130	0.12416	521.3	2.1022	1.0178	1.0963	186.4		0.11946	521.2	2.0989	1.0183	1.0966	186.3	130
135	0.12579	526.4	2.1147	1.0247	1.0952	187.7		0.12105	526.3	2.1115	1.0252	1.0955	187.6	135
140	0.12744	531.5	2.1273	1.0315	1.0941	188.9		0.12264	531.4	2.1241	1.0320	1.0944	188.8	140
145	0.12907	536.7	2.1397	1.0384	1.0931	190.0		0.12422	536.6	2.1365	1.0388	1.0934	190.0	145
150	0.13068	541.9	2.1521	1.0452	1.0922	191.2		0.12577	541.8	2.1489	1.0456	1.0924	191.1	150

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 280.00 kPa (abs)							PRESSURE = 290.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
-1.24	0.00077	198.3	0.9939	1.3374	1.5204	630.8	SATLIQ	0.00077	199.6	0.9986	1.3403	1.5214	626.4	-0.28
-1.24	0.07235	398.1	1.7285	0.8830	1.1762	147.0	SATVAP	0.06995	398.6	1.7280	0.8871	1.1774	147.0	-0.28
0	0.07281	399.2	1.7325	0.8827	1.1741	147.5		0.07005	398.9	1.7289	0.8870	1.1770	147.1	0
5	0.07464	403.6	1.7485	0.8826	1.1665	149.5		0.07183	403.3	1.7449	0.8864	1.1690	149.1	5
10	0.07645	408.0	1.7643	0.8835	1.1598	151.3		0.07359	407.8	1.7607	0.8869	1.1620	151.0	10
15	0.07822	412.4	1.7797	0.8854	1.1539	153.2		0.07531	412.2	1.7763	0.8885	1.1558	152.8	15
20	0.07996	416.9	1.7950	0.8881	1.1486	154.9		0.07701	416.6	1.7916	0.8909	1.1503	154.6	20
25	0.08168	421.3	1.8100	0.8915	1.1438	156.7		0.07867	421.1	1.8067	0.8939	1.1454	156.4	25
30	0.08338	425.8	1.8249	0.8954	1.1399	158.3		0.08033	425.6	1.8216	0.8976	1.1409	158.1	30
35	0.08506	430.3	1.8396	0.8998	1.1356	160.0		0.08196	430.1	1.8363	0.9018	1.1369	159.7	35
40	0.08672	434.8	1.8541	0.9045	1.1320	161.6		0.08358	434.6	1.8508	0.9064	1.1332	161.3	40
45	0.08837	439.3	1.8685	0.9096	1.1288	163.1		0.08517	439.1	1.8652	0.9113	1.1298	162.9	45
50	0.09001	443.9	1.8827	0.9150	1.1258	164.7		0.08676	443.7	1.8795	0.9166	1.1267	164.4	50
55	0.09163	448.5	1.8968	0.9207	1.1230	166.2		0.08835	448.3	1.8936	0.9221	1.1239	166.0	55
60	0.09325	453.1	1.9108	0.9266	1.1204	167.6		0.08990	452.9	1.9076	0.9279	1.1212	167.4	60
65	0.09485	457.7	1.9246	0.9326	1.1180	169.1		0.09145	457.6	1.9215	0.9338	1.1187	168.9	65
70	0.09645	462.4	1.9383	0.9388	1.1158	170.5		0.09301	462.3	1.9352	0.9399	1.1164	170.3	70
75	0.09804	467.1	1.9520	0.9451	1.1137	171.9		0.09455	467.0	1.9489	0.9462	1.1143	171.8	75
80	0.09962	471.8	1.9655	0.9516	1.1117	173.3		0.09606	471.7	1.9624	0.9525	1.1123	173.1	80
85	0.10118	476.6	1.9789	0.9581	1.1098	174.7		0.09760	476.5	1.9758	0.9590	1.1104	174.5	85
90	0.10275	481.4	1.9922	0.9647	1.1081	176.0		0.09911	481.3	1.9892	0.9656	1.1086	175.9	90
95	0.10432	486.3	2.0055	0.9714	1.1064	177.3		0.10062	486.2	2.0024	0.9722	1.1069	177.2	95
100	0.10588	491.1	2.0186	0.9781	1.1049	178.7		0.10213	491.0	2.0156	0.9788	1.1053	178.5	100
105	0.10743	496.1	2.0317	0.9848	1.1034	180.0		0.10363	496.0	2.0286	0.9855	1.1038	179.8	105
110	0.10897	501.0	2.0447	0.9916	1.1020	181.2		0.10512	500.9	2.0416	0.9923	1.1024	181.1	110
115	0.11052	506.0	2.0576	0.9984	1.1006	182.5		0.10663	505.9	2.0546	0.9990	1.1010	182.4	115
120	0.11206	511.0	2.0704	1.0052	1.0993	183.8		0.10812	510.9	2.0674	1.0058	1.0997	183.7	120
125	0.11358	516.0	2.0831	1.0120	1.0981	185.0		0.10960	515.9	2.0801	1.0126	1.0985	184.9	125
130	0.11511	521.1	2.0958	1.0189	1.0969	186.2		0.11107	521.0	2.0928	1.0194	1.0973	186.1	130
135	0.11665	526.2	2.1084	1.0257	1.0958	187.5		0.11256	526.1	2.1054	1.0262	1.0961	187.4	135
140	0.11818	531.4	2.1209	1.0325	1.0947	188.7		0.11404	531.3	2.1180	1.0329	1.0950	188.6	140
145	0.11969	536.5	2.1334	1.0392	1.0937	189.9		0.11550	536.5	2.1304	1.0397	1.0940	189.8	145
150	0.12121	541.7	2.1458	1.0460	1.0927	191.0		0.11697	541.7	2.1428	1.0464	1.0930	191.0	150

TEMP °C	PRESSURE = 300.00 kPa (abs)							PRESSURE = 310.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
0.66	0.00077	200.9	1.0032	1.3431	1.5225	622.1	SATLIQ	0.00078	202.1	1.0077	1.3459	1.5235	617.9	1.57
0.66	0.06770	399.2	1.7275	0.8912	1.1787	147.0	SATVAP	0.06559	399.7	1.7270	0.8952	1.1800	146.9	1.57
5	0.06921	403.1	1.7415	0.8902	1.1715	148.7		0.06676	402.8	1.7381	0.8942	1.1741	148.3	5
10	0.07092	407.5	1.7573	0.8904	1.1642	150.7		0.06842	407.3	1.7540	0.8938	1.1665	150.3	10
15	0.07260	412.0	1.7729	0.8915	1.1578	152.5		0.07006	411.7	1.7696	0.8947	1.1598	152.2	15
20	0.07424	416.4	1.7883	0.8936	1.1521	154.3		0.07166	416.2	1.7850	0.8954	1.1538	154.0	20
25	0.07587	420.9	1.8034	0.8964	1.1469	156.1		0.07325	420.7	1.8002	0.8989	1.1485	155.8	25
30	0.07748	425.4	1.8183	0.8998	1.1423	157.8		0.07481	425.2	1.8152	0.9021	1.1438	157.5	30
35	0.07906	429.9	1.8331	0.9038	1.1381	159.5		0.07635	429.7	1.8300	0.9059	1.1394	159.2	35
40	0.08063	434.4	1.8477	0.9082	1.1343	161.1		0.07788	434.3	1.8446	0.9101	1.1355	160.8	40
45	0.08219	439.0	1.8621	0.9130	1.1309	162.7		0.07939	438.8	1.8590	0.9147	1.1319	162.4	45
50	0.08372	443.6	1.8764	0.9181	1.1277	164.2		0.08090	443.4	1.8734	0.9197	1.1287	164.0	50
55	0.08525	448.2	1.8905	0.9236	1.1247	165.8		0.08239	448.0	1.8875	0.9250	1.1256	165.6	55
60	0.08678	452.8	1.9045	0.9292	1.1220	167.3		0.08385	452.7	1.9015	0.9305	1.1228	167.1	60
65	0.08829	457.5	1.9184	0.9350	1.1195	168.7		0.08532	457.3	1.9154	0.9363	1.1203	168.5	65
70	0.08978	462.1	1.9322	0.9411	1.1171	170.2		0.08678	462.0	1.9292	0.9422	1.1178	170.0	70
75	0.09128	466.9	1.9458	0.9472	1.1149	171.6		0.08821	466.7	1.9429	0.9483	1.1156	171.4	75
80	0.09276	471.6	1.9594	0.9535	1.1129	173.0		0.08967	471.5	1.9565	0.9545	1.1135	172.8	80
85	0.09424	476.4	1.9728	0.9599	1.1110	174.4		0.09111	476.3	1.9699	0.9608	1.1115	174.2	85
90	0.09571	481.2	1.9862	0.9664	1.1091	175.7		0.09253	481.1	1.9833	0.9672	1.1097	175.6	90
95	0.09718	486.1	1.9994	0.9730	1.1074	177.1		0.09395	486.0	1.9966	0.9737	1.1079	176.9	95
100	0.09863	490.9	2.0126	0.9796	1.1058	178.4		0.09536	490.8	2.0097	0.9803	1.1063	178.3	100
105	0.10009	495.9	2.0257	0.9862	1.1042	179.7		0.09678	495.8	2.0228	0.9869	1.1047	179.6	105
110	0.10153	500.8	2.0387	0.9929	1.1028	181.0		0.09818	500.7	2.0359	0.9936	1.1032	180.9	110
115	0.10299	505.8	2.0516	0.9996	1.1014	182.3		0.09958	505.7	2.0488	1.0003	1.1018	182.2	115
120	0.10444	510.8	2.0645	1.0064	1.1001	183.5		0.10098	510.7	2.0616	1.0070	1.1004	183.4	120
125	0.10585	515.9	2.0772	1.0131	1.0988	184.8		0.10236	515.8	2.0744	1.0137	1.0991	184.7	125
130	0.10730	520.9	2.0899	1.0199	1.0976	186.0		0.10376	520.9	2.0871	1.0204	1.0979	185.9	130
135	0.10873	526.1	2.1025	1.0266	1.0964	187.3		0.10514	526.0	2.0997	1.0271	1.0967	187.2	135
140	0.11017	531.2	2.1151	1.0334	1.0953	188.5		0.10654	531.1	2.1122	1.0338	1.0956	188.4	140
145	0.11158	536.4	2.1275	1.0401	1.0943	189.7		0.10791	536.3	2.1247	1.0406	1.0945	189.6	145
150	0.11301	541.6	2.1399	1.0468	1.0932	190.9		0.10929	541.5	2.1371	1.0472	1.0935	190.8	150
155	0.11442	546.9	2.1523	1.0535	1.0922	192.1		0.11067	546.8	2.1495	1.0539	1.0925	192.0	155

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 320.00 kPa (abs)							PRESSURE = 330.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
2.46	0.00078	203.3	1.0120	1.3486	1.5245	613.8	SATLIQ SATVAP	0.00078	204.5	1.0162	1.3514	1.5256	609.8	3.33
2.46	0.06361	400.2	1.7265	0.8991	1.1813	146.9		0.06174	400.7	1.7260	0.9030	1.1825	146.9	3.33
5	0.06445	402.5	1.7347	0.8982	1.1768	148.0		0.06229	402.2	1.7315	0.9023	1.1795	147.6	5
10	0.06608	407.0	1.7507	0.8974	1.1688	149.9		0.06388	406.8	1.7475	0.9010	1.1712	149.6	10
15	0.06768	411.5	1.7664	0.8978	1.1618	151.9		0.06544	411.3	1.7633	0.9010	1.1639	151.5	15
20	0.06924	416.0	1.7819	0.8992	1.1557	153.7		0.06697	415.8	1.7798	0.9021	1.1575	153.4	20
25	0.07079	420.5	1.7971	0.9015	1.1501	155.5		0.06848	420.3	1.7941	0.9040	1.1518	155.2	25
30	0.07231	425.0	1.8121	0.9044	1.1452	157.3		0.06996	424.8	1.8091	0.9067	1.1467	157.0	30
35	0.07382	429.5	1.8269	0.9080	1.1407	159.0		0.07148	429.3	1.8240	0.9101	1.1421	158.7	35
40	0.07530	434.1	1.8416	0.9120	1.1367	160.6		0.07288	433.9	1.8387	0.9139	1.1379	160.4	40
45	0.07678	438.7	1.8561	0.9165	1.1330	162.2		0.07432	438.5	1.8532	0.9182	1.1341	162.0	45
50	0.07824	443.2	1.8704	0.9213	1.1296	163.8		0.07574	443.1	1.8675	0.9229	1.1306	163.6	50
55	0.07967	447.9	1.8846	0.9264	1.1265	165.3		0.07715	447.7	1.8818	0.9279	1.1274	165.1	55
60	0.08112	452.5	1.8986	0.9319	1.1237	166.9		0.07854	452.4	1.8958	0.9332	1.1245	166.7	60
65	0.08254	457.2	1.9126	0.9375	1.1210	168.4		0.07993	457.0	1.9098	0.9387	1.1218	168.2	65
70	0.08396	461.9	1.9264	0.9433	1.1186	169.8		0.08131	461.8	1.9236	0.9445	1.1193	169.6	70
75	0.08537	466.6	1.9401	0.9493	1.1163	171.3		0.08267	466.5	1.9373	0.9504	1.1169	171.1	75
80	0.08676	471.4	1.9536	0.9555	1.1141	172.7		0.08403	471.3	1.9509	0.9565	1.1147	172.5	80
85	0.08816	476.2	1.9671	0.9617	1.1121	174.1		0.08538	476.1	1.9644	0.9627	1.1127	173.9	85
90	0.08953	481.0	1.9805	0.9681	1.1102	175.4		0.08675	480.9	1.9778	0.9690	1.1107	175.3	90
95	0.09092	485.9	1.9938	0.9745	1.1084	176.8		0.08807	485.7	1.9910	0.9753	1.1089	176.7	95
100	0.09229	490.7	2.0070	0.9811	1.1067	178.1		0.08941	490.6	2.0042	0.9818	1.1072	178.0	100
105	0.09366	495.7	2.0201	0.9876	1.1051	179.5		0.09074	495.6	2.0174	0.9883	1.1056	179.3	105
110	0.09504	500.6	2.0331	0.9942	1.1036	180.8		0.09208	500.5	2.0304	0.9949	1.1040	180.6	110
115	0.09639	505.6	2.0460	1.0009	1.1022	182.0		0.09339	505.5	2.0433	1.0015	1.1026	181.9	115
120	0.09775	510.6	2.0589	1.0075	1.1008	183.3		0.09471	510.5	2.0562	1.0081	1.1012	183.2	120
125	0.09910	515.7	2.0716	1.0142	1.0995	184.6		0.09603	515.6	2.0690	1.0148	1.0998	184.5	125
130	0.10046	520.8	2.0843	1.0209	1.0983	185.8		0.09735	520.7	2.0817	1.0214	1.0986	185.7	130
135	0.10180	525.9	2.0970	1.0276	1.0971	187.1		0.09864	525.8	2.0943	1.0281	1.0974	187.0	135
140	0.10316	531.0	2.1095	1.0343	1.0959	188.3		0.09995	531.0	2.1069	1.0348	1.0962	188.2	140
145	0.10448	536.2	2.1220	1.0410	1.0948	189.5		0.10126	536.2	2.1194	1.0414	1.0951	189.4	145
150	0.10582	541.5	2.1344	1.0477	1.0938	190.7		0.10255	541.4	2.1318	1.0481	1.0940	190.6	150
155	0.10717	546.7	2.1468	1.0543	1.0928	191.9		0.10384	546.6	2.1441	1.0547	1.0930	191.8	155

TEMP °C	PRESSURE = 340.00 kPa (abs)							PRESSURE = 350.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
4.18	0.00078	205.6	1.0204	1.3541	1.5266	605.9	SATLIQ SATVAP	0.00078	206.8	1.0244	1.3567	1.5276	602.1	5.01
4.18	0.05998	401.2	1.7256	0.9069	1.1838	146.8		0.05832	401.7	1.7252	0.9106	1.1851	146.8	5.01
5	0.06024	402.0	1.7283	0.9064	1.1823	147.2		—	—	—	—	—	5	
10	0.06180	406.5	1.7444	0.9047	1.1736	149.2		0.05985	406.2	1.7414	0.9084	1.1761	148.9	10
15	0.06333	411.0	1.7602	0.9043	1.1660	151.2		0.06134	410.8	1.7572	0.9076	1.1682	150.9	15
20	0.06483	415.5	1.7758	0.9050	1.1594	153.1		0.06281	415.3	1.7729	0.9079	1.1613	152.8	20
25	0.06630	420.1	1.7911	0.9066	1.1535	154.9		0.06425	419.9	1.7882	0.9093	1.1552	154.6	25
30	0.06776	424.6	1.8062	0.9091	1.1482	156.7		0.06567	424.4	1.8034	0.9115	1.1497	156.4	30
35	0.06919	429.2	1.8211	0.9122	1.1434	158.4		0.06706	429.0	1.8183	0.9143	1.1448	158.2	35
40	0.07060	433.7	1.8358	0.9158	1.1391	160.1		0.06845	433.6	1.8330	0.9178	1.1403	159.9	40
45	0.07200	438.3	1.8504	0.9200	1.1352	161.8		0.06981	438.2	1.8476	0.9217	1.1363	161.5	45
50	0.07339	442.9	1.8648	0.9245	1.1316	163.4		0.07116	442.8	1.8620	0.9261	1.1327	163.1	50
55	0.07476	447.6	1.8790	0.9294	1.1284	164.9		0.07250	447.4	1.8763	0.9309	1.1293	164.7	55
60	0.07612	452.2	1.8931	0.9346	1.1254	166.5		0.07388	452.1	1.8904	0.9359	1.1262	166.3	60
65	0.07747	456.9	1.9070	0.9400	1.1226	168.0		0.07515	456.8	1.9044	0.9412	1.1234	167.8	65
70	0.07880	461.6	1.9209	0.9456	1.1200	169.5		0.07645	461.5	1.9182	0.9468	1.1207	169.3	70
75	0.08013	466.4	1.9346	0.9515	1.1176	170.9		0.07775	466.2	1.9320	0.9525	1.1183	170.7	75
80	0.08146	471.1	1.9482	0.9575	1.1153	172.3		0.07904	471.0	1.9456	0.9585	1.1160	172.2	80
85	0.08280	475.9	1.9617	0.9636	1.1132	173.8		0.08033	475.8	1.9591	0.9645	1.1138	173.6	85
90	0.08410	480.8	1.9751	0.9698	1.1113	175.1		0.08161	480.7	1.9725	0.9707	1.1118	175.0	90
95	0.08540	485.6	1.9884	0.9761	1.1094	176.5		0.08287	485.5	1.9858	0.9770	1.1099	176.4	95
100	0.08669	490.5	2.0016	0.9826	1.1077	177.9		0.08414	490.4	1.9991	0.9833	1.1081	177.7	100
105	0.08800	495.5	2.0147	0.9890	1.1060	179.2		0.08541	495.4	2.0122	0.9897	1.1065	179.1	105
110	0.08929	500.4	2.0278	0.9955	1.1044	180.5		0.08666	500.3	2.0252	0.9962	1.1049	180.4	110
115	0.09058	505.4	2.0407	1.0021	1.1030	181.8		0.08790	505.3	2.0382	1.0027	1.1034	181.7	115
120	0.09184	510.4	2.0536	1.0087	1.1015	183.1		0.08916	510.4	2.0511	1.0093	1.1019	183.0	120
125	0.09314	515.5	2.0664	1.0153	1.1002	184.4		0.09041	515.4	2.0639	1.0159	1.1006	184.3	125
130	0.09440	520.6	2.0791	1.0220	1.0989	185.6		0.09165	520.5	2.0766	1.0225	1.0993	185.5	130
135	0.09568	525.7	2.0917	1.0286	1.0977	186.9		0.09289	525.6	2.0892	1.0291	1.0980	186.8	135
140	0.09696	530.9	2.1043	1.0352	1.0965	188.1		0.09413	530.8	2.1018	1.0357	1.0968	188.0	140
145	0.09822	536.1	2.1168	1.0419	1.0954	189.3		0.09536	536.0	2.1143	1.0423	1.0957	189.2	145
150	0.09948	541.3	2.1292	1.0485	1.0943	190.5		0.09658	541.2	2.1267	1.0489	1.0946	190.4	150
155	0.10074	546.6	2.1416	1.0551	1.0933	191.7		0.09781	546.5	2.1391	1.0555	1.0935	191.6	155
160	—	—	—	—	—	—		0.09904	551.8	2.1514	1.0621	1.0925	192.8	160

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 360.00 kPa (abs)							PRESSURE = 370.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
5.82	0.00078	207.9	1.0283	1.3593	1.5287	598.3	SATLIQ SATVAP	0.00079	209.0	1.0322	1.3619	1.5297	594.7	6.62
5.82	0.05675	402.2	1.7248	0.9144	1.1864	146.7		0.05526	402.6	1.7244	0.9181	1.1877	146.7	6.62
10	0.05800	406.0	1.7384	0.9122	1.1786	148.5		0.05625	405.7	1.7354	0.9180	1.1812	148.1	10
15	0.05946	410.5	1.7543	0.9109	1.1704	150.5		0.05769	410.3	1.7514	0.9143	1.1727	150.2	15
20	0.06090	415.1	1.7700	0.9109	1.1632	152.5		0.05909	414.9	1.7672	0.9140	1.1652	152.1	20
25	0.06231	419.7	1.7854	0.9120	1.1569	154.3		0.06047	419.4	1.7826	0.9147	1.1586	154.0	25
30	0.06370	424.2	1.8006	0.9139	1.1512	156.2		0.06184	424.0	1.7979	0.9183	1.1528	155.9	30
35	0.06507	428.8	1.8156	0.9165	1.1462	157.9		0.06317	428.6	1.8129	0.9187	1.1476	157.7	35
40	0.06641	433.4	1.8303	0.9198	1.1416	159.6		0.06449	433.2	1.8277	0.9217	1.1429	159.4	40
45	0.06775	438.0	1.8449	0.9235	1.1375	161.3		0.06580	437.8	1.8423	0.9253	1.1386	161.1	45
50	0.06907	442.6	1.8594	0.9278	1.1337	162.9		0.06708	442.5	1.8568	0.9294	1.1347	162.7	50
55	0.07037	447.3	1.8736	0.9324	1.1302	164.5		0.06836	447.1	1.8711	0.9339	1.1312	164.3	55
60	0.07167	451.9	1.8878	0.9373	1.1271	166.1		0.06962	451.8	1.8852	0.9387	1.1279	165.9	60
65	0.07296	456.6	1.9018	0.9425	1.1242	167.6		0.07088	456.5	1.8992	0.9488	1.1250	167.4	65
70	0.07423	461.4	1.9156	0.9480	1.1215	169.1		0.07213	461.2	1.9131	0.9491	1.1222	168.9	70
75	0.07551	466.1	1.9294	0.9536	1.1189	170.6		0.07336	466.0	1.9269	0.9547	1.1196	170.4	75
80	0.07676	470.9	1.9430	0.9595	1.1166	172.0		0.07459	470.8	1.9406	0.9605	1.1172	171.9	80
85	0.07800	475.7	1.9566	0.9654	1.1144	173.4		0.07582	475.6	1.9541	0.9654	1.1150	173.3	85
90	0.07925	480.6	1.9700	0.9716	1.1124	174.9		0.07702	480.4	1.9675	0.9724	1.1129	174.7	90
95	0.08050	485.4	1.9833	0.9778	1.1104	176.2		0.07824	485.3	1.9809	0.9786	1.1109	176.1	95
100	0.08173	490.3	1.9966	0.9841	1.1086	177.6		0.07945	490.2	1.9941	0.9848	1.1091	177.5	100
105	0.08295	495.3	2.0097	0.9904	1.1069	178.9		0.08065	495.2	2.0073	0.9912	1.1074	178.8	105
110	0.08418	500.2	2.0228	0.9969	1.1053	180.3		0.08184	500.1	2.0203	0.9975	1.1057	180.1	110
115	0.08540	505.2	2.0357	1.0034	1.1038	181.6		0.08304	505.1	2.0333	1.0040	1.1042	181.5	115
120	0.08663	510.3	2.0486	1.0099	1.1023	182.9		0.08420	510.2	2.0462	1.0105	1.1027	182.8	120
125	0.08783	515.3	2.0614	1.0164	1.1009	184.2		0.08540	515.3	2.0590	1.0170	1.1013	184.0	125
130	0.08904	520.4	2.0741	1.0230	1.0996	185.4		0.08657	520.4	2.0718	1.0235	1.0999	185.3	130
135	0.09024	525.6	2.0868	1.0296	1.0983	186.7		0.08776	525.5	2.0844	1.0301	1.0986	186.6	135
140	0.09146	530.7	2.0994	1.0362	1.0971	187.9		0.08891	530.7	2.0970	1.0366	1.0974	187.8	140
145	0.09264	535.9	2.1119	1.0428	1.0960	189.1		0.09009	535.9	2.1095	1.0482	1.0963	189.0	145
150	0.09385	541.2	2.1243	1.0493	1.0949	190.3		0.09126	541.1	2.1219	1.0498	1.0951	190.3	150
155	0.09504	546.4	2.1367	1.0559	1.0938	191.6		0.09241	546.4	2.1343	1.0553	1.0941	191.5	155
160	0.09623	551.7	2.1490	1.0625	1.0928	192.7		0.09358	551.7	2.1466	1.0628	1.0930	192.7	160

TEMP °C	PRESSURE = 380.00 kPa (abs)							PRESSURE = 390.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
7.4	0.00079	210.0	1.0360	1.3645	1.5308	591.1	SATLIQ SATVAP	0.00079	211.1	1.0397	1.3670	1.5318	587.6	8.16
7.4	0.05384	403.1	1.7240	0.9218	1.1890	146.6		0.05250	403.5	1.7237	0.9254	1.1903	146.6	8.16
10	0.05459	405.5	1.7325	0.9200	1.1838	147.8		0.05302	405.2	1.7297	0.9240	1.1865	147.4	10
15	0.05600	410.1	1.7486	0.9178	1.1750	149.8		0.05440	409.8	1.7459	0.9213	1.1773	149.5	15
20	0.05738	414.6	1.7644	0.9170	1.1672	151.8		0.05576	414.4	1.7617	0.9201	1.1693	151.5	20
25	0.05874	419.2	1.7799	0.9174	1.1604	153.7		0.05708	419.0	1.7773	0.9202	1.1622	153.4	25
30	0.06007	423.8	1.7952	0.9188	1.1544	155.6		0.05839	423.6	1.7926	0.9213	1.1560	155.3	30
35	0.06138	428.4	1.8102	0.9209	1.1490	157.4		0.05968	428.2	1.8077	0.9282	1.1504	157.1	35
40	0.06267	433.0	1.8251	0.9238	1.1441	159.1		0.06094	432.8	1.8225	0.9258	1.1454	158.9	40
45	0.06395	437.7	1.8397	0.9272	1.1398	160.8		0.06219	437.5	1.8372	0.9290	1.1409	160.6	45
50	0.06521	442.3	1.8542	0.9311	1.1358	162.5		0.06342	442.1	1.8517	0.9328	1.1368	162.3	50
55	0.06645	447.0	1.8686	0.9354	1.1321	164.1		0.06465	446.8	1.8661	0.9369	1.1331	163.9	55
60	0.06769	451.7	1.8827	0.9401	1.1288	165.7		0.06586	451.5	1.8803	0.9415	1.1297	165.5	60
65	0.06892	456.4	1.8968	0.9451	1.1258	167.2		0.06706	456.2	1.8944	0.9464	1.1266	167.0	65
70	0.07014	461.1	1.9107	0.9503	1.1229	168.8		0.06825	461.0	1.9083	0.9515	1.1237	168.6	70
75	0.07135	465.9	1.9245	0.9558	1.1203	170.2		0.06942	465.7	1.9221	0.9569	1.1210	170.1	75
80	0.07254	470.7	1.9381	0.9615	1.1179	171.7		0.07061	470.5	1.9358	0.9625	1.1185	171.5	80
85	0.07374	475.5	1.9517	0.9673	1.1156	173.1		0.07177	475.4	1.9494	0.9683	1.1162	173.0	85
90	0.07492	480.3	1.9652	0.9733	1.1135	174.6		0.07293	480.2	1.9628	0.9742	1.1140	174.4	90
95	0.07611	485.2	1.9785	0.9794	1.1115	176.0		0.07407	485.1	1.9762	0.9802	1.1120	175.8	95
100	0.07729	490.1	1.9918	0.9856	1.1096	177.3		0.07523	490.0	1.9894	0.9854	1.1101	177.2	100
105	0.07846	495.1	2.0049	0.9919	1.1078	178.7		0.07637	495.0	2.0026	0.9926	1.1083	178.6	105
110	0.07962	500.1	2.0180	0.9982	1.1061	180.0		0.07750	500.0	2.0157	0.9989	1.1066	179.9	110
115	0.08078	505.1	2.0310	1.0046	1.1046	181.3		0.07865	505.0	2.0287	1.0053	1.1050	181.2	115
120	0.08193	510.1	2.0439	1.0111	1.1031	182.6		0.07978	510.0	2.0416	1.0117	1.1034	182.5	120
125	0.08308	515.2	2.0567	1.0175	1.1016	183.9		0.08089	515.1	2.0544	1.0181	1.1020	183.8	125
130	0.08423	520.3	2.0694	1.0241	1.1003	185.2		0.08202	520.2	2.0672	1.0246	1.1006	185.1	130
135	0.08538	525.4	2.0821	1.0306	1.0990	186.5		0.08314	525.3	2.0798	1.0311	1.0993	186.4	135
140	0.08653	530.6	2.0947	1.0371	1.0977	187.7		0.08425	530.5	2.0924	1.0376	1.0980	187.6	140
145	0.08767	535.8	2.1072	1.0437	1.0966	189.0		0.08536	535.7	2.1049	1.0441	1.0968	188.9	145
150	0.08881	541.0	2.1196	1.0502	1.0954	190.2		0.08648	540.9	2.1174	1.0506	1.0957	190.1	150
155	0.08994	546.3	2.1320	1.0567	1.0943	191.4		0.08757	546.2	2.1298	1.0571	1.0946	191.3	155
160	0.09107	551.6	2.1443	1.0632	1.0933	192.6		0.08868	551.5	2.1421	1.0636	1.0935	192.5	160

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 400.00 kPa (abs)							PRESSURE = 425.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
8.91	0.00079	212.1	1.0433	1.3695	1.5329	584.1	SATLIQ	0.00080	214.6	1.0520	1.3757	1.5355	575.8	10.72
8.91	0.05122	403.9	1.7234	0.9290	1.1916	146.5	SATVAP	0.04827	404.9	1.7226	0.9378	1.1949	146.4	10.72
10	0.05152	404.9	1.7269	0.9281	1.1893	147.0		—	—	—	—	—	—	10
15	0.05288	409.6	1.7432	0.9249	1.1797	149.1		0.04939	408.9	1.7356	0.9341	1.1859	148.3	15
20	0.05421	414.2	1.7590	0.9233	1.1714	151.2		0.05067	413.6	1.7526	0.9314	1.1768	150.4	20
25	0.05552	418.8	1.7747	0.9230	1.1641	153.1		0.05192	418.3	1.7683	0.9302	1.1688	152.4	25
30	0.05680	423.4	1.7900	0.9238	1.1576	155.0		0.05314	422.9	1.7838	0.9302	1.1618	154.3	30
35	0.05806	428.0	1.8051	0.9254	1.1519	156.9		0.05434	427.6	1.7990	0.9312	1.1556	156.2	35
40	0.05930	432.7	1.8201	0.9278	1.1467	158.6		0.05553	432.2	1.8140	0.9331	1.1501	158.0	40
45	0.06052	437.3	1.8348	0.9309	1.1421	160.4		0.05669	436.9	1.8288	0.9356	1.1451	159.8	45
50	0.06172	442.0	1.8493	0.9345	1.1379	162.0		0.05785	441.6	1.8434	0.9388	1.1407	161.5	50
55	0.06293	446.7	1.8637	0.9385	1.1341	163.7		0.05899	446.3	1.8579	0.9424	1.1366	163.2	55
60	0.06411	451.4	1.8779	0.9429	1.1306	165.3		0.06010	451.0	1.8722	0.9465	1.1329	164.8	60
65	0.06529	456.1	1.8920	0.9477	1.1274	166.9		0.06123	455.7	1.8863	0.9510	1.1295	166.4	65
70	0.06645	460.8	1.9059	0.9527	1.1244	168.4		0.06238	460.5	1.9003	0.9558	1.1264	167.9	70
75	0.06761	465.6	1.9198	0.9580	1.1217	169.9		0.06343	465.3	1.9142	0.9608	1.1235	169.5	75
80	0.06876	470.4	1.9335	0.9635	1.1192	171.4		0.06452	470.1	1.9279	0.9661	1.1208	171.0	80
85	0.06989	475.3	1.9471	0.9692	1.1168	172.8		0.06559	475.0	1.9415	0.9716	1.1183	172.4	85
90	0.07102	480.1	1.9605	0.9751	1.1146	174.3		0.06663	479.8	1.9550	0.9773	1.1160	173.9	90
95	0.07215	485.0	1.9739	0.9810	1.1125	175.7		0.06774	484.7	1.9684	0.9831	1.1138	175.3	95
100	0.07328	489.9	1.9872	0.9871	1.1106	177.1		0.06880	489.7	1.9817	0.9891	1.1118	176.7	100
105	0.07440	494.9	2.0004	0.9933	1.1087	178.4		0.06986	494.6	1.9949	0.9951	1.1099	178.1	105
110	0.07551	499.9	2.0134	0.9996	1.1070	179.8		0.07092	499.6	2.0081	1.0013	1.1081	179.5	110
115	0.07661	504.9	2.0264	1.0059	1.1054	181.1		0.07196	504.6	2.0211	1.0075	1.1064	180.8	115
120	0.07772	509.9	2.0394	1.0123	1.1038	182.4		0.07300	509.7	2.0340	1.0138	1.1048	182.1	120
125	0.07881	515.0	2.0522	1.0187	1.1023	183.7		0.07404	514.8	2.0469	1.0201	1.1033	183.4	125
130	0.07991	520.1	2.0649	1.0251	1.1009	185.0		0.07508	519.9	2.0596	1.0264	1.1018	184.7	130
135	0.08101	525.2	2.0776	1.0316	1.0996	186.3		0.07611	525.0	2.0723	1.0328	1.1004	186.0	135
140	0.08210	530.4	2.0902	1.0381	1.0983	187.5		0.07714	530.2	2.0849	1.0393	1.0991	187.3	140
145	0.08318	535.6	2.1028	1.0445	1.0971	188.8		0.07817	535.4	2.0975	1.0457	1.0979	188.5	145
150	0.08426	540.9	2.1152	1.0510	1.0960	190.0		0.07920	540.7	2.1099	1.0521	1.0967	189.8	150
155	0.08535	546.1	2.1276	1.0575	1.0949	191.2		0.08021	546.0	2.1223	1.0585	1.0955	191.0	155
160	0.08642	551.4	2.1399	1.0640	1.0938	192.4		0.08123	551.3	2.1347	1.0650	1.0944	192.2	160
165	—	—	—	—	—	—		0.08224	556.6	2.1469	1.0714	1.0934	193.4	165

TEMP °C	PRESSURE = 450.00 kPa (abs)							PRESSURE = 475.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
12.45	0.00080	217.0	1.0603	1.3818	1.5382	567.8	SATLIQ	0.00080	219.3	1.0683	1.3878	1.5409	560.1	14.11
12.45	0.04564	405.9	1.7218	0.9465	1.1982	146.2	SATVAP	0.04327	406.8	1.7211	0.9349	1.2015	146.0	14.11
15	0.04628	408.3	1.7302	0.9437	1.1925	147.4		0.04349	407.7	1.7241	0.9338	1.1994	146.4	15
20	0.04751	413.0	1.7464	0.9399	1.1825	149.5		0.04468	412.4	1.7404	0.9487	1.1884	148.7	20
25	0.04871	417.7	1.7623	0.9377	1.1738	151.6		0.04584	417.2	1.7555	0.9454	1.1790	150.8	25
30	0.04989	422.4	1.7779	0.9369	1.1662	153.6		0.04697	421.9	1.7722	0.9438	1.1708	152.9	30
35	0.05104	427.1	1.7932	0.9372	1.1595	155.5		0.04808	426.6	1.7876	0.9433	1.1635	154.8	35
40	0.05217	431.8	1.8083	0.9384	1.1536	157.4		0.04917	431.3	1.8028	0.9439	1.1572	156.7	40
45	0.05329	436.5	1.8232	0.9405	1.1482	159.2		0.05024	436.0	1.8177	0.9454	1.1515	158.6	45
50	0.05439	441.2	1.8379	0.9432	1.1435	160.9		0.05130	440.8	1.8325	0.9477	1.1464	160.4	50
55	0.05548	445.9	1.8524	0.9464	1.1391	162.6		0.05234	445.5	1.8471	0.9505	1.1418	162.1	55
60	0.05655	450.6	1.8667	0.9502	1.1352	164.3		0.05336	450.3	1.8615	0.9539	1.1376	163.8	60
65	0.05761	455.4	1.8809	0.9543	1.1316	165.9		0.05438	455.0	1.8757	0.9578	1.1338	165.4	65
70	0.05867	460.2	1.8949	0.9589	1.1283	167.5		0.05539	459.8	1.8898	0.9620	1.1303	167.0	70
75	0.05971	465.0	1.9088	0.9637	1.1253	169.0		0.05639	464.7	1.9038	0.9666	1.1271	168.6	75
80	0.06075	469.8	1.9226	0.9688	1.1225	170.6		0.05737	469.5	1.9176	0.9714	1.1242	170.1	80
85	0.06178	474.7	1.9363	0.9741	1.1199	172.1		0.05836	474.4	1.9313	0.9765	1.1214	171.7	85
90	0.06279	479.6	1.9498	0.9796	1.1174	173.5		0.05934	479.3	1.9448	0.9819	1.1189	173.1	90
95	0.06381	484.5	1.9632	0.9852	1.1152	175.0		0.06030	484.2	1.9583	0.9874	1.1165	174.6	95
100	0.06482	489.4	1.9766	0.9910	1.1130	176.4		0.06126	489.2	1.9717	0.9930	1.1143	176.0	100
105	0.06583	494.4	1.9898	0.9970	1.1111	177.8		0.06221	494.1	1.9849	0.9988	1.1122	177.5	105
110	0.06683	499.4	2.0029	1.0030	1.1092	179.2		0.06317	499.1	1.9981	1.0047	1.1103	178.8	110
115	0.06782	504.4	2.0160	1.0091	1.1074	180.5		0.06411	504.2	2.0111	1.0107	1.1085	180.2	115
120	0.06882	509.5	2.0289	1.0153	1.1057	181.9		0.06506	509.3	2.0241	1.0168	1.1067	181.6	120
125	0.06979	514.6	2.0418	1.0215	1.1042	183.2		0.06600	514.3	2.0370	1.0230	1.1051	182.9	125
130	0.07078	519.7	2.0546	1.0278	1.1027	184.5		0.06694	519.5	2.0498	1.0291	1.1036	184.2	130
135	0.07176	524.8	2.0673	1.0341	1.1013	185.8		0.06787	524.6	2.0625	1.0354	1.1021	185.5	135
140	0.07274	530.0	2.0799	1.0405	1.0999	187.0		0.06880	529.8	2.0752	1.0417	1.1007	186.8	140
145	0.07371	535.2	2.0925	1.0468	1.0986	188.3		0.06972	535.1	2.0877	1.0480	1.0994	188.1	145
150	0.07468	540.5	2.1050	1.0532	1.0974	189.6		0.07065	540.3	2.1002	1.0543	1.0981	189.3	150
155	0.07565	545.8	2.1174	1.0596	1.0962	190.8		0.07157	545.6	2.1127	1.0606	1.0969	190.6	155
160	0.07662	551.1	2.1297	1.0659	1.0951	192.0		0.07249	550.9	2.1250	1.0669	1.0957	191.8	160
165	0.07757	556.4	2.1420	1.0723	1.0940	193.2		0.07341	556.3	2.1373	1.0732	1.0946	193.0	165

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 500.00 kPa (abs)							PRESSURE = 525.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
15.71	0.00081	221.5	1.0759	1.3937	1.5436	552.8	SATURATED VAPOR	0.00081	223.6	1.0833	1.3995	1.5463	545.7	17.24
15.71	0.04114	407.7	1.7205	0.9633	1.2049	145.8		0.03920	408.5	1.7199	0.9715	1.2083	145.6	17.24
20	0.04213	411.8	1.7347	0.9578	1.1947	147.8		0.03982	411.2	1.7291	0.9674	1.2013	146.9	20
25	0.04325	416.6	1.7508	0.9535	1.1844	150.0		0.04090	416.0	1.7454	0.9618	1.1901	149.2	25
30	0.04434	421.3	1.7667	0.9509	1.1755	152.1		0.04196	420.8	1.7613	0.9582	1.1804	151.4	30
35	0.04541	426.1	1.7822	0.9496	1.1677	154.1		0.04300	425.6	1.7770	0.9562	1.1721	153.4	35
40	0.04646	430.8	1.7975	0.9496	1.1609	156.1		0.04401	430.4	1.7924	0.9554	1.1647	155.4	40
45	0.04749	435.6	1.8125	0.9505	1.1548	158.0		0.04501	435.2	1.8075	0.9558	1.1582	157.3	45
50	0.04851	440.4	1.8274	0.9523	1.1493	159.8		0.04599	439.9	1.8224	0.9570	1.1524	159.2	50
55	0.04951	445.1	1.8420	0.9547	1.1444	161.5		0.04695	444.7	1.8371	0.9590	1.1472	161.0	55
60	0.05050	449.9	1.8565	0.9577	1.1400	163.3		0.04790	449.5	1.8517	0.9616	1.1425	162.7	60
65	0.05147	454.7	1.8708	0.9612	1.1360	164.9		0.04884	454.3	1.8660	0.9648	1.1383	164.5	65
70	0.05244	459.5	1.8849	0.9652	1.1323	166.6		0.04976	459.2	1.8802	0.9685	1.1344	166.1	70
75	0.05339	464.3	1.8989	0.9695	1.1290	168.2		0.05068	464.0	1.8942	0.9725	1.1309	167.7	75
80	0.05434	469.2	1.9128	0.9741	1.1259	169.7		0.05159	468.9	1.9081	0.9769	1.1276	169.3	80
85	0.05528	474.1	1.9265	0.9791	1.1230	171.3		0.05250	473.8	1.9219	0.9816	1.1246	170.9	85
90	0.05621	479.0	1.9401	0.9842	1.1204	172.8		0.05338	478.7	1.9355	0.9866	1.1219	172.4	90
95	0.05713	483.9	1.9536	0.9895	1.1179	174.2		0.05428	483.7	1.9491	0.9917	1.1193	173.9	95
100	0.05806	488.9	1.9670	0.9950	1.1156	175.7		0.05516	488.6	1.9625	0.9971	1.1169	175.4	100
105	0.05898	493.9	1.9803	1.0007	1.1134	177.1		0.05603	493.6	1.9758	1.0026	1.1147	176.8	105
110	0.05989	498.9	1.9934	1.0065	1.1114	178.5		0.05691	498.7	1.9890	1.0083	1.1126	178.2	110
115	0.06078	503.9	2.0065	1.0124	1.1095	179.9		0.05777	503.7	2.0021	1.0140	1.1106	179.6	115
120	0.06169	509.0	2.0195	1.0183	1.1077	181.3		0.05864	508.8	2.0151	1.0199	1.1087	181.0	120
125	0.06258	514.1	2.0324	1.0244	1.1060	182.6		0.05950	513.9	2.0281	1.0259	1.1070	182.4	125
130	0.06348	519.3	2.0452	1.0305	1.1044	184.0		0.06035	519.1	2.0409	1.0319	1.1053	183.7	130
135	0.06437	524.4	2.0580	1.0367	1.1029	185.3		0.06120	524.2	2.0536	1.0380	1.1038	185.0	135
140	0.06526	529.6	2.0707	1.0429	1.1015	186.6		0.06205	529.4	2.0663	1.0441	1.1023	186.3	140
145	0.06613	534.9	2.0832	1.0491	1.1001	187.8		0.06289	534.7	2.0789	1.0503	1.1009	187.6	145
150	0.06702	540.1	2.0957	1.0554	1.0988	189.1		0.06373	539.9	2.0914	1.0565	1.0995	188.9	150
155	0.06790	545.4	2.1082	1.0616	1.0975	190.4		0.06457	545.2	2.1039	1.0627	1.0982	190.2	155
160	0.06877	550.7	2.1205	1.0679	1.0964	191.6		0.06541	550.6	2.1163	1.0689	1.0970	191.4	160
165	0.06964	556.1	2.1328	1.0742	1.0952	192.8		0.06624	555.9	2.1286	1.0751	1.0958	192.6	165
170	0.07052	561.5	2.1450	1.0804	1.0941	194.0		0.06707	561.3	2.1408	1.0813	1.0947	193.9	170

TEMP °C	PRESSURE = 550.00 kPa (abs)							PRESSURE = 575.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
18.72	0.00081	225.7	1.0904	1.4052	1.5490	538.8	SATURATED VAPOR	0.00082	227.7	1.0972	1.4109	1.5518	532.2	20.15
18.72	0.03743	409.3	1.7193	0.9795	1.2117	145.4		0.03581	410.1	1.7188	0.9875	1.2152	145.2	20.15
20	0.03771	410.6	1.7236	0.9774	1.2083	146.0		—	—	—	—	—	—	20
25	0.03877	415.4	1.7401	0.9705	1.1961	148.4		0.03681	414.8	1.7349	0.9796	1.2023	147.5	25
30	0.03980	420.3	1.7562	0.9658	1.1856	150.6		0.03781	419.7	1.7512	0.9737	1.1910	149.8	30
35	0.04080	425.1	1.7720	0.9629	1.1766	152.7		0.03879	424.6	1.7671	0.9699	1.1813	152.0	35
40	0.04178	429.9	1.7874	0.9614	1.1687	154.8		0.03974	429.4	1.7827	0.9676	1.1728	154.1	40
45	0.04274	434.7	1.8027	0.9611	1.1617	156.7		0.04068	434.3	1.7980	0.9666	1.1654	156.1	45
50	0.04369	439.5	1.8177	0.9618	1.1556	158.6		0.04159	439.1	1.8131	0.9668	1.1588	158.0	50
55	0.04462	444.3	1.8324	0.9633	1.1501	160.5		0.04249	443.9	1.8279	0.9678	1.1530	159.9	55
60	0.04554	449.2	1.8470	0.9656	1.1451	162.2		0.04338	448.8	1.8426	0.9696	1.1477	161.7	60
65	0.04644	454.0	1.8614	0.9684	1.1406	164.0		0.04425	453.6	1.8570	0.9721	1.1430	163.5	65
70	0.04733	458.8	1.8757	0.9718	1.1366	165.6		0.04511	458.5	1.8713	0.9751	1.1387	165.2	70
75	0.04822	463.7	1.8898	0.9755	1.1328	167.3		0.04597	463.4	1.8854	0.9786	1.1348	166.9	75
80	0.04909	468.6	1.9037	0.9797	1.1294	168.9		0.04681	468.3	1.8994	0.9825	1.1313	168.5	80
85	0.04996	473.5	1.9175	0.9842	1.1263	170.5		0.04765	473.2	1.9133	0.9868	1.1280	170.1	85
90	0.05082	478.4	1.9312	0.9889	1.1234	172.0		0.04847	478.1	1.9270	0.9914	1.1250	171.6	90
95	0.05167	483.4	1.9447	0.9939	1.1207	173.5		0.04930	483.1	1.9406	0.9962	1.1222	173.2	95
100	0.05252	488.4	1.9582	0.9991	1.1182	175.0		0.05011	488.1	1.9540	1.0012	1.1196	174.7	100
105	0.05336	493.4	1.9715	1.0045	1.1159	176.5		0.05092	493.1	1.9674	1.0065	1.1171	176.1	105
110	0.05419	498.4	1.9847	1.0100	1.1137	177.9		0.05172	498.2	1.9806	1.0119	1.1149	177.6	110
115	0.05503	503.5	1.9979	1.0157	1.1117	179.3		0.05253	503.2	1.9938	1.0174	1.1128	179.0	115
120	0.05585	508.6	2.0109	1.0215	1.1097	180.7		0.05332	508.3	2.0069	1.0231	1.1108	180.4	120
125	0.05668	513.7	2.0239	1.0273	1.1079	182.1		0.05412	513.5	2.0198	1.0288	1.1089	181.8	125
130	0.05749	518.8	2.0367	1.0333	1.1062	183.4		0.05490	518.6	2.0327	1.0347	1.1071	183.2	130
135	0.05832	524.0	2.0495	1.0393	1.1046	184.8		0.05568	523.8	2.0455	1.0406	1.1055	184.5	135
140	0.05913	529.2	2.0622	1.0453	1.1031	186.1		0.05647	529.0	2.0582	1.0466	1.1039	185.8	140
145	0.05994	534.5	2.0748	1.0514	1.1016	187.4		0.05724	534.3	2.0708	1.0526	1.1024	187.2	145
150	0.06074	539.8	2.0873	1.0576	1.1002	188.7		0.05801	539.6	2.0834	1.0587	1.1010	188.4	150
155	0.06155	545.1	2.0998	1.0637	1.0989	189.9		0.05879	544.9	2.0958	1.0648	1.0996	189.7	155
160	0.06235	550.4	2.1122	1.0699	1.0977	191.2		0.05956	550.2	2.1082	1.0709	1.0983	191.0	160
165	0.06315	555.8	2.1245	1.0761	1.0965	192.4		0.06032	555.6	2.1206	1.0770	1.0971	192.2	165
170	0.06395	561.2	2.1367	1.0822	1.0953	193.7		0.06109	561.0	2.1328	1.0831	1.0959	193.5	170
175	—	—	—	—	—	—		0.06185	566.4	2.1450	1.0893	1.0948	194.7	175

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 600.00 kPa (abs)							PRESSURE = 625.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
21.54	0.00082	229.7	1.1038	1.4165	1.5545	525.8	SAT LIQ SAT VAP	0.00082	231.6	1.1102	1.4221	1.5573	519.5	22.88
21.54	0.03432	410.8	1.7183	0.9954	1.2187	145.0		0.03295	411.5	1.7179	1.0333	1.2223	144.7	22.88
25	0.03502	414.2	1.7299	0.9890	1.2090	146.7		0.03336	413.6	1.7250	0.9988	1.2159	145.8	25
30	0.03600	419.2	1.7463	0.9819	1.1967	149.0		0.03432	418.6	1.7415	0.9904	1.2026	148.2	30
35	0.03695	424.1	1.7623	0.9771	1.1862	151.3		0.03525	423.5	1.7577	0.9845	1.1913	150.5	35
40	0.03787	428.9	1.7780	0.9740	1.1771	153.4		0.03615	428.4	1.7735	0.9805	1.1816	152.7	40
45	0.03878	433.8	1.7934	0.9723	1.1692	155.5		0.03703	433.3	1.7890	0.9781	1.1731	154.8	45
50	0.03967	438.7	1.8086	0.9718	1.1622	157.4		0.03790	438.2	1.8042	0.9771	1.1657	156.8	50
55	0.04054	443.5	1.8235	0.9724	1.1560	159.3		0.03874	443.1	1.8192	0.9771	1.1591	158.8	55
60	0.04140	448.4	1.8382	0.9738	1.1505	161.2		0.03957	448.0	1.8340	0.9780	1.1532	160.6	60
65	0.04224	453.3	1.8527	0.9759	1.1455	163.0		0.04040	452.9	1.8486	0.9797	1.1480	162.5	65
70	0.04308	458.1	1.8671	0.9786	1.1410	164.7		0.04121	457.8	1.8630	0.9820	1.1432	164.2	70
75	0.04390	463.0	1.8813	0.9818	1.1369	166.4		0.04200	462.7	1.8772	0.9850	1.1389	166.0	75
80	0.04472	468.0	1.8953	0.9854	1.1331	168.1		0.04279	467.7	1.8913	0.9884	1.1350	167.6	80
85	0.04552	472.9	1.9092	0.9895	1.1297	169.7		0.04357	472.6	1.9052	0.9922	1.1314	169.3	85
90	0.04633	477.9	1.9229	0.9938	1.1265	171.3		0.04434	477.6	1.9190	0.9963	1.1282	170.9	90
95	0.04712	482.8	1.9365	0.9985	1.1236	172.8		0.04511	482.6	1.9327	1.0008	1.1251	172.4	95
100	0.04790	487.8	1.9500	1.0033	1.1209	174.3		0.04587	487.6	1.9462	1.0055	1.1223	174.0	100
105	0.04868	492.9	1.9634	1.0084	1.1184	175.8		0.04663	492.6	1.9596	1.0104	1.1197	175.5	105
110	0.04945	497.9	1.9767	1.0137	1.1161	177.3		0.04738	497.7	1.9729	1.0155	1.1173	177.0	110
115	0.05023	503.0	1.9899	1.0191	1.1139	178.7		0.04812	502.8	1.9861	1.0208	1.1150	178.4	115
120	0.05100	508.1	2.0030	1.0247	1.1118	180.1		0.04886	507.9	1.9992	1.0263	1.1129	179.8	120
125	0.05175	513.3	2.0159	1.0303	1.1099	181.5		0.04959	513.0	2.0122	1.0318	1.1109	181.3	125
130	0.05252	518.4	2.0288	1.0361	1.1081	182.9		0.05033	518.2	2.0251	1.0375	1.1090	182.6	130
135	0.05327	523.6	2.0417	1.0419	1.1063	184.3		0.05105	523.4	2.0380	1.0433	1.1072	184.0	135
140	0.05402	528.8	2.0544	1.0478	1.1047	185.6		0.05177	528.6	2.0507	1.0491	1.1055	185.4	140
145	0.05477	534.1	2.0670	1.0538	1.1032	186.9		0.05250	533.9	2.0633	1.0550	1.1040	186.7	145
150	0.05552	539.4	2.0796	1.0598	1.1017	188.2		0.05321	539.2	2.0759	1.0609	1.1024	188.0	150
155	0.05626	544.7	2.0921	1.0658	1.1003	189.5		0.05393	544.5	2.0884	1.0669	1.1010	189.3	155
160	0.05700	550.0	2.1045	1.0719	1.0990	190.8		0.05465	549.9	2.1008	1.0729	1.0997	190.6	160
165	0.05774	555.4	2.1168	1.0780	1.0977	192.0		0.05536	555.2	2.1132	1.0789	1.0984	191.8	165
170	0.05848	560.8	2.1291	1.0840	1.0965	193.3		0.05607	560.7	2.1255	1.0850	1.0971	193.1	170
175	0.05921	566.3	2.1413	1.0901	1.0954	194.5		0.05678	566.1	2.1377	1.0910	1.0959	194.3	175

TEMP °C	PRESSURE = 650.00 kPa (abs)							PRESSURE = 675.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
24.18	0.00083	233.5	1.1163	1.4276	1.5601	513.5	SAT LIQ SAT VAP	0.00083	235.3	1.1224	1.4331	1.5630	507.6	25.45
24.18	0.03167	412.2	1.7174	1.0111	1.2259	144.5		0.03049	412.8	1.7170	1.0188	1.2295	144.2	25.45
25	0.03183	413.0	1.7202	1.0091	1.2233	144.9		—	—	—	—	—	25	
30	0.03277	418.0	1.7369	0.9993	1.2089	147.4		0.03133	417.4	1.7323	1.0086	1.2154	146.6	30
35	0.03367	423.0	1.7532	0.9922	1.1967	149.8		0.03222	422.5	1.7487	1.0002	1.2022	149.0	35
40	0.03456	428.0	1.7691	0.9873	1.1862	152.0		0.03308	427.4	1.7648	0.9943	1.1910	151.3	40
45	0.03542	432.9	1.7847	0.9841	1.1772	154.2		0.03392	432.4	1.7805	0.9903	1.1814	153.5	45
50	0.03626	437.8	1.8000	0.9824	1.1693	156.2		0.03474	437.4	1.7959	0.9879	1.1730	155.6	50
55	0.03708	442.7	1.8151	0.9819	1.1623	158.2		0.03555	442.3	1.8111	0.9868	1.1656	157.6	55
60	0.03789	447.6	1.8300	0.9823	1.1561	160.1		0.03633	447.2	1.8260	0.9867	1.1590	159.6	60
65	0.03869	452.5	1.8446	0.9836	1.1505	162.0		0.03711	452.2	1.8407	0.9876	1.1532	161.5	65
70	0.03948	457.5	1.8591	0.9856	1.1456	163.8		0.03787	457.1	1.8552	0.9892	1.1479	163.3	70
75	0.04025	462.4	1.8733	0.9882	1.1411	165.5		0.03862	462.1	1.8695	0.9915	1.1432	165.1	75
80	0.04102	467.3	1.8874	0.9913	1.1370	167.2		0.03937	467.0	1.8837	0.9944	1.1389	166.8	80
85	0.04177	472.3	1.9014	0.9949	1.1332	168.9		0.04010	472.0	1.8977	0.9977	1.1350	168.5	85
90	0.04252	477.3	1.9152	0.9988	1.1298	170.5		0.04083	477.0	1.9116	1.0014	1.1314	170.1	90
95	0.04326	482.3	1.9289	1.0031	1.1266	172.1		0.04155	482.0	1.9253	1.0054	1.1282	171.7	95
100	0.04399	487.3	1.9425	1.0076	1.1237	173.6		0.04226	487.0	1.9389	1.0098	1.1251	173.3	100
105	0.04472	492.4	1.9559	1.0124	1.1210	175.1		0.04296	492.1	1.9523	1.0144	1.1223	174.8	105
110	0.04545	497.4	1.9693	1.0174	1.1185	176.6		0.04367	497.2	1.9657	1.0193	1.1197	176.3	110
115	0.04617	502.5	1.9825	1.0226	1.1161	178.1		0.04437	502.3	1.9789	1.0243	1.1173	177.8	115
120	0.04688	507.7	1.9956	1.0279	1.1139	179.6		0.04505	507.4	1.9921	1.0296	1.1150	179.3	120
125	0.04760	512.8	2.0086	1.0334	1.1119	181.0		0.04574	512.6	2.0051	1.0349	1.1129	180.7	125
130	0.04830	518.0	2.0215	1.0389	1.1099	182.4		0.04642	517.8	2.0181	1.0404	1.1109	182.1	130
135	0.04900	523.2	2.0344	1.0446	1.1081	183.8		0.04711	523.0	2.0309	1.0460	1.1090	183.5	135
140	0.04970	528.4	2.0471	1.0504	1.1064	185.1		0.04778	528.2	2.0437	1.0516	1.1072	184.9	140
145	0.05040	533.7	2.0598	1.0562	1.1047	186.5		0.04845	533.5	2.0564	1.0574	1.1055	186.2	145
150	0.05109	539.0	2.0724	1.0620	1.1032	187.8		0.04913	538.8	2.0690	1.0632	1.1039	187.6	150
155	0.05178	544.3	2.0849	1.0680	1.1017	189.1		0.04979	544.2	2.0815	1.0690	1.1024	188.9	155
160	0.05247	549.7	2.0973	1.0739	1.1003	190.4		0.05046	549.5	2.0940	1.0749	1.1010	190.2	160
165	0.05316	555.1	2.1097	1.0799	1.0990	191.6		0.05112	554.9	2.1063	1.0809	1.0996	191.5	165
170	0.05384	560.5	2.1220	1.0859	1.0977	192.9		0.05178	560.3	2.1186	1.0868	1.0983	192.7	170
175	0.05453	565.9	2.1342	1.0919	1.0965	194.2		0.05244	565.8	2.1309	1.0928	1.0971	194.0	175
180	0.05520	571.4	2.1464	1.0979	1.0954	195.4		0.05310	571.2	2.1430	1.0987	1.0959	195.2	180

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 700.00 kPa (abs)							PRESSURE = 725.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
26.68	0.00083	237.0	1.1282	1.4385	1.5658	501.8	SATLIQ	0.00084	238.8	1.1339	1.4440	1.5687	496.2	27.88
26.68	0.02939	413.5	1.7166	1.0265	1.2332	144.0	SATVAP	0.02836	414.1	1.7162	1.0341	1.2370	143.7	27.88
30	0.02999	416.8	1.7278	1.0182	1.2223	145.7		0.02874	416.2	1.7234	1.0283	1.2295	144.9	30
35	0.03086	421.9	1.7444	1.0085	1.2081	148.2		0.02960	421.4	1.7401	1.0172	1.2142	147.4	35
40	0.03171	426.9	1.7606	1.0015	1.1960	150.6		0.03048	426.4	1.7554	1.0090	1.2013	149.9	40
45	0.03253	431.9	1.7764	0.9967	1.1857	152.8		0.03123	431.5	1.7724	1.0033	1.1903	152.2	45
50	0.03333	436.9	1.7919	0.9935	1.1768	155.0		0.03202	436.5	1.7880	0.9994	1.1807	154.4	50
55	0.03412	441.9	1.8071	0.9918	1.1689	157.0		0.03278	441.4	1.8033	0.9970	1.1724	156.5	55
60	0.03488	446.8	1.8221	0.9913	1.1620	159.0		0.03353	446.4	1.8184	0.9959	1.1651	158.5	60
65	0.03564	451.8	1.8369	0.9917	1.1559	160.9		0.03427	451.4	1.8332	0.9959	1.1587	160.4	65
70	0.03638	456.7	1.8515	0.9929	1.1504	162.8		0.03500	456.4	1.8478	0.9967	1.1529	162.3	70
75	0.03711	461.7	1.8658	0.9949	1.1454	164.6		0.03571	461.4	1.8623	0.9983	1.1477	164.1	75
80	0.03784	466.7	1.8801	0.9974	1.1409	166.3		0.03641	466.4	1.8765	1.0006	1.1430	165.9	80
85	0.03855	471.7	1.8941	1.0005	1.1369	168.0		0.03711	471.4	1.8906	1.0033	1.1387	167.6	85
90	0.03925	476.7	1.9080	1.0040	1.1331	169.7		0.03779	476.4	1.9045	1.0066	1.1349	169.3	90
95	0.03995	481.7	1.9217	1.0078	1.1297	171.3		0.03847	481.5	1.9183	1.0103	1.1313	171.0	95
100	0.04064	486.8	1.9354	1.0120	1.1266	172.9		0.03914	486.5	1.9320	1.0143	1.1280	172.6	100
105	0.04133	491.9	1.9489	1.0165	1.1236	174.5		0.03981	491.6	1.9455	1.0186	1.1250	174.1	105
110	0.04201	496.9	1.9622	1.0212	1.1209	176.0		0.04047	496.7	1.9589	1.0231	1.1222	175.7	110
115	0.04269	502.1	1.9755	1.0261	1.1184	177.5		0.04112	501.8	1.9722	1.0279	1.1196	177.2	115
120	0.04336	507.2	1.9887	1.0312	1.1161	179.0		0.04177	507.0	1.9854	1.0329	1.1172	178.7	120
125	0.04402	512.4	2.0018	1.0365	1.1139	180.4		0.04243	512.2	1.9985	1.0380	1.1149	180.1	125
130	0.04468	517.6	2.0147	1.0419	1.1118	181.8		0.04307	517.4	2.0115	1.0433	1.1128	181.6	130
135	0.04535	522.8	2.0276	1.0473	1.1099	183.2		0.04371	522.6	2.0244	1.0487	1.1108	183.0	135
140	0.04600	528.0	2.0404	1.0529	1.1081	184.6		0.04434	527.8	2.0372	1.0542	1.1089	184.4	140
145	0.04665	533.3	2.0531	1.0586	1.1063	186.0		0.04497	533.1	2.0499	1.0598	1.1071	185.8	145
150	0.04730	538.6	2.0657	1.0643	1.1047	187.3		0.04560	538.4	2.0625	1.0655	1.1055	187.1	150
155	0.04795	544.0	2.0782	1.0701	1.1032	188.7		0.04622	543.8	2.0751	1.0712	1.1039	188.4	155
160	0.04859	549.3	2.0907	1.0760	1.1017	190.0		0.04685	549.2	2.0875	1.0770	1.1024	189.8	160
165	0.04923	554.7	2.1031	1.0818	1.1003	191.3		0.04747	554.6	2.0999	1.0828	1.1009	191.1	165
170	0.04987	560.2	2.1154	1.0877	1.0990	192.5		0.04809	560.0	2.1122	1.0887	1.0996	192.3	170
175	0.05051	565.6	2.1276	1.0936	1.0977	193.8		0.04871	565.4	2.1245	1.0945	1.0983	193.6	175
180	0.05114	571.1	2.1398	1.0996	1.0965	195.0		0.04932	570.9	2.1367	1.1004	1.0970	194.9	180

TEMP °C	PRESSURE = 750.00 kPa (abs)							PRESSURE = 800.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
29.04	0.00084	240.5	1.1394	1.4494	1.5716	490.8	SATLIQ	0.00085	243.7	1.1500	1.4602	1.5775	480.2	31.29
29.04	0.02740	414.6	1.7158	1.0417	1.2408	143.5	SATVAP	0.02555	415.7	1.7150	1.0369	1.2485	142.9	31.29
30	0.02757	415.6	1.7191	1.0388	1.2372	144.0		—	—	—	—	—	30	
35	0.02841	420.8	1.7360	1.0262	1.2206	146.6		0.02625	419.6	1.7278	1.0453	1.2344	145.0	35
40	0.02923	425.9	1.7524	1.0168	1.2067	149.1		0.02705	424.8	1.7445	1.0332	1.2184	147.6	40
45	0.03002	431.0	1.7684	1.0100	1.1950	151.5		0.02782	430.0	1.7608	1.0243	1.2049	150.1	45
50	0.03079	436.0	1.7842	1.0053	1.1848	153.7		0.02855	435.1	1.7767	1.0178	1.1935	152.4	50
55	0.03154	441.0	1.7996	1.0023	1.1760	155.9		0.02928	440.2	1.7923	1.0133	1.1836	154.7	55
60	0.03227	446.0	1.8147	1.0006	1.1683	157.9		0.02998	445.2	1.8076	1.0105	1.1750	156.8	60
65	0.03299	451.0	1.8296	1.0001	1.1615	159.9		0.03067	450.3	1.8226	1.0089	1.1674	158.8	65
70	0.03370	456.0	1.8443	1.0005	1.1554	161.8		0.03135	455.3	1.8374	1.0085	1.1607	160.8	70
75	0.03439	461.0	1.8588	1.0018	1.1500	163.7		0.03202	460.4	1.8520	1.0090	1.1548	162.7	75
80	0.03508	466.1	1.8731	1.0037	1.1451	165.5		0.03267	465.4	1.8664	1.0103	1.1494	164.6	80
85	0.03576	471.1	1.8872	1.0063	1.1406	167.2		0.03331	470.5	1.8806	1.0122	1.1446	166.4	85
90	0.03643	476.1	1.9012	1.0093	1.1366	168.9		0.03395	475.5	1.8947	1.0147	1.1402	168.1	90
95	0.03708	481.2	1.9150	1.0127	1.1329	170.6		0.03457	480.6	1.9086	1.0177	1.1362	169.8	95
100	0.03774	486.2	1.9287	1.0165	1.1295	172.2		0.03520	485.7	1.9223	1.0212	1.1325	171.5	100
105	0.03839	491.3	1.9422	1.0207	1.1264	173.8		0.03581	490.8	1.9360	1.0250	1.1292	173.1	105
110	0.03903	496.4	1.9557	1.0251	1.1233	175.4		0.03642	495.9	1.9494	1.0291	1.1261	174.7	110
115	0.03966	501.6	1.9690	1.0297	1.1208	176.9		0.03703	501.1	1.9628	1.0334	1.1232	176.3	115
120	0.04030	506.7	1.9822	1.0346	1.1183	178.4		0.03763	506.3	1.9761	1.0380	1.1205	177.8	120
125	0.04093	511.9	1.9953	1.0396	1.1160	179.9		0.03822	511.5	1.9892	1.0428	1.1181	179.3	125
130	0.04155	517.1	2.0083	1.0448	1.1138	181.3		0.03881	516.7	2.0023	1.0478	1.1157	180.8	130
135	0.04217	522.4	2.0212	1.0501	1.1117	182.7		0.03940	522.0	2.0152	1.0529	1.1136	182.2	135
140	0.04279	527.6	2.0341	1.0555	1.1098	184.1		0.03998	527.2	2.0281	1.0582	1.1115	183.6	140
145	0.04340	532.9	2.0468	1.0611	1.1080	185.5		0.04056	532.5	2.0408	1.0636	1.1096	185.0	145
150	0.04401	538.3	2.0594	1.0667	1.1062	186.9		0.04114	537.9	2.0535	1.0690	1.1078	186.4	150
155	0.04462	543.6	2.0720	1.0723	1.1046	188.2		0.04171	543.2	2.0661	1.0745	1.1061	187.8	155
160	0.04523	549.0	2.0845	1.0780	1.1031	189.5		0.04229	548.6	2.0786	1.0801	1.1045	189.1	160
165	0.04583	554.4	2.0969	1.0838	1.1016	190.9		0.04285	554.0	2.0910	1.0858	1.1029	190.5	165
170	0.04643	559.8	2.1092	1.0896	1.1002	192.1		0.04342	559.5	2.1034	1.0915	1.1015	191.8	170
175	0.04703	565.3	2.1215	1.0954	1.0989	193.4		0.04398	565.0	2.1157	1.0972	1.1001	193.1	175
180	0.04762	570.8	2.1336	1.1013	1.0976	194.7		0.04455	570.5	2.1279	1.1030	1.0988	194.3	180
185	—	—	—	—	—	—		0.04511	576.0	2.1400	1.1087	1.0975	195.6	185

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 850.00 kPa (abs)							PRESSURE = 900.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
33.44	0.00085	246.9	1.1602	1.4710	1.5836	470.1	SATLIQ	0.00086	249.9	1.1699	1.4818	1.5897	460.4	35.49
33.44	0.02410	416.8	1.7143	1.0720	1.2564	142.4	SATVAP	0.02271	417.7	1.7137	1.0872	1.2546	141.8	35.49
35	0.02435	418.4	1.7198	1.0663	1.2498	143.3		—	—	—	—	—	35	
40	0.02512	423.7	1.7368	1.0510	1.2312	146.0		0.02340	422.6	1.7293	1.0702	1.2453	144.4	40
45	0.02586	429.0	1.7534	1.0395	1.2157	148.6		0.02412	427.9	1.7452	1.0559	1.2275	147.2	45
50	0.02658	434.1	1.7695	1.0311	1.2027	151.1		0.02482	433.2	1.7625	1.0452	1.2128	149.7	50
55	0.02728	439.3	1.7853	1.0250	1.1916	153.4		0.02550	438.4	1.7785	1.0373	1.2003	152.2	55
60	0.02796	444.4	1.8008	1.0208	1.1820	155.6		0.02615	443.5	1.7942	1.0316	1.1896	154.5	60
65	0.02862	449.5	1.8159	1.0181	1.1737	157.8		0.02680	448.7	1.8095	1.0278	1.1803	156.7	65
70	0.02927	454.6	1.8309	1.0167	1.1663	159.8		0.02748	453.8	1.8246	1.0253	1.1722	158.8	70
75	0.02991	459.7	1.8456	1.0164	1.1598	161.8		0.02803	458.9	1.8394	1.0242	1.1650	160.8	75
80	0.03053	464.7	1.8601	1.0170	1.1539	163.7		0.02864	464.1	1.8540	1.0240	1.1586	162.8	80
85	0.03115	469.8	1.8744	1.0184	1.1487	165.5		0.02923	469.2	1.8684	1.0247	1.1529	164.7	85
90	0.03176	474.9	1.8885	1.0204	1.1439	167.3		0.02981	474.3	1.8826	1.0261	1.1478	166.5	90
95	0.03236	480.0	1.9025	1.0229	1.1396	169.1		0.03039	479.4	1.8967	1.0282	1.1431	168.3	95
100	0.03295	485.1	1.9163	1.0259	1.1357	170.8		0.03096	484.6	1.9106	1.0308	1.1389	170.1	100
105	0.03353	490.3	1.9300	1.0293	1.1321	172.4		0.03151	489.8	1.9243	1.0338	1.1351	171.7	105
110	0.03412	495.4	1.9435	1.0331	1.1288	174.1		0.03207	494.9	1.9379	1.0373	1.1315	173.4	110
115	0.03469	500.6	1.9569	1.0372	1.1257	175.6		0.03262	500.1	1.9514	1.0410	1.1282	175.0	115
120	0.03526	505.8	1.9703	1.0415	1.1229	177.2		0.03315	505.3	1.9647	1.0451	1.1252	176.6	120
125	0.03582	511.0	1.9834	1.0461	1.1202	178.7		0.03370	510.6	1.9779	1.0494	1.1224	178.2	125
130	0.03639	516.3	1.9965	1.0509	1.1178	180.2		0.03423	515.8	1.9911	1.0540	1.1198	179.7	130
135	0.03695	521.5	2.0095	1.0558	1.1155	181.7		0.03477	521.1	2.0041	1.0587	1.1174	181.2	135
140	0.03750	526.8	2.0224	1.0609	1.1133	183.1		0.03530	526.4	2.0170	1.0636	1.1151	182.7	140
145	0.03805	532.2	2.0352	1.0661	1.1113	184.6		0.03582	531.8	2.0298	1.0687	1.1130	184.1	145
150	0.03860	537.5	2.0479	1.0714	1.1094	186.0		0.03634	537.1	2.0426	1.0738	1.1110	185.5	150
155	0.03914	542.9	2.0605	1.0768	1.1076	187.4		0.03686	542.5	2.0552	1.0791	1.1091	186.9	155
160	0.03969	548.3	2.0731	1.0823	1.1059	188.7		0.03737	547.9	2.0678	1.0844	1.1073	188.3	160
165	0.04023	553.7	2.0855	1.0878	1.1043	190.1		0.03789	553.3	2.0803	1.0898	1.1056	189.7	165
170	0.04076	559.1	2.0979	1.0934	1.1028	191.4		0.03840	558.8	2.0927	1.0953	1.1040	191.0	170
175	0.04130	564.6	2.1102	1.0990	1.1013	192.7		0.03890	564.3	2.1050	1.1009	1.1025	192.3	175
180	0.04183	570.1	2.1224	1.1047	1.0999	194.0		0.03941	569.8	2.1172	1.1064	1.1011	193.6	180
185	0.04236	575.7	2.1346	1.1104	1.0986	195.3		0.03992	575.4	2.1294	1.1120	1.0997	194.9	185
190	—	—	—	—	—	—		0.04042	580.9	2.1415	1.1177	1.0984	196.2	190

TEMP °C	PRESSURE = 950.00 kPa (abs)							PRESSURE = 1000.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
37.46	0.00086	252.8	1.1792	1.4926	1.5960	451.1	SATLIQ	0.00087	255.6	1.1881	1.5035	1.6025	442.1	39.35
37.46	0.02147	418.6	1.7130	1.1024	1.2730	141.2	SATVAP	0.02034	419.5	1.7124	1.1177	1.2817	140.6	39.35
40	0.02184	421.4	1.7220	1.0913	1.2609	142.8		0.02044	420.2	1.7147	1.1144	1.2782	141.0	40
45	0.02256	426.8	1.7391	1.0736	1.2404	145.7		0.02114	425.7	1.7382	1.0928	1.2546	144.1	45
50	0.02324	432.2	1.7558	1.0604	1.2236	148.3		0.02181	431.2	1.7491	1.0766	1.2354	146.9	50
55	0.02390	437.4	1.7720	1.0504	1.2095	150.9		0.02246	436.5	1.7655	1.0644	1.2195	149.6	55
60	0.02454	442.7	1.7878	1.0431	1.1976	153.3		0.02308	441.8	1.7816	1.0552	1.2061	152.1	60
65	0.02516	447.9	1.8033	1.0379	1.1873	155.6		0.02368	447.1	1.7972	1.0485	1.1947	154.4	65
70	0.02577	453.1	1.8185	1.0344	1.1783	157.8		0.02427	452.3	1.8126	1.0438	1.1848	156.7	70
75	0.02636	458.2	1.8334	1.0323	1.1705	159.9		0.02485	457.5	1.8277	1.0406	1.1762	158.9	75
80	0.02694	463.4	1.8481	1.0313	1.1635	161.9		0.02541	462.7	1.8425	1.0388	1.1687	160.9	80
85	0.02751	468.5	1.8626	1.0313	1.1573	163.8		0.02596	467.9	1.8571	1.0381	1.1619	162.9	85
90	0.02807	473.7	1.8769	1.0321	1.1518	165.7		0.02650	473.1	1.8715	1.0383	1.1559	164.9	90
95	0.02862	478.9	1.8911	1.0337	1.1468	167.5		0.02708	478.3	1.8857	1.0393	1.1506	166.8	95
100	0.02917	484.0	1.9050	1.0358	1.1422	169.3		0.02756	483.5	1.8997	1.0409	1.1457	168.6	100
105	0.02971	489.2	1.9188	1.0384	1.1381	171.1		0.02807	488.7	1.9136	1.0432	1.1413	170.4	105
110	0.03023	494.4	1.9325	1.0415	1.1343	172.7		0.02859	493.9	1.9273	1.0459	1.1372	172.1	110
115	0.03076	499.6	1.9460	1.0450	1.1309	174.4		0.02909	499.1	1.9409	1.0490	1.1335	173.8	115
120	0.03128	504.9	1.9594	1.0488	1.1277	176.0		0.02959	504.4	1.9543	1.0525	1.1301	175.4	120
125	0.03180	510.1	1.9727	1.0528	1.1247	177.6		0.03008	509.7	1.9676	1.0563	1.1270	177.0	125
130	0.03231	515.4	1.9858	1.0572	1.1219	179.1		0.03058	515.0	1.9809	1.0604	1.1241	178.6	130
135	0.03282	520.7	1.9989	1.0617	1.1194	180.7		0.03106	520.3	1.9940	1.0647	1.1214	180.1	135
140	0.03333	526.0	2.0119	1.0664	1.1170	182.2		0.03155	525.6	2.0070	1.0692	1.1189	181.7	140
145	0.03383	531.4	2.0247	1.0713	1.1147	183.6		0.03208	531.0	2.0198	1.0739	1.1165	183.1	145
150	0.03432	536.7	2.0375	1.0763	1.1126	185.1		0.03250	536.3	2.0326	1.0787	1.1143	184.6	150
155	0.03482	542.1	2.0502	1.0814	1.1107	186.5		0.03298	541.8	2.0453	1.0837	1.1122	186.0	155
160	0.03531	547.5	2.0628	1.0866	1.1088	187.9		0.03345	547.2	2.0579	1.0888	1.1103	187.5	160
165	0.03580	553.0	2.0753	1.0919	1.1070	189.3		0.03392	552.6	2.0705	1.0940	1.1084	188.9	165
170	0.03629	558.5	2.0877	1.0973	1.1054	190.6		0.03438	558.1	2.0829	1.0993	1.1067	190.2	170
175	0.03677	564.0	2.1000	1.1027	1.1038	192.0		0.03485	563.6	2.0953	1.1046	1.1050	191.6	175
180	0.03725	569.5	2.1123	1.1082	1.1023	193.3		0.03531	569.2	2.1076	1.1100	1.1035	192.9	180
185	0.03774	575.0	2.1245	1.1137	1.1009	194.6		0.03577	574.7	2.1198	1.1154	1.1020	194.2	185
190	0.03821	580.6	2.1366	1.1193	1.0995	195.9		0.03623	580.3	2.1319	1.1209	1.1006	195.6	190

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 1100.00 kPa (abs)							PRESSURE = 1200.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
42.93	0.00088	261.0	1.2050	1.5256	1.6158	424.9	SATLIQ	0.00089	266.2	1.2208	1.5481	1.6300	408.8	46.28
42.93	0.01839	421.0	1.7112	1.1488	1.3000	139.4	SATVAP	0.01674	422.4	1.7100	1.1807	1.3195	138.1	46.28
45	0.01867	423.4	1.7186	1.1368	1.2876	140.8								
50	0.01932	429.0	1.7362	1.1131	1.2623	143.9		0.01722	426.8	1.7235	1.1563	1.2951	140.7	50
55	0.01995	434.5	1.7531	1.0952	1.2419	146.8		0.01783	432.5	1.7411	1.1310	1.2585	143.9	55
60	0.02054	440.0	1.7696	1.0817	1.2251	149.5		0.01842	438.1	1.7580	1.1119	1.2471	146.9	60
65	0.02112	445.4	1.7856	1.0716	1.2110	152.1		0.01897	443.6	1.7745	1.0974	1.2296	149.7	65
70	0.02168	450.7	1.8013	1.0640	1.1990	154.5		0.01951	449.1	1.7905	1.0864	1.2149	152.3	70
75	0.02223	456.0	1.8166	1.0586	1.1887	156.8		0.02003	454.5	1.8062	1.0782	1.2025	154.8	75
80	0.02275	461.3	1.8317	1.0548	1.1797	159.1		0.02054	459.8	1.8215	1.0722	1.1918	157.1	80
85	0.02327	466.6	1.8465	1.0525	1.1718	161.2		0.02103	465.2	1.8365	1.0679	1.1825	159.3	85
90	0.02378	471.8	1.8611	1.0513	1.1648	163.2		0.02151	470.5	1.8513	1.0652	1.1743	161.5	90
95	0.02428	477.1	1.8755	1.0511	1.1589	165.2		0.02199	475.8	1.8659	1.0636	1.1671	163.6	95
100	0.02477	482.3	1.8897	1.0517	1.1529	167.1		0.02245	481.2	1.8802	1.0630	1.1607	165.6	100
105	0.02525	487.6	1.9037	1.0530	1.1479	168.9		0.02290	486.5	1.8944	1.0633	1.1549	167.5	105
110	0.02573	492.9	1.9175	1.0549	1.1433	170.7		0.02335	491.8	1.9083	1.0644	1.1497	169.4	110
115	0.02620	498.1	1.9312	1.0573	1.1391	172.5		0.02379	497.1	1.9221	1.0660	1.1450	171.2	115
120	0.02666	503.4	1.9447	1.0602	1.1353	174.2		0.02423	502.5	1.9358	1.0682	1.1407	173.0	120
125	0.02713	508.7	1.9582	1.0634	1.1318	175.9		0.02466	507.8	1.9493	1.0708	1.1368	174.7	125
130	0.02758	514.1	1.9715	1.0670	1.1285	177.5		0.02508	513.2	1.9627	1.0739	1.1331	176.4	130
135	0.02803	519.4	1.9846	1.0709	1.1255	179.1		0.02550	518.5	1.9760	1.0773	1.1298	178.0	135
140	0.02848	524.8	1.9977	1.0750	1.1227	180.6		0.02592	523.9	1.9891	1.0810	1.1267	179.6	140
145	0.02892	530.2	2.0106	1.0793	1.1201	182.2		0.02633	529.4	2.0021	1.0849	1.1239	181.2	145
150	0.02936	535.6	2.0235	1.0838	1.1177	183.7		0.02675	534.8	2.0150	1.0890	1.1212	182.8	150
155	0.02980	541.0	2.0363	1.0885	1.1154	185.2		0.02715	540.2	2.0279	1.0934	1.1187	184.3	155
160	0.03023	546.5	2.0489	1.0933	1.1133	186.6		0.02756	545.7	2.0406	1.0979	1.1164	185.8	160
165	0.03067	551.9	2.0615	1.0982	1.1113	188.0		0.02796	551.2	2.0532	1.1026	1.1142	187.2	165
170	0.03110	557.4	2.0740	1.1033	1.1094	189.5		0.02836	556.8	2.0657	1.1074	1.1122	188.7	170
175	0.03152	563.0	2.0864	1.1084	1.1076	190.8		0.02875	562.3	2.0782	1.1123	1.1102	190.1	175
180	0.03194	568.5	2.0987	1.1136	1.1059	192.2		0.02915	567.9	2.0906	1.1173	1.1084	191.5	180
185	0.03237	574.1	2.1110	1.1188	1.1043	193.6		0.02954	573.5	2.1029	1.1223	1.1067	192.9	185
190	0.03279	579.7	2.1231	1.1241	1.1028	194.9		0.02993	579.1	2.1151	1.1275	1.1050	194.2	190
195	0.03321	585.3	2.1353	1.1295	1.1013	196.2		0.03032	584.7	2.1272	1.1326	1.1035	195.6	195
200	—	—	—	—	—	—		0.03070	590.4	2.1393	1.1379	1.1020	196.9	200

TEMP °C	PRESSURE = 1300.00 kPa (abs)							PRESSURE = 1400.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
49.42	0.00091	271.0	1.2357	1.5714	1.6449	393.5	SATLIQ	0.00092	273.7	1.2498	1.5954	1.6608	378.9	52.39
49.42	0.01534	423.6	1.7088	1.2137	1.3405	136.9	SATVAP	0.01413	424.7	1.7076	1.2482	1.3531	135.5	52.39
50	0.01542	424.3	1.7110	1.2088	1.3358	137.3		—	—	—	—	—	45	
55	0.01602	430.3	1.7292	1.1731	1.3009	140.9		0.01445	427.9	1.7174	1.2239	1.3399	137.6	55
60	0.01660	436.1	1.7468	1.1466	1.2730	144.1		0.01502	434.0	1.7357	1.1872	1.3039	141.2	60
65	0.01714	441.8	1.7637	1.1266	1.2510	147.1		0.01555	439.8	1.7531	1.1600	1.2760	144.5	65
70	0.01767	447.3	1.7801	1.1114	1.2330	150.0		0.01607	445.6	1.7700	1.1395	1.2537	147.5	70
75	0.01817	452.9	1.7961	1.0998	1.2179	152.6		0.01655	451.2	1.7864	1.1239	1.2354	150.4	75
80	0.01865	458.4	1.8117	1.0911	1.2052	155.1		0.01703	456.8	1.8023	1.1119	1.2201	153.0	80
85	0.01912	463.8	1.8270	1.0847	1.1942	157.5		0.01749	462.3	1.8179	1.1029	1.2071	155.6	85
90	0.01959	469.2	1.8420	1.0801	1.1847	159.8		0.01793	467.8	1.8331	1.0962	1.1960	158.0	90
95	0.02003	474.6	1.8568	1.0770	1.1763	161.9		0.01836	473.3	1.8481	1.0913	1.1863	160.2	95
100	0.02047	480.0	1.8713	1.0751	1.1690	164.0		0.01878	478.8	1.8628	1.0880	1.1779	162.4	100
105	0.02091	485.3	1.8856	1.0743	1.1624	166.0		0.01919	484.2	1.8772	1.0859	1.1704	164.6	105
110	0.02133	490.7	1.8997	1.0743	1.1565	168.0		0.01960	489.6	1.8915	1.0849	1.1637	166.6	110
115	0.02175	496.1	1.9136	1.0752	1.1512	169.9		0.01999	495.0	1.9055	1.0847	1.1577	168.6	115
120	0.02216	501.5	1.9274	1.0766	1.1464	171.7		0.02038	500.5	1.9194	1.0854	1.1524	170.5	120
125	0.02257	506.9	1.9410	1.0786	1.1420	173.5		0.02077	505.9	1.9332	1.0866	1.1475	172.3	125
130	0.02297	512.3	1.9545	1.0810	1.1380	175.3		0.02115	511.3	1.9467	1.0885	1.1430	174.1	130
135	0.02336	517.7	1.9678	1.0839	1.1343	177.0		0.02153	516.8	1.9602	1.0908	1.1390	175.9	135
140	0.02375	523.1	1.9810	1.0871	1.1309	178.6		0.02189	522.2	1.9734	1.0935	1.1352	177.6	140
145	0.02414	528.5	1.9941	1.0906	1.1278	180.2		0.02226	527.7	1.9866	1.0966	1.1318	179.3	145
150	0.02453	534.0	2.0071	1.0944	1.1249	181.8		0.02263	533.2	1.9997	1.1000	1.1286	180.9	150
155	0.02491	539.5	2.0200	1.0984	1.1221	183.4		0.02299	538.7	2.0126	1.1036	1.1257	182.5	155
160	0.02529	545.0	2.0328	1.1027	1.1196	184.9		0.02334	544.2	2.0255	1.1075	1.1229	184.1	160
165	0.02566	550.5	2.0455	1.1070	1.1172	186.4		0.02370	549.8	2.0382	1.1116	1.1203	185.6	165
170	0.02604	556.1	2.0581	1.1116	1.1150	187.9		0.02405	555.4	2.0508	1.1159	1.1179	187.1	170
175	0.02641	561.6	2.0706	1.1162	1.1129	189.4		0.02440	561.0	2.0634	1.1203	1.1157	188.6	175
180	0.02677	567.2	2.0830	1.1210	1.1110	190.8		0.02475	566.6	2.0758	1.1249	1.1136	190.1	180
185	0.02714	572.8	2.0953	1.1259	1.1091	192.2		0.02509	572.2	2.0882	1.1295	1.1116	191.5	185
190	0.02751	578.5	2.1075	1.1308	1.1073	193.6		0.02543	577.9	2.1005	1.1343	1.1097	192.9	190
195	0.02787	584.1	2.1197	1.1359	1.1057	194.9		0.02577	583.5	2.1127	1.1391	1.1079	194.3	195
200	0.02823	589.8	2.1318	1.1409	1.1041	196.3		0.02611	589.3	2.1248	1.1440	1.1062	195.7	200
205	—	—	—	—	—	—		0.02645	595.0	2.1369	1.1490	1.1046	197.0	205

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 1500.00 kPa (abs)							PRESSURE = 1600.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
55.2	0.00093	280.1	1.2632	1.6205	1.6778	365.0	SATLIQ SATVAP	0.00094	284.5	1.2759	1.6468	1.6959	351.6	57.88
55.2	0.01308	425.7	1.7063	1.2844	1.3876	134.2		0.01215	426.5	1.7050	1.3227	1.4142	182.8	57.88
60	0.01363	431.7	1.7246	1.2358	1.3416	138.0		0.01239	429.3	1.7134	1.2953	1.3888	184.7	60
65	0.01417	437.8	1.7427	1.1989	1.3056	141.7		0.01294	435.6	1.7323	1.2448	1.3412	188.7	65
70	0.01468	443.7	1.7601	1.1715	1.2776	145.0		0.01344	441.7	1.7503	1.2083	1.3056	142.3	70
75	0.01516	449.5	1.7769	1.1507	1.2552	148.0		0.01392	447.7	1.7675	1.1811	1.2779	145.6	75
80	0.01562	455.2	1.7932	1.1349	1.2368	150.9		0.01437	453.6	1.7842	1.1604	1.2556	148.7	80
85	0.01606	460.9	1.8090	1.1228	1.2214	153.6		0.01480	459.3	1.8004	1.1447	1.2373	151.5	85
90	0.01649	466.4	1.8245	1.1136	1.2084	156.1		0.01522	465.0	1.8162	1.1325	1.2220	154.2	90
95	0.01690	472.0	1.8397	1.1067	1.1972	158.5		0.01562	470.6	1.8316	1.1233	1.2090	156.8	95
100	0.01731	477.5	1.8546	1.1016	1.1875	160.8		0.01602	476.2	1.8467	1.1163	1.1978	159.2	100
105	0.01770	483.0	1.8692	1.0982	1.1790	163.0		0.01640	481.8	1.8616	1.1112	1.1881	161.5	105
110	0.01809	488.5	1.8837	1.0959	1.1714	165.2		0.01677	487.4	1.8761	1.1077	1.1796	163.7	110
115	0.01847	494.0	1.8978	1.0948	1.1647	167.2		0.01714	492.9	1.8905	1.1054	1.1721	165.9	115
120	0.01885	499.4	1.9119	1.0945	1.1587	169.2		0.01750	498.4	1.9046	1.1042	1.1653	167.9	120
125	0.01921	504.9	1.9257	1.0950	1.1532	171.1		0.01785	503.9	1.9186	1.1038	1.1593	169.9	125
130	0.01958	510.4	1.9394	1.0962	1.1483	173.0		0.01820	509.5	1.9323	1.1042	1.1539	171.8	130
135	0.01993	515.9	1.9529	1.0979	1.1438	174.8		0.01854	515.0	1.9460	1.1053	1.1489	173.7	135
140	0.02028	521.4	1.9663	1.1001	1.1397	176.6		0.01887	520.5	1.9594	1.1069	1.1444	175.5	140
145	0.02063	526.9	1.9795	1.1027	1.1360	178.3		0.01921	526.0	1.9728	1.1090	1.1403	177.3	145
150	0.02098	532.4	1.9926	1.1057	1.1325	180.0		0.01954	531.6	1.9860	1.1115	1.1365	179.0	150
155	0.02132	537.9	2.0056	1.1090	1.1293	181.6		0.01986	537.2	1.9990	1.1144	1.1330	180.7	155
160	0.02166	543.5	2.0185	1.1125	1.1263	183.2		0.02018	542.7	2.0120	1.1176	1.1298	182.4	160
165	0.02199	549.1	2.0313	1.1163	1.1235	184.8		0.02050	548.3	2.0248	1.1211	1.1268	184.0	165
170	0.02233	554.7	2.0440	1.1203	1.1209	186.3		0.02082	554.0	2.0376	1.1248	1.1240	185.5	170
175	0.02265	560.3	2.0566	1.1244	1.1185	187.9		0.02113	559.6	2.0502	1.1287	1.1214	187.1	175
180	0.02298	565.9	2.0691	1.1288	1.1162	189.3		0.02144	565.2	2.0627	1.1328	1.1190	188.6	180
185	0.02331	571.6	2.0815	1.1332	1.1141	190.8		0.02175	570.9	2.0752	1.1370	1.1167	190.1	185
190	0.02363	577.2	2.0939	1.1378	1.1121	192.3		0.02206	576.6	2.0876	1.1414	1.1145	191.6	190
195	0.02395	582.9	2.1061	1.1425	1.1102	193.7		0.02236	582.3	2.0998	1.1458	1.1125	193.1	195
200	0.02427	588.7	2.1183	1.1472	1.1084	195.1		0.02267	588.1	2.1121	1.1504	1.1106	194.5	200
205	0.02459	594.4	2.1303	1.1520	1.1067	196.5		0.02297	593.8	2.1242	1.1551	1.1088	195.9	205
210	0.02491	600.2	2.1424	1.1569	1.1050	197.8		0.02327	599.6	2.1362	1.1598	1.1070	197.3	210

TEMP °C	PRESSURE = 1700.00 kPa (abs)							PRESSURE = 1800.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
60.43	0.00095	288.6	1.2882	1.6746	1.7155	338.6	SATLIQ SATVAP	0.00095	292.6	1.2999	1.7040	1.7366	326.1	62.87
60.43	0.01132	427.2	1.7037	1.3635	1.4432	131.4		0.01058	427.8	1.7022	1.4072	1.4749	180.0	62.87
65	0.01183	433.3	1.7217	1.3004	1.3851	135.5		0.01082	430.8	1.7110	1.3696	1.4408	182.1	65
70	0.01234	439.7	1.7405	1.2514	1.3390	139.5		0.01134	437.4	1.7306	1.3029	1.3794	186.5	70
75	0.01281	445.8	1.7583	1.2158	1.3042	143.1		0.01182	443.8	1.7491	1.2559	1.3352	140.5	75
80	0.01326	451.8	1.7754	1.1891	1.2770	146.4		0.01227	450.0	1.7657	1.2215	1.3016	144.0	80
85	0.01369	457.7	1.7920	1.1687	1.2551	149.5		0.01269	456.1	1.7837	1.1957	1.2752	147.3	85
90	0.01410	463.5	1.8081	1.1532	1.2371	152.3		0.01309	462.0	1.8001	1.1760	1.2538	150.3	90
95	0.01449	469.3	1.8238	1.1412	1.2219	155.0		0.01348	467.8	1.8161	1.1607	1.2361	153.2	95
100	0.01487	474.9	1.8391	1.1321	1.2091	157.5		0.01386	473.6	1.8317	1.1491	1.2213	155.8	100
105	0.01525	480.6	1.8541	1.1252	1.1980	159.9		0.01422	479.3	1.8469	1.1401	1.2087	158.4	105
110	0.01561	486.2	1.8689	1.1202	1.1884	162.3		0.01457	485.0	1.8618	1.1334	1.1978	160.8	110
115	0.01596	491.8	1.8834	1.1166	1.1799	164.5		0.01491	490.7	1.8765	1.1284	1.1882	163.1	115
120	0.01631	497.4	1.8976	1.1143	1.1724	166.6		0.01524	496.3	1.8909	1.1249	1.1798	165.3	120
125	0.01665	502.9	1.9117	1.1130	1.1657	168.7		0.01557	501.9	1.9051	1.1226	1.1724	167.4	125
130	0.01698	508.5	1.9256	1.1126	1.1597	170.7		0.01589	507.5	1.9191	1.1214	1.1657	169.5	130
135	0.01730	514.1	1.9393	1.1130	1.1542	172.6		0.01621	513.1	1.9329	1.1210	1.1598	171.5	135
140	0.01763	519.6	1.9529	1.1140	1.1493	174.5		0.01652	518.7	1.9466	1.1213	1.1544	173.4	140
145	0.01795	525.2	1.9663	1.1156	1.1448	176.3		0.01682	524.3	1.9601	1.1223	1.1495	175.3	145
150	0.01826	530.8	1.9796	1.1176	1.1407	178.1		0.01713	530.0	1.9734	1.1239	1.1450	177.1	150
155	0.01857	536.4	1.9927	1.1201	1.1369	179.8		0.01742	535.6	1.9866	1.1259	1.1409	178.9	155
160	0.01888	542.0	2.0057	1.1229	1.1334	181.5		0.01772	541.2	1.9997	1.1283	1.1371	180.6	160
165	0.01918	547.6	2.0186	1.1260	1.1302	183.1		0.01801	546.9	2.0127	1.1310	1.1336	182.3	165
170	0.01949	553.2	2.0314	1.1294	1.1272	184.8		0.01830	552.5	2.0256	1.1341	1.1304	184.0	170
175	0.01978	558.9	2.0441	1.1330	1.1244	186.4		0.01859	558.2	2.0383	1.1374	1.1274	185.6	175
180	0.02008	564.6	2.0567	1.1368	1.1218	187.9		0.01887	563.9	2.0509	1.1410	1.1246	187.2	180
185	0.02037	570.3	2.0692	1.1408	1.1193	189.4		0.01915	569.6	2.0635	1.1447	1.1220	188.7	185
190	0.02066	576.0	2.0816	1.1450	1.1170	190.9		0.01943	575.4	2.0759	1.1487	1.1196	190.3	190
195	0.02096	581.7	2.0939	1.1493	1.1149	192.4		0.01971	581.1	2.0883	1.1528	1.1173	191.8	195
200	0.02124	587.5	2.1062	1.1537	1.1128	193.9		0.01998	586.9	2.1005	1.1570	1.1151	193.3	200
205	0.02153	593.3	2.1183	1.1582	1.1109	195.3		0.02026	592.7	2.1127	1.1613	1.1130	194.7	205
210	0.02182	599.1	2.1304	1.1628	1.1091	196.7		0.02053	598.5	2.1248	1.1658	1.1111	196.2	210
215	0.02210	604.9	2.1424	1.1674	1.1073	198.1		0.02080	604.3	2.1369	1.1703	1.1093	197.6	215

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 1900.00 kPa (abs)							PRESSURE = 2000.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
65.22	0.00098	296.6	1.3113	1.7353	1.7594	314.0	SATLIQ SATVAP	0.00099	300.4	1.3223	1.7690	1.7844	302.2	67.47
65.22	0.00991	428.3	1.7007	1.4544	1.5098	128.6		0.00931	428.8	1.6991	1.5055	1.5484	127.2	67.47
70	0.01043	435.1	1.7205	1.3658	1.4297	133.3		0.00959	432.5	1.7101	1.4452	1.4943	129.9	70
75	0.01092	441.7	1.7398	1.3032	1.3722	137.7		0.01009	439.5	1.7303	1.3600	1.4173	134.7	75
80	0.01137	448.1	1.7580	1.2587	1.3301	141.5		0.01055	446.1	1.7493	1.3019	1.3538	138.9	80
85	0.01179	454.3	1.7755	1.2259	1.2980	145.0		0.01097	452.5	1.7673	1.2601	1.3242	142.7	85
90	0.01219	460.4	1.7923	1.2011	1.2725	148.3		0.01137	458.8	1.7845	1.2291	1.2936	146.2	90
95	0.01257	466.4	1.8086	1.1821	1.2518	151.3		0.01175	464.8	1.8011	1.2055	1.2692	149.3	95
100	0.01294	472.2	1.8244	1.1674	1.2346	154.1		0.01211	470.8	1.8173	1.1874	1.2493	152.3	100
105	0.01329	478.0	1.8399	1.1561	1.2202	156.7		0.01246	476.7	1.8330	1.1733	1.2327	155.1	105
110	0.01364	483.8	1.8550	1.1475	1.2078	159.3		0.01279	482.6	1.8483	1.1625	1.2186	157.7	110
115	0.01397	489.5	1.8698	1.1409	1.1971	161.7		0.01312	488.4	1.8633	1.1542	1.2066	160.2	115
120	0.01429	495.2	1.8844	1.1361	1.1877	164.0		0.01344	494.1	1.8781	1.1479	1.1961	162.6	120
125	0.01461	500.9	1.8987	1.1327	1.1795	166.2		0.01374	499.8	1.8925	1.1433	1.1869	164.9	125
130	0.01492	506.5	1.9129	1.1305	1.1721	168.3		0.01405	505.5	1.9068	1.1401	1.1789	167.1	130
135	0.01523	512.2	1.9268	1.1293	1.1656	170.4		0.01434	511.2	1.9208	1.1380	1.1717	169.2	135
140	0.01553	517.8	1.9405	1.1290	1.1597	172.4		0.01463	516.9	1.9347	1.1369	1.1652	171.3	140
145	0.01582	523.5	1.9541	1.1293	1.1543	174.3		0.01492	522.6	1.9483	1.1366	1.1594	173.3	145
150	0.01611	529.1	1.9676	1.1303	1.1495	176.2		0.01520	528.3	1.9619	1.1370	1.1541	175.2	150
155	0.01640	534.8	1.9808	1.1319	1.1450	178.0		0.01547	534.0	1.9752	1.1380	1.1493	177.1	155
160	0.01668	540.5	1.9940	1.1338	1.1410	179.8		0.01575	539.7	1.9884	1.1395	1.1449	178.9	160
165	0.01696	546.1	2.0070	1.1362	1.1372	181.5		0.01602	545.4	2.0015	1.1415	1.1409	180.7	165
170	0.01724	551.8	2.0199	1.1389	1.1337	183.2		0.01629	551.1	2.0145	1.1439	1.1372	182.4	170
175	0.01752	557.5	2.0327	1.1419	1.1305	184.8		0.01655	556.8	2.0274	1.1466	1.1337	184.1	175
180	0.01779	563.2	2.0454	1.1452	1.1275	186.5		0.01681	562.6	2.0401	1.1496	1.1305	185.7	180
185	0.01806	569.0	2.0580	1.1487	1.1248	188.1		0.01707	568.3	2.0527	1.1528	1.1276	187.4	185
190	0.01832	574.7	2.0705	1.1524	1.1221	189.6		0.01733	574.1	2.0653	1.1563	1.1248	189.0	190
195	0.01859	580.5	2.0829	1.1563	1.1197	191.2		0.01758	579.9	2.0777	1.1599	1.1222	190.5	195
200	0.01885	586.3	2.0952	1.1604	1.1174	192.7		0.01784	585.7	2.0900	1.1638	1.1198	192.1	200
205	0.01911	592.1	2.1074	1.1645	1.1152	194.1		0.01809	591.5	2.1023	1.1678	1.1175	193.6	205
210	0.01937	597.9	2.1195	1.1688	1.1132	195.6		0.01834	597.4	2.1145	1.1719	1.1153	195.0	210
215	0.01963	603.8	2.1316	1.1732	1.1113	197.0		0.01858	603.2	2.1265	1.1761	1.1133	196.5	215
220	0.01989	609.7	2.1436	1.1776	1.1095	198.4		0.01883	609.1	2.1386	1.1804	1.1114	197.9	220

TEMP °C	PRESSURE = 2200.00 kPa (abs)							PRESSURE = 2400.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
71.72	0.00102	307.8	1.3433	1.8446	1.8417	279.5	SATLIQ SATVAP	0.00104	314.9	1.3632	1.9351	1.9120	257.6	75.69
71.72	0.00825	429.3	1.6956	1.6230	1.6389	124.2		0.00735	429.5	1.6917	1.7675	1.7530	121.2	75.69
75	0.00860	434.5	1.7105	1.5190	1.5466	128.1		—	—	—	—	—	75	
80	0.00909	441.8	1.7313	1.4143	1.4531	133.3		0.00782	436.7	1.7122	1.5873	1.5944	126.8	80
85	0.00953	448.7	1.7507	1.3450	1.3903	137.7		0.00829	444.3	1.7336	1.4637	1.4851	132.3	85
90	0.00993	455.3	1.7690	1.2961	1.3449	141.7		0.00870	451.4	1.7533	1.3841	1.4137	136.9	90
95	0.01031	461.6	1.7865	1.2601	1.3103	145.3		0.00909	458.2	1.7718	1.3286	1.3630	141.0	95
100	0.01067	467.9	1.8033	1.2329	1.2831	148.6		0.00945	464.7	1.7894	1.2882	1.3250	144.8	100
105	0.01100	474.0	1.8195	1.2121	1.2612	151.7		0.00978	471.1	1.8054	1.2579	1.2954	148.2	105
110	0.01133	480.0	1.8354	1.1959	1.2429	154.6		0.01010	477.3	1.8227	1.2346	1.2715	151.3	110
115	0.01164	485.9	1.8508	1.1834	1.2276	157.3		0.01041	483.4	1.8386	1.2166	1.2519	154.3	115
120	0.01195	491.8	1.8658	1.1737	1.2145	159.9		0.01070	489.5	1.8541	1.2026	1.2355	157.1	120
125	0.01224	497.7	1.8806	1.1662	1.2032	162.4		0.01098	495.5	1.8692	1.1917	1.2215	159.7	125
130	0.01253	503.5	1.8951	1.1606	1.1934	164.7		0.01126	501.4	1.8841	1.1832	1.2095	162.3	130
135	0.01281	509.3	1.9094	1.1565	1.1847	167.0		0.01153	507.3	1.8986	1.1767	1.1990	164.7	135
140	0.01308	515.1	1.9235	1.1537	1.1770	169.1		0.01179	513.2	1.9129	1.1719	1.1898	167.0	140
145	0.01335	520.8	1.9374	1.1519	1.1701	171.2		0.01205	519.0	1.9270	1.1684	1.1817	169.2	145
150	0.01362	526.6	1.9510	1.1510	1.1639	173.3		0.01230	524.9	1.9408	1.1660	1.1744	171.3	150
155	0.01388	532.3	1.9646	1.1509	1.1583	175.2		0.01255	530.7	1.9545	1.1646	1.1679	173.4	155
160	0.01413	538.1	1.9779	1.1515	1.1532	177.1		0.01279	536.5	1.9680	1.1641	1.1620	175.4	160
165	0.01439	543.9	1.9912	1.1526	1.1485	179.0		0.01303	542.3	1.9814	1.1642	1.1567	177.3	165
170	0.01464	549.6	2.0042	1.1541	1.1443	180.8		0.01326	548.1	1.9946	1.1649	1.1518	179.2	170
175	0.01488	555.4	2.0172	1.1561	1.1404	182.6		0.01349	554.0	2.0077	1.1662	1.1473	181.1	175
180	0.01513	561.2	2.0300	1.1585	1.1367	184.3		0.01372	559.8	2.0206	1.1679	1.1432	182.9	180
185	0.01537	567.0	2.0428	1.1612	1.1334	186.0		0.01395	565.7	2.0335	1.1699	1.1394	184.6	185
190	0.01561	572.8	2.0554	1.1642	1.1302	187.6		0.01417	571.5	2.0462	1.1723	1.1359	186.3	190
195	0.01585	578.6	2.0679	1.1674	1.1273	189.3		0.01440	577.4	2.0588	1.1751	1.1327	188.0	195
200	0.01608	584.5	2.0803	1.1708	1.1246	190.8		0.01462	583.3	2.0713	1.1780	1.1296	189.6	200
205	0.01631	590.3	2.0927	1.1744	1.1221	192.4		0.01483	589.2	2.0837	1.1812	1.1268	191.2	205
210	0.01654	596.2	2.1049	1.1781	1.1197	193.9		0.01505	595.1	2.0960	1.1846	1.1241	192.8	210
215	0.01677	602.1	2.1170	1.1820	1.1174	195.4		0.01526	601.0	2.1082	1.1882	1.1216	194.4	215
220	0.01700	608.0	2.1291	1.1861	1.1153	196.9		0.01548	607.0	2.1203	1.1919	1.1193	195.9	220
225	0.01723	614.0	2.1411	1.1902	1.1133	198.4		0.01569	612.9	2.1324	1.1957	1.1171	197.4	225
230	—	—	—	—	—	—		0.01590	618.9	2.1443	1.1996	1.1150	198.9	230

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 2600.00 kPa (abs)							PRESSURE = 2800.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
79.41	0.00107	321.8	1.3823	2.0468	2.0008	236.5	SATLIQ	0.00111	328.6	1.4007	2.1903	2.1171	216.0	82.91
79.41	0.00657	429.3	1.6872	1.9511	1.9009	118.2	SATVAP	0.00589	428.7	1.6819	2.1936	2.0991	115.2	82.91
80	0.00664	430.4	1.6904	1.9044	1.8601	119.2		—	—	—	—	—	—	80
85	0.00718	439.2	1.7151	1.6459	1.6339	126.1		0.00614	433.0	1.6941	1.9759	1.9996	118.8	85
90	0.00763	447.1	1.7369	1.5063	1.5114	131.7		0.00665	442.1	1.7193	1.6913	1.6522	125.8	90
95	0.00803	454.4	1.7569	1.4179	1.4330	136.5		0.00709	450.2	1.7413	1.5403	1.5807	131.5	95
100	0.00839	461.3	1.7756	1.3571	1.3781	140.7		0.00747	457.6	1.7614	1.4459	1.4477	136.4	100
105	0.00873	468.0	1.7933	1.3131	1.3373	144.5		0.00782	464.7	1.7802	1.3812	1.3897	140.7	105
110	0.00905	474.5	1.8103	1.2801	1.3056	148.0		0.00814	471.4	1.7980	1.3345	1.3469	144.5	110
115	0.00935	480.8	1.8268	1.2549	1.2803	151.2		0.00844	478.0	1.8150	1.2996	1.3137	148.1	115
120	0.00964	487.0	1.8427	1.2354	1.2595	154.2		0.00872	484.5	1.8315	1.2729	1.2873	151.3	120
125	0.00992	493.2	1.8582	1.2201	1.2422	157.1		0.00899	490.8	1.8474	1.2521	1.2657	154.4	125
130	0.01018	499.2	1.8734	1.2081	1.2275	159.8		0.00925	497.0	1.8630	1.2359	1.2477	157.3	130
135	0.01044	505.2	1.8882	1.1988	1.2149	162.3		0.00951	503.1	1.8781	1.2231	1.2324	160.0	135
140	0.01069	511.2	1.9027	1.1916	1.2039	164.8		0.00975	509.2	1.8929	1.2131	1.2193	162.6	140
145	0.01094	517.2	1.9170	1.1861	1.1943	167.1		0.00999	515.3	1.9075	1.2053	1.2080	165.1	145
150	0.01118	523.1	1.9311	1.1821	1.1858	169.4		0.01022	521.3	1.9218	1.1994	1.1981	167.4	150
155	0.01142	529.0	1.9450	1.1793	1.1782	171.5		0.01045	527.3	1.9358	1.1949	1.1893	169.7	155
160	0.01165	534.9	1.9587	1.1775	1.1714	173.6		0.01067	533.2	1.9497	1.1917	1.1814	171.9	160
165	0.01187	540.8	1.9722	1.1765	1.1653	175.7		0.01088	539.2	1.9634	1.1895	1.1744	174.0	165
170	0.01210	546.6	1.9855	1.1763	1.1597	177.6		0.01110	545.1	1.9769	1.1882	1.1681	176.1	170
175	0.01232	552.5	1.9987	1.1767	1.1547	179.6		0.01131	551.1	1.9902	1.1877	1.1624	178.1	175
180	0.01253	558.4	2.0118	1.1776	1.1500	181.4		0.01151	557.0	2.0034	1.1878	1.1572	180.0	180
185	0.01275	564.3	2.0247	1.1790	1.1458	183.2		0.01172	562.9	2.0164	1.1885	1.1524	181.9	185
190	0.01296	570.2	2.0375	1.1808	1.1418	185.0		0.01192	568.9	2.0293	1.1897	1.1480	183.7	190
195	0.01317	576.1	2.0502	1.1830	1.1382	186.7		0.01212	574.8	2.0421	1.1913	1.1440	185.5	195
200	0.01338	582.0	2.0628	1.1855	1.1348	188.4		0.01232	580.8	2.0547	1.1932	1.1402	187.3	200
205	0.01358	588.0	2.0753	1.1883	1.1317	190.1		0.01251	586.8	2.0673	1.1955	1.1367	189.0	205
210	0.01379	593.9	2.0876	1.1912	1.1288	191.7		0.01270	592.8	2.0798	1.1981	1.1335	190.6	210
215	0.01399	599.9	2.0999	1.1944	1.1260	193.3		0.01289	598.8	2.0921	1.2009	1.1305	192.3	215
220	0.01419	605.9	2.1121	1.1978	1.1234	194.9		0.01308	604.8	2.1044	1.2039	1.1277	193.9	220
225	0.01439	611.9	2.1242	1.2014	1.1210	196.4		0.01327	610.8	2.1165	1.2071	1.1250	195.5	225
230	0.01458	617.9	2.1362	1.2050	1.1187	197.9		0.01346	616.8	2.1286	1.2105	1.1225	197.0	230
235	—	—	—	—	—	—		0.01364	622.9	2.1406	1.2140	1.1202	198.6	235

TEMP °C	PRESSURE = 3000.00 kPa (abs)							PRESSURE = 3200.00 kPa (ab)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
86.22	0.00114	335.3	1.4188	2.3843	2.2770	195.8	SATLIQ	0.00118	342.0	1.4867	2.6657	2.5126	175.9	89.35
86.22	0.00528	427.6	1.6758	2.5300	2.3769	112.1	SATVAP	0.00472	426.0	1.6685	3.0280	2.7912	109.1	89.35
90	0.00575	436.1	1.6992	2.0156	1.9317	119.1		0.00482	427.9	1.6737	2.8017	2.5961	110.6	90
95	0.00624	445.3	1.7245	1.7214	1.6778	126.1		0.00544	439.5	1.7056	2.0237	1.9273	119.9	95
100	0.00665	453.5	1.7466	1.5654	1.5427	131.7		0.00589	448.8	1.7307	1.7365	1.6809	126.7	100
105	0.00701	461.1	1.7667	1.4676	1.4573	136.6		0.00628	457.1	1.7527	1.5813	1.5473	132.3	105
110	0.00733	468.2	1.7855	1.4007	1.3977	140.9		0.00662	464.7	1.7728	1.4831	1.4619	137.2	110
115	0.00764	475.1	1.8034	1.3523	1.3537	144.8		0.00692	472.0	1.7916	1.4156	1.4022	141.4	115
120	0.00792	481.8	1.8204	1.3161	1.3197	148.4		0.00721	478.9	1.8094	1.3667	1.3579	145.3	120
125	0.00819	488.3	1.8369	1.2884	1.2926	151.7		0.00748	485.7	1.8264	1.3299	1.3236	148.9	125
130	0.00845	494.7	1.8528	1.2669	1.2704	154.7		0.00773	492.2	1.8428	1.3017	1.2962	152.2	130
135	0.00869	501.0	1.8683	1.2500	1.2520	157.6		0.00798	498.7	1.8587	1.2797	1.2738	155.3	135
140	0.00893	507.2	1.8835	1.2366	1.2363	160.4		0.00821	505.1	1.8742	1.2624	1.2551	158.2	140
145	0.00916	513.3	1.8983	1.2262	1.2229	163.0		0.00844	511.3	1.8893	1.2487	1.2393	160.9	145
150	0.00939	519.4	1.9128	1.2179	1.2113	165.5		0.00865	517.5	1.9041	1.2379	1.2257	163.5	150
155	0.00960	525.5	1.9271	1.2116	1.2011	167.9		0.00887	523.7	1.9186	1.2294	1.2139	166.0	155
160	0.00982	531.6	1.9411	1.2068	1.1921	170.2		0.00907	529.8	1.9328	1.2228	1.2036	168.4	160
165	0.01003	537.6	1.9549	1.2032	1.1841	172.4		0.00927	535.9	1.9468	1.2177	1.1944	170.7	165
170	0.01023	543.6	1.9686	1.2007	1.1770	174.5		0.00947	542.0	1.9606	1.2140	1.1863	173.0	170
175	0.01043	549.6	1.9820	1.1992	1.1705	176.6		0.00967	548.1	1.9742	1.2113	1.1790	175.1	175
180	0.01063	555.6	1.9953	1.1984	1.1646	178.6		0.00986	554.1	1.9876	1.2095	1.1724	177.2	180
185	0.01083	561.6	2.0085	1.1983	1.1593	180.5		0.01004	560.2	2.0009	1.2086	1.1665	179.2	185
190	0.01102	567.6	2.0215	1.1988	1.1544	182.4		0.01023	566.2	2.0140	1.2083	1.1611	181.2	190
195	0.01121	573.6	2.0344	1.1998	1.1499	184.3		0.01041	572.3	2.0270	1.2086	1.1561	183.1	195
200	0.01139	579.6	2.0471	1.2012	1.1458	186.1		0.01059	578.3	2.0398	1.2094	1.1515	184.9	200
205	0.01158	585.6	2.0598	1.2030	1.1420	187.8		0.01077	584.4	2.0526	1.2107	1.1473	186.7	205
210	0.01176	591.6	2.0723	1.2051	1.1384	189.6		0.01094	590.4	2.0652	1.2123	1.1434	188.5	210
215	0.01194	597.6	2.0847	1.2075	1.1351	191.3		0.01111	596.5	2.0776	1.2143	1.1398	190.2	215
220	0.01212	603.7	2.0970	1.2102	1.1320	192.9		0.01129	602.6	2.0900	1.2166	1.1365	191.9	220
225	0.01230	609.7	2.1092	1.2130	1.1291	194.5		0.01146	608.6	2.1023	1.2191	1.1333	193.6	225
230	0.01248	615.8	2.1214	1.2161	1.1264	196.1		0.01162	614.8	2.1145	1.2218	1.1304	195.2	230
235	0.01265	621.9	2.1334	1.2194	1.1239	197.7		0.01179	620.9	2.1266	1.2248	1.1276	196.8	235
240	0.01283	628.0	2.1454	1.2227	1.1215	199.2		0.01196	627.0	2.1386	1.2279	1.1251	198.4	240

TABLE 2 (continued)
HFC-134a Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg H = Enthalpy in kJ/kg S = Entropy in kJ/(kg)(K) v_s = Velocity of Sound in m/sec
 Cp = Heat Capacity at Constant Pressure in kJ/(kg)(°C) Cp/Cv = Heat Capacity Ratio (Dimensionless)

TEMP °C	PRESSURE = 3400.00 kPa (abs)							PRESSURE = 3600.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
92.32	0.00123	348.8	1.4548	3.1183	2.8961	156.1	SAT LIQ	0.00130	356.0	1.4737	3.9821	3.6345	136.2	95.15
92.32	0.00420	423.6	1.6596	3.8377	3.4671	106.0	SAT VAP	0.00370	420.3	1.6483	5.3756	4.7521	102.8	95.15
95	0.00463	432.0	1.6825	2.6656	2.4643	112.6		—	—	—	—	—	—	95
100	0.00518	443.4	1.7132	2.0061	1.9016	121.2		0.00449	436.6	1.6924	2.5079	2.3168	115.0	100
105	0.00561	452.7	1.7379	1.7383	1.6732	127.8		0.00498	447.6	1.7216	1.9711	1.8620	122.9	105
110	0.00597	461.0	1.7597	1.5889	1.5452	133.3		0.00537	456.8	1.7458	1.7296	1.6572	129.2	110
115	0.00629	468.7	1.7796	1.4930	1.4622	138.0		0.00571	465.1	1.7672	1.5896	1.5377	134.5	115
120	0.00658	475.9	1.7983	1.4263	1.4035	142.2		0.00601	472.8	1.7870	1.4978	1.4586	139.1	120
125	0.00685	482.9	1.8160	1.3777	1.3596	146.1		0.00628	480.1	1.8055	1.4333	1.4019	143.2	125
130	0.00710	489.7	1.8329	1.3411	1.3255	149.6		0.00654	487.1	1.8230	1.3859	1.3592	147.0	130
135	0.00734	496.4	1.8493	1.3128	1.2982	152.9		0.00678	494.0	1.8399	1.3499	1.3258	150.5	135
140	0.00757	502.9	1.8651	1.2908	1.2758	156.0		0.00700	500.6	1.8561	1.3220	1.2989	153.8	140
145	0.00779	509.3	1.8805	1.2733	1.2571	158.9		0.00722	507.2	1.8719	1.3001	1.2767	156.8	145
150	0.00801	515.6	1.8956	1.2595	1.2413	161.6		0.00743	513.6	1.8873	1.2828	1.2582	159.7	150
155	0.00821	521.9	1.9103	1.2485	1.2276	164.2		0.00763	520.0	1.9022	1.2690	1.2424	162.4	155
160	0.00842	528.1	1.9247	1.2399	1.2158	166.7		0.00783	526.3	1.9169	1.2581	1.2288	165.0	160
165	0.00861	534.3	1.9389	1.2331	1.2054	169.1		0.00802	532.6	1.9313	1.2494	1.2170	167.5	165
170	0.00880	540.4	1.9529	1.2279	1.1962	171.4		0.00821	538.8	1.9454	1.2425	1.2066	169.9	170
175	0.00899	546.6	1.9667	1.2240	1.1880	173.6		0.00839	545.0	1.9594	1.2373	1.1974	172.2	175
180	0.00917	552.7	1.9802	1.2211	1.1806	175.8		0.00857	551.2	1.9731	1.2333	1.1892	174.4	180
185	0.00935	558.8	1.9936	1.2192	1.1740	177.9		0.00874	557.4	1.9866	1.2303	1.1818	176.6	185
190	0.00953	564.9	2.0068	1.2181	1.1680	179.9		0.00891	563.5	1.9999	1.2284	1.1752	178.7	190
195	0.00971	571.0	2.0199	1.2177	1.1625	181.9		0.00908	569.7	2.0131	1.2272	1.1691	180.7	195
200	0.00988	577.1	2.0328	1.2179	1.1575	183.8		0.00925	575.8	2.0261	1.2267	1.1636	182.7	200
205	0.01005	583.1	2.0457	1.2186	1.1529	185.7		0.00941	581.9	2.0390	1.2267	1.1586	184.6	205
210	0.01022	589.2	2.0583	1.2197	1.1486	187.5		0.00957	588.1	2.0518	1.2273	1.1540	186.5	210
215	0.01038	595.3	2.0709	1.2212	1.1447	189.3		0.00973	594.2	2.0644	1.2284	1.1497	188.3	215
220	0.01055	601.5	2.0834	1.2231	1.1410	191.0		0.00989	600.3	2.0770	1.2298	1.1457	190.1	220
225	0.01071	607.6	2.0957	1.2253	1.1376	192.7		0.01005	606.5	2.0894	1.2316	1.1420	191.8	225
230	0.01087	613.7	2.1080	1.2277	1.1345	194.4		0.01020	612.7	2.1017	1.2336	1.1386	193.5	230
235	0.01103	619.8	2.1201	1.2303	1.1315	196.0		0.01035	618.8	2.1139	1.2359	1.1354	195.2	235
240	0.01119	626.0	2.1322	1.2331	1.1287	197.6		0.01050	625.0	2.1260	1.2385	1.1324	196.8	240
245	0.01134	632.2	2.1441	1.2361	1.1261	199.2		0.01065	631.4	2.1380	1.2412	1.1296	198.4	245
250	—	—	—	—	—	—		0.01080	637.4	2.1500	1.2441	1.1269	200.0	250

TEMP °C	PRESSURE = 3800.00 kPa (abs)							PRESSURE = 4000.00 kPa (abs)						TEMP °C
	V	H	S	Cp	Cp/Cv	γ		V	H	S	Cp	Cp/Cv	γ	
97.83	0.00139	364.0	1.4947	6.3049	5.6279	116.1	SAT LIQ	0.00158	375.6	1.5250	28.1470	24.2211	95.7	100.37
97.83	0.00319	415.1	1.6324	9.3686	8.0817	99.5	SAT VAP	0.00254	404.4	1.6022	42.1018	35.2394	95.0	100.37
100	0.00374	427.0	1.6645	3.8743	3.4563	107.3		—	—	—	—	—	—	100
105	0.00438	441.5	1.7031	2.3563	2.1772	117.6		0.00376	433.7	1.6804	3.1309	2.8151	111.6	105
110	0.00482	452.1	1.7309	1.9265	1.8153	124.9		0.00429	446.7	1.7143	2.2216	2.0540	120.4	110
115	0.00517	461.1	1.7543	1.7135	1.6356	130.8		0.00468	456.8	1.7406	1.8780	1.7563	127.1	115
120	0.00549	469.4	1.7754	1.5848	1.5261	135.9		0.00501	465.7	1.7634	1.6927	1.6106	132.7	120
125	0.00577	477.1	1.7948	1.4986	1.4519	140.4		0.00530	473.8	1.7840	1.5762	1.5117	137.5	125
130	0.00602	484.4	1.8131	1.4371	1.3979	144.4		0.00556	481.5	1.8031	1.4963	1.4429	141.8	130
135	0.00626	491.4	1.8306	1.3915	1.3569	148.1		0.00580	488.8	1.8212	1.4384	1.3921	145.8	135
140	0.00649	498.3	1.8473	1.3566	1.3245	151.6		0.00603	495.9	1.8385	1.3950	1.3530	149.4	140
145	0.00671	505.0	1.8634	1.3295	1.2982	154.8		0.00624	502.8	1.8550	1.3615	1.3219	152.8	145
150	0.00691	511.6	1.8791	1.3080	1.2766	157.8		0.00645	509.5	1.8710	1.3354	1.2965	155.9	150
155	0.00711	518.1	1.8944	1.2910	1.2583	160.7		0.00664	516.2	1.8866	1.3146	1.2755	158.9	155
160	0.00731	524.5	1.9093	1.2775	1.2428	163.4		0.00683	522.7	1.9018	1.2981	1.2577	161.7	160
165	0.00749	530.9	1.9239	1.2666	1.2293	166.0		0.00702	529.2	1.9166	1.2849	1.2424	164.4	165
170	0.00767	537.2	1.9382	1.2580	1.2176	168.4		0.00719	535.6	1.9311	1.2743	1.2293	167.0	170
175	0.00785	543.5	1.9523	1.2512	1.2073	170.8		0.00737	541.9	1.9454	1.2658	1.2177	169.4	175
180	0.00802	549.7	1.9661	1.2459	1.1982	173.1		0.00753	548.2	1.9594	1.2591	1.2076	171.8	180
185	0.00819	555.9	1.9798	1.2419	1.1900	175.3		0.00770	554.5	1.9732	1.2539	1.1985	174.1	185
190	0.00836	562.1	1.9932	1.2390	1.1827	177.5		0.00786	560.8	1.9867	1.2499	1.1904	176.3	190
195	0.00852	568.3	2.0065	1.2369	1.1760	179.6		0.00802	567.0	2.0001	1.2470	1.1831	178.4	195
200	0.00868	574.5	2.0197	1.2357	1.1700	181.6		0.00817	573.2	2.0134	1.2450	1.1765	180.5	200
205	0.00884	580.7	2.0326	1.2351	1.1645	183.5		0.00833	579.4	2.0265	1.2438	1.1705	182.5	205
210	0.00900	586.9	2.0455	1.2351	1.1594	185.5		0.00848	585.7	2.0394	1.2432	1.1650	184.5	210
215	0.00915	593.0	2.0582	1.2357	1.1548	187.3		0.00863	591.9	2.0522	1.2431	1.1600	186.4	215
220	0.00930	599.2	2.0708	1.2366	1.1505	189.1		0.00877	598.1	2.0649	1.2436	1.1554	188.3	220
225	0.00945	605.4	2.0833	1.2380	1.1465	190.9		0.00892	604.3	2.0774	1.2445	1.1511	190.1	225
230	0.00960	611.6	2.0957	1.2397	1.1428	192.7		0.00906	610.5	2.0898	1.2458	1.1471	191.9	230
235	0.00975	617.8	2.1079	1.2416	1.1394	194.4		0.00920	616.8	2.1022	1.2475	1.1434	193.6	235
240	0.00989	624.0	2.1201	1.2439	1.1362	196.1		0.00934	623.0	2.1144	1.2494	1.1400	195.3	240
245	0.01004	630.2	2.1322	1.2463	1.1331	197.7		0.00948	629.3	2.1265	1.2515	1.1368	197.0	245
250	0.01018	636.5	2.1441	1.2490	1.1303	199.3		0.00962	635.5	2.1386	1.2539	1.1337	198.6	250

PHỤ LỤC 8: BẢNG TRA MÔI CHẤT R22
DuPont™ Freon® 22 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 v _f	Vapour v _g	Liquid d _f	Vapour d _g	Liquid H _f	Latent H _{fg}	Vapour H _g	Liquid S _f	Vapour S _g	
-100	2.0	0.0006	8.2660	1571.0	0.121	90.7	268.3	359.0	0.505	2.054	-100
-99	2.2	0.0006	7.5770	1569.0	0.132	91.8	267.7	359.5	0.511	2.048	-99
-98	2.4	0.0006	6.9540	1566.0	0.144	92.8	267.1	359.9	0.517	2.042	-98
-97	2.6	0.0006	6.3900	1563.0	0.157	93.9	266.5	360.4	0.523	2.036	-97
-96	2.9	0.0006	5.8780	1561.0	0.170	95.0	266.0	360.9	0.529	2.031	-96
-95	3.2	0.0006	5.4130	1558.0	0.185	96.0	265.4	361.4	0.535	2.025	-95
-94	3.4	0.0006	4.9910	1555.0	0.200	97.1	264.8	361.9	0.541	2.019	-94
-93	3.7	0.0006	4.6060	1553.0	0.217	98.1	264.3	362.4	0.547	2.014	-93
-92	4.1	0.0007	4.2560	1550.0	0.235	99.2	263.7	362.9	0.553	2.009	-92
-91	4.4	0.0007	3.9370	1548.0	0.254	100.3	263.1	363.4	0.559	2.003	-91
-90	4.8	0.0007	3.6450	1545.0	0.274	101.3	262.6	363.9	0.565	1.998	-90
-89	5.2	0.0007	3.3780	1542.0	0.296	102.4	261.9	364.3	0.570	1.993	-89
-88	5.7	0.0007	3.1340	1540.0	0.319	103.4	261.4	364.8	0.576	1.988	-88
-87	6.1	0.0007	2.9100	1537.0	0.344	104.5	260.8	365.3	0.582	1.983	-87
-86	6.6	0.0007	2.7050	1534.0	0.370	105.6	260.2	365.8	0.588	1.978	-86
-85	7.2	0.0007	2.5170	1532.0	0.397	106.6	259.7	366.3	0.593	1.973	-85
-84	7.7	0.0007	2.3440	1529.0	0.427	107.7	259.1	366.8	0.599	1.969	-84
-83	8.3	0.0007	2.1840	1526.0	0.458	108.7	258.6	367.3	0.604	1.964	-83
-82	9.0	0.0007	2.0380	1524.0	0.491	109.8	258.0	367.8	0.610	1.960	-82
-81	9.6	0.0007	1.9030	1521.0	0.526	110.9	257.4	368.3	0.616	1.955	-81
-80	10.4	0.0007	1.7780	1518.0	0.562	111.9	256.9	368.8	0.621	1.951	-80
-79	11.1	0.0007	1.6630	1516.0	0.601	113.0	256.3	369.3	0.627	1.946	-79
-78	12.0	0.0007	1.5570	1513.0	0.642	114.1	255.7	369.8	0.632	1.942	-78
-77	12.8	0.0007	1.4580	1510.0	0.686	115.1	255.2	370.3	0.637	1.938	-77
-76	13.8	0.0007	1.3670	1507.0	0.731	116.2	254.5	370.7	0.643	1.934	-76
-75	14.7	0.0007	1.2830	1505.0	0.780	117.3	253.9	371.2	0.648	1.930	-75
-74	15.8	0.0007	1.2050	1502.0	0.830	118.3	253.4	371.7	0.654	1.926	-74
-73	16.8	0.0007	1.1320	1499.0	0.883	119.4	252.8	372.2	0.659	1.922	-73
-72	18.0	0.0007	1.0650	1497.0	0.939	120.4	252.3	372.7	0.664	1.918	-72
-71	19.2	0.0007	1.0020	1494.0	0.998	121.5	251.7	373.2	0.670	1.915	-71
-70	20.5	0.0007	0.9434	1491.0	1.060	122.6	251.1	373.7	0.675	1.911	-70
-69	21.8	0.0007	0.8891	1488.0	1.125	123.6	250.6	374.2	0.680	1.907	-69
-68	23.2	0.0007	0.8384	1486.0	1.193	124.7	250.0	374.7	0.685	1.904	-68
-67	24.7	0.0007	0.7912	1483.0	1.264	125.8	249.4	375.2	0.690	1.900	-67
-66	26.3	0.0007	0.7471	1480.0	1.338	126.8	248.9	375.7	0.696	1.897	-66
-65	27.9	0.0007	0.7060	1477.0	1.416	127.9	248.3	376.2	0.701	1.893	-65
-64	29.7	0.0007	0.6675	1475.0	1.498	129.0	247.6	376.6	0.706	1.890	-64
-63	31.5	0.0007	0.6315	1472.0	1.583	130.1	247.0	377.1	0.711	1.887	-63
-62	33.4	0.0007	0.5979	1469.0	1.673	131.1	246.5	377.6	0.716	1.883	-62
-61	35.4	0.0007	0.5664	1466.0	1.766	132.2	245.9	378.1	0.721	1.880	-61
-60	37.5	0.0007	0.5368	1464.0	1.863	133.3	245.3	378.6	0.726	1.877	-60
-59	39.7	0.0007	0.5091	1461.0	1.964	134.3	244.8	379.1	0.731	1.874	-59
-58	42.0	0.0007	0.4831	1458.0	2.070	135.4	244.2	379.6	0.736	1.871	-58
-57	44.4	0.0007	0.4587	1455.0	2.180	136.5	243.5	380.0	0.741	1.868	-57
-56	46.9	0.0007	0.4357	1453.0	2.295	137.6	242.9	380.5	0.746	1.865	-56
-55	49.6	0.0007	0.4142	1450.0	2.414	138.6	242.4	381.0	0.751	1.862	-55
-54	52.3	0.0007	0.3939	1447.0	2.539	139.7	241.8	381.5	0.756	1.859	-54
-53	55.2	0.0007	0.3748	1444.0	2.668	140.8	241.2	382.0	0.761	1.856	-53
-52	58.2	0.0007	0.3568	1441.0	2.803	141.9	240.6	382.5	0.766	1.853	-52
-51	61.3	0.0007	0.3398	1438.0	2.943	142.9	240.0	382.9	0.770	1.851	-51
-50	64.5	0.0007	0.3238	1436.0	3.088	144.0	239.4	383.4	0.775	1.848	-50
-49	67.9	0.0007	0.3088	1433.0	3.239	145.1	238.8	383.9	0.780	1.845	-49
-48	71.5	0.0007	0.2945	1430.0	3.395	146.2	238.2	384.4	0.785	1.843	-48
-47	75.1	0.0007	0.2811	1427.0	3.558	147.3	237.5	384.8	0.790	1.840	-47

Table 1 *continued*)
DuPont™ Freon® 22 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 v _f	Vapour v _g	Liquid d _f	Vapour d _g	Liquid H _f	Latent H _{fg}	Vapour H _g	Liquid S _f	Vapour S _g	
-46	78.9	0.0007	0.2684	1424.0	3.726	148.4	236.9	385.3	0.794	1.838	-46
-45	82.9	0.0007	0.2563	1421.0	3.901	149.4	236.4	385.8	0.799	1.835	-45
-44	87.1	0.0007	0.2450	1418.0	4.082	150.5	235.8	386.3	0.804	1.833	-44
-43	91.3	0.0007	0.2342	1416.0	4.270	151.6	235.1	386.7	0.809	1.830	-43
-42	95.8	0.0007	0.2240	1413.0	4.464	152.7	234.5	387.2	0.813	1.828	-42
-41	100.4	0.0007	0.2144	1410.0	4.665	153.8	233.9	387.7	0.818	1.825	-41
-40	105.2	0.0007	0.2052	1407.0	4.873	154.9	233.2	388.1	0.823	1.823	-40
-39	110.2	0.0007	0.1965	1404.0	5.088	156.0	232.6	388.6	0.827	1.821	-39
-38	115.4	0.0007	0.1883	1401.0	5.311	157.1	232.0	389.1	0.832	1.819	-38
-37	120.7	0.0007	0.1805	1398.0	5.541	158.2	231.3	389.5	0.837	1.816	-37
-36	126.3	0.0007	0.1730	1395.0	5.779	159.3	230.7	390.0	0.841	1.814	-36
-35	132.0	0.0007	0.1660	1392.0	6.025	160.4	230.0	390.4	0.846	1.812	-35
-34	138.0	0.0007	0.1593	1389.0	6.279	161.5	229.4	390.9	0.851	1.810	-34
-33	144.1	0.0007	0.1529	1386.0	6.541	162.6	228.7	391.3	0.855	1.808	-33
-32	150.5	0.0007	0.1468	1383.0	6.811	163.7	228.1	391.8	0.860	1.806	-32
-31	157.1	0.0007	0.1410	1380.0	7.090	164.8	227.4	392.2	0.864	1.804	-31
-30	163.9	0.0007	0.1355	1377.0	7.379	165.9	226.8	392.7	0.869	1.802	-30
-29	170.9	0.0007	0.1303	1374.0	7.676	167.0	226.1	393.1	0.873	1.800	-29
-28	178.2	0.0007	0.1253	1371.0	7.982	168.1	225.5	393.6	0.878	1.798	-28
-27	185.7	0.0007	0.1205	1368.0	8.298	169.2	224.8	394.0	0.882	1.796	-27
-26	193.4	0.0007	0.1160	1365.0	8.623	170.3	224.2	394.5	0.887	1.794	-26
-25	201.4	0.0007	0.1116	1362.0	8.958	171.4	223.5	394.9	0.891	1.792	-25
-24	209.7	0.0007	0.1075	1359.0	9.304	172.6	222.7	395.3	0.896	1.790	-24
-23	218.2	0.0007	0.1035	1356.0	9.659	173.7	222.1	395.8	0.900	1.788	-23
-22	227.0	0.0007	0.0998	1353.0	10.030	174.8	221.4	396.2	0.905	1.786	-22
-21	236.0	0.0007	0.0961	1350.0	10.400	175.9	220.7	396.6	0.909	1.784	-21
-20	245.3	0.0007	0.0927	1347.0	10.790	177.0	220.1	397.1	0.914	1.783	-20
-19	254.9	0.0007	0.0894	1343.0	11.190	178.2	219.3	397.5	0.918	1.781	-19
-18	264.8	0.0008	0.0862	1340.0	11.600	179.3	218.6	397.9	0.922	1.779	-18
-17	275.0	0.0008	0.0832	1337.0	12.020	180.4	217.9	398.3	0.927	1.777	-17
-16	285.4	0.0008	0.0803	1334.0	12.450	181.6	217.1	398.7	0.931	1.776	-16
-15	296.2	0.0008	0.0775	1331.0	12.900	182.7	216.5	399.2	0.935	1.774	-15
-14	307.3	0.0008	0.0749	1328.0	13.360	183.8	215.8	399.6	0.940	1.772	-14
-13	318.7	0.0008	0.0723	1324.0	13.830	185.0	215.0	400.0	0.944	1.771	-13
-12	330.4	0.0008	0.0699	1321.0	14.310	186.1	214.3	400.4	0.949	1.769	-12
-11	342.4	0.0008	0.0675	1318.0	14.810	187.3	213.5	400.8	0.953	1.767	-11
-10	354.8	0.0008	0.0653	1315.0	15.320	188.4	212.8	401.2	0.957	1.766	-10
-9	367.5	0.0008	0.0631	1311.0	15.850	189.6	212.0	401.6	0.962	1.764	-9
-8	380.5	0.0008	0.0610	1308.0	16.380	190.7	211.3	402.0	0.966	1.763	-8
-7	393.9	0.0008	0.0590	1305.0	16.940	191.9	210.5	402.4	0.970	1.761	-7
-6	407.7	0.0008	0.0571	1302.0	17.500	193.0	209.8	402.8	0.974	1.760	-6
-5	421.8	0.0008	0.0553	1298.0	18.090	194.2	209.0	403.2	0.979	1.758	-5
-4	436.3	0.0008	0.0535	1295.0	18.680	195.3	208.2	403.5	0.983	1.757	-4
-3	451.1	0.0008	0.0518	1292.0	19.300	196.5	207.4	403.9	0.987	1.755	-3
-2	466.4	0.0008	0.0502	1288.0	19.920	197.7	206.6	404.3	0.992	1.754	-2
-1	482.0	0.0008	0.0486	1285.0	20.570	198.8	205.9	404.7	0.996	1.752	-1
0	498.0	0.0008	0.0471	1282.0	21.230	200.0	205.0	405.0	1.000	1.751	0
1	514.4	0.0008	0.0457	1278.0	21.910	201.2	204.2	405.4	1.004	1.749	1
2	531.2	0.0008	0.0442	1275.0	22.600	202.4	203.4	405.8	1.008	1.748	2
3	548.4	0.0008	0.0429	1271.0	23.310	203.5	202.6	406.1	1.013	1.746	3
4	566.1	0.0008	0.0416	1268.0	24.040	204.7	201.8	406.5	1.017	1.745	4
5	584.1	0.0008	0.0403	1264.0	24.790	205.9	200.9	406.8	1.021	1.744	5
6	602.6	0.0008	0.0391	1261.0	25.560	207.1	200.1	407.2	1.025	1.742	6
7	621.5	0.0008	0.0380	1257.0	26.340	208.3	199.2	407.5	1.030	1.741	7

Table 1 *continued*)
DuPont™ Freon® 22 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 v _f	Vapour v _g	Liquid d _f	Vapour d _g	Liquid H _f	Latent H _{fg}	Vapour H _g	Liquid S _f	Vapour S _g	
8	640.9	0.0008	0.0368	1254.0	27.150	209.5	198.4	407.9	1.034	1.739	8
9	660.7	0.0008	0.0358	1250.0	27.970	210.7	197.5	408.2	1.038	1.738	9
10	680.9	0.0008	0.0347	1247.0	28.820	211.9	196.7	408.6	1.042	1.737	10
11	701.7	0.0008	0.0337	1243.0	29.690	213.1	195.8	408.9	1.046	1.735	11
12	722.9	0.0008	0.0327	1239.0	30.570	214.3	194.9	409.2	1.051	1.734	12
13	744.5	0.0008	0.0318	1236.0	31.480	215.5	194.0	409.5	1.055	1.733	13
14	766.7	0.0008	0.0309	1232.0	32.410	216.7	193.2	409.9	1.059	1.732	14
15	789.3	0.0008	0.0300	1229.0	33.360	217.9	192.3	410.2	1.063	1.730	15
16	812.4	0.0008	0.0291	1225.0	34.340	219.1	191.4	410.5	1.067	1.729	16
17	836.1	0.0008	0.0283	1221.0	35.340	220.4	190.4	410.8	1.071	1.728	17
18	860.2	0.0008	0.0275	1217.0	36.360	221.6	189.5	411.1	1.076	1.726	18
19	884.8	0.0008	0.0267	1214.0	37.410	222.8	188.6	411.4	1.080	1.725	19
20	910.0	0.0008	0.0260	1210.0	38.480	224.1	187.6	411.7	1.084	1.724	20
21	935.7	0.0008	0.0253	1206.0	39.570	225.3	186.6	411.9	1.088	1.722	21
22	961.9	0.0008	0.0246	1202.0	40.700	226.5	185.7	412.2	1.092	1.721	22
23	988.7	0.0008	0.0239	1198.0	41.850	227.8	184.7	412.5	1.096	1.720	23
24	1016.0	0.0008	0.0232	1195.0	43.030	229.0	183.8	412.8	1.100	1.719	24
25	1044.0	0.0008	0.0226	1191.0	44.230	230.3	182.7	413.0	1.105	1.717	25
26	1072.0	0.0008	0.0220	1187.0	45.470	231.5	181.8	413.3	1.109	1.716	26
27	1101.0	0.0009	0.0214	1183.0	46.730	232.8	180.7	413.5	1.113	1.715	27
28	1131.0	0.0009	0.0208	1179.0	48.020	234.1	179.7	413.8	1.117	1.714	28
29	1161.0	0.0009	0.0203	1175.0	49.350	235.3	178.7	414.0	1.121	1.712	29
30	1192.0	0.0009	0.0197	1171.0	50.700	236.6	177.7	414.3	1.125	1.711	30
31	1223.0	0.0009	0.0192	1167.0	52.090	237.9	176.6	414.5	1.129	1.710	31
32	1255.0	0.0009	0.0187	1163.0	53.520	239.2	175.5	414.7	1.133	1.709	32
33	1288.0	0.0009	0.0182	1158.0	54.970	240.5	174.4	414.9	1.138	1.707	33
34	1321.0	0.0009	0.0177	1154.0	56.460	241.8	173.3	415.1	1.142	1.706	34
35	1355.0	0.0009	0.0172	1150.0	57.990	243.1	172.2	415.3	1.146	1.705	35
36	1389.0	0.0009	0.0168	1146.0	59.550	244.4	171.1	415.5	1.150	1.704	36
37	1424.0	0.0009	0.0164	1142.0	61.150	245.7	170.0	415.7	1.154	1.702	37
38	1460.0	0.0009	0.0159	1137.0	62.790	247.0	168.9	415.9	1.158	1.701	38
39	1497.0	0.0009	0.0155	1133.0	64.470	248.3	167.8	416.1	1.162	1.700	39
40	1534.0	0.0009	0.0151	1129.0	66.190	249.6	166.6	416.2	1.166	1.698	40
41	1571.0	0.0009	0.0147	1124.0	67.960	251.0	165.4	416.4	1.171	1.697	41
42	1610.0	0.0009	0.0143	1120.0	69.760	252.3	164.3	416.6	1.175	1.696	42
43	1649.0	0.0009	0.0140	1115.0	71.610	253.7	163.0	416.7	1.179	1.695	43
44	1689.0	0.0009	0.0136	1111.0	73.510	255.0	161.8	416.8	1.183	1.693	44
45	1729.0	0.0009	0.0133	1106.0	75.460	256.4	160.6	417.0	1.187	1.692	45
46	1770.0	0.0009	0.0129	1101.0	77.450	257.7	159.4	417.1	1.191	1.691	46
47	1812.0	0.0009	0.0126	1097.0	79.500	259.1	158.1	417.2	1.196	1.689	47
48	1855.0	0.0009	0.0123	1092.0	81.590	260.5	156.8	417.3	1.200	1.688	48
49	1899.0	0.0009	0.0119	1087.0	83.740	261.9	155.5	417.4	1.204	1.687	49
50	1943.0	0.0009	0.0116	1082.0	85.950	263.2	154.2	417.4	1.208	1.685	50
51	1988.0	0.0009	0.0113	1077.0	88.220	264.6	152.9	417.5	1.212	1.684	51
52	2033.0	0.0009	0.0110	1072.0	90.540	266.0	151.6	417.6	1.216	1.682	52
53	2080.0	0.0009	0.0108	1067.0	92.930	267.5	150.1	417.6	1.221	1.681	53
54	2127.0	0.0009	0.0105	1062.0	95.380	268.9	148.7	417.6	1.225	1.680	54
55	2175.0	0.0010	0.0102	1057.0	97.900	270.3	147.4	417.7	1.229	1.678	55
56	2224.0	0.0010	0.0100	1052.0	100.500	271.8	145.9	417.7	1.233	1.677	56
57	2274.0	0.0010	0.0097	1047.0	103.100	273.2	144.5	417.7	1.238	1.675	57
58	2324.0	0.0010	0.0094	1041.0	105.900	274.7	142.9	417.6	1.242	1.674	58
59	2375.0	0.0010	0.0092	1036.0	108.700	276.1	141.5	417.6	1.246	1.672	59
60	2427.0	0.0010	0.0090	1030.0	111.600	277.6	139.9	417.5	1.250	1.670	60
61	2480.0	0.0010	0.0087	1025.0	114.600	279.1	138.4	417.5	1.255	1.669	61

Table 1 *continued*)
DuPont™ Freon® 22 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 v _f	Vapour v _g	Liquid d _f	Vapour d _g	Liquid H _f	Latent H _{fg}	Vapour H _g	Liquid S _f	Vapour S _g	
62	2534.0	0.0010	0.0085	1019.0	117.600	280.6	136.8	417.4	1.259	1.667	
63	2589.0	0.0010	0.0083	1013.0	120.800	282.1	135.2	417.3	1.263	1.666	
64	2645.0	0.0010	0.0081	1007.0	124.100	283.6	133.6	417.2	1.268	1.664	
65	2701.0	0.0010	0.0079	1001.0	127.400	285.2	131.9	417.1	1.272	1.662	
66	2759.0	0.0010	0.0076	995.3	130.900	286.7	130.2	416.9	1.277	1.660	
67	2817.0	0.0010	0.0074	989.1	134.500	288.3	128.4	416.7	1.281	1.659	
68	2876.0	0.0010	0.0072	982.8	138.200	289.9	126.6	416.5	1.285	1.657	
69	2936.0	0.0010	0.0070	976.3	142.000	291.5	124.8	416.3	1.290	1.655	
70	2997.0	0.0010	0.0069	969.7	146.000	293.1	123.0	416.1	1.295	1.653	
71	3059.0	0.0010	0.0067	963.0	150.100	294.7	121.1	415.8	1.299	1.651	
72	3123.0	0.0011	0.0065	956.1	154.400	296.4	119.1	415.5	1.304	1.649	
73	3187.0	0.0011	0.0063	949.0	158.800	298.0	117.2	415.2	1.308	1.647	
74	3252.0	0.0011	0.0061	941.8	163.400	299.7	115.2	414.9	1.313	1.645	
75	3318.0	0.0011	0.0060	934.4	168.200	301.5	113.0	414.5	1.318	1.642	
76	3385.0	0.0011	0.0058	926.7	173.100	303.2	110.9	414.1	1.323	1.640	
77	3453.0	0.0011	0.0056	918.9	178.300	305.0	108.6	413.6	1.327	1.638	
78	3522.0	0.0011	0.0054	910.8	183.800	306.8	106.3	413.1	1.332	1.635	
79	3592.0	0.0011	0.0053	902.4	189.400	308.6	104.0	412.6	1.337	1.633	
80	3664.0	0.0011	0.0051	893.7	195.400	310.4	101.6	412.0	1.342	1.630	
81	3736.0	0.0011	0.0050	884.8	201.700	312.3	99.1	411.4	1.347	1.627	
82	3810.0	0.0011	0.0048	875.4	208.300	314.3	96.4	410.7	1.353	1.624	
83	3885.0	0.0012	0.0047	865.7	215.300	316.3	93.6	409.9	1.358	1.621	
84	3961.0	0.0012	0.0045	855.5	222.700	318.3	90.8	409.1	1.363	1.618	
85	4038.0	0.0012	0.0043	844.8	230.600	320.4	87.8	408.2	1.369	1.614	
86	4116.0	0.0012	0.0042	833.5	239.000	322.5	84.7	407.2	1.375	1.610	
87	4196.0	0.0012	0.0040	821.6	248.100	324.8	81.3	406.1	1.381	1.606	
88	4277.0	0.0012	0.0039	808.8	257.900	327.1	77.7	404.8	1.387	1.602	
89	4359.0	0.0013	0.0037	795.1	268.700	329.5	73.9	403.4	1.393	1.597	
90	4442.0	0.0013	0.0036	780.1	280.600	332.1	69.8	401.9	1.400	1.592	
91	4527.0	0.0013	0.0034	763.6	294.000	334.8	65.3	400.1	1.407	1.586	
92	4614.0	0.0013	0.0032	745.1	309.300	337.8	60.1	397.9	1.415	1.580	
93	4702.0	0.0014	0.0031	723.7	327.500	341.0	54.3	395.3	1.424	1.572	
94	4791.0	0.0014	0.0029	697.8	350.200	344.8	47.2	392.0	1.434	1.562	
95	4882.0	0.0015	0.0026	662.9	382.000	349.6	37.7	387.3	1.446	1.549	

Table 2
DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

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

Absolute Pressure kPa													
Temp °C	10			20			30			40			Temp °C
	(-80.51°C)			(-70.36°C)			(-63.82°C)			(-58.87°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(1.8400)	(368.5)	(1.953)	(0.9640)	(373.5)	(1.912)	(0.6608)	(376.7)	(1.889)	(0.5056)	(379.1)	(1.873)	
-80	1.8450	368.8	1.954	-	-	-	-	-	-	-	-	-	-80
-75	1.8940	371.4	1.968	-	-	-	-	-	-	-	-	-	-75
-70	1.9430	374.1	1.981	0.9658	373.7	1.913	-	-	-	-	-	-	-70
-65	1.9910	376.8	1.994	0.9905	376.5	1.926	-	-	-	-	-	-	-65
-60	2.0400	379.6	2.007	1.0150	379.2	1.940	0.6736	378.9	1.899	-	-	-	-60
-55	2.0890	382.3	2.020	1.0400	382.0	1.952	0.6902	381.7	1.912	0.5153	381.3	1.884	-55
-50	2.1370	385.1	2.033	1.0640	384.8	1.965	0.7067	384.5	1.925	0.5279	384.2	1.897	-50
-45	2.1860	388.0	2.045	1.0890	387.7	1.978	0.7232	387.4	1.938	0.5404	387.1	1.909	-45
-40	2.2340	390.8	2.058	1.1130	390.5	1.990	0.7397	390.3	1.950	0.5528	390.0	1.922	-40
-35	2.2830	393.7	2.070	1.1380	393.4	2.003	0.7561	393.2	1.963	0.5653	392.9	1.934	-35
-30	2.3310	396.6	2.082	1.1620	396.4	2.015	0.7725	396.1	1.975	0.5777	395.9	1.947	-30
-25	2.3800	399.5	2.094	1.1870	399.3	2.027	0.7889	399.1	1.987	0.5900	398.9	1.959	-25
-20	2.4280	402.5	2.106	1.2110	402.3	2.039	0.8053	402.1	1.999	0.6024	401.9	1.971	-20
-15	2.4760	405.5	2.118	1.2350	405.3	2.051	0.8216	405.1	2.011	0.6147	404.9	1.983	-15
-10	2.5250	408.6	2.129	1.2600	408.4	2.062	0.8379	408.2	2.023	0.6270	408.0	1.994	-10
-5	2.5730	411.6	2.141	1.2840	411.4	2.074	0.8542	411.3	2.034	0.6393	411.1	2.006	-5
0	2.6210	414.7	2.152	1.3080	414.5	2.085	0.8704	414.4	2.046	0.6515	414.2	2.018	0
5	2.6700	417.8	2.164	1.3320	417.7	2.097	0.8867	417.5	2.057	0.6638	417.3	2.029	5
10	2.7180	421.0	2.175	1.3570	420.8	2.108	0.9029	420.7	2.068	0.6760	420.5	2.040	10
15	2.7660	424.2	2.186	1.3810	424.0	2.119	0.9191	423.9	2.080	0.6882	423.7	2.052	15
20	2.8150	427.4	2.197	1.4050	427.2	2.130	0.9353	427.1	2.091	0.7004	426.9	2.063	20
25	2.8630	430.6	2.208	1.4290	430.5	2.141	0.9515	430.3	2.102	0.7126	430.2	2.074	25
30	2.9110	433.9	2.219	1.4540	433.8	2.152	0.9677	433.6	2.113	0.7248	433.5	2.085	30
35	2.9590	437.2	2.230	1.4780	437.1	2.163	0.9839	436.9	2.123	0.7370	436.8	2.095	35
40	3.0080	440.5	2.240	1.5020	440.4	2.173	1.0000	440.3	2.134	0.7491	440.1	2.106	40
45	3.0560	443.9	2.251	1.5260	443.7	2.184	1.0160	443.6	2.145	0.7613	443.5	2.117	45
50	3.1040	447.2	2.262	1.5500	447.1	2.195	1.0320	447.0	2.155	0.7734	446.9	2.128	50
55	3.1520	450.7	2.272	1.5740	450.6	2.205	1.0490	450.4	2.166	0.7856	450.3	2.138	55
60	3.2000	454.1	2.282	1.5990	454.0	2.216	1.0650	453.9	2.176	0.7977	453.8	2.148	60
65	3.2490	457.6	2.293	1.6230	457.5	2.226	1.0810	457.4	2.187	0.8099	457.3	2.159	65
70	3.2970	461.1	2.303	1.6470	461.0	2.236	1.0970	460.9	2.197	0.8220	460.8	2.169	70

Absolute Pressure kPa													
Temp °C	50			60			70			80			Temp °C
	(-54.83°C)			(-51.40°C)			(-48.41°C)			(-45.73°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.4107)	(381.1)	(1.861)	(0.3466)	(382.7)	(1.852)	(0.3002)	(384.2)	(1.844)	(0.2651)	(385.4)	(1.837)	
-50	0.4205	383.9	1.874	0.3490	383.6	1.856	-	-	-	-	-	-	-50
-45	0.4307	386.8	1.887	0.3575	386.5	1.868	0.3052	386.2	1.853	0.2660	385.9	1.839	-45
-40	0.4407	389.7	1.900	0.3660	389.4	1.881	0.3126	389.1	1.866	0.2725	388.9	1.852	-40
-35	0.4508	392.7	1.912	0.3744	392.4	1.894	0.3198	392.1	1.878	0.2789	391.9	1.865	-35
-30	0.4607	395.6	1.924	0.3828	395.4	1.906	0.3271	395.1	1.891	0.2853	394.9	1.877	-30
-25	0.4707	398.6	1.937	0.3912	398.4	1.918	0.3343	398.2	1.903	0.2917	397.9	1.889	-25
-20	0.4807	401.7	1.949	0.3995	401.4	1.931	0.3415	401.2	1.915	0.2980	401.0	1.902	-20
-15	0.4906	404.7	1.961	0.4078	404.5	1.943	0.3487	404.3	1.927	0.3044	404.1	1.914	-15
-10	0.5005	407.8	1.972	0.4161	407.6	1.954	0.3559	407.4	1.939	0.3107	407.2	1.926	-10
-5	0.5103	410.9	1.984	0.4244	410.7	1.966	0.3630	410.5	1.951	0.3169	410.3	1.937	-5
0	0.5202	414.0	1.996	0.4326	413.8	1.978	0.3701	413.6	1.962	0.3232	413.5	1.949	0
5	0.5300	417.2	2.007	0.4409	417.0	1.989	0.3772	416.8	1.974	0.3294	416.6	1.961	5
10	0.5399	420.3	2.019	0.4491	420.2	2.001	0.3843	420.0	1.985	0.3356	419.9	1.972	10
15	0.5497	423.6	2.030	0.4573	423.4	2.012	0.3913	423.2	1.997	0.3419	423.1	1.983	15
20	0.5595	426.8	2.041	0.4655	426.6	2.023	0.3984	426.5	2.008	0.3481	426.3	1.995	20
25	0.5693	430.1	2.052	0.4737	429.9	2.034	0.4054	429.8	2.019	0.3542	429.6	2.006	25
30	0.5790	433.3	2.063	0.4819	433.2	2.045	0.4125	433.1	2.030	0.3604	432.9	2.017	30
35	0.5888	436.7	2.074	0.4900	436.5	2.056	0.4195	436.4	2.041	0.3666	436.3	2.028	35
40	0.5986	440.0	2.085	0.4982	439.9	2.067	0.4265	439.8	2.052	0.3727	439.6	2.038	40
45	0.6083	443.4	2.095	0.5064	443.3	2.077	0.4335	443.1	2.062	0.3789	443.0	2.049	45
50	0.6181	446.8	2.106	0.5145	446.7	2.088	0.4405	446.6	2.073	0.3850	446.4	2.060	50
55	0.6278	450.2	2.116	0.5226	450.1	2.099	0.4475	450.0	2.083	0.3912	449.9	2.070	55
60	0.6376	453.7	2.127	0.5308	453.6	2.109	0.4545	453.5	2.094	0.3973	453.4	2.081	60
65	0.6473	457.2	2.137	0.5389	457.1	2.119	0.4615	456.9	2.104	0.4034	456.8	2.091	65
70	0.6570	460.7	2.147	0.5470	460.6	2.130	0.4684	460.5	2.115	0.4095	460.4	2.102	70
75	0.6667	464.2	2.158	0.5551	464.1	2.140	0.4754	464.0	2.125	0.4156	463.9	2.112	75
80	0.6764	467.8	2.168	0.5632	467.7	2.150	0.4824	467.6	2.135	0.4217	467.5	2.122	80
85	0.6861	471.4	2.178	0.5713	471.3	2.160	0.4893	471.2	2.145	0.4278	471.1	2.132	85
90	0.6958	475.0	2.188	0.5794	474.9	2.170	0.4963	474.8	2.155	0.4339	474.7	2.142	90
95	0.7055	478.7	2.198	0.5875	478.6	2.180	0.5033	478.5	2.165	0.4400	478.4	2.152	95
100	0.7152	482.3	2.208	0.5956	482.2	2.190	0.5102	482.1	2.175	0.4461	482.0	2.162	100

Table 2 continued)

DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

V = Volume in m³/kg

H = Enthalpy in kJ/kg

S = Entropy in kJ/kg K

Saturation Properties in ()

Absolute Pressure kPa													
Temp °C	90			100			101.325			110			Temp °C
	(-43.31°C)			(-41.09°C)			(-40.81°C)			(-39.04°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.2375)	(386.6)	(1.831)	(0.2152)	(387.6)	(1.826)	(0.2126)	(387.8)	(1.825)	(0.1969)	(388.6)	(1.821)	
-40	0.2413	388.6	1.840	0.2164	388.3	1.829	0.2134	388.2	1.827	-	-	-	-40
-35	0.2471	391.6	1.852	0.2216	391.3	1.841	0.2186	391.3	1.840	0.2008	391.0	1.831	-35
-30	0.2528	394.6	1.865	0.2268	394.4	1.854	0.2238	394.3	1.853	0.2056	394.1	1.844	-30
-25	0.2585	397.7	1.877	0.2320	397.4	1.867	0.2289	397.4	1.865	0.2103	397.2	1.857	-25
-20	0.2642	400.8	1.890	0.2372	400.5	1.879	0.2340	400.5	1.878	0.2150	400.3	1.869	-20
-15	0.2699	403.9	1.902	0.2423	403.6	1.891	0.2390	403.6	1.890	0.2197	403.4	1.881	-15
-10	0.2755	407.0	1.914	0.2474	406.8	1.903	0.2441	406.7	1.902	0.2244	406.6	1.893	-10
-5	0.2811	410.1	1.926	0.2524	409.9	1.915	0.2491	409.9	1.914	0.2290	409.7	1.905	-5
0	0.2867	413.3	1.937	0.2575	413.1	1.927	0.2541	413.1	1.925	0.2336	412.9	1.917	0
5	0.2923	416.5	1.949	0.2625	416.3	1.938	0.2590	416.3	1.937	0.2382	416.1	1.929	5
10	0.2978	419.7	1.960	0.2676	419.5	1.950	0.2640	419.5	1.948	0.2428	419.4	1.940	10
15	0.3034	422.9	1.972	0.2726	422.8	1.961	0.2689	422.8	1.960	0.2474	422.6	1.952	15
20	0.3089	426.2	1.983	0.2776	426.0	1.972	0.2739	426.0	1.971	0.2519	425.9	1.963	20
25	0.3144	429.5	1.994	0.2826	429.3	1.984	0.2788	429.3	1.982	0.2565	429.2	1.974	25
30	0.3199	432.8	2.005	0.2875	432.7	1.995	0.2837	432.6	1.993	0.2610	432.5	1.985	30
35	0.3254	436.1	2.016	0.2925	436.0	2.006	0.2886	436.0	2.004	0.2655	435.9	1.996	35
40	0.3309	439.5	2.027	0.2974	439.4	2.016	0.2935	439.4	2.015	0.2701	439.3	2.007	40
45	0.3364	442.9	2.038	0.3024	442.8	2.027	0.2984	442.8	2.026	0.2746	442.7	2.018	45
50	0.3419	446.3	2.048	0.3073	446.2	2.038	0.3033	446.2	2.037	0.2791	446.1	2.028	50
55	0.3473	449.8	2.059	0.3123	449.7	2.048	0.3081	449.6	2.047	0.2836	449.5	2.039	55
60	0.3528	453.2	2.069	0.3172	453.1	2.059	0.3130	453.1	2.058	0.2881	453.0	2.050	60
65	0.3582	456.7	2.080	0.3221	456.6	2.069	0.3179	456.6	2.068	0.2925	456.5	2.060	65
70	0.3637	460.3	2.090	0.3270	460.2	2.080	0.3227	460.2	2.078	0.2970	460.1	2.070	70
75	0.3691	463.8	2.100	0.3319	463.7	2.090	0.3276	463.7	2.089	0.3015	463.6	2.081	75
80	0.3746	467.4	2.111	0.3368	467.3	2.100	0.3324	467.3	2.099	0.3060	467.2	2.091	80
85	0.3800	471.0	2.121	0.3417	470.9	2.110	0.3372	470.9	2.109	0.3104	470.8	2.101	85
90	0.3854	474.6	2.131	0.3466	474.5	2.120	0.3421	474.5	2.119	0.3149	474.4	2.111	90
95	0.3909	478.3	2.141	0.3515	478.2	2.130	0.3473	478.2	2.129	0.3194	478.1	2.121	95
100	0.3963	482.0	2.151	0.3564	481.9	2.140	0.3517	481.9	2.139	0.3238	481.8	2.131	100
105	0.4017	485.7	2.161	0.3613	485.6	2.150	0.3565	485.6	2.149	0.3282	485.5	2.141	105
110	0.4071	489.4	2.170	0.3662	489.3	2.160	0.3614	489.3	2.159	0.3327	489.2	2.151	110

Absolute Pressure kPa													
Temp °C	120			130			140			150			Temp °C
	(-37.13°C)			(-35.35°C)			(-33.67°C)			(-32.08°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.1815)	(389.5)	(1.817)	(0.1684)	(390.3)	(1.813)	(0.1571)	(391.0)	(1.809)	(0.1473)	(391.8)	(1.806)	
-35	0.1834	390.8	1.822	0.1687	390.5	1.814	-	-	-	-	-	-	-35
-30	0.1878	393.9	1.835	0.1728	393.6	1.827	0.1599	393.3	1.819	0.1488	393.1	1.811	-30
-25	0.1922	397.0	1.848	0.1769	396.7	1.839	0.1637	396.5	1.831	0.1524	396.2	1.824	-25
-20	0.1965	400.1	1.860	0.1809	399.8	1.852	0.1675	399.6	1.844	0.1559	399.4	1.837	-20
-15	0.2009	403.2	1.872	0.1849	403.0	1.864	0.1713	402.8	1.856	0.1595	402.6	1.849	-15
-10	0.2052	406.4	1.884	0.1889	406.2	1.876	0.1750	406.0	1.869	0.1630	405.7	1.861	-10
-5	0.2094	409.5	1.896	0.1929	409.3	1.888	0.1787	409.2	1.881	0.1664	409.0	1.873	-5
0	0.2137	412.7	1.908	0.1969	412.6	1.900	0.1824	412.4	1.892	0.1699	412.2	1.885	0
5	0.2179	416.0	1.920	0.2008	415.8	1.912	0.1861	415.6	1.904	0.1733	415.4	1.897	5
10	0.2222	419.2	1.931	0.2047	419.0	1.923	0.1897	418.9	1.916	0.1768	418.7	1.909	10
15	0.2264	422.5	1.943	0.2086	422.3	1.935	0.1934	422.1	1.927	0.1802	422.0	1.920	15
20	0.2306	425.7	1.954	0.2125	425.6	1.946	0.1970	425.4	1.939	0.1836	425.3	1.932	20
25	0.2348	429.1	1.965	0.2164	428.9	1.957	0.2006	428.8	1.950	0.1870	428.6	1.943	25
30	0.2389	432.4	1.976	0.2202	432.2	1.968	0.2042	432.1	1.961	0.1903	432.0	1.954	30
35	0.2431	435.7	1.987	0.2241	435.6	1.979	0.2078	435.5	1.972	0.1937	435.3	1.965	35
40	0.2473	439.1	1.998	0.2279	439.0	1.990	0.2114	438.9	1.983	0.1971	438.7	1.976	40
45	0.2514	442.5	2.009	0.2318	442.4	2.001	0.2150	442.3	1.994	0.2004	442.2	1.987	45
50	0.2555	446.0	2.020	0.2356	445.9	2.012	0.2185	445.7	2.004	0.2037	445.6	1.998	50
55	0.2597	449.4	2.030	0.2394	449.3	2.023	0.2221	449.2	2.015	0.2071	449.1	2.008	55
60	0.2638	452.9	2.041	0.2433	452.8	2.033	0.2257	452.7	2.026	0.2104	452.6	2.019	60
65	0.2679	456.4	2.051	0.2471	456.3	2.044	0.2292	456.2	2.036	0.2137	456.1	2.029	65
70	0.2720	460.0	2.062	0.2509	459.9	2.054	0.2327	459.8	2.047	0.2170	459.7	2.040	70
75	0.2761	463.5	2.072	0.2547	463.4	2.064	0.2363	463.3	2.057	0.2203	463.2	2.050	75
80	0.2802	467.1	2.082	0.2585	467.0	2.074	0.2398	466.9	2.067	0.2236	466.8	2.060	80
85	0.2843	470.7	2.093	0.2623	470.6	2.085	0.2433	470.5	2.077	0.2269	470.4	2.071	85
90	0.2884	474.4	2.103	0.2660	474.3	2.095	0.2469	474.2	2.087	0.2302	474.1	2.081	90
95	0.2925	478.1	2.113	0.2698	478.0	2.105	0.2504	477.9	2.097	0.2335	477.8	2.091	95
100	0.2966	481.7	2.123	0.2736	481.6	2.115	0.2539	481.5	2.107	0.2368	481.5	2.101	100
105	0.3007	485.4	2.132	0.2774	485.3	2.125	0.2574	485.3	2.117	0.2401	485.2	2.111	105
110	0.3048	489.2	2.142	0.2812	489.1	2.134	0.2609	489.0	2.127	0.2434	488.9	2.120	110
115	0.3089	492.9	2.152	0.2849	492.8	2.144	0.2644	492.8	2.137	0.2466	492.7	2.130	115

Table 2 *continued*)
DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

V = Volume in m3/kg

H = Enthalpy in kJ/kg

S = Entropy in kJ/kg K

Saturation Properties in ()

Temp °C	Absolute Pressure kPa												Temp °C
	160			170			180			190			
	(-30.57°C)			(-29.13°C)			(-27.76°C)			(-26.44°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.1386)	(392.4)	(1.803)	(0.1309)	(393.1)	(1.800)	(0.1241)	(393.7)	(1.797)	(0.1179)	(394.3)	(1.795)	
-30	0.1390	392.8	1.804	-	-	-	-	-	-	-	-	-	-30
-25	0.1424	396.0	1.817	0.1336	395.7	1.810	0.1258	395.5	1.804	0.1188	395.2	1.798	-25
-20	0.1458	399.1	1.830	0.1368	398.9	1.823	0.1288	398.7	1.817	0.1217	398.4	1.811	-20
-15	0.1491	402.3	1.842	0.1400	402.1	1.836	0.1318	401.9	1.830	0.1245	401.7	1.824	-15
-10	0.1524	405.5	1.855	0.1431	405.3	1.848	0.1348	405.1	1.842	0.1274	404.9	1.836	-10
-5	0.1557	408.8	1.867	0.1462	408.6	1.860	0.1378	408.4	1.854	0.1302	408.2	1.848	-5
0	0.1589	412.0	1.879	0.1493	411.8	1.872	0.1407	411.6	1.866	0.1330	411.4	1.861	0
5	0.1622	415.3	1.890	0.1523	415.1	1.884	0.1436	414.9	1.878	0.1358	414.7	1.872	5
10	0.1654	418.5	1.902	0.1554	418.4	1.896	0.1465	418.2	1.890	0.1385	418.0	1.884	10
15	0.1686	421.8	1.914	0.1584	421.7	1.907	0.1494	421.5	1.901	0.1413	421.3	1.896	15
20	0.1718	425.1	1.925	0.1615	425.0	1.919	0.1522	424.8	1.913	0.1440	424.7	1.907	20
25	0.1750	428.5	1.936	0.1645	428.3	1.930	0.1551	428.2	1.924	0.1467	428.0	1.919	25
30	0.1782	431.8	1.947	0.1675	431.7	1.941	0.1579	431.6	1.935	0.1494	431.4	1.930	30
35	0.1813	435.2	1.959	0.1705	435.1	1.952	0.1608	434.9	1.947	0.1521	434.8	1.941	35
40	0.1845	438.6	1.970	0.1734	438.5	1.963	0.1636	438.4	1.958	0.1548	438.2	1.952	40
45	0.1877	442.0	1.980	0.1764	441.9	1.974	0.1664	441.8	1.968	0.1575	441.7	1.963	45
50	0.1908	445.5	1.991	0.1794	445.4	1.985	0.1692	445.3	1.979	0.1601	445.1	1.974	50
55	0.1939	449.0	2.002	0.1823	448.9	1.996	0.1720	448.8	1.990	0.1628	448.6	1.985	55
60	0.1970	452.5	2.012	0.1853	452.4	2.006	0.1748	452.3	2.001	0.1654	452.2	1.995	60
65	0.2002	456.0	2.023	0.1882	455.9	2.017	0.1776	455.8	2.011	0.1681	455.7	2.006	65
70	0.2033	459.6	2.033	0.1911	459.5	2.027	0.1804	459.4	2.022	0.1707	459.3	2.016	70
75	0.2064	463.1	2.044	0.1941	463.0	2.038	0.1831	462.9	2.032	0.1733	462.8	2.027	75
80	0.2095	466.7	2.054	0.1970	466.6	2.048	0.1859	466.5	2.042	0.1760	466.4	2.037	80
85	0.2126	470.4	2.064	0.1999	470.3	2.058	0.1887	470.2	2.052	0.1786	470.1	2.047	85
90	0.2157	474.0	2.074	0.2028	473.9	2.068	0.1914	473.8	2.063	0.1812	473.7	2.057	90
95	0.2188	477.7	2.084	0.2058	477.6	2.078	0.1941	477.5	2.073	0.1838	477.4	2.067	95
100	0.2219	481.4	2.094	0.2087	481.3	2.088	0.1969	481.2	2.083	0.1864	481.1	2.077	100
105	0.2249	485.1	2.104	0.2116	485.0	2.098	0.1997	484.9	2.093	0.1891	484.9	2.087	105
110	0.2280	488.8	2.114	0.2145	488.8	2.108	0.2024	488.7	2.102	0.1917	488.6	2.097	110
115	0.2311	492.6	2.124	0.2174	492.5	2.118	0.2052	492.5	2.112	0.1943	492.4	2.107	115
120	0.2342	496.4	2.133	0.2203	496.3	2.128	0.2079	496.3	2.122	0.1969	496.2	2.117	120

Temp °C	Absolute Pressure kPa												Temp °C
	200			210			220			230			
	(-25.18°C)			(-23.96°C)			(-22.79°C)			(-21.66°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.1124)	(394.8)	(1.792)	(0.1073)	(395.4)	(1.790)	(0.1027)	(395.9)	(1.788)	(0.0985)	(396.4)	(1.786)	
-25	0.1125	394.9	1.793	-	-	-	-	-	-	-	-	-	-25
-20	0.1153	398.2	1.806	0.1094	397.9	1.800	0.1042	397.7	1.795	0.0993	397.4	1.790	-20
-15	0.1180	401.4	1.818	0.1121	401.2	1.813	0.1067	401.0	1.808	0.1018	400.7	1.803	-15
-10	0.1207	404.7	1.831	0.1147	404.5	1.825	0.1092	404.3	1.820	0.1042	404.0	1.815	-10
-5	0.1234	408.0	1.843	0.1172	407.8	1.838	0.1117	407.6	1.833	0.1065	407.3	1.828	-5
0	0.1261	411.2	1.855	0.1198	411.0	1.850	0.1141	410.9	1.845	0.1089	410.7	1.840	0
5	0.1287	414.5	1.867	0.1223	414.4	1.862	0.1165	414.2	1.857	0.1112	414.0	1.852	5
10	0.1313	417.8	1.879	0.1249	417.7	1.874	0.1190	417.5	1.869	0.1136	417.3	1.864	10
15	0.1340	421.2	1.891	0.1274	421.0	1.885	0.1214	420.8	1.881	0.1159	420.7	1.876	15
20	0.1366	424.5	1.902	0.1298	424.4	1.897	0.1237	424.2	1.892	0.1182	424.0	1.887	20
25	0.1392	427.9	1.913	0.1323	427.7	1.908	0.1261	427.6	1.904	0.1204	427.4	1.899	25
30	0.1417	431.3	1.925	0.1348	431.1	1.920	0.1285	431.0	1.915	0.1227	430.8	1.910	30
35	0.1443	434.7	1.936	0.1372	434.5	1.931	0.1308	434.4	1.926	0.1250	434.3	1.921	35
40	0.1468	438.1	1.947	0.1397	438.0	1.942	0.1332	437.8	1.937	0.1272	437.7	1.933	40
45	0.1494	441.6	1.958	0.1421	441.4	1.953	0.1355	441.3	1.948	0.1294	441.2	1.944	45
50	0.1519	445.0	1.969	0.1445	444.9	1.964	0.1378	444.8	1.959	0.1317	444.7	1.954	50
55	0.1545	448.5	1.979	0.1470	448.4	1.974	0.1401	448.3	1.970	0.1339	448.2	1.965	55
60	0.1570	452.0	1.990	0.1494	451.9	1.985	0.1424	451.8	1.980	0.1361	451.7	1.976	60
65	0.1595	455.6	2.001	0.1518	455.5	1.996	0.1447	455.4	1.991	0.1383	455.3	1.986	65
70	0.1620	459.1	2.011	0.1542	459.0	2.006	0.1470	458.9	2.001	0.1405	458.8	1.997	70
75	0.1645	462.7	2.021	0.1566	462.6	2.017	0.1493	462.5	2.012	0.1427	462.4	2.007	75
80	0.1670	466.4	2.032	0.1589	466.3	2.027	0.1516	466.2	2.022	0.1449	466.1	2.018	80
85	0.1695	470.0	2.042	0.1613	469.9	2.037	0.1539	469.8	2.032	0.1471	469.7	2.028	85
90	0.1720	473.6	2.052	0.1637	473.6	2.047	0.1561	473.5	2.043	0.1492	473.4	2.038	90
95	0.1745	477.3	2.062	0.1661	477.2	2.057	0.1584	477.2	2.053	0.1514	477.1	2.048	95
100	0.1770	481.0	2.072	0.1685	481.0	2.067	0.1607	480.9	2.063	0.1536	480.8	2.058	100
105	0.1795	484.8	2.082	0.1708	484.7	2.077	0.1630	484.6	2.073	0.1558	484.5	2.068	105
110	0.1820	488.5	2.092	0.1732	488.4	2.087	0.1652	488.4	2.083	0.1579	488.3	2.078	110
115	0.1844	492.3	2.102	0.1755	492.2	2.097	0.1675	492.2	2.092	0.1601	492.1	2.088	115
120	0.1869	496.1	2.111	0.1779	496.0	2.107	0.1697	496.0	2.102	0.1623	495.9	2.098	120
125	0.1894	499.9	2.121	0.1803	499.9	2.116	0.1720	499.8	2.112	0.1644	499.7	2.107	125

Table 2 (continued)

DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

V = Volume in m³/kg

H = Enthalpy in kJ/kg

S = Entropy in kJ/kg K

Saturation Properties in ()

Absolute Pressure kPa													
Temp °C	240			250			260			270			Temp °C
	(-20.57°C)			(-19.51°C)			(-18.48°C)			(-17.48°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0946)	(396.8)	(1.784)	(0.0910)	(397.3)	(1.782)	(0.0877)	(397.7)	(1.780)	(0.0846)	(398.1)	(1.778)	
-20	0.0949	397.2	1.785	-	-	-	-	-	-	-	-	-	-20
-15	0.0972	400.5	1.798	0.0931	400.3	1.793	0.0893	400.0	1.789	0.0857	399.8	1.785	-15
-10	0.0996	403.8	1.811	0.0953	403.6	1.806	0.0914	403.4	1.802	0.0878	403.2	1.798	-10
-5	0.1019	407.1	1.823	0.0976	406.9	1.819	0.0936	406.7	1.814	0.0899	406.5	1.810	-5
0	0.1041	410.5	1.836	0.0998	410.3	1.831	0.0957	410.1	1.827	0.0919	409.9	1.823	0
5	0.1064	413.8	1.848	0.1019	413.6	1.843	0.0978	413.4	1.839	0.0940	413.2	1.835	5
10	0.1086	417.2	1.860	0.1041	417.0	1.855	0.0999	416.8	1.851	0.0960	416.6	1.847	10
15	0.1108	420.5	1.871	0.1062	420.3	1.867	0.1019	420.2	1.863	0.0980	420.0	1.859	15
20	0.1130	423.9	1.883	0.1083	423.7	1.879	0.1040	423.6	1.875	0.1000	423.4	1.870	20
25	0.1152	427.3	1.894	0.1105	427.1	1.890	0.1060	427.0	1.886	0.1019	426.8	1.882	25
30	0.1174	430.7	1.906	0.1126	430.6	1.902	0.1081	430.4	1.897	0.1039	430.3	1.893	30
35	0.1196	434.1	1.917	0.1146	434.0	1.913	0.1101	433.9	1.909	0.1059	433.7	1.905	35
40	0.1217	437.6	1.928	0.1167	437.5	1.924	0.1121	437.3	1.920	0.1078	437.2	1.916	40
45	0.1239	441.1	1.939	0.1188	440.9	1.935	0.1141	440.8	1.931	0.1097	440.7	1.927	45
50	0.1260	444.5	1.950	0.1208	444.4	1.946	0.1161	444.3	1.942	0.1116	444.2	1.938	50
55	0.1282	448.1	1.961	0.1229	447.9	1.957	0.1180	447.8	1.953	0.1135	447.7	1.949	55
60	0.1303	451.6	1.972	0.1249	451.5	1.967	0.1200	451.4	1.963	0.1154	451.3	1.959	60
65	0.1324	455.2	1.982	0.1270	455.0	1.978	0.1220	454.9	1.974	0.1173	454.8	1.970	65
70	0.1345	458.7	1.993	0.1290	458.6	1.989	0.1239	458.5	1.985	0.1192	458.4	1.981	70
75	0.1366	462.3	2.003	0.1310	462.2	1.999	0.1259	462.1	1.995	0.1211	462.0	1.991	75
80	0.1387	466.0	2.013	0.1331	465.9	2.009	0.1278	465.8	2.005	0.1230	465.7	2.002	80
85	0.1408	469.6	2.024	0.1351	469.5	2.020	0.1298	469.4	2.016	0.1249	469.3	2.012	85
90	0.1429	473.3	2.034	0.1371	473.2	2.030	0.1317	473.1	2.026	0.1267	473.0	2.022	90
95	0.1450	477.0	2.044	0.1391	476.9	2.040	0.1337	476.8	2.036	0.1286	476.7	2.032	95
100	0.1471	480.7	2.054	0.1411	480.6	2.050	0.1356	480.5	2.046	0.1305	480.5	2.042	100
105	0.1492	484.4	2.064	0.1431	484.4	2.060	0.1375	484.3	2.056	0.1323	484.2	2.052	105
110	0.1513	488.2	2.074	0.1451	488.1	2.070	0.1394	488.1	2.066	0.1342	488.0	2.062	110
115	0.1533	492.0	2.084	0.1471	491.9	2.080	0.1414	491.8	2.076	0.1360	491.8	2.072	115
120	0.1554	495.8	2.093	0.1491	495.7	2.089	0.1433	495.7	2.085	0.1379	495.6	2.082	120
125	0.1575	499.6	2.103	0.1511	499.6	2.099	0.1452	499.5	2.095	0.1397	499.4	2.091	125
130	0.1595	503.5	2.113	0.1531	503.4	2.109	0.1471	503.4	2.105	0.1416	503.3	2.101	130

Absolute Pressure kPa													
Temp °C	280			290			300			310			Temp °C
	(-16.51°C)			(-15.57°C)			(-14.65°C)			(-13.76°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0818)	(398.5)	(1.777)	(0.0791)	(398.9)	(1.775)	(0.0766)	(399.3)	(1.773)	(0.0742)	(399.7)	(1.772)	
-15	0.0824	399.6	1.781	0.0793	399.3	1.776	-	-	-	-	-	-	-15
-10	0.0844	402.9	1.793	0.0813	402.7	1.789	0.0784	402.5	1.786	0.0757	402.2	1.782	-10
-5	0.0865	406.3	1.806	0.0833	406.1	1.802	0.0803	405.9	1.798	0.0775	405.7	1.795	-5
0	0.0885	409.7	1.819	0.0852	409.5	1.815	0.0822	409.3	1.811	0.0793	409.1	1.807	0
5	0.0904	413.1	1.831	0.0871	412.9	1.827	0.0840	412.7	1.823	0.0812	412.5	1.820	5
10	0.0924	416.4	1.843	0.0890	416.3	1.839	0.0859	416.1	1.835	0.0830	415.9	1.832	10
15	0.0943	419.8	1.855	0.0909	419.7	1.851	0.0877	419.5	1.847	0.0847	419.3	1.844	15
20	0.0962	423.3	1.867	0.0928	423.1	1.863	0.0895	422.9	1.859	0.0865	422.8	1.856	20
25	0.0982	426.7	1.878	0.0946	426.5	1.874	0.0913	426.4	1.871	0.0882	426.2	1.867	25
30	0.1000	430.1	1.890	0.0965	430.0	1.886	0.0931	429.8	1.882	0.0900	429.7	1.879	30
35	0.1019	433.6	1.901	0.0983	433.4	1.897	0.0949	433.3	1.894	0.0917	433.2	1.890	35
40	0.1038	437.1	1.912	0.1001	436.9	1.908	0.0966	436.8	1.905	0.0934	436.7	1.901	40
45	0.1057	440.6	1.923	0.1019	440.4	1.920	0.0984	440.3	1.916	0.0951	440.2	1.913	45
50	0.1075	444.1	1.934	0.1037	443.9	1.931	0.1001	443.8	1.927	0.0968	443.7	1.924	50
55	0.1094	447.6	1.945	0.1055	447.5	1.941	0.1018	447.4	1.938	0.0985	447.2	1.934	55
60	0.1112	451.2	1.956	0.1073	451.0	1.952	0.1036	450.9	1.949	0.1001	450.8	1.945	60
65	0.1130	454.7	1.966	0.1090	454.6	1.963	0.1053	454.5	1.959	0.1018	454.4	1.956	65
70	0.1149	458.3	1.977	0.1108	458.2	1.973	0.1070	458.1	1.970	0.1035	458.0	1.967	70
75	0.1167	461.9	1.987	0.1126	461.8	1.984	0.1087	461.7	1.980	0.1051	461.6	1.977	75
80	0.1185	465.6	1.998	0.1143	465.5	1.994	0.1104	465.4	1.991	0.1068	465.3	1.987	80
85	0.1203	469.2	2.008	0.1161	469.2	2.005	0.1121	469.1	2.001	0.1084	469.0	1.998	85
90	0.1221	472.9	2.018	0.1178	472.8	2.015	0.1138	472.7	2.011	0.1101	472.7	2.008	90
95	0.1239	476.6	2.028	0.1196	476.5	2.025	0.1155	476.5	2.021	0.1117	476.4	2.018	95
100	0.1257	480.4	2.039	0.1213	480.3	2.035	0.1172	480.2	2.032	0.1133	480.1	2.028	100
105	0.1275	484.1	2.049	0.1230	484.0	2.045	0.1189	484.0	2.042	0.1150	483.9	2.038	105
110	0.1293	487.9	2.058	0.1248	487.8	2.055	0.1205	487.7	2.052	0.1166	487.7	2.048	110
115	0.1311	491.7	2.068	0.1265	491.6	2.065	0.1222	491.5	2.061	0.1182	491.5	2.058	115
120	0.1329	495.5	2.078	0.1282	495.4	2.075	0.1239	495.4	2.071	0.1198	495.3	2.068	120
125	0.1347	499.4	2.088	0.1300	499.3	2.084	0.1256	499.2	2.081	0.1214	499.1	2.078	125
130	0.1365	503.2	2.097	0.1317	503.1	2.094	0.1272	503.1	2.091	0.1231	503.0	2.087	130
135	0.1382	507.1	2.107	0.1334	507.0	2.104	0.1289	507.0	2.100	0.1247	506.9	2.097	135

Table 2 *continued*
DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

V = Volume in m³/kg

H = Enthalpy in kJ/kg

S = Entropy in kJ/kg K

Saturation Properties in ()

Temp °C	Absolute Pressure kPa												Temp °C
	320			330			340			350			
	(-12.88°C)			(-12.03°C)			(-11.20°C)			(-10.38°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0720)	(400.0)	(1.770)	(0.0699)	(400.4)	(1.769)	(0.0680)	(400.7)	(1.768)	(0.0661)	(401.0)	(1.766)	
-10	0.0731	402.0	1.778	0.0707	401.8	1.774	0.0684	401.5	1.771	0.0663	401.3	1.767	-10
-5	0.0749	405.4	1.791	0.0724	405.2	1.787	0.0701	405.0	1.784	0.0679	404.8	1.781	-5
0	0.0767	408.9	1.804	0.0742	408.7	1.800	0.0718	408.5	1.797	0.0696	408.3	1.793	0
5	0.0785	412.3	1.816	0.0759	412.1	1.813	0.0735	411.9	1.809	0.0713	411.7	1.806	5
10	0.0802	415.7	1.828	0.0776	415.6	1.825	0.0752	415.4	1.822	0.0729	415.2	1.818	10
15	0.0819	419.2	1.840	0.0793	419.0	1.837	0.0768	418.8	1.834	0.0745	418.7	1.830	15
20	0.0836	422.6	1.852	0.0810	422.5	1.849	0.0784	422.3	1.846	0.0761	422.1	1.842	20
25	0.0853	426.1	1.864	0.0826	425.9	1.861	0.0800	425.8	1.857	0.0776	425.6	1.854	25
30	0.0870	429.5	1.875	0.0842	429.4	1.872	0.0816	429.2	1.869	0.0792	429.1	1.866	30
35	0.0887	433.0	1.887	0.0859	432.9	1.884	0.0832	432.7	1.880	0.0807	432.6	1.877	35
40	0.0903	436.5	1.898	0.0875	436.4	1.895	0.0848	436.3	1.892	0.0823	436.1	1.889	40
45	0.0920	440.0	1.909	0.0891	439.9	1.906	0.0864	439.8	1.903	0.0838	439.7	1.900	45
50	0.0936	443.6	1.920	0.0907	443.5	1.917	0.0879	443.3	1.914	0.0853	443.2	1.911	50
55	0.0953	447.1	1.931	0.0923	447.0	1.928	0.0895	446.9	1.925	0.0868	446.8	1.922	55
60	0.0969	450.7	1.942	0.0939	450.6	1.939	0.0910	450.5	1.936	0.0883	450.4	1.933	60
65	0.0985	454.3	1.953	0.0954	454.2	1.949	0.0925	454.1	1.946	0.0898	454.0	1.943	65
70	0.1001	457.9	1.963	0.0970	457.8	1.960	0.0941	457.7	1.957	0.0913	457.6	1.954	70
75	0.1017	461.5	1.974	0.0986	461.4	1.971	0.0956	461.3	1.968	0.0928	461.2	1.965	75
80	0.1033	465.2	1.984	0.1001	465.1	1.981	0.0971	465.0	1.978	0.0942	464.9	1.975	80
85	0.1049	468.9	1.995	0.1017	468.8	1.991	0.0986	468.7	1.988	0.0957	468.6	1.985	85
90	0.1065	472.6	2.005	0.1032	472.5	2.002	0.1001	472.4	1.999	0.0972	472.3	1.996	90
95	0.1081	476.3	2.015	0.1048	476.2	2.012	0.1016	476.1	2.009	0.0986	476.0	2.006	95
100	0.1097	480.0	2.025	0.1063	479.9	2.022	0.1031	479.9	2.019	0.1001	479.8	2.016	100
105	0.1113	483.8	2.035	0.1078	483.7	2.032	0.1046	483.6	2.029	0.1015	483.5	2.026	105
110	0.1129	487.6	2.045	0.1094	487.5	2.042	0.1061	487.4	2.039	0.1030	487.3	2.036	110
115	0.1144	491.4	2.055	0.1109	491.3	2.052	0.1076	491.2	2.049	0.1044	491.1	2.046	115
120	0.1160	495.2	2.065	0.1124	495.1	2.062	0.1091	495.1	2.059	0.1059	495.0	2.056	120
125	0.1176	499.1	2.074	0.1140	499.0	2.071	0.1105	498.9	2.068	0.1073	498.8	2.065	125
130	0.1192	502.9	2.084	0.1155	502.9	2.081	0.1120	502.8	2.078	0.1088	502.7	2.075	130
135	0.1207	506.8	2.094	0.1170	506.8	2.091	0.1135	506.7	2.088	0.1102	506.6	2.085	135
140	0.1223	510.7	2.103	0.1185	510.7	2.100	0.1150	510.6	2.097	0.1116	510.5	2.094	140

Absolute Pressure kPa													
Temp °C	360			370			380			390			Temp °C
	(-9.59°C)			(-8.81°C)			(-8.04°C)			(-7.29°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0644)	(401.4)	(1.765)	(0.0627)	(401.7)	(1.764)	(0.0611)	(402.0)	(1.763)	(0.0596)	(402.3)	(1.762)	
-5	0.0659	404.6	1.777	0.0639	404.3	1.774	0.0621	404.1	1.771	0.0603	403.9	1.768	-5
0	0.0675	408.1	1.790	0.0655	407.8	1.787	0.0637	407.6	1.784	0.0619	407.4	1.781	0
5	0.0691	411.5	1.803	0.0671	411.3	1.800	0.0652	411.1	1.796	0.0634	410.9	1.793	5
10	0.0707	415.0	1.815	0.0687	414.8	1.812	0.0667	414.6	1.809	0.0649	414.4	1.806	10
15	0.0723	418.5	1.827	0.0702	418.3	1.824	0.0682	418.1	1.821	0.0663	418.0	1.818	15
20	0.0738	422.0	1.839	0.0717	421.8	1.836	0.0697	421.6	1.833	0.0678	421.5	1.830	20
25	0.0754	425.5	1.851	0.0732	425.3	1.848	0.0711	425.1	1.845	0.0692	425.0	1.842	25
30	0.0769	429.0	1.863	0.0747	428.8	1.860	0.0726	428.7	1.857	0.0706	428.5	1.854	30
35	0.0784	432.5	1.874	0.0761	432.3	1.871	0.0740	432.2	1.868	0.0720	432.0	1.865	35
40	0.0799	436.0	1.886	0.0776	435.9	1.883	0.0755	435.7	1.880	0.0734	435.6	1.877	40
45	0.0814	439.5	1.897	0.0791	439.4	1.894	0.0769	439.3	1.891	0.0748	439.1	1.888	45
50	0.0828	443.1	1.908	0.0805	443.0	1.905	0.0783	442.8	1.902	0.0762	442.7	1.899	50
55	0.0843	446.7	1.919	0.0819	446.5	1.916	0.0797	446.4	1.913	0.0776	446.3	1.910	55
60	0.0858	450.2	1.930	0.0834	450.1	1.927	0.0811	450.0	1.924	0.0789	449.9	1.921	60
65	0.0872	453.9	1.940	0.0848	453.7	1.938	0.0825	453.6	1.935	0.0803	453.5	1.932	65
70	0.0887	457.5	1.951	0.0862	457.4	1.948	0.0838	457.3	1.945	0.0816	457.2	1.943	70
75	0.0901	461.1	1.962	0.0876	461.0	1.959	0.0852	460.9	1.956	0.0830	460.8	1.953	75
80	0.0915	464.8	1.972	0.0890	464.7	1.969	0.0866	464.6	1.966	0.0843	464.5	1.964	80
85	0.0930	468.5	1.982	0.0904	468.4	1.980	0.0879	468.3	1.977	0.0856	468.2	1.974	85
90	0.0944	472.2	1.993	0.0918	472.1	1.990	0.0893	472.0	1.987	0.0869	471.9	1.984	90
95	0.0958	475.9	2.003	0.0932	475.8	2.000	0.0907	475.8	1.997	0.0883	475.7	1.995	95
100	0.0973	479.7	2.013	0.0946	479.6	2.010	0.0920	479.5	2.008	0.0896	479.4	2.005	100
105	0.0987	483.5	2.023	0.0959	483.4	2.020	0.0933	483.3	2.018	0.0909	483.2	2.015	105
110	0.1001	487.3	2.033	0.0973	487.2	2.030	0.0947	487.1	2.028	0.0922	487.0	2.025	110
115	0.1015	491.1	2.043	0.0987	491.0	2.040	0.0960	490.9	2.037	0.0935	490.8	2.035	115
120	0.1029	494.9	2.053	0.1000	494.8	2.050	0.0974	494.8	2.047	0.0948	494.7	2.045	120
125	0.1043	498.8	2.063	0.1014	498.7	2.060	0.0987	498.6	2.057	0.0961	498.6	2.054	125
130	0.1057	502.7	2.072	0.1028	502.6	2.069	0.1000	502.5	2.067	0.0974	502.4	2.064	130
135	0.1071	506.6	2.082	0.1041	506.5	2.079	0.1013	506.4	2.076	0.0987	506.3	2.074	135
140	0.1085	510.5	2.091	0.1055	510.4	2.089	0.1027	510.3	2.086	0.1000	510.3	2.083	140
145	0.1099	514.4	2.101	0.1069	514.4	2.098	0.1040	514.3	2.095	0.1013	514.2	2.093	145

Table 2 *continued*)
DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

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

Temp °C	Absolute Pressure kPa												Temp °C
	400			425			450			475			
	(-6.56°C)			(-4.78°C)			(-3.08°C)			(-1.44°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0582)	(402.6)	(1.760)	(0.0549)	(403.2)	(1.758)	(0.0520)	(403.9)	(1.755)	(0.0493)	(404.5)	(1.753)	
-5	0.0587	403.7	1.765	-	-	-	-	-	-	-	-	-	-5
0	0.0602	407.2	1.778	0.0563	406.7	1.770	0.0528	406.1	1.763	0.0497	405.6	1.757	0
5	0.0616	410.7	1.790	0.0577	410.2	1.783	0.0542	409.7	1.776	0.0510	409.2	1.770	5
10	0.0631	414.3	1.803	0.0591	413.8	1.796	0.0555	413.3	1.789	0.0523	412.8	1.783	10
15	0.0645	417.8	1.815	0.0604	417.3	1.808	0.0568	416.9	1.802	0.0535	416.4	1.795	15
20	0.0660	421.3	1.827	0.0618	420.9	1.821	0.0581	420.5	1.814	0.0548	420.0	1.808	20
25	0.0674	424.8	1.839	0.0631	424.4	1.833	0.0594	424.0	1.826	0.0560	423.6	1.820	25
30	0.0688	428.4	1.851	0.0644	428.0	1.844	0.0606	427.6	1.838	0.0572	427.2	1.832	30
35	0.0701	431.9	1.863	0.0658	431.5	1.856	0.0619	431.2	1.850	0.0584	430.8	1.844	35
40	0.0715	435.4	1.874	0.0671	435.1	1.868	0.0631	434.8	1.861	0.0596	434.4	1.855	40
45	0.0728	439.0	1.885	0.0683	438.7	1.879	0.0643	438.4	1.873	0.0607	438.0	1.867	45
50	0.0742	442.6	1.897	0.0696	442.3	1.890	0.0655	442.0	1.884	0.0619	441.6	1.878	50
55	0.0755	446.2	1.908	0.0709	445.9	1.901	0.0667	445.6	1.895	0.0630	445.3	1.889	55
60	0.0769	449.8	1.919	0.0721	449.5	1.912	0.0679	449.2	1.906	0.0642	448.9	1.900	60
65	0.0782	453.4	1.929	0.0734	453.1	1.923	0.0691	452.9	1.917	0.0653	452.6	1.911	65
70	0.0795	457.1	1.940	0.0746	456.8	1.934	0.0703	456.5	1.928	0.0665	456.3	1.922	70
75	0.0808	460.7	1.951	0.0759	460.5	1.944	0.0715	460.2	1.938	0.0676	460.0	1.933	75
80	0.0821	464.4	1.961	0.0771	464.2	1.955	0.0727	463.9	1.949	0.0687	463.7	1.943	80
85	0.0834	468.1	1.972	0.0783	467.9	1.965	0.0738	467.6	1.959	0.0698	467.4	1.954	85
90	0.0847	471.8	1.982	0.0796	471.6	1.976	0.0750	471.4	1.970	0.0709	471.1	1.964	90
95	0.0860	475.6	1.992	0.0808	475.4	1.986	0.0762	475.1	1.980	0.0720	474.9	1.974	95
100	0.0873	479.3	2.002	0.0820	479.1	1.996	0.0773	478.9	1.990	0.0731	478.7	1.985	100
105	0.0886	483.1	2.012	0.0832	482.9	2.006	0.0785	482.7	2.000	0.0742	482.5	1.995	105
110	0.0898	486.9	2.022	0.0844	486.7	2.016	0.0796	486.5	2.010	0.0753	486.3	2.005	110
115	0.0911	490.8	2.032	0.0856	490.6	2.026	0.0807	490.4	2.020	0.0764	490.2	2.015	115
120	0.0924	494.6	2.042	0.0868	494.4	2.036	0.0819	494.2	2.030	0.0775	494.0	2.025	120
125	0.0937	498.5	2.052	0.0880	498.3	2.046	0.0830	498.1	2.040	0.0785	497.9	2.034	125
130	0.0949	502.4	2.062	0.0892	502.2	2.055	0.0842	502.0	2.050	0.0796	501.8	2.044	130
135	0.0962	506.3	2.071	0.0904	506.1	2.065	0.0853	505.9	2.059	0.0807	505.8	2.054	135
140	0.0975	510.2	2.081	0.0916	510.0	2.075	0.0864	509.9	2.069	0.0818	509.7	2.063	140
145	0.0987	514.2	2.090	0.0928	514.0	2.084	0.0875	513.8	2.078	0.0828	513.7	2.073	145

Absolute Pressure kPa													
Temp °C	500			525			550			575			Temp °C
	(+0.12°C)			(+1.63°C)			(+3.09°C)			(+4.50°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0469)	(405.1)	(1.750)	(0.0448)	(405.6)	(1.748)	(0.0428)	(406.2)	(1.746)	(0.0410)	(406.7)	(1.744)	
5	0.0482	408.7	1.764	0.0456	408.1	1.757	0.0432	407.6	1.751	0.0411	407.1	1.746	5
10	0.0494	412.3	1.777	0.0468	411.8	1.771	0.0444	411.3	1.765	0.0422	410.8	1.759	10
15	0.0506	416.0	1.789	0.0479	415.5	1.783	0.0455	415.0	1.778	0.0433	414.6	1.772	15
20	0.0518	419.6	1.802	0.0491	419.2	1.796	0.0466	418.7	1.790	0.0444	418.3	1.785	20
25	0.0530	423.2	1.814	0.0502	422.8	1.808	0.0477	422.4	1.803	0.0454	422.0	1.797	25
30	0.0541	426.8	1.826	0.0513	426.4	1.820	0.0488	426.0	1.815	0.0465	425.6	1.810	30
35	0.0553	430.4	1.838	0.0524	430.1	1.832	0.0498	429.7	1.827	0.0475	429.3	1.822	35
40	0.0564	434.1	1.849	0.0535	433.7	1.844	0.0509	433.4	1.839	0.0485	433.0	1.834	40
45	0.0575	437.7	1.861	0.0546	437.4	1.855	0.0519	437.0	1.850	0.0495	436.7	1.845	45
50	0.0586	441.3	1.872	0.0557	441.0	1.867	0.0530	440.7	1.862	0.0505	440.4	1.857	50
55	0.0597	445.0	1.884	0.0567	444.7	1.878	0.0540	444.4	1.873	0.0515	444.0	1.868	55
60	0.0608	448.6	1.895	0.0578	448.3	1.889	0.0550	448.0	1.884	0.0524	447.7	1.879	60
65	0.0619	452.3	1.906	0.0588	452.0	1.900	0.0560	451.7	1.895	0.0534	451.5	1.890	65
70	0.0630	456.0	1.916	0.0598	455.7	1.911	0.0570	455.5	1.906	0.0543	455.2	1.901	70
75	0.0640	459.7	1.927	0.0609	459.4	1.922	0.0579	459.2	1.917	0.0553	458.9	1.912	75
80	0.0651	463.4	1.938	0.0619	463.2	1.932	0.0589	462.9	1.927	0.0562	462.7	1.923	80
85	0.0662	467.2	1.948	0.0629	466.9	1.943	0.0599	466.7	1.938	0.0572	466.4	1.933	85
90	0.0672	470.9	1.959	0.0639	470.7	1.953	0.0609	470.5	1.949	0.0581	470.2	1.944	90
95	0.0683	474.7	1.969	0.0649	474.5	1.964	0.0618	474.2	1.959	0.0590	474.0	1.954	95
100	0.0693	478.5	1.979	0.0659	478.3	1.974	0.0628	478.0	1.969	0.0600	477.8	1.964	100
105	0.0704	482.3	1.989	0.0669	482.1	1.984	0.0638	481.9	1.979	0.0609	481.7	1.975	105
110	0.0714	486.1	1.999	0.0679	485.9	1.994	0.0647	485.7	1.989	0.0618	485.5	1.985	110
115	0.0724	490.0	2.009	0.0689	489.8	2.004	0.0657	489.6	1.999	0.0627	489.4	1.995	115
120	0.0735	493.8	2.019	0.0699	493.7	2.014	0.0666	493.5	2.009	0.0636	493.3	2.005	120
125	0.0745	497.7	2.029	0.0709	497.6	2.024	0.0675	497.4	2.019	0.0645	497.2	2.015	125
130	0.0755	501.7	2.039	0.0718	501.5	2.034	0.0685	501.3	2.029	0.0654	501.1	2.024	130
135	0.0766	505.6	2.049	0.0728	505.4	2.044	0.0694	505.2	2.039	0.0663	505.1	2.034	135
140	0.0776	509.5	2.058	0.0738	509.4	2.053	0.0704	509.2	2.048	0.0672	509.0	2.044	140
145	0.0786	513.5	2.068	0.0748	513.3	2.063	0.0713	513.2	2.058	0.0681	513.0	2.053	145
150	0.0796	517.5	2.077	0.0757	517.3	2.072	0.0722	517.2	2.068	0.0690	517.0	2.063	150
155	0.0806	521.5	2.087	0.0767	521.4	2.082	0.0731	521.2	2.077	0.0699	521.0	2.072	155

Table 2 (continued)

DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

V = Volume in m³/kg

H = Enthalpy in kJ/kg

S = Entropy in kJ/kg K

Saturation Properties in ()

Temp °C	Absolute Pressure kPa												Temp °C
	600			625			650			675			
	(5.86°C)			(7.18°C)			(8.46°C)			(9.71°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0393)	(407.2)	(1.742)	(0.0380)	(407.6)	(1.741)	(0.0363)	(408.0)	(1.739)	(0.0350)	(408.5)	(1.737)	
10	0.0402	410.3	1.754	0.0384	409.8	1.748	0.0366	409.2	1.743	0.0351	408.7	1.738	10
15	0.0413	414.1	1.767	0.0394	413.6	1.762	0.0377	413.1	1.757	0.0361	412.6	1.752	15
20	0.0423	417.8	1.780	0.0404	417.4	1.775	0.0387	416.9	1.770	0.0370	416.4	1.765	20
25	0.0433	421.5	1.792	0.0414	421.1	1.787	0.0396	420.7	1.782	0.0380	420.2	1.778	25
30	0.0443	425.2	1.805	0.0424	424.8	1.800	0.0406	424.4	1.795	0.0389	424.0	1.790	30
35	0.0453	428.9	1.817	0.0433	428.6	1.812	0.0415	428.2	1.807	0.0398	427.8	1.803	35
40	0.0463	432.6	1.829	0.0443	432.3	1.824	0.0424	431.9	1.819	0.0407	431.5	1.815	40
45	0.0473	436.3	1.840	0.0452	436.0	1.836	0.0433	435.6	1.831	0.0416	435.3	1.827	45
50	0.0482	440.0	1.852	0.0461	439.7	1.847	0.0442	439.4	1.843	0.0424	439.0	1.838	50
55	0.0492	443.7	1.863	0.0471	443.4	1.859	0.0451	443.1	1.854	0.0433	442.8	1.850	55
60	0.0501	447.5	1.874	0.0480	447.2	1.870	0.0460	446.8	1.865	0.0441	446.5	1.861	60
65	0.0510	451.2	1.886	0.0489	450.9	1.881	0.0468	450.6	1.877	0.0450	450.3	1.872	65
70	0.0520	454.9	1.897	0.0497	454.6	1.892	0.0477	454.4	1.888	0.0458	454.1	1.883	70
75	0.0529	458.7	1.907	0.0506	458.4	1.903	0.0486	458.1	1.899	0.0466	457.9	1.894	75
80	0.0538	462.4	1.918	0.0515	462.2	1.914	0.0494	461.9	1.909	0.0475	461.7	1.905	80
85	0.0547	466.2	1.929	0.0524	465.9	1.924	0.0503	465.7	1.920	0.0483	465.5	1.916	85
90	0.0556	470.0	1.939	0.0532	469.7	1.935	0.0511	469.5	1.931	0.0491	469.3	1.926	90
95	0.0565	473.8	1.950	0.0541	473.6	1.945	0.0519	473.3	1.941	0.0499	473.1	1.937	95
100	0.0574	477.6	1.960	0.0550	477.4	1.956	0.0527	477.2	1.951	0.0507	477.0	1.947	100
105	0.0582	481.5	1.970	0.0558	481.2	1.966	0.0536	481.0	1.962	0.0515	480.8	1.958	105
110	0.0591	485.3	1.980	0.0567	485.1	1.976	0.0544	484.9	1.972	0.0523	484.7	1.968	110
115	0.0600	489.2	1.990	0.0575	489.0	1.986	0.0552	488.8	1.982	0.0531	488.6	1.978	115
120	0.0609	493.1	2.000	0.0583	492.9	1.996	0.0560	492.7	1.992	0.0539	492.5	1.988	120
125	0.0617	497.0	2.010	0.0592	496.8	2.006	0.0568	496.6	2.002	0.0546	496.4	1.998	125
130	0.0626	500.9	2.020	0.0600	500.7	2.016	0.0576	500.6	2.012	0.0554	500.4	2.008	130
135	0.0635	504.9	2.030	0.0609	504.7	2.026	0.0584	504.5	2.021	0.0562	504.4	2.018	135
140	0.0643	508.9	2.039	0.0617	508.7	2.035	0.0592	508.5	2.031	0.0570	508.3	2.027	140
145	0.0652	512.8	2.049	0.0625	512.7	2.045	0.0600	512.5	2.041	0.0577	512.3	2.037	145
150	0.0661	516.9	2.059	0.0633	516.7	2.054	0.0608	516.5	2.050	0.0585	516.4	2.046	150
155	0.0669	520.9	2.068	0.0642	520.7	2.064	0.0616	520.6	2.060	0.0593	520.4	2.056	155
160	0.0678	524.9	2.077	0.0650	524.8	2.073	0.0624	524.6	2.069	0.0600	524.5	2.065	160

Temp °C	Absolute Pressure kPa												Temp °C
	700			725			750			775			
	(10.92°C)			(12.10°C)			(13.25°C)			(14.37°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0338)	(408.9)	(1.736)	(0.0326)	(409.2)	(1.734)	(0.0315)	(409.6)	(1.732)	(0.0305)	(410.0)	(1.731)	
15	0.0346	412.1	1.747	0.0332	411.5	1.742	0.0319	411	1.737	0.0306	410.5	1.733	15
20	0.0355	415.9	1.760	0.0341	415.5	1.755	0.0328	415	1.751	0.0315	414.5	1.747	20
25	0.0364	419.8	1.773	0.0350	419.3	1.769	0.0337	418.9	1.764	0.0324	418.4	1.760	25
30	0.0373	423.6	1.786	0.0359	423.2	1.781	0.0345	422.7	1.777	0.0332	422.3	1.773	30
35	0.0382	427.4	1.798	0.0367	427.0	1.794	0.0354	426.6	1.790	0.0341	426.2	1.785	35
40	0.0391	431.2	1.810	0.0376	430.8	1.806	0.0362	430.4	1.802	0.0349	430.0	1.798	40
45	0.0399	434.9	1.822	0.0384	434.6	1.818	0.0370	434.2	1.814	0.0357	433.9	1.810	45
50	0.0408	438.7	1.834	0.0392	438.4	1.830	0.0378	438.0	1.826	0.0365	437.7	1.822	50
55	0.0416	442.5	1.846	0.0401	442.1	1.842	0.0386	441.8	1.838	0.0372	441.5	1.834	55
60	0.0424	446.2	1.857	0.0409	445.9	1.853	0.0394	445.6	1.849	0.0380	445.3	1.845	60
65	0.0433	450.0	1.868	0.0417	449.7	1.864	0.0402	449.4	1.860	0.0387	449.1	1.857	65
70	0.0441	453.8	1.879	0.0424	453.5	1.875	0.0409	453.2	1.872	0.0395	453.0	1.868	70
75	0.0449	457.6	1.890	0.0432	457.3	1.886	0.0417	457.1	1.883	0.0402	456.8	1.879	75
80	0.0457	461.4	1.901	0.0440	461.1	1.897	0.0424	460.9	1.893	0.0410	460.6	1.890	80
85	0.0465	465.2	1.912	0.0448	465.0	1.908	0.0432	464.7	1.904	0.0417	464.5	1.901	85
90	0.0472	469.0	1.923	0.0455	468.8	1.919	0.0439	468.6	1.915	0.0424	468.3	1.911	90
95	0.0480	472.9	1.933	0.0463	472.6	1.929	0.0446	472.4	1.925	0.0431	472.2	1.922	95
100	0.0488	476.7	1.943	0.0470	476.5	1.940	0.0454	476.3	1.936	0.0438	476.1	1.932	100
105	0.0496	480.6	1.954	0.0478	480.4	1.950	0.0461	480.2	1.946	0.0445	480.0	1.943	105
110	0.0503	484.5	1.964	0.0485	484.3	1.960	0.0468	484.1	1.957	0.0452	483.9	1.953	110
115	0.0511	488.4	1.974	0.0493	488.2	1.970	0.0475	488.0	1.967	0.0459	487.8	1.963	115
120	0.0519	492.3	1.984	0.0500	492.1	1.980	0.0483	491.9	1.977	0.0466	491.7	1.973	120
125	0.0526	496.2	1.994	0.0507	496.1	1.990	0.0490	495.9	1.987	0.0473	495.7	1.983	125
130	0.0534	500.2	2.004	0.0515	500.0	2.000	0.0497	499.8	1.997	0.0480	499.7	1.993	130
135	0.0541	504.2	2.014	0.0522	504.0	2.010	0.0504	503.8	2.006	0.0487	503.6	2.003	135
140	0.0549	508.2	2.023	0.0529	508.0	2.020	0.0511	507.8	2.016	0.0494	507.6	2.013	140
145	0.0556	512.2	2.033	0.0536	512.0	2.029	0.0518	511.8	2.026	0.0501	511.7	2.022	145
150	0.0564	516.2	2.043	0.0544	516.0	2.039	0.0525	515.9	2.035	0.0507	515.7	2.032	150
155	0.0571	520.3	2.052	0.0551	520.1	2.049	0.0532	519.9	2.045	0.0514	519.8	2.042	155
160	0.0578	524.3	2.062	0.0558	524.2	2.058	0.0539	524.0	2.054	0.0521	523.9	2.051	160
165	0.0586	528.4	2.071	0.0565	528.2	2.067	0.0546	528.1	2.064	0.0528	527.9	2.060	165

Table 2 continued)

DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

V = Volume in m³/kg

H = Enthalpy in kJ/kg

S = Entropy in kJ/kg K

Saturation Properties in ()

Temp °C	Absolute Pressure kPa												Temp °C
	800			850			900			950			
	(15.46°C)			(17.58°C)			(19.60°C)			(21.55°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0296)	(410.3)	(1.730)	(0.0278)	(410.9)	(1.727)	(0.0263)	(411.5)	(1.724)	(0.0249)	(412.1)	(1.722)	
20	0.0304	414.0	1.742	0.0282	412.9	1.734	0.0264	411.9	1.725	-	-	-	20
25	0.0312	417.9	1.756	0.0291	417.0	1.747	0.0272	416.0	1.739	0.0254	415.0	1.732	25
30	0.0321	421.9	1.769	0.0299	421.0	1.761	0.0279	420.1	1.753	0.0262	419.1	1.745	30
35	0.0329	425.8	1.781	0.0307	424.9	1.774	0.0287	424.1	1.766	0.0269	423.2	1.759	35
40	0.0337	429.6	1.794	0.0314	428.9	1.786	0.0294	428.1	1.779	0.0276	427.3	1.772	40
45	0.0344	433.5	1.806	0.0322	432.8	1.799	0.0301	432.0	1.791	0.0283	431.2	1.784	45
50	0.0352	437.3	1.818	0.0329	436.6	1.811	0.0308	435.9	1.804	0.0290	435.2	1.797	50
55	0.0360	441.2	1.830	0.0336	440.5	1.823	0.0315	439.8	1.816	0.0297	439.2	1.809	55
60	0.0367	445.0	1.841	0.0343	444.4	1.834	0.0322	443.7	1.827	0.0303	443.1	1.821	60
65	0.0374	448.8	1.853	0.0350	448.2	1.846	0.0329	447.6	1.839	0.0310	447.0	1.832	65
70	0.0382	452.7	1.864	0.0357	452.1	1.857	0.0335	451.5	1.850	0.0316	450.9	1.844	70
75	0.0389	456.5	1.875	0.0364	456.0	1.868	0.0342	455.4	1.862	0.0322	454.8	1.855	75
80	0.0396	460.4	1.886	0.0371	459.8	1.879	0.0348	459.3	1.873	0.0329	458.8	1.866	80
85	0.0403	464.2	1.897	0.0377	463.7	1.890	0.0355	463.2	1.884	0.0335	462.7	1.877	85
90	0.0410	468.1	1.908	0.0384	467.6	1.901	0.0361	467.1	1.894	0.0341	466.6	1.888	90
95	0.0417	471.9	1.918	0.0391	471.5	1.912	0.0368	471.0	1.905	0.0347	470.5	1.899	95
100	0.0424	475.8	1.929	0.0397	475.4	1.922	0.0374	474.9	1.916	0.0353	474.5	1.910	100
105	0.0431	479.7	1.939	0.0404	479.3	1.933	0.0380	478.9	1.926	0.0359	478.4	1.920	105
110	0.0437	483.7	1.950	0.0410	483.2	1.943	0.0386	482.8	1.937	0.0365	482.4	1.931	110
115	0.0444	487.6	1.960	0.0417	487.2	1.953	0.0392	486.8	1.947	0.0370	486.4	1.941	115
120	0.0451	491.5	1.970	0.0423	491.1	1.963	0.0398	490.7	1.957	0.0376	490.3	1.951	120
125	0.0458	495.5	1.980	0.0430	495.1	1.973	0.0404	494.7	1.967	0.0382	494.3	1.961	125
130	0.0464	499.5	1.990	0.0436	499.1	1.983	0.0410	498.7	1.977	0.0388	498.4	1.971	130
135	0.0471	503.5	2.000	0.0442	503.1	1.993	0.0416	502.7	1.987	0.0393	502.4	1.981	135
140	0.0478	507.5	2.009	0.0448	507.1	2.003	0.0422	506.8	1.997	0.0399	506.4	1.991	140
145	0.0484	511.5	2.019	0.0455	511.2	2.013	0.0428	510.8	2.007	0.0405	510.5	2.001	145
150	0.0491	515.6	2.029	0.0461	515.2	2.022	0.0434	514.9	2.016	0.0410	514.6	2.010	150
155	0.0497	519.6	2.038	0.0467	519.3	2.032	0.0440	519.0	2.026	0.0416	518.7	2.020	155
160	0.0504	523.7	2.048	0.0473	523.4	2.041	0.0446	523.1	2.035	0.0422	522.8	2.030	160
165	0.0511	527.8	2.057	0.0480	527.5	2.051	0.0452	527.2	2.045	0.0427	526.9	2.039	165
170	0.0517	531.9	2.066	0.0486	531.6	2.060	0.0458	531.3	2.054	0.0433	531.0	2.048	170

Absolute Pressure kPa													
Temp °C	1000			1100			1200			1300			Temp °C
	(23.42°C)			(26.95°C)			(30.26°C)			(33.37°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0236)	(412.6)	(1.719)	(0.0214)	(413.5)	(1.715)	(0.0196)	(414.3)	(1.711)	(0.0180)	(415.0)	(1.707)	
25	0.0239	414.0	1.724	-	-	-	-	-	-	-	-	-	25
30	0.0246	418.2	1.738	0.0219	416.2	1.724	-	-	-	-	-	-	30
35	0.0253	422.3	1.752	0.0225	420.5	1.738	0.0202	418.6	1.725	0.0182	416.5	1.712	35
40	0.0260	426.4	1.765	0.0232	424.7	1.751	0.0209	422.9	1.739	0.0188	421.1	1.726	40
45	0.0267	430.5	1.778	0.0238	428.9	1.765	0.0215	427.2	1.752	0.0194	425.5	1.740	45
50	0.0273	434.5	1.790	0.0245	433.0	1.777	0.0221	431.4	1.765	0.0200	429.8	1.754	50
55	0.0280	438.5	1.802	0.0251	437.1	1.790	0.0226	435.6	1.778	0.0206	434.1	1.767	55
60	0.0286	442.4	1.814	0.0257	441.1	1.802	0.0232	439.7	1.791	0.0211	438.3	1.780	60
65	0.0292	446.4	1.826	0.0263	445.1	1.814	0.0238	443.8	1.803	0.0216	442.5	1.792	65
70	0.0299	450.3	1.838	0.0268	449.1	1.826	0.0243	447.9	1.815	0.0222	446.6	1.804	70
75	0.0305	454.3	1.849	0.0274	453.1	1.838	0.0248	452.0	1.827	0.0227	450.8	1.816	75
80	0.0311	458.2	1.860	0.0279	457.1	1.849	0.0254	456.0	1.838	0.0232	454.9	1.828	80
85	0.0316	462.2	1.871	0.0285	461.1	1.860	0.0259	460.0	1.850	0.0236	459.0	1.840	85
90	0.0322	466.1	1.882	0.0290	465.1	1.871	0.0264	464.1	1.861	0.0241	463.0	1.851	90
95	0.0328	470.1	1.893	0.0296	469.1	1.882	0.0269	468.1	1.872	0.0246	467.1	1.862	95
100	0.0334	474.0	1.904	0.0301	473.1	1.893	0.0274	472.1	1.883	0.0251	471.2	1.873	100
105	0.0339	478.0	1.914	0.0306	477.1	1.904	0.0279	476.2	1.893	0.0255	475.3	1.884	105
110	0.0345	482.0	1.925	0.0312	481.1	1.914	0.0284	480.2	1.904	0.0260	479.3	1.895	110
115	0.0351	485.9	1.935	0.0317	485.1	1.924	0.0288	484.3	1.915	0.0264	483.4	1.905	115
120	0.0356	489.9	1.945	0.0322	489.1	1.935	0.0293	488.3	1.925	0.0269	487.5	1.916	120
125	0.0362	494.0	1.956	0.0327	493.2	1.945	0.0298	492.4	1.935	0.0273	491.6	1.926	125
130	0.0367	498.0	1.966	0.0332	497.2	1.955	0.0303	496.5	1.945	0.0278	495.7	1.936	130
135	0.0373	502.0	1.976	0.0337	501.3	1.965	0.0307	500.6	1.955	0.0282	499.8	1.946	135
140	0.0378	506.1	1.985	0.0342	505.4	1.975	0.0312	504.7	1.965	0.0286	503.9	1.956	140
145	0.0384	510.1	1.995	0.0347	509.5	1.985	0.0317	508.8	1.975	0.0291	508.1	1.966	145
150	0.0389	514.2	2.005	0.0352	513.6	1.995	0.0321	512.9	1.985	0.0295	512.2	1.976	150
155	0.0394	518.3	2.015	0.0357	517.7	2.004	0.0326	517.0	1.995	0.0299	516.4	1.986	155
160	0.0400	522.5	2.024	0.0362	521.8	2.014	0.0330	521.2	2.004	0.0304	520.5	1.996	160
165	0.0405	526.6	2.034	0.0367	526.0	2.023	0.0335	525.4	2.014	0.0308	524.7	2.005	165
170	0.0410	530.7	2.043	0.0372	530.1	2.033	0.0339	529.5	2.024	0.0312	528.9	2.015	170
175	0.0416	534.9	2.052	0.0377	534.3	2.042	0.0344	533.7	2.033	0.0316	533.1	2.024	175

Table 2 *continued*)

DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

V = Volume in m³/kg

H = Enthalpy in kJ/kg

S = Entropy in kJ/kg K

Saturation Properties in ()

Absolute Pressure kPa													
Temp °C	1400			1500			1600			1700			Temp °C
	(36.31°C)			(39.10°C)			(41.75°C)			(44.28°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0167)	(415.6)	(1.703)	(0.0155)	(416.1)	(1.700)	(0.0144)	(416.5)	(1.696)	(0.0135)	(416.9)	(1.693)	
40	0.0171	419.1	1.714	0.0156	417.0	1.702	-	-	-	-	-	-	40
45	0.0177	423.7	1.729	0.0162	421.8	1.718	0.0148	419.8	1.706	0.0136	417.6	1.695	45
50	0.0183	428.2	1.743	0.0167	426.4	1.732	0.0153	424.6	1.721	0.0141	422.6	1.711	50
55	0.0188	432.5	1.756	0.0172	430.9	1.746	0.0159	429.2	1.736	0.0146	427.5	1.726	55
60	0.0193	436.9	1.769	0.0177	435.4	1.759	0.0164	433.8	1.750	0.0151	432.2	1.740	60
65	0.0198	441.1	1.782	0.0182	439.7	1.772	0.0168	438.3	1.763	0.0156	436.8	1.754	65
70	0.0203	445.3	1.795	0.0187	444.0	1.785	0.0173	442.7	1.776	0.0160	441.2	1.767	70
75	0.0208	449.5	1.807	0.0192	448.3	1.797	0.0177	447.0	1.788	0.0165	445.7	1.780	75
80	0.0213	453.7	1.819	0.0196	452.5	1.809	0.0182	451.3	1.801	0.0169	450.0	1.792	80
85	0.0217	457.8	1.830	0.0201	456.7	1.821	0.0186	455.6	1.813	0.0173	454.4	1.804	85
90	0.0222	462.0	1.842	0.0205	460.9	1.833	0.0190	459.8	1.824	0.0177	458.7	1.816	90
95	0.0226	466.1	1.853	0.0209	465.1	1.844	0.0194	464.0	1.836	0.0181	463.0	1.828	95
100	0.0231	470.2	1.864	0.0213	469.2	1.855	0.0198	468.2	1.847	0.0185	467.2	1.839	100
105	0.0235	474.3	1.875	0.0218	473.4	1.866	0.0202	472.4	1.858	0.0189	471.5	1.851	105
110	0.0239	478.4	1.886	0.0222	477.5	1.877	0.0206	476.6	1.869	0.0193	475.7	1.862	110
115	0.0244	482.6	1.896	0.0226	481.7	1.888	0.0210	480.8	1.880	0.0196	479.9	1.873	115
120	0.0248	486.7	1.907	0.0230	485.8	1.899	0.0214	485.0	1.891	0.0200	484.1	1.884	120
125	0.0252	490.8	1.917	0.0234	490.0	1.909	0.0218	489.2	1.902	0.0204	488.3	1.894	125
130	0.0256	494.9	1.928	0.0238	494.1	1.920	0.0222	493.4	1.912	0.0207	492.6	1.905	130
135	0.0260	499.1	1.938	0.0242	498.3	1.930	0.0225	497.5	1.922	0.0211	496.8	1.915	135
140	0.0265	503.2	1.948	0.0246	502.5	1.940	0.0229	501.7	1.933	0.0214	501.0	1.925	140
145	0.0269	507.4	1.958	0.0249	506.7	1.950	0.0233	505.9	1.943	0.0218	505.2	1.936	145
150	0.0273	511.5	1.968	0.0253	510.9	1.960	0.0236	510.2	1.953	0.0221	509.5	1.946	150
155	0.0277	515.7	1.978	0.0257	515.1	1.970	0.0240	514.4	1.963	0.0225	513.7	1.956	155
160	0.0281	519.9	1.987	0.0261	519.3	1.980	0.0243	518.6	1.972	0.0228	518.0	1.965	160
165	0.0285	524.1	1.997	0.0264	523.5	1.989	0.0247	522.9	1.982	0.0231	522.2	1.975	165
170	0.0289	528.3	2.007	0.0268	527.7	1.999	0.0250	527.1	1.992	0.0235	526.5	1.985	170
175	0.0292	532.6	2.016	0.0272	532.0	2.009	0.0254	531.4	2.001	0.0238	530.8	1.995	175
180	0.0296	536.8	2.026	0.0276	536.2	2.018	0.0257	535.6	2.011	0.0241	535.1	2.004	180
185	0.0300	541.1	2.035	0.0279	540.5	2.027	0.0261	539.9	2.020	0.0245	539.4	2.014	185
190	0.0304	545.3	2.044	0.0283	544.8	2.037	0.0264	544.2	2.030	0.0248	543.7	2.023	190

Absolute Pressure kPa													
Temp °C	1800			1900			2000			2100			Temp °C
	(46.71°C)			(49.03°C)			(51.27°C)			(53.43°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0127)	(417.1)	(1.690)	(0.0119)	(417.4)	(1.687)	(0.0113)	(417.5)	(1.683)	(0.0106)	(417.6)	(1.680)	
50	0.0130	420.6	1.700	0.0120	418.4	1.690	-	-	-	-	-	-	50
55	0.0135	425.6	1.716	0.0126	423.7	1.706	0.0116	421.6	1.696	0.0108	419.4	1.686	55
60	0.0140	430.5	1.731	0.0130	428.7	1.721	0.0121	426.9	1.712	0.0113	424.9	1.702	60
65	0.0145	435.2	1.745	0.0135	433.6	1.736	0.0126	431.9	1.727	0.0118	430.1	1.718	65
70	0.0149	439.8	1.758	0.0139	438.3	1.750	0.0130	436.8	1.741	0.0122	435.1	1.733	70
75	0.0154	444.3	1.771	0.0143	442.9	1.763	0.0134	441.5	1.755	0.0126	440.0	1.747	75
80	0.0158	448.8	1.784	0.0147	447.5	1.776	0.0138	446.1	1.768	0.0130	444.7	1.760	80
85	0.0162	453.2	1.796	0.0151	451.9	1.788	0.0142	450.7	1.781	0.0134	449.4	1.773	85
90	0.0166	457.5	1.808	0.0155	456.4	1.801	0.0146	455.2	1.793	0.0137	454.0	1.786	90
95	0.0169	461.9	1.820	0.0159	460.8	1.813	0.0149	459.6	1.806	0.0141	458.5	1.798	95
100	0.0173	466.2	1.832	0.0162	465.1	1.825	0.0153	464.1	1.817	0.0144	463.0	1.811	100
105	0.0177	470.5	1.843	0.0166	469.5	1.836	0.0156	468.5	1.829	0.0148	467.4	1.822	105
110	0.0180	474.7	1.854	0.0170	473.8	1.847	0.0160	472.8	1.841	0.0151	471.8	1.834	110
115	0.0184	479.0	1.866	0.0173	478.1	1.859	0.0163	477.2	1.852	0.0154	476.2	1.845	115
120	0.0188	483.3	1.876	0.0176	482.4	1.870	0.0166	481.5	1.863	0.0157	480.6	1.857	120
125	0.0191	487.5	1.887	0.0180	486.7	1.880	0.0170	485.8	1.874	0.0160	484.9	1.868	125
130	0.0194	491.8	1.898	0.0183	490.9	1.891	0.0173	490.1	1.885	0.0163	489.3	1.878	130
135	0.0198	496.0	1.908	0.0186	495.2	1.902	0.0176	494.4	1.895	0.0166	493.6	1.889	135
140	0.0201	500.3	1.919	0.0190	499.5	1.912	0.0179	498.7	1.906	0.0169	498.0	1.900	140
145	0.0205	504.5	1.929	0.0193	503.8	1.922	0.0182	503.0	1.916	0.0172	502.3	1.910	145
150	0.0208	508.8	1.939	0.0196	508.1	1.932	0.0185	507.3	1.926	0.0175	506.6	1.920	150
155	0.0211	513.0	1.949	0.0199	512.3	1.943	0.0188	511.7	1.936	0.0178	511.0	1.931	155
160	0.0214	517.3	1.959	0.0202	516.6	1.953	0.0191	516.0	1.946	0.0181	515.3	1.941	160
165	0.0218	521.6	1.969	0.0205	520.9	1.962	0.0194	520.3	1.956	0.0184	519.6	1.951	165
170	0.0221	525.9	1.978	0.0208	525.2	1.972	0.0197	524.6	1.966	0.0187	524.0	1.960	170
175	0.0224	530.2	1.988	0.0211	529.6	1.982	0.0200	529.0	1.976	0.0190	528.3	1.970	175
180	0.0227	534.5	1.998	0.0214	533.9	1.991	0.0203	533.3	1.986	0.0192	532.7	1.980	180
185	0.0230	538.8	2.007	0.0217	538.2	2.001	0.0206	537.7	1.995	0.0195	537.1	1.989	185
190	0.0233	543.1	2.017	0.0220	542.6	2.010	0.0209	542.0	2.005	0.0198	541.5	1.999	190
195	0.0236	547.5	2.026	0.0223	546.9	2.020	0.0211	546.4	2.014	0.0201	545.8	2.008	195
200	0.0240	551.8	2.035	0.0226	551.3	2.029	0.0214	550.8	2.023	0.0203	550.2	2.018	200

Table 2 *continued*)

DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

V = Volume in m³/kg

H = Enthalpy in kJ/kg

S = Entropy in kJ/kg K

Saturation Properties in ()

Absolute Pressure kPa													
Temp °C	2200			2300			2400			2500			Temp °C
	(55.51°C)			(57.53°C)			(59.47°C)			(61.36°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0101)	(417.7)	(1.677)	(0.0096)	(417.6)	(1.674)	(0.0091)	(417.6)	(1.671)	(0.0086)	(417.5)	(1.668)	
60	0.0105	422.8	1.693	0.0098	420.6	1.683	0.0091	418.2	1.673	-	-	-	60
65	0.0110	428.3	1.709	0.0103	426.3	1.700	0.0096	424.3	1.691	0.0090	422.1	1.682	65
70	0.0114	433.5	1.724	0.0107	431.7	1.716	0.0101	429.9	1.708	0.0095	428.0	1.699	70
75	0.0118	438.5	1.739	0.0111	436.9	1.731	0.0105	435.2	1.723	0.0099	433.5	1.715	75
80	0.0122	443.3	1.753	0.0115	441.9	1.745	0.0109	440.3	1.738	0.0102	438.8	1.730	80
85	0.0126	448.1	1.766	0.0119	446.7	1.759	0.0112	445.3	1.752	0.0106	443.9	1.745	85
90	0.0129	452.7	1.779	0.0122	451.5	1.772	0.0116	450.2	1.765	0.0110	448.8	1.758	90
95	0.0133	457.3	1.792	0.0126	456.1	1.785	0.0119	454.9	1.778	0.0113	453.7	1.772	95
100	0.0136	461.9	1.804	0.0129	460.7	1.797	0.0122	459.6	1.791	0.0116	458.4	1.784	100
105	0.0139	466.4	1.816	0.0132	465.3	1.809	0.0125	464.2	1.803	0.0119	463.1	1.797	105
110	0.0143	470.8	1.828	0.0135	469.8	1.821	0.0128	468.8	1.815	0.0122	467.7	1.809	110
115	0.0146	475.3	1.839	0.0138	474.3	1.833	0.0131	473.3	1.827	0.0125	472.3	1.821	115
120	0.0149	479.7	1.850	0.0141	478.8	1.844	0.0134	477.8	1.838	0.0128	476.9	1.833	120
125	0.0152	484.1	1.861	0.0144	483.2	1.855	0.0137	482.3	1.850	0.0131	481.4	1.844	125
130	0.0155	488.5	1.872	0.0147	487.6	1.867	0.0140	486.7	1.861	0.0134	485.9	1.855	130
135	0.0158	492.8	1.883	0.0150	492.0	1.877	0.0143	491.2	1.872	0.0136	490.4	1.866	135
140	0.0161	497.2	1.894	0.0153	496.4	1.888	0.0146	495.6	1.883	0.0139	494.8	1.877	140
145	0.0164	501.5	1.904	0.0156	500.8	1.899	0.0148	500.0	1.893	0.0142	499.3	1.888	145
150	0.0167	505.9	1.915	0.0158	505.2	1.909	0.0151	504.4	1.904	0.0144	503.7	1.898	150
155	0.0169	510.3	1.925	0.0161	509.6	1.919	0.0154	508.9	1.914	0.0147	508.1	1.909	155
160	0.0172	514.6	1.935	0.0164	513.9	1.930	0.0156	513.3	1.924	0.0149	512.6	1.919	160
165	0.0175	519.0	1.945	0.0167	518.3	1.940	0.0159	517.7	1.934	0.0152	517.0	1.929	165
170	0.0178	523.4	1.955	0.0169	522.7	1.950	0.0161	522.1	1.944	0.0154	521.4	1.939	170
175	0.0180	527.7	1.965	0.0172	527.1	1.959	0.0164	526.5	1.954	0.0157	525.9	1.949	175
180	0.0183	532.1	1.974	0.0174	531.5	1.969	0.0166	530.9	1.964	0.0159	530.3	1.959	180
185	0.0186	536.5	1.984	0.0177	535.9	1.979	0.0169	535.3	1.974	0.0162	534.7	1.969	185
190	0.0188	540.9	1.994	0.0179	540.3	1.988	0.0171	539.8	1.983	0.0164	539.2	1.979	190
195	0.0191	545.3	2.003	0.0182	544.7	1.998	0.0174	544.2	1.993	0.0166	543.6	1.988	195
200	0.0194	549.7	2.012	0.0185	549.2	2.007	0.0176	548.6	2.002	0.0169	548.1	1.998	200
205	0.0196	554.1	2.022	0.0187	553.6	2.017	0.0179	553.1	2.012	0.0171	552.6	2.007	205
210	0.0199	558.6	2.031	0.0190	558.1	2.026	0.0181	557.5	2.021	0.0173	557.0	2.016	210

Absolute Pressure kPa													
Temp °C	2600			2700			2800			2900			Temp °C
	(63.20°C)			(64.98°C)			(66.71°C)			(68.40°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0082)	(417.3)	(1.665)	(0.0079)	(417.1)	(1.662)	(0.0075)	(416.8)	(1.659)	(0.0072)	(416.5)	(1.656)	
65	0.0084	419.7	1.672	0.0079	417.1	1.662	-	-	-	-	-	-	65
70	0.0089	425.9	1.691	0.0083	423.7	1.682	0.0078	421.4	1.673	0.0073	418.8	1.663	70
75	0.0093	431.7	1.707	0.0088	429.8	1.699	0.0083	427.8	1.691	0.0078	425.6	1.683	75
80	0.0097	437.1	1.723	0.0092	435.4	1.715	0.0087	433.7	1.708	0.0082	431.8	1.700	80
85	0.0100	442.4	1.738	0.0095	440.8	1.731	0.0090	439.2	1.724	0.0086	437.6	1.716	85
90	0.0104	447.4	1.752	0.0099	446.0	1.745	0.0094	444.6	1.738	0.0089	443.1	1.732	90
95	0.0107	452.4	1.765	0.0102	451.1	1.759	0.0097	449.7	1.752	0.0092	448.3	1.746	95
100	0.0110	457.2	1.778	0.0105	456.0	1.772	0.0100	454.7	1.766	0.0095	453.5	1.760	100
105	0.0113	462.0	1.791	0.0108	460.8	1.785	0.0103	459.7	1.779	0.0098	458.5	1.773	105
110	0.0116	466.7	1.803	0.0111	465.6	1.797	0.0106	464.5	1.792	0.0101	463.4	1.786	110
115	0.0119	471.3	1.815	0.0114	470.3	1.810	0.0109	469.2	1.804	0.0104	468.2	1.799	115
120	0.0122	475.9	1.827	0.0117	474.9	1.822	0.0111	473.9	1.816	0.0107	472.9	1.811	120
125	0.0125	480.5	1.839	0.0119	479.5	1.833	0.0114	478.6	1.828	0.0109	477.6	1.823	125
130	0.0128	485.0	1.850	0.0122	484.1	1.845	0.0117	483.2	1.839	0.0112	482.3	1.834	130
135	0.0130	489.5	1.861	0.0124	488.7	1.856	0.0119	487.8	1.851	0.0114	486.9	1.846	135
140	0.0133	494.0	1.872	0.0127	493.2	1.867	0.0122	492.4	1.862	0.0117	491.5	1.857	140
145	0.0135	498.5	1.883	0.0130	497.7	1.878	0.0124	496.9	1.873	0.0119	496.1	1.868	145
150	0.0138	503.0	1.893	0.0132	502.2	1.888	0.0127	501.4	1.884	0.0122	500.7	1.879	150
155	0.0140	507.4	1.904	0.0134	506.7	1.899	0.0129	506.0	1.894	0.0124	505.2	1.889	155
160	0.0143	511.9	1.914	0.0137	511.2	1.909	0.0131	510.5	1.905	0.0126	509.8	1.900	160
165	0.0145	516.3	1.924	0.0139	515.7	1.920	0.0134	515.0	1.915	0.0128	514.3	1.910	165
170	0.0148	520.8	1.934	0.0142	520.1	1.930	0.0136	519.5	1.925	0.0131	518.8	1.921	170
175	0.0150	525.2	1.944	0.0144	524.6	1.940	0.0138	524.0	1.935	0.0133	523.3	1.931	175
180	0.0152	529.7	1.954	0.0146	529.1	1.950	0.0140	528.5	1.945	0.0135	527.8	1.941	180
185	0.0155	534.1	1.964	0.0148	533.6	1.960	0.0143	533.0	1.955	0.0137	532.4	1.951	185
190	0.0157	538.6	1.974	0.0151	538.0	1.969	0.0145	537.5	1.965	0.0139	536.9	1.961	190
195	0.0159	543.1	1.983	0.0153	542.5	1.979	0.0147	542.0	1.975	0.0141	541.4	1.970	195
200	0.0162	547.5	1.993	0.0155	547.0	1.988	0.0149	546.5	1.984	0.0144	545.9	1.980	200
205	0.0164	552.0	2.002	0.0157	551.5	1.998	0.0151	551.0	1.994	0.0146	550.4	1.989	205
210	0.0166	556.5	2.012	0.0160	556.0	2.007	0.0153	555.5	2.003	0.0148	555.0	1.999	210
215	0.0168	561.0	2.021	0.0162	560.5	2.017	0.0156	560.0	2.012	0.0150	559.5	2.008	215

Table 2 *continued*)

DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

V = Volume in m³/kg

H = Enthalpy in kJ/kg

S = Entropy in kJ/kg K

Saturation Properties in ()

Absolute Pressure kPa													
Temp °C	3000			3100			3200			3300			Temp °C
	(70.04°C)			(71.64°C)			(73.21°C)			(74.73°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0068)	(416.1)	(1.653)	(0.0065)	(415.6)	(1.650)	(0.0063)	(415.2)	(1.646)	(0.0060)	(414.6)	(1.643)	
75	0.0073	423.3	1.674	0.0069	420.9	1.665	0.0065	418.1	1.655	0.0060	415.1	1.644	75
80	0.0077	429.8	1.692	0.0073	427.8	1.684	0.0069	425.5	1.676	0.0065	423.1	1.667	80
85	0.0081	435.8	1.709	0.0077	434.0	1.702	0.0073	432.1	1.695	0.0069	430.1	1.687	85
90	0.0085	441.5	1.725	0.0081	439.9	1.718	0.0077	438.2	1.711	0.0073	436.4	1.705	90
95	0.0088	446.9	1.740	0.0084	445.4	1.733	0.0080	443.9	1.727	0.0076	442.3	1.721	95
100	0.0091	452.1	1.754	0.0087	450.8	1.748	0.0083	449.4	1.742	0.0079	448.0	1.736	100
105	0.0094	457.2	1.767	0.0090	456.0	1.762	0.0086	454.7	1.756	0.0082	453.4	1.750	105
110	0.0097	462.2	1.781	0.0093	461.0	1.775	0.0089	459.9	1.770	0.0085	458.6	1.764	110
115	0.0100	467.1	1.793	0.0095	466.0	1.788	0.0091	464.9	1.783	0.0088	463.8	1.777	115
120	0.0102	471.9	1.806	0.0098	470.9	1.800	0.0094	469.8	1.795	0.0090	468.8	1.790	120
125	0.0105	476.7	1.818	0.0101	475.7	1.813	0.0097	474.7	1.808	0.0093	473.7	1.803	125
130	0.0107	481.4	1.829	0.0103	480.5	1.824	0.0099	479.5	1.820	0.0095	478.6	1.815	130
135	0.0110	486.1	1.841	0.0105	485.2	1.836	0.0101	484.3	1.831	0.0098	483.4	1.827	135
140	0.0112	490.7	1.852	0.0108	489.9	1.847	0.0104	489.0	1.843	0.0100	488.1	1.838	140
145	0.0114	495.3	1.863	0.0110	494.5	1.859	0.0106	493.7	1.854	0.0102	492.9	1.850	145
150	0.0117	499.9	1.874	0.0112	499.1	1.870	0.0108	498.3	1.865	0.0104	497.6	1.861	150
155	0.0119	504.5	1.885	0.0115	503.7	1.880	0.0110	503.0	1.876	0.0106	502.2	1.872	155
160	0.0121	509.0	1.896	0.0117	508.3	1.891	0.0113	507.6	1.887	0.0109	506.9	1.883	160
165	0.0124	513.6	1.906	0.0119	512.9	1.902	0.0115	512.2	1.897	0.0111	511.5	1.893	165
170	0.0126	518.1	1.916	0.0121	517.5	1.912	0.0117	516.8	1.908	0.0113	516.1	1.904	170
175	0.0128	522.7	1.926	0.0123	522.0	1.922	0.0119	521.4	1.918	0.0115	520.7	1.914	175
180	0.0130	527.2	1.937	0.0125	526.6	1.932	0.0121	526.0	1.928	0.0117	525.3	1.924	180
185	0.0132	531.8	1.946	0.0127	531.1	1.942	0.0123	530.5	1.938	0.0119	529.9	1.934	185
190	0.0134	536.3	1.956	0.0129	535.7	1.952	0.0125	535.1	1.948	0.0121	534.5	1.944	190
195	0.0136	540.8	1.966	0.0131	540.2	1.962	0.0127	539.7	1.958	0.0123	539.1	1.954	195
200	0.0138	545.4	1.976	0.0133	544.8	1.972	0.0129	544.2	1.968	0.0124	543.7	1.964	200
205	0.0140	549.9	1.985	0.0135	549.4	1.981	0.0131	548.8	1.977	0.0126	548.3	1.973	205
210	0.0142	554.4	1.995	0.0137	553.9	1.991	0.0133	553.4	1.987	0.0128	552.9	1.983	210
215	0.0144	559.0	2.004	0.0139	558.5	2.000	0.0135	558.0	1.996	0.0130	557.5	1.993	215
220	0.0146	563.6	2.013	0.0141	563.1	2.009	0.0136	562.6	2.006	0.0132	562.1	2.002	220

Absolute Pressure kPa													
Temp °C	3400			3500			3600			3700			Temp °C
	(76.22°C)			(77.68°C)			(79.11°C)			(80.50°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0057)	(414.0)	(1.640)	(0.0055)	(413.3)	(1.636)	(0.0053)	(412.5)	(1.632)	(0.0050)	(411.7)	(1.628)	
80	0.0061	420.5	1.658	0.0058	417.7	1.648	0.0054	414.4	1.638	-	-	-	80
85	0.0066	428.0	1.679	0.0062	425.7	1.671	0.0059	423.2	1.662	0.0055	420.5	1.653	85
90	0.0069	434.6	1.697	0.0066	432.7	1.690	0.0063	430.6	1.683	0.0060	428.5	1.675	90
95	0.0073	440.7	1.714	0.0069	439.0	1.708	0.0066	437.3	1.701	0.0063	435.4	1.694	95
100	0.0076	446.5	1.730	0.0073	445.0	1.724	0.0070	443.4	1.718	0.0066	441.8	1.712	100
105	0.0079	452.0	1.745	0.0076	450.7	1.739	0.0072	449.2	1.733	0.0069	447.8	1.727	105
110	0.0082	457.4	1.759	0.0078	456.1	1.753	0.0075	454.8	1.748	0.0072	453.5	1.742	110
115	0.0084	462.6	1.772	0.0081	461.4	1.767	0.0078	460.2	1.762	0.0075	459.0	1.757	115
120	0.0087	467.7	1.785	0.0084	466.6	1.780	0.0080	465.5	1.775	0.0077	464.3	1.770	120
125	0.0089	472.7	1.798	0.0086	471.6	1.793	0.0083	470.6	1.788	0.0080	469.5	1.783	125
130	0.0092	477.6	1.810	0.0088	476.6	1.805	0.0085	475.6	1.801	0.0082	474.6	1.796	130
135	0.0094	482.5	1.822	0.0091	481.5	1.818	0.0087	480.6	1.813	0.0084	479.6	1.809	135
140	0.0096	487.3	1.834	0.0093	486.4	1.829	0.0090	485.5	1.825	0.0087	484.6	1.821	140
145	0.0098	492.0	1.845	0.0095	491.2	1.841	0.0092	490.3	1.837	0.0089	489.5	1.832	145
150	0.0101	496.8	1.856	0.0097	496.0	1.852	0.0094	495.1	1.848	0.0091	494.3	1.844	150
155	0.0103	501.5	1.868	0.0099	500.7	1.863	0.0096	499.9	1.859	0.0093	499.1	1.855	155
160	0.0105	506.1	1.878	0.0101	505.4	1.874	0.0098	504.7	1.870	0.0095	503.9	1.866	160
165	0.0107	510.8	1.889	0.0103	510.1	1.885	0.0100	509.4	1.881	0.0097	508.6	1.877	165
170	0.0109	515.4	1.900	0.0105	514.8	1.896	0.0102	514.1	1.892	0.0099	513.4	1.888	170
175	0.0111	520.1	1.910	0.0107	519.4	1.906	0.0104	518.7	1.902	0.0100	518.1	1.898	175
180	0.0113	524.7	1.920	0.0109	524.1	1.916	0.0106	523.4	1.913	0.0102	522.8	1.909	180
185	0.0115	529.3	1.930	0.0111	528.7	1.927	0.0108	528.1	1.923	0.0104	527.4	1.919	185
190	0.0117	533.9	1.940	0.0113	533.3	1.937	0.0109	532.7	1.933	0.0106	532.1	1.929	190
195	0.0119	538.5	1.950	0.0115	537.9	1.947	0.0111	537.4	1.943	0.0108	536.8	1.939	195
200	0.0120	543.1	1.960	0.0117	542.6	1.956	0.0113	542.0	1.953	0.0110	541.4	1.949	200
205	0.0122	547.7	1.970	0.0118	547.2	1.966	0.0115	546.6	1.963	0.0111	546.1	1.959	205
210	0.0124	552.3	1.979	0.0120	551.8	1.976	0.0117	551.3	1.972	0.0113	550.8	1.969	210
215	0.0126	557.0	1.989	0.0122	556.4	1.985	0.0118	555.9	1.982	0.0115	555.4	1.978	215
220	0.0128	561.6	1.998	0.0124	561.1	1.995	0.0120	560.6	1.991	0.0116	560.1	1.988	220

Table 2 *continued*)

DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

V = Volume in m³/kg

H = Enthalpy in kJ/kg

S = Entropy in kJ/kg K

Saturation Properties in ()

Absolute Pressure kPa													
Temp °C	3800			3900			4000			4100			Temp °C
	(81.87°C)			(83.20°C)			(84.51°C)			(85.50°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0048)	(410.8)	(1.624)	(0.0046)	(409.8)	(1.620)	(0.0044)	(408.6)	(1.616)	(0.0042)	(407.4)	(1.611)	
85	0.0052	417.5	1.643	0.0048	414.1	1.632	0.0045	410.0	1.620	-	-	-	85
90	0.0056	426.1	1.667	0.0053	423.6	1.659	0.0050	420.9	1.650	0.0047	417.8	1.640	90
95	0.0060	433.5	1.687	0.0057	431.4	1.680	0.0055	429.3	1.673	0.0052	426.9	1.665	95
100	0.0064	440.1	1.705	0.0061	438.3	1.699	0.0058	436.5	1.692	0.0056	434.6	1.686	100
105	0.0067	446.3	1.722	0.0064	444.7	1.716	0.0061	443.1	1.710	0.0059	441.4	1.704	105
110	0.0069	452.1	1.737	0.0067	450.7	1.732	0.0064	449.3	1.726	0.0062	447.8	1.721	110
115	0.0072	457.7	1.752	0.0069	456.4	1.746	0.0067	455.1	1.741	0.0064	453.8	1.736	115
120	0.0075	463.1	1.765	0.0072	462.0	1.761	0.0069	460.7	1.756	0.0067	459.5	1.751	120
125	0.0077	468.4	1.779	0.0074	467.3	1.774	0.0072	466.2	1.769	0.0069	465.0	1.765	125
130	0.0079	473.6	1.792	0.0077	472.6	1.787	0.0074	471.5	1.783	0.0071	470.4	1.778	130
135	0.0081	478.7	1.804	0.0079	477.7	1.800	0.0076	476.7	1.796	0.0074	475.7	1.791	135
140	0.0084	483.7	1.816	0.0081	482.7	1.812	0.0078	481.8	1.808	0.0076	480.9	1.804	140
145	0.0086	488.6	1.828	0.0083	487.7	1.824	0.0080	486.8	1.820	0.0078	485.9	1.816	145
150	0.0088	493.5	1.840	0.0085	492.7	1.836	0.0082	491.8	1.832	0.0080	491.0	1.828	150
155	0.0090	498.3	1.851	0.0087	497.5	1.847	0.0084	496.7	1.843	0.0082	495.9	1.840	155
160	0.0092	503.1	1.862	0.0089	502.4	1.859	0.0086	501.6	1.855	0.0084	500.8	1.851	160
165	0.0094	507.9	1.873	0.0091	507.2	1.870	0.0088	506.5	1.866	0.0085	505.7	1.862	165
170	0.0096	512.7	1.884	0.0093	512.0	1.880	0.0090	511.3	1.877	0.0087	510.5	1.873	170
175	0.0097	517.4	1.895	0.0094	516.7	1.891	0.0092	516.0	1.888	0.0089	515.4	1.884	175
180	0.0099	522.1	1.905	0.0096	521.5	1.902	0.0093	520.8	1.898	0.0091	520.2	1.895	180
185	0.0101	526.8	1.916	0.0098	526.2	1.912	0.0095	525.6	1.909	0.0092	524.9	1.905	185
190	0.0103	531.5	1.926	0.0100	530.9	1.922	0.0097	530.3	1.919	0.0094	529.7	1.915	190
195	0.0105	536.2	1.936	0.0102	535.6	1.932	0.0099	535.0	1.929	0.0096	534.4	1.926	195
200	0.0106	540.9	1.946	0.0103	540.3	1.942	0.0100	539.7	1.939	0.0097	539.2	1.936	200
205	0.0108	545.5	1.956	0.0105	545.0	1.952	0.0102	544.4	1.949	0.0099	543.9	1.946	205
210	0.0110	550.2	1.965	0.0107	549.7	1.962	0.0104	549.1	1.959	0.0101	548.6	1.955	210
215	0.0111	554.9	1.975	0.0108	554.4	1.972	0.0105	553.8	1.968	0.0102	553.3	1.965	215
220	0.0113	559.6	1.984	0.0110	559.0	1.981	0.0107	558.5	1.978	0.0104	558.0	1.975	220

Absolute Pressure kPa													
Temp °C	4200			4300			4400			4500			Temp °C
	(87.05°C)			(88.29°C)			(89.50°C)			(90.68°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0040)	(406.0)	(1.606)	(0.0038)	(404.5)	(1.601)	(0.0036)	(402.7)	(1.595)	(0.0035)	(400.7)	(1.588)	
90	0.0044	414.4	1.629	0.0041	410.2	1.617	0.0037	404.9	1.601	-	-	-	90
95	0.0049	424.4	1.657	0.0047	421.7	1.648	0.0044	418.7	1.639	0.0041	415.3	1.628	95
100	0.0053	432.5	1.679	0.0051	430.4	1.672	0.0048	428.1	1.664	0.0046	425.7	1.656	100
105	0.0056	439.7	1.698	0.0054	437.9	1.692	0.0052	436.0	1.685	0.0049	434.0	1.679	105
110	0.0059	446.2	1.715	0.0057	444.7	1.709	0.0055	443.0	1.704	0.0053	441.3	1.698	110
115	0.0062	452.4	1.731	0.0060	451.0	1.726	0.0058	449.5	1.720	0.0055	448.0	1.715	115
120	0.0064	458.2	1.746	0.0062	457.0	1.741	0.0060	455.6	1.736	0.0058	454.3	1.731	120
125	0.0067	463.9	1.760	0.0065	462.7	1.756	0.0062	461.5	1.751	0.0060	460.3	1.746	125
130	0.0069	469.4	1.774	0.0067	468.2	1.769	0.0065	467.1	1.765	0.0063	466.0	1.761	130
135	0.0071	474.7	1.787	0.0069	473.7	1.783	0.0067	472.6	1.779	0.0065	471.5	1.774	135
140	0.0073	479.9	1.800	0.0071	478.9	1.796	0.0069	478.0	1.792	0.0067	477.0	1.787	140
145	0.0075	485.0	1.812	0.0073	484.1	1.808	0.0071	483.2	1.804	0.0069	482.3	1.800	145
150	0.0077	490.1	1.824	0.0075	489.2	1.820	0.0073	488.4	1.816	0.0071	487.5	1.813	150
155	0.0079	495.1	1.836	0.0077	494.3	1.832	0.0075	493.4	1.828	0.0073	492.6	1.825	155
160	0.0081	500.1	1.847	0.0079	499.3	1.844	0.0077	498.5	1.840	0.0074	497.7	1.836	160
165	0.0083	505.0	1.859	0.0081	504.2	1.855	0.0078	503.5	1.851	0.0076	502.7	1.848	165
170	0.0085	509.8	1.870	0.0082	509.1	1.866	0.0080	508.4	1.863	0.0078	507.7	1.859	170
175	0.0086	514.7	1.881	0.0084	514.0	1.877	0.0082	513.3	1.874	0.0080	512.6	1.870	175
180	0.0088	519.5	1.891	0.0086	518.8	1.888	0.0083	518.2	1.884	0.0081	517.5	1.881	180
185	0.0090	524.3	1.902	0.0087	523.6	1.898	0.0085	523.0	1.895	0.0083	522.3	1.892	185
190	0.0092	529.1	1.912	0.0089	528.4	1.909	0.0087	527.8	1.906	0.0084	527.2	1.902	190
195	0.0093	533.8	1.922	0.0091	533.2	1.919	0.0088	532.6	1.916	0.0086	532.0	1.913	195
200	0.0095	538.6	1.932	0.0092	538.0	1.929	0.0090	537.4	1.926	0.0088	536.8	1.923	200
205	0.0096	543.3	1.942	0.0094	542.8	1.939	0.0091	542.2	1.936	0.0089	541.6	1.933	205
210	0.0098	548.1	1.952	0.0095	547.5	1.949	0.0093	547.0	1.946	0.0091	546.4	1.943	210
215	0.0100	552.8	1.962	0.0097	552.3	1.959	0.0095	551.7	1.956	0.0092	551.2	1.953	215
220	0.0101	557.5	1.972	0.0099	557.0	1.969	0.0096	556.5	1.966	0.0094	556.0	1.963	220

Table 2 *continued*)

DuPont™ Freon® 22 Superheated Vapor — Constant Pressure Tables

V = Volume in m³/kg

H = Enthalpy in kJ/kg

S = Entropy in kJ/kg K

Saturation Properties in ()

Absolute Pressure kPa													
Temp °C	4600			4700			4800			4900			Temp °C
	(91.84°C)			(92.98°C)			(94.1°C)			(95.19°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0033)	(398.3)	(1.581)	(0.0031)	(395.4)	(1.572)	(0.0028)	(391.6)	(1.561)	(0.0026)	(386.1)	(1.545)	
95	0.0038	411.3	1.616	0.0035	406.4	1.602	0.0032	399.4	1.582	-	-	-	95
100	0.0043	423.0	1.648	0.0041	420.1	1.639	0.0039	416.9	1.629	0.0036	413.2	1.619	100
105	0.0047	431.9	1.672	0.0045	429.7	1.665	0.0043	427.4	1.657	0.0041	424.8	1.650	105
110	0.0051	439.6	1.692	0.0049	437.7	1.686	0.0047	435.8	1.679	0.0045	433.8	1.673	110
115	0.0053	446.5	1.710	0.0051	444.9	1.704	0.0050	443.2	1.699	0.0048	441.5	1.693	115
120	0.0056	452.9	1.726	0.0054	451.5	1.721	0.0052	450.0	1.716	0.0050	448.5	1.711	120
125	0.0058	459.0	1.742	0.0056	457.7	1.737	0.0055	456.4	1.732	0.0053	455.1	1.728	125
130	0.0061	464.8	1.756	0.0059	463.7	1.752	0.0057	462.5	1.747	0.0055	461.2	1.743	130
135	0.0063	470.5	1.770	0.0061	469.4	1.766	0.0059	468.3	1.762	0.0057	467.1	1.758	135
140	0.0065	476.0	1.783	0.0063	474.9	1.779	0.0061	473.9	1.775	0.0059	472.9	1.771	140
145	0.0067	481.3	1.796	0.0065	480.4	1.793	0.0063	479.4	1.789	0.0061	478.4	1.785	145
150	0.0069	486.6	1.809	0.0067	485.7	1.805	0.0065	484.8	1.801	0.0063	483.9	1.798	150
155	0.0071	491.8	1.821	0.0069	490.9	1.817	0.0067	490.0	1.814	0.0065	489.2	1.810	155
160	0.0072	496.9	1.833	0.0070	496.1	1.829	0.0069	495.2	1.826	0.0067	494.4	1.822	160
165	0.0074	501.9	1.844	0.0072	501.1	1.841	0.0070	500.4	1.838	0.0068	499.6	1.834	165
170	0.0076	506.9	1.856	0.0074	506.2	1.852	0.0072	505.4	1.849	0.0070	504.7	1.846	170
175	0.0077	511.9	1.867	0.0075	511.2	1.864	0.0074	510.5	1.860	0.0072	509.7	1.857	175
180	0.0079	516.8	1.878	0.0077	516.1	1.875	0.0075	515.4	1.871	0.0073	514.8	1.868	180
185	0.0081	521.7	1.889	0.0079	521.0	1.885	0.0077	520.4	1.882	0.0075	519.7	1.879	185
190	0.0082	526.6	1.899	0.0080	525.9	1.896	0.0078	525.3	1.893	0.0076	524.7	1.890	190
195	0.0084	531.4	1.910	0.0082	530.8	1.907	0.0080	530.2	1.904	0.0078	529.6	1.901	195
200	0.0085	536.3	1.920	0.0083	535.7	1.917	0.0081	535.1	1.914	0.0079	534.5	1.911	200
205	0.0087	541.1	1.930	0.0085	540.5	1.927	0.0083	539.9	1.924	0.0081	539.4	1.921	205
210	0.0088	545.9	1.940	0.0086	545.3	1.937	0.0084	544.8	1.934	0.0082	544.2	1.931	210
215	0.0090	550.7	1.950	0.0088	550.1	1.947	0.0086	549.6	1.944	0.0084	549.1	1.941	215
220	0.0091	555.5	1.960	0.0089	555.0	1.957	0.0087	554.4	1.954	0.0085	553.9	1.951	220

PHỤ LỤC 9: BẢNG TRA MÔI CHẤT R404A
Suva® 404A (HP62) Saturation Properties—Temperature Table

TEMP. °F	PRESSURE psia		VOLUME ft ³ /lb		DENSITY lb/ft ³		ENTHALPY Btu/lb			ENTROPY Btu/(lb)(°R)		TEMP. °F
	LIQUID	VAPOR	LIQUID	VAPOR	LIQUID	VAPOR	LIQUID	LATENT	VAPOR	LIQUID	VAPOR	
	Pf	Pg	vf	vg	1/vf	1/vg	hf	hfg	hg	sf	sg	
-150	0.39	0.36	0.0111	94.3396	89.78	0.0106	-30.6	99.0	68.4	-0.0842	0.2369	-150
-149	0.42	0.38	0.0111	90.0901	89.73	0.0111	-30.4	98.9	68.5	-0.0834	0.2364	-149
-148	0.44	0.40	0.0112	86.2069	89.69	0.0116	-30.1	98.8	68.7	-0.0825	0.2358	-148
-147	0.46	0.42	0.0112	81.9672	89.64	0.0122	-29.9	98.7	68.8	-0.0817	0.2352	-147
-146	0.48	0.44	0.0112	78.1250	89.58	0.0128	-29.6	98.6	69.0	-0.0809	0.2347	-146
-145	0.51	0.46	0.0112	74.6269	89.53	0.0134	-29.3	98.4	69.1	-0.0800	0.2341	-145
-144	0.53	0.49	0.0112	71.4286	89.48	0.0140	-29.1	98.3	69.3	-0.0792	0.2336	-144
-143	0.56	0.51	0.0112	68.0272	89.42	0.0147	-28.8	98.2	69.4	-0.0784	0.2331	-143
-142	0.59	0.54	0.0112	64.9351	89.37	0.0154	-28.6	98.1	69.6	-0.0776	0.2325	-142
-141	0.61	0.56	0.0112	62.1118	89.31	0.0161	-28.3	98.0	69.7	-0.0768	0.2320	-141
-140	0.64	0.59	0.0112	59.5238	89.25	0.0168	-28.0	97.9	69.9	-0.0759	0.2315	-140
-139	0.67	0.62	0.0112	56.8182	89.19	0.0176	-27.8	97.8	70.0	-0.0751	0.2310	-139
-138	0.71	0.65	0.0112	54.3478	89.13	0.0184	-27.5	97.7	70.2	-0.0743	0.2305	-138
-137	0.74	0.68	0.0112	52.0833	89.07	0.0192	-27.2	97.5	70.3	-0.0735	0.2300	-137
-136	0.77	0.71	0.0112	49.7512	89.01	0.0201	-27.0	97.4	70.4	-0.0727	0.2295	-136
-135	0.81	0.75	0.0112	47.6190	88.95	0.0210	-26.7	97.3	70.6	-0.0719	0.2290	-135
-134	0.85	0.78	0.0113	45.6621	88.88	0.0219	-26.5	97.2	70.7	-0.0711	0.2286	-134
-133	0.89	0.82	0.0113	43.6681	88.82	0.0229	-26.2	97.1	70.9	-0.0703	0.2281	-133
-132	0.93	0.86	0.0113	41.8410	88.75	0.0239	-25.9	97.0	71.0	-0.0694	0.2276	-132
-131	0.97	0.90	0.0113	40.1606	88.68	0.0249	-25.7	96.9	71.2	-0.0686	0.2272	-131
-130	1.01	0.94	0.0113	38.4615	88.62	0.0260	-25.4	96.7	71.3	-0.0678	0.2267	-130
-129	1.06	0.98	0.0113	36.9004	88.55	0.0271	-25.1	96.6	71.5	-0.0670	0.2263	-129
-128	1.10	1.02	0.0113	35.4610	88.48	0.0282	-24.9	96.5	71.6	-0.0662	0.2258	-128
-127	1.15	1.07	0.0113	34.0136	88.40	0.0294	-24.6	96.4	71.8	-0.0654	0.2254	-127
-126	1.20	1.12	0.0113	32.6797	88.33	0.0306	-24.3	96.3	71.9	-0.0646	0.2250	-126
-125	1.25	1.17	0.0113	31.3480	88.26	0.0319	-24.1	96.2	72.1	-0.0638	0.2245	-125
-124	1.31	1.22	0.0113	30.1205	88.19	0.0332	-23.8	96.1	72.2	-0.0630	0.2241	-124
-123	1.36	1.27	0.0113	28.9855	88.11	0.0345	-23.5	95.9	72.4	-0.0623	0.2237	-123
-122	1.42	1.33	0.0114	27.8552	88.04	0.0359	-23.3	95.8	72.6	-0.0615	0.2233	-122
-121	1.48	1.38	0.0114	26.8097	87.96	0.0373	-23.0	95.7	72.7	-0.0607	0.2229	-121
-120	1.54	1.44	0.0114	25.7732	87.88	0.0388	-22.7	95.6	72.9	-0.0599	0.2225	-120
-119	1.61	1.50	0.0114	24.8139	87.81	0.0403	-22.5	95.5	73.0	-0.0591	0.2221	-119
-118	1.67	1.56	0.0114	23.8663	87.73	0.0419	-22.2	95.4	73.2	-0.0583	0.2217	-118
-117	1.74	1.63	0.0114	22.9885	87.65	0.0435	-21.9	95.2	73.3	-0.0575	0.2214	-117
-116	1.81	1.70	0.0114	22.1239	87.57	0.0452	-21.7	95.1	73.5	-0.0567	0.2210	-116
-115	1.89	1.77	0.0114	21.3220	87.49	0.0469	-21.4	95.0	73.6	-0.0559	0.2206	-115
-114	1.96	1.84	0.0114	20.5339	87.40	0.0487	-21.1	94.9	73.8	-0.0552	0.2202	-114
-113	2.04	1.91	0.0115	19.7628	87.32	0.0506	-20.8	94.8	73.9	-0.0544	0.2199	-113
-112	2.12	1.99	0.0115	19.0476	87.24	0.0525	-20.6	94.7	74.1	-0.0536	0.2195	-112
-111	2.20	2.07	0.0115	18.3824	87.16	0.0544	-20.3	94.5	74.2	-0.0528	0.2192	-111
-110	2.29	2.15	0.0115	17.7305	87.07	0.0564	-20.0	94.4	74.4	-0.0520	0.2188	-110
-109	2.38	2.24	0.0115	17.0940	86.99	0.0585	-19.8	94.3	74.5	-0.0513	0.2185	-109
-108	2.47	2.32	0.0115	16.5017	86.90	0.0606	-19.5	94.2	74.7	-0.0505	0.2181	-108
-107	2.56	2.41	0.0115	15.9236	86.81	0.0628	-19.2	94.1	74.8	-0.0497	0.2178	-107
-106	2.66	2.51	0.0115	15.3610	86.73	0.0651	-18.9	93.9	75.0	-0.0489	0.2175	-106
-105	2.76	2.60	0.0115	14.8368	86.64	0.0674	-18.7	93.8	75.2	-0.0482	0.2172	-105
-104	2.86	2.70	0.0116	14.3266	86.55	0.0698	-18.4	93.7	75.3	-0.0474	0.2168	-104
-103	2.97	2.80	0.0116	13.8504	86.46	0.0722	-18.1	93.6	75.5	-0.0466	0.2165	-103
-102	3.08	2.91	0.0116	13.3869	86.37	0.0747	-17.8	93.5	75.6	-0.0459	0.2162	-102
-101	3.19	3.02	0.0116	12.9366	86.29	0.0773	-17.6	93.3	75.8	-0.0451	0.2159	-101
-100	3.31	3.13	0.0116	12.5000	86.19	0.0800	-17.3	93.2	75.9	-0.0443	0.2156	-100
-99	3.43	3.25	0.0116	12.0919	86.10	0.0827	-17.0	93.1	76.1	-0.0436	0.2153	-99
-98	3.55	3.36	0.0116	11.6959	86.01	0.0855	-16.7	93.0	76.2	-0.0428	0.2150	-98
-97	3.68	3.49	0.0116	11.3122	85.92	0.0884	-16.5	92.9	76.4	-0.0420	0.2147	-97
-96	3.81	3.61	0.0117	10.9409	85.83	0.0914	-16.2	92.7	76.5	-0.0413	0.2144	-96
-95	3.94	3.74	0.0117	10.5820	85.74	0.0945	-15.9	92.6	76.7	-0.0405	0.2142	-95
-94	4.08	3.87	0.0117	10.2459	85.64	0.0976	-15.6	92.5	76.9	-0.0398	0.2139	-94
-93	4.22	4.01	0.0117	9.9206	85.55	0.1008	-15.4	92.4	77.0	-0.0390	0.2136	-93
-92	4.37	4.15	0.0117	9.6061	85.45	0.1041	-15.1	92.2	77.2	-0.0382	0.2133	-92
-91	4.52	4.30	0.0117	9.3023	85.36	0.1075	-14.8	92.1	77.3	-0.0375	0.2131	-91

Suva® 404A (HP62) Saturation Properties—Temperature Table

TEMP. °F	PRESSURE		VOLUME		DENSITY		ENTHALPY			ENTROPY		TEMP. °F
	psia		ft ³ /lb		lb/ft ³		Btu/lb			Btu/(lb)(°R)		
	LIQUID	VAPOR	LIQUID	VAPOR	LIQUID	VAPOR	LIQUID	LATENT	VAPOR	LIQUID	VAPOR	
	pf	pg	vf	vg	1/vf	1/vg	hf	hfg	hg	sf	sg	
-90	4.68	4.45	0.0117	9.0171	85.26	0.1109	-14.5	92.0	77.5	-0.0367	0.2128	-90
-89	4.83	4.60	0.0117	8.7336	85.17	0.1145	-14.2	91.9	77.6	-0.0360	0.2126	-89
-88	5.00	4.76	0.0118	8.4674	85.07	0.1181	-14.0	91.7	77.8	-0.0352	0.2123	-88
-87	5.16	4.92	0.0118	8.2034	84.98	0.1219	-13.7	91.6	77.9	-0.0345	0.2120	-87
-86	5.34	5.08	0.0118	7.9554	84.88	0.1257	-13.4	91.5	78.1	-0.0337	0.2118	-86
-85	5.51	5.25	0.0118	7.7160	84.78	0.1296	-13.1	91.4	78.3	-0.0330	0.2116	-85
-84	5.69	5.43	0.0118	7.4850	84.68	0.1336	-12.8	91.2	78.4	-0.0322	0.2113	-84
-83	5.88	5.61	0.0118	7.2569	84.59	0.1378	-12.6	91.1	78.6	-0.0315	0.2111	-83
-82	6.07	5.79	0.0118	7.0423	84.49	0.1420	-12.3	91.0	78.7	-0.0307	0.2108	-82
-81	6.27	5.98	0.0119	6.8353	84.39	0.1463	-12.0	90.9	78.9	-0.0300	0.2106	-81
-80	6.47	6.18	0.0119	6.6357	84.29	0.1507	-11.7	90.7	79.0	-0.0292	0.2104	-80
-79	6.67	6.38	0.0119	6.4392	84.19	0.1553	-11.4	90.6	79.2	-0.0285	0.2102	-79
-78	6.88	6.58	0.0119	6.2539	84.09	0.1599	-11.1	90.5	79.3	-0.0277	0.2099	-78
-77	7.10	6.79	0.0119	6.0716	83.99	0.1647	-10.9	90.4	79.5	-0.0270	0.2097	-77
-76	7.32	7.01	0.0119	5.8997	83.89	0.1695	-10.6	90.2	79.7	-0.0262	0.2095	-76
-75	7.55	7.23	0.0119	5.7307	83.79	0.1745	-10.3	90.1	79.8	-0.0255	0.2093	-75
-74	7.78	7.45	0.0119	5.5679	83.69	0.1796	-10.0	90.0	80.0	-0.0248	0.2091	-74
-73	8.02	7.69	0.0120	5.4113	83.59	0.1848	-9.7	89.8	80.1	-0.0240	0.2089	-73
-72	8.27	7.92	0.0120	5.2604	83.48	0.1901	-9.4	89.7	80.3	-0.0233	0.2087	-72
-71	8.52	8.17	0.0120	5.1151	83.38	0.1955	-9.1	89.6	80.4	-0.0225	0.2085	-71
-70	8.77	8.42	0.0120	4.9727	83.28	0.2011	-8.8	89.4	80.6	-0.0218	0.2083	-70
-69	9.04	8.67	0.0120	4.8356	83.18	0.2068	-8.6	89.3	80.8	-0.0211	0.2081	-69
-68	9.31	8.93	0.0120	4.7037	83.08	0.2126	-8.3	89.2	80.9	-0.0203	0.2079	-68
-67	9.58	9.20	0.0121	4.5746	82.97	0.2186	-8.0	89.0	81.1	-0.0196	0.2077	-67
-66	9.86	9.48	0.0121	4.4524	82.87	0.2246	-7.7	88.9	81.2	-0.0189	0.2075	-66
-65	10.15	9.76	0.0121	4.3328	82.77	0.2308	-7.4	88.8	81.4	-0.0181	0.2073	-65
-64	10.45	10.04	0.0121	4.2159	82.66	0.2372	-7.1	88.6	81.5	-0.0174	0.2072	-64
-63	10.75	10.34	0.0121	4.1034	82.56	0.2437	-6.8	88.5	81.7	-0.0167	0.2070	-63
-62	11.06	10.64	0.0121	3.9952	82.45	0.2503	-6.5	88.4	81.9	-0.0159	0.2068	-62
-61	11.37	10.95	0.0121	3.8911	82.35	0.2570	-6.2	88.2	82.0	-0.0152	0.2066	-61
-60	11.69	11.26	0.0122	3.7893	82.24	0.2639	-5.9	88.1	82.2	-0.0145	0.2065	-60
-59	12.02	11.58	0.0122	3.6900	82.14	0.2710	-5.7	88.0	82.3	-0.0137	0.2063	-59
-58	12.36	11.91	0.0122	3.5945	82.03	0.2782	-5.4	87.8	82.5	-0.0130	0.2061	-58
-57	12.71	12.25	0.0122	3.5026	81.93	0.2855	-5.1	87.7	82.6	-0.0123	0.2060	-57
-56	13.06	12.59	0.0122	3.4130	81.82	0.2930	-4.8	87.6	82.8	-0.0116	0.2058	-56
-55	13.42	12.95	0.0122	3.3256	81.72	0.3007	-4.5	87.4	82.9	-0.0108	0.2057	-55
-54	13.79	13.30	0.0123	3.2415	81.61	0.3085	-4.2	87.3	83.1	-0.0101	0.2055	-54
-53	14.16	13.67	0.0123	3.1606	81.51	0.3164	-3.9	87.1	83.3	-0.0094	0.2054	-53
-52	14.55	14.05	0.0123	3.0807	81.40	0.3246	-3.6	87.0	83.4	-0.0087	0.2052	-52
-51	14.94	14.43	0.0123	3.0039	81.29	0.3329	-3.3	86.9	83.6	-0.0079	0.2051	-51
-50	15.34	14.82	0.0123	2.9300	81.19	0.3413	-3.0	86.7	83.7	-0.0072	0.2049	-50
-49	15.75	15.22	0.0123	2.8580	81.08	0.3499	-2.7	86.6	83.9	-0.0065	0.2048	-49
-48	16.16	15.63	0.0123	2.7878	80.97	0.3587	-2.4	86.4	84.0	-0.0058	0.2046	-48
-47	16.59	16.05	0.0124	2.7196	80.87	0.3677	-2.1	86.3	84.2	-0.0050	0.2045	-47
-46	17.02	16.47	0.0124	2.6539	80.76	0.3768	-1.8	86.1	84.3	-0.0043	0.2044	-46
-45	17.47	16.91	0.0124	2.5900	80.65	0.3861	-1.5	86.0	84.5	-0.0036	0.2042	-45
-44	17.92	17.35	0.0124	2.5278	80.54	0.3956	-1.2	85.9	84.7	-0.0029	0.2041	-44
-43	18.38	17.80	0.0124	2.4673	80.43	0.4053	-0.9	85.7	84.8	-0.0022	0.2040	-43
-42	18.85	18.26	0.0124	2.4085	80.33	0.4152	-0.6	85.6	85.0	-0.0014	0.2038	-42
-41	19.33	18.73	0.0125	2.3518	80.22	0.4252	-0.3	85.4	85.1	-0.0007	0.2037	-41
-40	19.82	19.21	0.0125	2.2962	80.11	0.4355	0.0	85.3	85.3	0.0000	0.2036	-40
-39	20.32	19.70	0.0125	2.2427	80.00	0.4459	0.3	85.1	85.4	0.0007	0.2035	-39
-38	20.83	20.20	0.0125	2.1906	79.89	0.4565	0.6	85.0	85.6	0.0014	0.2033	-38
-37	21.35	20.71	0.0125	2.1400	79.78	0.4673	0.9	84.8	85.7	0.0022	0.2032	-37
-36	21.88	21.23	0.0126	2.0903	79.68	0.4784	1.2	84.7	85.9	0.0029	0.2031	-36
-35	22.42	21.76	0.0126	2.0425	79.57	0.4896	1.5	84.5	86.0	0.0036	0.2030	-35
-34	22.97	22.30	0.0126	1.9960	79.46	0.5010	1.8	84.4	86.2	0.0043	0.2029	-34
-33	23.53	22.85	0.0126	1.9505	79.35	0.5127	2.1	84.2	86.4	0.0050	0.2028	-33
-32	24.10	23.41	0.0126	1.9066	79.24	0.5245	2.6	83.9	86.5	0.0062	0.2027	-32
-31	24.68	23.98	0.0126	1.8636	79.13	0.5366	2.9	83.7	86.7	0.0069	0.2026	-31

Suva® 404A (HP62) Saturation Properties—Temperature Table

TEMP. °F	PRESSURE psia		VOLUME ft ³ /lb		DENSITY lb/ft ³		ENTHALPY Btu/lb			ENTROPY Btu/(lb)(°R)		TEMP. °F
	LIQUID	VAPOR	LIQUID	VAPOR	LIQUID	VAPOR	LIQUID	LATENT	VAPOR	LIQUID	VAPOR	
	pf	pg	vf	vg	1/vf	1/vg	hf	hfg	hg	sf	sg	
-30	25.27	24.56	0.0127	1.8222	79.02	0.5488	3.2	83.6	86.8	0.0076	0.2025	-30
-29	25.87	25.15	0.0127	1.7816	78.91	0.5613	3.5	83.4	87.0	0.0083	0.2024	-29
-28	26.48	25.75	0.0127	1.7422	78.80	0.5740	3.8	83.3	87.1	0.0090	0.2023	-28
-27	27.11	26.36	0.0127	1.7036	78.69	0.5870	4.2	83.1	87.3	0.0097	0.2022	-27
-26	27.74	26.99	0.0127	1.6664	78.58	0.6001	4.5	83.0	87.4	0.0104	0.2021	-26
-25	28.39	27.62	0.0127	1.6300	78.47	0.6135	4.8	82.8	87.6	0.0111	0.2020	-25
-24	29.04	28.27	0.0128	1.5946	78.36	0.6271	5.1	82.7	87.7	0.0118	0.2019	-24
-23	29.71	28.93	0.0128	1.5601	78.25	0.6410	5.9	82.0	87.9	0.0136	0.2018	-23
-22	30.39	29.60	0.0128	1.5267	78.14	0.6550	6.2	81.9	88.0	0.0143	0.2017	-22
-21	31.08	30.28	0.0128	1.4943	78.03	0.6692	6.5	81.7	88.2	0.0150	0.2016	-21
-20	31.78	30.97	0.0128	1.4626	77.92	0.6837	6.8	81.6	88.4	0.0157	0.2015	-20
-19	32.50	31.67	0.0129	1.4316	77.81	0.6985	7.1	81.4	88.5	0.0164	0.2015	-19
-18	33.22	32.39	0.0129	1.4015	77.70	0.7135	7.4	81.3	88.7	0.0170	0.2014	-18
-17	33.96	33.11	0.0129	1.3723	77.59	0.7287	7.7	81.1	88.8	0.0177	0.2013	-17
-16	34.71	33.85	0.0129	1.3437	77.48	0.7442	8.0	81.0	89.0	0.0184	0.2012	-16
-15	35.48	34.61	0.0129	1.3158	77.37	0.7600	8.3	80.8	89.1	0.0191	0.2011	-15
-14	36.25	35.37	0.0129	1.2885	77.26	0.7761	8.6	80.7	89.3	0.0198	0.2011	-14
-13	37.04	36.15	0.0130	1.2620	77.15	0.7924	8.9	80.5	89.4	0.0205	0.2010	-13
-12	37.85	36.95	0.0130	1.2362	77.03	0.8089	9.2	80.3	89.6	0.0211	0.2009	-12
-11	38.66	37.75	0.0130	1.2109	76.92	0.8258	9.5	80.2	89.7	0.0218	0.2008	-11
-10	39.49	38.57	0.0130	1.1864	76.81	0.8429	9.8	80.0	89.9	0.0225	0.2008	-10
-9	40.34	39.40	0.0130	1.1624	76.70	0.8603	10.1	79.9	90.0	0.0232	0.2007	-9
-8	41.20	40.25	0.0131	1.1390	76.59	0.8780	10.4	79.7	90.2	0.0239	0.2006	-8
-7	42.07	41.11	0.0131	1.1161	76.47	0.8960	10.8	79.5	90.3	0.0246	0.2006	-7
-6	42.95	41.98	0.0131	1.0937	76.36	0.9143	11.1	79.4	90.5	0.0252	0.2005	-6
-5	43.85	42.87	0.0131	1.0719	76.25	0.9329	11.4	79.2	90.6	0.0259	0.2004	-5
-4	44.77	43.78	0.0131	1.0506	76.14	0.9518	11.7	79.1	90.7	0.0266	0.2004	-4
-3	45.70	44.69	0.0132	1.0299	76.02	0.9710	12.0	78.9	90.9	0.0273	0.2003	-3
-2	46.64	45.63	0.0132	1.0096	75.91	0.9905	12.3	78.7	91.0	0.0280	0.2002	-2
-1	47.60	46.57	0.0132	0.9898	75.80	1.0103	12.6	78.6	91.2	0.0286	0.2002	-1
0	48.57	47.54	0.0132	0.9705	75.68	1.0304	12.9	78.4	91.3	0.0293	0.2001	0
1	49.56	48.51	0.0132	0.9516	75.57	1.0509	13.3	78.2	91.5	0.0300	0.2000	1
2	50.57	49.51	0.0133	0.9332	75.46	1.0716	13.6	78.0	91.6	0.0307	0.2000	2
3	51.59	50.51	0.0133	0.9152	75.34	1.0927	13.9	77.9	91.8	0.0314	0.1999	3
4	52.62	51.54	0.0133	0.8975	75.23	1.1142	14.2	77.7	91.9	0.0320	0.1999	4
5	53.67	52.58	0.0133	0.8803	75.11	1.1360	14.5	77.5	92.1	0.0327	0.1998	5
6	54.74	53.63	0.0133	0.8635	75.00	1.1581	14.9	77.4	92.2	0.0334	0.1998	6
7	55.82	54.70	0.0134	0.8470	74.88	1.1806	15.2	77.2	92.3	0.0341	0.1997	7
8	56.92	55.79	0.0134	0.8310	74.76	1.2034	15.5	77.0	92.5	0.0348	0.1996	8
9	58.04	56.90	0.0134	0.8153	74.65	1.2266	15.8	76.8	92.6	0.0354	0.1996	9
10	59.17	58.02	0.0134	0.7999	74.53	1.2501	16.1	76.6	92.8	0.0361	0.1995	10
11	60.32	59.16	0.0134	0.7849	74.42	1.2740	16.5	76.5	92.9	0.0368	0.1995	11
12	61.49	60.31	0.0135	0.7702	74.30	1.2983	16.8	76.3	93.1	0.0375	0.1994	12
13	62.67	61.48	0.0135	0.7559	74.18	1.3230	17.1	76.1	93.2	0.0382	0.1994	13
14	63.87	62.67	0.0135	0.7418	74.06	1.3480	17.4	75.9	93.3	0.0388	0.1993	14
15	65.09	63.88	0.0135	0.7281	73.95	1.3734	17.8	75.7	93.5	0.0395	0.1993	15
16	66.33	65.10	0.0135	0.7146	73.83	1.3993	18.1	75.6	93.6	0.0402	0.1992	16
17	67.58	66.34	0.0136	0.7015	73.71	1.4255	18.4	75.4	93.8	0.0409	0.1992	17
18	68.85	67.60	0.0136	0.6887	73.59	1.4521	18.7	75.2	93.9	0.0416	0.1991	18
19	70.14	68.88	0.0136	0.6761	73.47	1.4791	19.1	75.0	94.0	0.0422	0.1991	19
20	71.45	70.18	0.0136	0.6637	73.35	1.5066	19.4	74.8	94.2	0.0429	0.1990	20
21	72.78	71.49	0.0137	0.6517	73.23	1.5344	19.7	74.6	94.3	0.0436	0.1990	21
22	74.12	72.82	0.0137	0.6399	73.11	1.5627	20.1	74.4	94.5	0.0443	0.1990	22
23	75.49	74.18	0.0137	0.6284	72.99	1.5914	20.4	74.2	94.6	0.0450	0.1989	23
24	76.87	75.55	0.0137	0.6171	72.87	1.6206	20.7	74.0	94.7	0.0456	0.1989	24
25	78.27	76.94	0.0137	0.6060	72.75	1.6502	21.0	73.8	94.9	0.0463	0.1988	25
26	79.69	78.35	0.0138	0.5952	72.63	1.6802	21.4	73.6	95.0	0.0470	0.1988	26
27	81.13	79.78	0.0138	0.5845	72.50	1.7108	21.7	73.4	95.1	0.0477	0.1987	27
28	82.60	81.22	0.0138	0.5742	72.38	1.7417	22.1	73.2	95.3	0.0484	0.1987	28
29	84.08	82.69	0.0138	0.5640	72.26	1.7732	22.4	73.0	95.4	0.0490	0.1987	29

Suva® 404A (HP62) Saturation Properties—Temperature Table

TEMP. °F	PRESSURE psia		VOLUME ft ³ /lb		DENSITY lb/ft ³		ENTHALPY Btu/lb			ENTROPY Btu/(lb)(°R)		TEMP. °F
	LIQUID	VAPOR	LIQUID	VAPOR	LIQUID	VAPOR	LIQUID	LATENT	VAPOR	LIQUID	VAPOR	
	pf	pg	vf	vg	1/vf	1/vg	hf	hfg	hg	sf	sg	
30	85.58	84.18	0.0139	0.5540	72.13	1.8051	22.7	72.8	95.5	0.0497	0.1986	30
31	87.10	85.69	0.0139	0.5442	72.01	1.8375	23.1	72.6	95.7	0.0504	0.1986	31
32	88.64	87.22	0.0139	0.5347	71.88	1.8703	23.4	72.4	95.8	0.0511	0.1985	32
33	90.20	88.77	0.0139	0.5253	71.76	1.9037	23.7	72.2	95.9	0.0518	0.1985	33
34	91.78	90.34	0.0140	0.5161	71.63	1.9376	24.1	72.0	96.1	0.0525	0.1984	34
35	93.38	91.93	0.0140	0.5071	71.51	1.9720	24.4	71.8	96.2	0.0531	0.1984	35
36	95.01	93.54	0.0140	0.4983	71.38	2.0069	24.8	71.6	96.3	0.0538	0.1984	36
37	96.65	95.17	0.0140	0.4896	71.25	2.0423	25.1	71.4	96.5	0.0545	0.1983	37
38	98.32	96.83	0.0141	0.4812	71.12	2.0783	25.5	71.1	96.6	0.0552	0.1983	38
39	100.01	98.51	0.0141	0.4729	70.99	2.1148	25.8	70.9	96.7	0.0559	0.1982	39
40	101.72	100.20	0.0141	0.4647	70.86	2.1518	26.1	70.7	96.8	0.0566	0.1982	40
41	103.45	101.92	0.0141	0.4567	70.73	2.1894	26.5	70.5	97.0	0.0572	0.1982	41
42	105.20	103.67	0.0142	0.4489	70.60	2.2276	26.8	70.3	97.1	0.0579	0.1981	42
43	106.98	105.43	0.0142	0.4412	70.47	2.2664	27.2	70.0	97.2	0.0586	0.1981	43
44	108.78	107.22	0.0142	0.4337	70.34	2.3057	27.5	69.8	97.4	0.0593	0.1980	44
45	110.60	109.03	0.0142	0.4263	70.20	2.3456	27.9	69.6	97.5	0.0600	0.1980	45
46	112.45	110.86	0.0143	0.4191	70.07	2.3861	28.2	69.4	97.6	0.0607	0.1980	46
47	114.31	112.72	0.0143	0.4120	69.94	2.4273	28.6	69.1	97.7	0.0614	0.1979	47
48	116.20	114.60	0.0143	0.4050	69.80	2.4690	29.0	68.9	97.8	0.0620	0.1979	48
49	118.12	116.50	0.0144	0.3982	69.67	2.5114	29.3	68.7	98.0	0.0627	0.1978	49
50	120.06	118.43	0.0144	0.3915	69.53	2.5544	29.7	68.4	98.1	0.0634	0.1978	50
51	122.02	120.38	0.0144	0.3849	69.39	2.5980	30.0	68.2	98.2	0.0641	0.1978	51
52	124.00	122.35	0.0144	0.3784	69.25	2.6424	30.4	67.9	98.3	0.0648	0.1977	52
53	126.02	124.35	0.0145	0.3721	69.11	2.6873	30.7	67.7	98.4	0.0655	0.1977	53
54	128.05	126.37	0.0145	0.3659	68.97	2.7330	31.1	67.5	98.6	0.0662	0.1976	54
55	130.11	128.42	0.0145	0.3598	68.83	2.7794	31.5	67.2	98.7	0.0669	0.1976	55
56	132.19	130.49	0.0146	0.3538	68.69	2.8264	31.8	67.0	98.8	0.0676	0.1976	56
57	134.30	132.59	0.0146	0.3479	68.55	2.8742	32.2	66.7	98.9	0.0683	0.1975	57
58	136.44	134.71	0.0146	0.3421	68.40	2.9227	32.5	66.5	99.0	0.0689	0.1975	58
59	138.59	136.86	0.0147	0.3365	68.26	2.9719	32.9	66.2	99.1	0.0696	0.1974	59
60	140.78	139.04	0.0147	0.3309	68.11	3.0219	33.3	66.0	99.2	0.0703	0.1974	60
61	142.99	141.24	0.0147	0.3255	67.96	3.0726	33.6	65.7	99.4	0.0710	0.1974	61
62	145.23	143.46	0.0147	0.3201	67.82	3.1241	34.0	65.5	99.5	0.0717	0.1973	62
63	147.49	145.71	0.0148	0.3148	67.67	3.1764	34.4	65.2	99.6	0.0724	0.1973	63
64	149.78	147.99	0.0148	0.3096	67.52	3.2295	34.8	64.9	99.7	0.0731	0.1972	64
65	152.09	150.30	0.0148	0.3046	67.36	3.2834	35.1	64.7	99.8	0.0738	0.1972	65
66	154.44	152.63	0.0149	0.2996	67.21	3.3382	35.5	64.4	99.9	0.0745	0.1971	66
67	156.81	154.99	0.0149	0.2947	67.06	3.3938	35.9	64.1	100.0	0.0752	0.1971	67
68	159.20	157.38	0.0149	0.2898	66.90	3.4502	36.3	63.9	100.1	0.0759	0.1970	68
69	161.63	159.79	0.0150	0.2851	66.75	3.5075	36.6	63.6	100.2	0.0766	0.1970	69
70	164.08	162.23	0.0150	0.2804	66.59	3.5657	37.0	63.3	100.3	0.0773	0.1969	70
71	166.56	164.70	0.0151	0.2759	66.43	3.6248	37.4	63.0	100.4	0.0780	0.1969	71
72	169.06	167.20	0.0151	0.2714	66.27	3.6849	37.8	62.7	100.5	0.0787	0.1969	72
73	171.60	169.72	0.0151	0.2670	66.11	3.7459	38.2	62.5	100.6	0.0794	0.1968	73
74	174.16	172.28	0.0152	0.2626	65.95	3.8078	38.5	62.2	100.7	0.0801	0.1968	74
75	176.75	174.86	0.0152	0.2584	65.78	3.8707	38.9	61.9	100.8	0.0808	0.1967	75
76	179.37	177.47	0.0152	0.2542	65.61	3.9346	39.3	61.6	100.9	0.0816	0.1966	76
77	182.02	180.11	0.0153	0.2500	65.45	3.9995	39.7	61.3	101.0	0.0823	0.1966	77
78	184.70	182.78	0.0153	0.2460	65.28	4.0655	40.1	61.0	101.1	0.0830	0.1965	78
79	187.41	185.48	0.0154	0.2420	65.11	4.1325	40.5	60.7	101.2	0.0837	0.1965	79
80	190.15	188.21	0.0154	0.2381	64.94	4.2005	40.9	60.4	101.3	0.0844	0.1964	80
81	192.92	190.97	0.0154	0.2342	64.76	4.2697	41.3	60.1	101.4	0.0851	0.1964	81
82	195.72	193.76	0.0155	0.2304	64.59	4.3400	41.7	59.8	101.5	0.0858	0.1963	82
83	198.54	196.58	0.0155	0.2267	64.41	4.4114	42.1	59.5	101.5	0.0866	0.1963	83
84	201.40	199.43	0.0156	0.2230	64.23	4.4840	42.5	59.2	101.6	0.0873	0.1962	84
85	204.29	202.31	0.0156	0.2194	64.05	4.5578	42.9	58.9	101.7	0.0880	0.1961	85
86	207.21	205.23	0.0157	0.2159	63.87	4.6328	43.3	58.5	101.8	0.0887	0.1961	86
87	210.16	208.17	0.0157	0.2124	63.69	4.7090	43.7	58.2	101.9	0.0894	0.1960	87
88	213.15	211.15	0.0157	0.2089	63.50	4.7865	44.1	57.9	102.0	0.0902	0.1959	88
89	216.16	214.15	0.0158	0.2055	63.31	4.8653	44.5	57.6	102.0	0.0909	0.1959	89

Suva® 404A (HP62) Saturation Properties—Temperature Table

TEMP. °F	PRESSURE psia		VOLUME ft ³ /lb		DENSITY lb/ft ³		ENTHALPY Btu/lb			ENTROPY Btu/(lb)(°R)		TEMP. °F
	LIQUID	VAPOR	LIQUID	VAPOR	LIQUID	VAPOR	LIQUID	LATENT	VAPOR	LIQUID	VAPOR	
	pf	pg	vf	vg	1/vf	1/vg	hf	hfg	hg	sf	sg	
90	219.21	217.19	0.0158	0.2022	63.12	4.9454	44.9	57.2	102.1	0.0916	0.1958	90
91	222.28	220.26	0.0159	0.1989	62.93	5.0268	45.3	56.9	102.2	0.0923	0.1957	91
92	225.39	223.37	0.0159	0.1957	62.74	5.1097	45.7	56.5	102.3	0.0931	0.1957	92
93	228.53	226.50	0.0160	0.1925	62.54	5.1939	46.1	56.2	102.3	0.0938	0.1956	93
94	231.71	229.67	0.0160	0.1894	62.34	5.2796	46.6	55.9	102.4	0.0945	0.1955	94
95	234.92	232.87	0.0161	0.1863	62.14	5.3668	47.0	55.5	102.5	0.0953	0.1954	95
96	238.16	236.11	0.0161	0.1833	61.94	5.4555	47.4	55.1	102.5	0.0960	0.1953	96
97	241.43	239.38	0.0162	0.1803	61.73	5.5458	47.8	54.8	102.6	0.0968	0.1953	97
98	244.74	242.68	0.0163	0.1774	61.53	5.6376	48.2	54.4	102.7	0.0975	0.1952	98
99	248.08	246.02	0.0163	0.1745	61.32	5.7311	48.7	54.1	102.7	0.0982	0.1951	99
100	251.46	249.39	0.0164	0.1716	61.10	5.8262	49.1	53.7	102.8	0.0990	0.1950	100
101	254.87	252.80	0.0164	0.1688	60.89	5.9231	49.5	53.3	102.8	0.0997	0.1949	101
102	258.31	256.24	0.0165	0.1661	60.67	6.0217	50.0	52.9	102.9	0.1005	0.1948	102
103	261.79	259.71	0.0165	0.1633	60.45	6.1221	50.4	52.6	103.0	0.1013	0.1947	103
104	265.30	263.22	0.0166	0.1607	60.23	6.2243	50.8	52.2	103.0	0.1020	0.1946	104
105	268.85	266.77	0.0167	0.1580	60.00	6.3285	51.3	51.8	103.1	0.1028	0.1945	105
106	272.43	270.35	0.0167	0.1554	59.77	6.4346	51.7	51.4	103.1	0.1035	0.1944	106
107	276.05	273.97	0.0168	0.1528	59.54	6.5427	52.2	51.0	103.1	0.1043	0.1943	107
108	279.71	277.62	0.0169	0.1503	59.31	6.6529	52.6	50.6	103.2	0.1051	0.1942	108
109	283.40	281.31	0.0169	0.1478	59.07	6.7652	53.1	50.2	103.2	0.1058	0.1941	109
110	287.13	285.04	0.0170	0.1454	58.83	6.8797	53.5	49.7	103.3	0.1066	0.1940	110
111	290.89	288.80	0.0171	0.1429	58.58	6.9965	54.0	49.3	103.3	0.1074	0.1939	111
112	294.69	292.60	0.0171	0.1405	58.34	7.1156	54.4	48.9	103.3	0.1082	0.1938	112
113	298.53	296.44	0.0172	0.1382	58.08	7.2370	54.9	48.5	103.4	0.1090	0.1936	113
114	302.40	300.32	0.0173	0.1359	57.83	7.3610	55.4	48.0	103.4	0.1097	0.1935	114
115	306.32	304.23	0.0174	0.1336	57.57	7.4874	55.8	47.6	103.4	0.1105	0.1934	115
116	310.27	308.18	0.0174	0.1313	57.31	7.6166	56.3	47.1	103.4	0.1113	0.1932	116
117	314.26	312.17	0.0175	0.1291	57.04	7.7484	56.8	46.7	103.4	0.1121	0.1931	117
118	318.28	316.20	0.0176	0.1269	56.77	7.8830	57.2	46.2	103.5	0.1129	0.1930	118
119	322.35	320.27	0.0177	0.1247	56.50	8.0206	57.7	45.7	103.5	0.1137	0.1928	119
120	326.45	324.38	0.0178	0.1225	56.22	8.1611	58.2	45.3	103.5	0.1146	0.1927	120
121	330.59	328.52	0.0179	0.1204	55.94	8.3048	58.7	44.8	103.5	0.1154	0.1925	121
122	334.77	332.71	0.0180	0.1183	55.65	8.4517	59.2	44.3	103.5	0.1162	0.1924	122
123	338.99	336.94	0.0181	0.1163	55.36	8.6020	59.7	43.8	103.5	0.1170	0.1922	123
124	343.25	341.20	0.0182	0.1142	55.06	8.7558	60.2	43.3	103.5	0.1178	0.1920	124
125	347.55	345.51	0.0183	0.1122	54.76	8.9132	60.7	42.7	103.4	0.1187	0.1918	125
126	351.89	349.86	0.0184	0.1102	54.46	9.0743	61.2	42.2	103.4	0.1195	0.1917	126
127	356.27	354.25	0.0185	0.1082	54.14	9.2395	61.7	41.7	103.4	0.1204	0.1915	127
128	360.69	358.68	0.0186	0.1063	53.83	9.4087	62.2	41.1	103.4	0.1212	0.1913	128
129	365.16	363.15	0.0187	0.1044	53.50	9.5822	62.8	40.6	103.4	0.1221	0.1911	129
130	369.66	367.67	0.0188	0.1025	53.18	9.7602	63.3	40.0	103.3	0.1230	0.1909	130
131	374.20	372.22	0.0189	0.1006	52.84	9.9429	63.8	39.4	103.3	0.1238	0.1907	131
132	378.79	376.82	0.0190	0.0987	52.50	10.1305	64.4	38.9	103.2	0.1247	0.1904	132
133	383.42	381.46	0.0192	0.0969	52.15	10.3233	64.9	38.3	103.2	0.1256	0.1902	133
134	388.09	386.15	0.0193	0.0950	51.80	10.5215	65.5	37.7	103.1	0.1265	0.1900	134
135	392.80	390.88	0.0194	0.0932	51.43	10.7254	66.0	37.0	103.1	0.1274	0.1897	135
136	397.55	395.65	0.0196	0.0914	51.07	10.9354	66.6	36.4	103.0	0.1283	0.1895	136
137	402.35	400.47	0.0197	0.0897	50.69	11.1517	67.2	35.7	102.9	0.1293	0.1892	137
138	407.19	405.33	0.0199	0.0879	50.30	11.3748	67.7	35.1	102.8	0.1302	0.1889	138
139	412.07	410.23	0.0200	0.0862	49.91	11.6051	68.3	34.4	102.7	0.1311	0.1886	139
140	417.00	415.18	0.0202	0.0844	49.50	11.8430	68.9	33.7	102.6	0.1321	0.1883	140
141	421.97	420.18	0.0204	0.0827	49.09	12.0890	69.5	33.0	102.5	0.1331	0.1880	141
142	426.99	425.22	0.0205	0.0810	48.66	12.3438	70.1	32.3	102.4	0.1341	0.1877	142
143	432.05	430.30	0.0207	0.0793	48.23	12.6079	70.8	31.5	102.3	0.1351	0.1874	143
144	437.15	435.44	0.0209	0.0776	47.78	12.8822	71.4	30.7	102.1	0.1361	0.1870	144
145	442.30	440.62	0.0211	0.0759	47.32	13.1673	72.1	29.9	102.0	0.1371	0.1866	145
146	447.49	445.84	0.0213	0.0743	46.85	13.4642	72.7	29.1	101.8	0.1382	0.1862	146
147	452.73	451.12	0.0216	0.0726	46.36	13.7741	73.4	28.2	101.6	0.1393	0.1858	147
148	458.01	456.44	0.0218	0.0709	45.86	14.0981	74.1	27.4	101.4	0.1403	0.1854	148
149	463.34	461.81	0.0221	0.0693	45.33	14.4378	74.8	26.4	101.2	0.1415	0.1849	149
150	468.72	467.23	0.0223	0.0676	44.79	14.7948	75.5	25.5	101.0	0.1426	0.1844	150

Suva® 404A (HP62) Superheated Vapor—Constant Pressure Tables

V = Volume in ft³/lb H = Enthalpy in Btu/lb S = Entropy in Btu/(lb) (°R) (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, psia													
TEMP. °F	1.00			2.00			3.00			4.00			TEMP. °F
	(-128.54°F)			(-111.88°F)			(-101.17°F)			(-93.08°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(36.2565)	(71.6)	(0.2261)	(18.9797)	(74.1)	(0.2195)	(13.0054)	(75.7)	(0.2160)	(9.9475)	(77.0)	(0.2136)	
-100	39.4132	76.1	0.2391	19.6402	76.0	0.2249	13.0490	75.9	0.2165	—	—	—	-100
-90	40.5185	77.7	0.2436	20.1958	77.6	0.2293	13.4214	77.6	0.2210	10.0340	77.5	0.2150	-90
-80	41.6234	79.3	0.2480	20.7511	79.3	0.2338	13.7934	79.2	0.2254	10.3145	79.2	0.2195	-80
-70	42.7281	81.0	0.2524	21.3060	81.0	0.2382	14.1651	80.9	0.2298	10.5946	80.9	0.2239	-70
-60	43.8324	82.7	0.2567	21.8606	82.7	0.2425	14.5365	82.6	0.2341	10.8744	82.6	0.2282	-60
-50	44.9365	84.5	0.2610	22.4150	84.4	0.2468	14.9077	84.4	0.2385	11.1539	84.3	0.2325	-50
-40	46.0403	86.3	0.2652	22.9691	86.2	0.2511	15.2785	86.1	0.2427	11.4332	86.1	0.2368	-40
-30	47.1438	88.0	0.2695	23.5229	88.0	0.2553	15.6492	87.9	0.2470	11.7122	87.9	0.2410	-30
-20	48.2472	89.9	0.2737	24.0765	89.8	0.2595	16.0195	89.8	0.2512	11.9910	89.7	0.2452	-20
-10	49.3503	91.7	0.2778	24.6299	91.7	0.2636	16.3897	91.6	0.2553	12.2695	91.6	0.2494	-10
0	50.4533	93.6	0.2819	25.1831	93.5	0.2678	16.7597	93.5	0.2594	12.5479	93.4	0.2535	0
10	51.5560	95.5	0.2860	25.7362	95.4	0.2718	17.1295	95.4	0.2635	12.8261	95.3	0.2576	10
20	52.6587	97.4	0.2901	26.2891	97.4	0.2759	17.4992	97.3	0.2676	13.1042	97.3	0.2617	20
30	53.7611	99.4	0.2941	26.8418	99.3	0.2799	17.8687	99.3	0.2716	13.3820	99.2	0.2657	30
40	54.8635	101.3	0.2981	27.3944	101.3	0.2839	18.2380	101.3	0.2756	13.6598	101.2	0.2697	40
50	55.9657	103.3	0.3020	27.9469	103.3	0.2879	18.6072	103.3	0.2796	13.9374	103.2	0.2737	50
60	57.0677	105.4	0.3060	28.4992	105.3	0.2918	18.9763	105.3	0.2835	14.2149	105.2	0.2776	60
70	58.1697	107.4	0.3099	29.0515	107.4	0.2957	19.3453	107.3	0.2874	14.4923	107.3	0.2815	70
80	59.2716	109.5	0.3138	29.6036	109.4	0.2996	19.7142	109.4	0.2913	14.7695	109.4	0.2854	80
90	60.3733	111.6	0.3176	30.1556	111.6	0.3035	20.0830	111.5	0.2952	15.0467	111.5	0.2893	90
100	61.4750	113.7	0.3215	30.7075	113.7	0.3073	20.4517	113.6	0.2990	15.3237	113.6	0.2931	100
110	62.5766	115.9	0.3253	31.2593	115.8	0.3111	20.8203	115.8	0.3028	15.6007	115.8	0.2969	110
120	63.6780	118.0	0.3291	31.8111	118.0	0.3149	21.1888	118.0	0.3066	15.8776	117.9	0.3007	120
130	64.7794	120.2	0.3328	32.3628	120.2	0.3187	21.5572	120.2	0.3104	16.1544	120.1	0.3045	130
140	65.8808	122.4	0.3365	32.9144	122.4	0.3224	21.9255	122.4	0.3141	16.4311	122.4	0.3082	140
150	66.9820	124.7	0.3403	33.4659	124.7	0.3261	22.2938	124.6	0.3178	16.7078	124.6	0.3119	150
160	68.0832	127.0	0.3439	34.0173	126.9	0.3298	22.6620	126.9	0.3215	16.9843	126.9	0.3156	160
170	69.1844	129.3	0.3476	34.5687	129.2	0.3335	23.0302	129.2	0.3252	17.2609	129.2	0.3193	170
180	70.2854	131.6	0.3513	35.1200	131.5	0.3371	23.3982	131.5	0.3288	17.5373	131.5	0.3229	180
190	71.3864	133.9	0.3549	35.6713	133.9	0.3407	23.7663	133.8	0.3325	17.8137	133.8	0.3266	190
200	72.4874	136.3	0.3585	36.2225	136.2	0.3443	24.1342	136.2	0.3361	18.0901	136.2	0.3302	200
210	—	—	—	—	—	—	—	—	—	18.3664	138.6	0.3338	210

TEMP. °F	5.00			6.00			7.00			8.00			TEMP. °F
	(-86.50°F)			(-80.92°F)			(-76.04°F)			(-71.69°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(8.0804)	(78.0)	(0.2119)	(6.8179)	(78.9)	(0.2106)	(5.9054)	(79.7)	(0.2095)	(5.2140)	(80.3)	(0.2086)	
-80	8.2269	79.1	0.2148	6.8352	79.0	0.2110	—	—	—	—	—	—	-80
-70	8.4521	80.8	0.2192	7.0237	80.7	0.2154	6.0034	80.7	0.2122	5.2381	80.6	0.2094	-70
-60	8.6770	82.5	0.2236	7.2120	82.5	0.2198	6.1655	82.4	0.2165	5.3806	82.4	0.2137	-60
-50	8.9016	84.3	0.2279	7.4000	84.2	0.2241	6.3273	84.2	0.2209	5.5228	84.1	0.2181	-50
-40	9.1259	86.0	0.2322	7.5877	86.0	0.2284	6.4888	85.9	0.2252	5.6647	85.9	0.2224	-40
-30	9.3500	87.8	0.2364	7.7751	87.8	0.2326	6.6501	87.7	0.2294	5.8064	87.7	0.2266	-30
-20	9.5738	89.7	0.2406	7.9623	89.6	0.2368	6.8112	89.6	0.2336	5.9478	89.5	0.2308	-20
-10	9.7974	91.5	0.2448	8.1493	91.5	0.2410	6.9720	91.4	0.2378	6.0890	91.4	0.2350	-10
0	10.0208	93.4	0.2489	8.3360	93.4	0.2451	7.1326	93.3	0.2419	6.2300	93.3	0.2391	0
10	10.2440	95.3	0.2530	8.5226	95.3	0.2492	7.2930	95.2	0.2460	6.3708	95.2	0.2433	10
20	10.4671	97.2	0.2571	8.7091	97.2	0.2533	7.4533	97.1	0.2501	6.5114	97.1	0.2473	20
30	10.6900	99.2	0.2611	8.8953	99.1	0.2573	7.6134	99.1	0.2541	6.6519	99.1	0.2514	30
40	10.9128	101.2	0.2651	9.0815	101.1	0.2613	7.7734	101.1	0.2582	6.7923	101.1	0.2554	40
50	11.1355	103.2	0.2691	9.2675	103.1	0.2653	7.9332	103.1	0.2621	6.9325	103.1	0.2594	50
60	11.3580	105.2	0.2730	9.4534	105.2	0.2693	8.0929	105.1	0.2661	7.0725	105.1	0.2633	60
70	11.5804	107.3	0.2769	9.6391	107.2	0.2732	8.2525	107.2	0.2700	7.2125	107.2	0.2672	70
80	11.8027	109.3	0.2808	9.8248	109.3	0.2771	8.4120	109.3	0.2739	7.3523	109.2	0.2711	80
90	12.0249	111.4	0.2847	10.0103	111.4	0.2809	8.5713	111.4	0.2778	7.4921	111.3	0.2750	90
100	12.2470	113.6	0.2885	10.1958	113.5	0.2848	8.7306	113.5	0.2816	7.6317	113.5	0.2789	100
110	12.4690	115.7	0.2924	10.3811	115.7	0.2886	8.8898	115.7	0.2854	7.7713	115.6	0.2827	110
120	12.6909	117.9	0.2961	10.5664	117.9	0.2924	9.0489	117.8	0.2892	7.9107	117.8	0.2865	120
130	12.9127	120.1	0.2999	10.7516	120.1	0.2962	9.2079	120.0	0.2930	8.0501	120.0	0.2902	130
140	13.1345	122.3	0.3036	10.9367	122.3	0.2999	9.3668	122.3	0.2967	8.1894	122.2	0.2940	140
150	13.3561	124.6	0.3074	11.1217	124.5	0.3036	9.5257	124.5	0.3004	8.3287	124.5	0.2977	150
160	13.5777	126.8	0.3111	11.3067	126.8	0.3073	9.6845	126.8	0.3041	8.4678	126.8	0.3014	160
170	13.7993	129.1	0.3147	11.4916	129.1	0.3110	9.8432	129.1	0.3078	8.6069	129.1	0.3051	170
180	14.0208	131.5	0.3184	11.6764	131.4	0.3146	10.0018	131.4	0.3115	8.7459	131.4	0.3087	180
190	14.2422	133.8	0.3220	11.8612	133.8	0.3183	10.1605	133.7	0.3151	8.8849	133.7	0.3123	190
200	14.4636	136.2	0.3256	12.0459	136.1	0.3219	10.3190	136.1	0.3187	9.0238	136.1	0.3160	200
210	14.6849	138.5	0.3292	12.2306	138.5	0.3254	10.4775	138.5	0.3223	9.1627	138.5	0.3195	210
220	14.9062	140.9	0.3327	12.4152	140.9	0.3290	10.6359	140.9	0.3258	9.3015	140.9	0.3231	220
230	—	—	—	—	—	—	10.7943	143.3	0.3294	9.4402	143.3	0.3266	230

Suva® 404A (HP62) Superheated Vapor—Constant Pressure Tables

V = Volume in ft³/lb H = Enthalpy in Btu/lb S = Entropy in Btu/(lb) (°R) (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, psia

TEMP. °F	9.00			10.00			11.00			12.00			TEMP. °F
	(-67.75°F)			(-64.15°F)			(-60.83°F)			(-57.74°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(4.6714)	(81.0)	(0.2078)	(4.2337)	(81.5)	(0.2072)	(3.8730)	(82.0)	(0.2066)	(3.5705)	(82.5)	(0.2061)	
-60	4.7700	82.3	0.2112	4.2815	82.2	0.2090	3.8818	82.2	0.2070	—	—	—	-60
-50	4.8970	84.0	0.2156	4.3963	84.0	0.2134	3.9866	83.9	0.2113	3.6451	83.9	0.2095	-50
-40	5.0236	85.8	0.2199	4.5108	85.8	0.2177	4.0911	85.7	0.2156	3.7414	85.7	0.2138	-40
-30	5.1501	87.6	0.2241	4.6250	87.6	0.2219	4.1954	87.5	0.2199	3.8373	87.5	0.2180	-30
-20	5.2762	89.5	0.2284	4.7390	89.4	0.2261	4.2994	89.4	0.2241	3.9330	89.3	0.2223	-20
-10	5.4022	91.3	0.2325	4.8527	91.3	0.2303	4.4031	91.2	0.2283	4.0284	91.2	0.2265	-10
0	5.5279	93.2	0.2367	4.9662	93.2	0.2345	4.5067	93.1	0.2325	4.1237	93.1	0.2306	0
10	5.6535	95.1	0.2408	5.0796	95.1	0.2386	4.6100	95.0	0.2366	4.2187	95.0	0.2348	10
20	5.7788	97.1	0.2449	5.1928	97.0	0.2427	4.7132	97.0	0.2407	4.3136	96.9	0.2388	20
30	5.9041	99.0	0.2489	5.3058	99.0	0.2467	4.8163	98.9	0.2447	4.4083	98.9	0.2429	30
40	6.0292	101.0	0.2529	5.4187	101.0	0.2507	4.9192	100.9	0.2487	4.5029	100.9	0.2469	40
50	6.1541	103.0	0.2569	5.5314	103.0	0.2547	5.0219	102.9	0.2527	4.5973	102.9	0.2509	50
60	6.2789	105.1	0.2609	5.6440	105.0	0.2587	5.1245	105.0	0.2567	4.6916	104.9	0.2549	60
70	6.4036	107.1	0.2648	5.7565	107.1	0.2626	5.2270	107.0	0.2606	4.7858	107.0	0.2588	70
80	6.5282	109.2	0.2687	5.8689	109.2	0.2665	5.3294	109.1	0.2645	4.8798	109.1	0.2627	80
90	6.6527	111.3	0.2726	5.9811	111.3	0.2704	5.4317	111.2	0.2684	4.9738	111.2	0.2666	90
100	6.7770	113.4	0.2764	6.0933	113.4	0.2742	5.5338	113.4	0.2722	5.0676	113.3	0.2704	100
110	6.9013	115.6	0.2802	6.2054	115.6	0.2781	5.6359	115.5	0.2761	5.1614	115.5	0.2743	110
120	7.0255	117.8	0.2840	6.3173	117.7	0.2818	5.7379	117.7	0.2799	5.2551	117.7	0.2781	120
130	7.1496	120.0	0.2878	6.4292	120.0	0.2856	5.8398	119.9	0.2836	5.3486	119.9	0.2818	130
140	7.2737	122.2	0.2915	6.5411	122.2	0.2894	5.9417	122.2	0.2874	5.4421	122.1	0.2856	140
150	7.3976	124.5	0.2953	6.6528	124.4	0.2931	6.0434	124.4	0.2911	5.5356	124.4	0.2893	150
160	7.5215	126.7	0.2990	6.7645	126.7	0.2968	6.1451	126.7	0.2948	5.6289	126.6	0.2930	160
170	7.6453	129.0	0.3026	6.8761	129.0	0.3005	6.2467	129.0	0.2985	5.7222	128.9	0.2967	170
180	7.7691	131.3	0.3063	6.9876	131.3	0.3041	6.3483	131.3	0.3021	5.8154	131.3	0.3003	180
190	7.8928	133.7	0.3099	7.0991	133.7	0.3077	6.4497	133.6	0.3058	5.9086	133.6	0.3040	190
200	8.0164	136.1	0.3135	7.2106	136.0	0.3114	6.5512	136.0	0.3094	6.0017	136.0	0.3076	200
210	8.1400	138.4	0.3171	7.3219	138.4	0.3149	6.6526	138.4	0.3130	6.0948	138.4	0.3112	210
220	8.2636	140.8	0.3207	7.4332	140.8	0.3185	6.7539	140.8	0.3165	6.1878	140.8	0.3147	220
230	8.3871	143.3	0.3242	7.5445	143.2	0.3221	6.8552	143.2	0.3201	6.2807	143.2	0.3183	230
240	8.5105	145.7	0.3277	7.6558	145.7	0.3256	6.9564	145.7	0.3236	6.3736	145.6	0.3218	240
250	—	—	—	—	—	—	—	—	—	6.4665	148.1	0.3253	250

TEMP. °F	13.00			14.00			14.696			15.00			TEMP. °F
	(-54.85°F)			(-52.12°F)			(-50.32°F)			(-49.55°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(3.3128)	(83.0)	(0.2056)	(3.0908)	(83.4)	(0.2052)	(2.9534)	(83.7)	(0.2050)	(2.8973)	(83.8)	(0.2049)	
-50	3.3562	83.8	0.2077	3.1085	83.8	0.2061	2.9559	83.7	0.2051	—	—	—	-50
-40	3.4454	85.6	0.2121	3.1917	85.6	0.2105	3.0354	85.5	0.2094	2.9717	85.5	0.2090	-40
-30	3.5343	87.4	0.2163	3.2746	87.4	0.2148	3.1146	87.3	0.2137	3.0494	87.3	0.2133	-30
-20	3.6230	89.3	0.2206	3.3572	89.2	0.2190	3.1936	89.2	0.2180	3.1268	89.2	0.2175	-20
-10	3.7114	91.1	0.2248	3.4396	91.1	0.2232	3.2722	91.1	0.2222	3.2040	91.0	0.2217	-10
0	3.7996	93.0	0.2289	3.5218	93.0	0.2274	3.3507	93.0	0.2263	3.2810	92.9	0.2259	0
10	3.8876	95.0	0.2331	3.6038	94.9	0.2315	3.4290	94.9	0.2305	3.3578	94.9	0.2300	10
20	3.9754	96.9	0.2372	3.6856	96.8	0.2356	3.5071	96.8	0.2346	3.4343	96.8	0.2341	20
30	4.0631	98.9	0.2412	3.7672	98.8	0.2396	3.5850	98.8	0.2386	3.5108	98.8	0.2382	30
40	4.1506	100.8	0.2452	3.8487	100.8	0.2437	3.6628	100.8	0.2426	3.5870	100.8	0.2422	40
50	4.2380	102.9	0.2492	3.9301	102.8	0.2477	3.7405	102.8	0.2466	3.6632	102.8	0.2462	50
60	4.3253	104.9	0.2532	4.0113	104.9	0.2516	3.8180	104.8	0.2506	3.7392	104.8	0.2502	60
70	4.4124	107.0	0.2571	4.0924	106.9	0.2556	3.8953	106.9	0.2546	3.8150	106.9	0.2541	70
80	4.4994	109.1	0.2610	4.1734	109.0	0.2595	3.9726	109.0	0.2585	3.8908	109.0	0.2580	80
90	4.5863	111.2	0.2649	4.2542	111.1	0.2634	4.0498	111.1	0.2623	3.9664	111.1	0.2619	90
100	4.6731	113.3	0.2688	4.3350	113.3	0.2672	4.1268	113.3	0.2662	4.0420	113.2	0.2658	100
110	4.7599	115.5	0.2726	4.4157	115.4	0.2710	4.2038	115.4	0.2700	4.1174	115.4	0.2696	110
120	4.8465	117.7	0.2764	4.4963	117.6	0.2748	4.2806	117.6	0.2738	4.1927	117.6	0.2734	120
130	4.9330	119.9	0.2802	4.5768	119.8	0.2786	4.3574	119.8	0.2776	4.2680	119.8	0.2772	130
140	5.0195	122.1	0.2839	4.6572	122.1	0.2824	4.4341	122.0	0.2814	4.3432	122.0	0.2809	140
150	5.1059	124.3	0.2876	4.7375	124.3	0.2861	4.5108	124.3	0.2851	4.4183	124.3	0.2847	150
160	5.1922	126.6	0.2913	4.8178	126.6	0.2898	4.5873	126.6	0.2888	4.4933	126.6	0.2884	160
170	5.2784	128.9	0.2950	4.8980	128.9	0.2935	4.6638	128.9	0.2925	4.5683	128.9	0.2921	170
180	5.3646	131.2	0.2987	4.9781	131.2	0.2971	4.7402	131.2	0.2961	4.6432	131.2	0.2957	180
190	5.4507	133.6	0.3023	5.0582	133.6	0.3008	4.8166	133.5	0.2998	4.7181	133.5	0.2994	190
200	5.5368	135.9	0.3059	5.1382	135.9	0.3044	4.8929	135.9	0.3034	4.7928	135.9	0.3030	200
210	5.6228	138.3	0.3095	5.2182	138.3	0.3080	4.9691	138.3	0.3070	4.8676	138.3	0.3066	210
220	5.7087	140.7	0.3131	5.2981	140.7	0.3116	5.0453	140.7	0.3106	4.9423	140.7	0.3101	220
230	5.7946	143.2	0.3166	5.3780	143.1	0.3151	5.1215	143.1	0.3141	5.0169	143.1	0.3137	230
240	5.8805	145.6	0.3202	5.4578	145.6	0.3186	5.1976	145.6	0.3176	5.0915	145.6	0.3172	240
250	5.9663	148.1	0.3237	5.5376	148.1	0.3221	5.2736	148.1	0.3211	5.1660	148.0	0.3207	250
260	—	—	—	—	—	—	—	—	—	5.2405	150.5	0.3242	260

Suva® 404A (HP62) Superheated Vapor—Constant Pressure Tables

V = Volume in ft³/lb H = Enthalpy in Btu/lb S = Entropy in Btu/(lb) (°R) (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, psia													
TEMP. °F	16.00			17.00			18.00			19.00			TEMP. °F
	(-47.11°F)			(-44.78°F)			(-42.57°F)			(-40.44°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(2.7271)	(84.2)	(0.2045)	(2.5763)	(84.5)	(0.2042)	(2.4416)	(84.9)	(0.2039)	(2.3206)	(85.2)	(0.2036)	
-40	2.7793	85.5	0.2076	2.6094	85.4	0.2063	2.4584	85.3	0.2050	2.3233	85.3	0.2038	-40
-30	2.8524	87.3	0.2119	2.6786	87.2	0.2106	2.5240	87.2	0.2093	2.3857	87.1	0.2081	-30
-20	2.9253	89.1	0.2161	2.7474	89.1	0.2148	2.5893	89.0	0.2136	2.4478	89.0	0.2124	-20
-10	2.9979	91.0	0.2203	2.8160	90.9	0.2190	2.6543	90.9	0.2178	2.5096	90.9	0.2166	-10
0	3.0703	92.9	0.2245	2.8843	92.8	0.2232	2.7191	92.8	0.2220	2.5712	92.8	0.2208	0
10	3.1425	94.8	0.2286	2.9525	94.8	0.2273	2.7837	94.7	0.2261	2.6326	94.7	0.2250	10
20	3.2145	96.8	0.2327	3.0205	96.7	0.2315	2.8481	96.7	0.2302	2.6938	96.6	0.2291	20
30	3.2864	98.7	0.2368	3.0883	98.7	0.2355	2.9123	98.6	0.2343	2.7548	98.6	0.2331	30
40	3.3581	100.7	0.2408	3.1560	100.7	0.2396	2.9764	100.6	0.2383	2.8157	100.6	0.2372	40
50	3.4296	102.7	0.2448	3.2235	102.7	0.2436	3.0403	102.7	0.2423	2.8764	102.6	0.2412	50
60	3.5010	104.8	0.2488	3.2909	104.8	0.2475	3.1041	104.7	0.2463	2.9370	104.7	0.2452	60
70	3.5723	106.9	0.2528	3.3582	106.8	0.2515	3.1678	106.8	0.2503	2.9975	106.7	0.2491	70
80	3.6435	109.0	0.2567	3.4253	108.9	0.2554	3.2313	108.9	0.2542	3.0578	108.8	0.2530	80
90	3.7146	111.1	0.2606	3.4923	111.0	0.2593	3.2948	111.0	0.2581	3.1180	111.0	0.2569	90
100	3.7855	113.2	0.2644	3.5593	113.2	0.2631	3.3581	113.1	0.2619	3.1782	113.1	0.2608	100
110	3.8564	115.4	0.2682	3.6261	115.3	0.2670	3.4214	115.3	0.2658	3.2382	115.3	0.2646	110
120	3.9272	117.6	0.2721	3.6928	117.5	0.2708	3.4845	117.5	0.2696	3.2981	117.5	0.2684	120
130	3.9978	119.8	0.2758	3.7595	119.7	0.2746	3.5476	119.7	0.2734	3.3580	119.7	0.2722	130
140	4.0685	122.0	0.2796	3.8260	122.0	0.2783	3.6105	121.9	0.2771	3.4177	121.9	0.2760	140
150	4.1390	124.3	0.2833	3.8925	124.2	0.2821	3.6734	124.2	0.2809	3.4774	124.2	0.2797	150
160	4.2094	126.5	0.2870	3.9589	126.5	0.2858	3.7363	126.5	0.2846	3.5370	126.4	0.2834	160
170	4.2798	128.8	0.2907	4.0253	128.8	0.2894	3.7990	128.8	0.2883	3.5966	128.8	0.2871	170
180	4.3502	131.2	0.2944	4.0916	131.1	0.2931	3.8617	131.1	0.2919	3.6561	131.1	0.2908	180
190	4.4204	133.5	0.2980	4.1578	133.5	0.2967	3.9244	133.5	0.2956	3.7155	133.4	0.2944	190
200	4.4906	135.9	0.3016	4.2240	135.8	0.3004	3.9869	135.8	0.2992	3.7748	135.8	0.2980	200
210	4.5608	138.3	0.3052	4.2901	138.2	0.3040	4.0495	138.2	0.3028	3.8342	138.2	0.3016	210
220	4.6309	140.7	0.3088	4.3561	140.6	0.3075	4.1119	140.6	0.3063	3.8934	140.6	0.3052	220
230	4.7009	143.1	0.3123	4.4221	143.1	0.3111	4.1743	143.1	0.3099	3.9526	143.0	0.3088	230
240	4.7709	145.6	0.3159	4.4881	145.5	0.3146	4.2367	145.5	0.3134	4.0118	145.5	0.3123	240
250	4.8409	148.0	0.3194	4.5540	148.0	0.3181	4.2990	148.0	0.3169	4.0709	148.0	0.3158	250
260	4.9108	150.5	0.3229	4.6199	150.5	0.3216	4.3613	150.5	0.3204	4.1299	150.5	0.3193	260

TEMP. °F	20.00			21.00			22.00			23.00			TEMP. °F
	(-38.40°F)			(-36.44°F)			(-34.55°F)			(-32.73°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(2.2112)	(85.5)	(0.2034)	(2.1119)	(85.8)	(0.2032)	(2.0213)	(86.1)	(0.2029)	(1.9383)	(86.4)	(0.2027)	
-30	2.2612	87.1	0.2070	2.1485	87.0	0.2059	2.0461	87.0	0.2049	1.9525	86.9	0.2039	-30
-20	2.3204	88.9	0.2113	2.2051	88.9	0.2102	2.1003	88.8	0.2092	2.0046	88.8	0.2082	-20
-10	2.3793	90.8	0.2155	2.2615	90.8	0.2145	2.1543	90.7	0.2134	2.0565	90.7	0.2125	-10
0	2.4380	92.7	0.2197	2.3176	92.7	0.2186	2.2081	92.6	0.2176	2.1081	92.6	0.2167	0
10	2.4966	94.6	0.2239	2.3735	94.6	0.2228	2.2616	94.5	0.2218	2.1594	94.5	0.2208	10
20	2.5549	96.6	0.2280	2.4292	96.5	0.2269	2.3150	96.5	0.2259	2.2106	96.5	0.2249	20
30	2.6130	98.6	0.2320	2.4848	98.5	0.2310	2.3681	98.5	0.2300	2.2617	98.4	0.2290	30
40	2.6710	100.6	0.2361	2.5401	100.5	0.2350	2.4212	100.5	0.2340	2.3125	100.4	0.2331	40
50	2.7289	102.6	0.2401	2.5954	102.5	0.2391	2.4740	102.5	0.2381	2.3632	102.5	0.2371	50
60	2.7866	104.6	0.2441	2.6505	104.6	0.2430	2.5267	104.6	0.2420	2.4138	104.5	0.2411	60
70	2.8442	106.7	0.2480	2.7054	106.7	0.2470	2.5793	106.6	0.2460	2.4642	106.6	0.2450	70
80	2.9016	108.8	0.2520	2.7603	108.8	0.2509	2.6318	108.7	0.2499	2.5145	108.7	0.2490	80
90	2.9590	110.9	0.2558	2.8150	110.9	0.2548	2.6842	110.9	0.2538	2.5647	110.8	0.2529	90
100	3.0162	113.1	0.2597	2.8696	113.0	0.2587	2.7364	113.0	0.2577	2.6148	113.0	0.2567	100
110	3.0733	115.2	0.2635	2.9242	115.2	0.2625	2.7886	115.2	0.2615	2.6647	115.1	0.2606	110
120	3.1304	117.4	0.2674	2.9786	117.4	0.2663	2.8406	117.4	0.2653	2.7146	117.3	0.2644	120
130	3.1873	119.6	0.2711	3.0329	119.6	0.2701	2.8926	119.6	0.2691	2.7644	119.5	0.2682	130
140	3.2442	121.9	0.2749	3.0872	121.8	0.2739	2.9445	121.8	0.2729	2.8141	121.8	0.2720	140
150	3.3010	124.1	0.2786	3.1414	124.1	0.2776	2.9963	124.1	0.2766	2.8638	124.0	0.2757	150
160	3.3577	126.4	0.2824	3.1955	126.4	0.2813	3.0480	126.4	0.2804	2.9133	126.3	0.2794	160
170	3.4144	128.7	0.2860	3.2495	128.7	0.2850	3.0997	128.7	0.2840	2.9628	128.6	0.2831	170
180	3.4710	131.1	0.2897	3.3035	131.0	0.2887	3.1513	131.0	0.2877	3.0123	131.0	0.2868	180
190	3.5275	133.4	0.2934	3.3574	133.4	0.2923	3.2028	133.3	0.2914	3.0616	133.3	0.2904	190
200	3.5840	135.8	0.2970	3.4113	135.7	0.2960	3.2543	135.7	0.2950	3.1109	135.7	0.2940	200
210	3.6404	138.2	0.3006	3.4651	138.1	0.2996	3.3057	138.1	0.2986	3.1602	138.1	0.2976	210
220	3.6967	140.6	0.3041	3.5188	140.5	0.3031	3.3571	140.5	0.3022	3.2094	140.5	0.3012	220
230	3.7531	143.0	0.3077	3.5725	143.0	0.3067	3.4084	143.0	0.3057	3.2585	142.9	0.3048	230
240	3.8093	145.5	0.3112	3.6262	145.4	0.3102	3.4596	145.4	0.3092	3.3076	145.4	0.3083	240
250	3.8655	147.9	0.3147	3.6798	147.9	0.3137	3.5109	147.9	0.3128	3.3567	147.9	0.3118	250
260	3.9217	150.4	0.3182	3.7333	150.4	0.3172	3.5620	150.4	0.3163	3.4057	150.4	0.3153	260
270	3.9779	152.9	0.3217	3.7868	152.9	0.3207	3.6132	152.9	0.3197	3.4546	152.9	0.3188	270

Suva® 404A (HP62) Superheated Vapor—Constant Pressure Tables

V = Volume in ft³/lb H = Enthalpy in Btu/lb S = Entropy in Btu/(lb) (°R) (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, psia													
TEMP. °F	24.00			25.00			26.00			27.00			TEMP. °F
	(-30.96°F)			(-29.25°F)			(-27.59°F)			(-25.98°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(1.8619)	(86.7)	(0.2026)	(1.7915)	(86.9)	(0.2024)	(1.7262)	(87.2)	(0.2022)	(1.6657)	(87.4)	(0.2021)	
-30	1.8668	86.8	0.2030	—	—	—	—	—	—	—	—	—	-30
-20	1.9169	88.7	0.2073	1.8362	88.7	0.2064	1.7616	88.6	0.2055	1.6926	88.6	0.2046	-20
-10	1.9667	90.6	0.2115	1.8842	90.6	0.2106	1.8080	90.5	0.2097	1.7374	90.5	0.2089	-10
0	2.0164	92.5	0.2157	1.9320	92.5	0.2148	1.8541	92.4	0.2140	1.7820	92.4	0.2131	0
10	2.0658	94.4	0.2199	1.9796	94.4	0.2190	1.9000	94.4	0.2181	1.8264	94.3	0.2173	10
20	2.1150	96.4	0.2240	2.0270	96.4	0.2231	1.9458	96.3	0.2223	1.8705	96.3	0.2214	20
30	2.1640	98.4	0.2281	2.0742	98.3	0.2272	1.9913	98.3	0.2264	1.9145	98.3	0.2255	30
40	2.2129	100.4	0.2322	2.1213	100.4	0.2313	2.0367	100.3	0.2304	1.9583	100.3	0.2296	40
50	2.2616	102.4	0.2362	2.1682	102.4	0.2353	2.0819	102.3	0.2344	2.0020	102.3	0.2336	50
60	2.3102	104.5	0.2402	2.2149	104.4	0.2393	2.1269	104.4	0.2384	2.0455	104.4	0.2376	60
70	2.3586	106.6	0.2441	2.2615	106.5	0.2433	2.1719	106.5	0.2424	2.0889	106.4	0.2416	70
80	2.4070	108.7	0.2481	2.3080	108.6	0.2472	2.2167	108.6	0.2463	2.1321	108.6	0.2455	80
90	2.4552	110.8	0.2520	2.3544	110.7	0.2511	2.2614	110.7	0.2502	2.1752	110.7	0.2494	90
100	2.5033	112.9	0.2558	2.4007	112.9	0.2550	2.3060	112.9	0.2541	2.2183	112.8	0.2533	100
110	2.5512	115.1	0.2597	2.4468	115.1	0.2588	2.3504	115.0	0.2580	2.2612	115.0	0.2572	110
120	2.5991	117.3	0.2635	2.4929	117.3	0.2626	2.3948	117.2	0.2618	2.3040	117.2	0.2610	120
130	2.6470	119.5	0.2673	2.5389	119.5	0.2664	2.4391	119.5	0.2656	2.3467	119.4	0.2648	130
140	2.6947	121.8	0.2711	2.5848	121.7	0.2702	2.4833	121.7	0.2694	2.3894	121.7	0.2686	140
150	2.7423	124.0	0.2748	2.6306	124.0	0.2739	2.5274	124.0	0.2731	2.4319	123.9	0.2723	150
160	2.7899	126.3	0.2785	2.6763	126.3	0.2777	2.5715	126.2	0.2768	2.4744	126.2	0.2760	160
170	2.8374	128.6	0.2822	2.7220	128.6	0.2814	2.6155	128.6	0.2805	2.5168	128.5	0.2797	170
180	2.8848	130.9	0.2859	2.7676	130.9	0.2850	2.6594	130.9	0.2842	2.5592	130.9	0.2834	180
190	2.9322	133.3	0.2895	2.8131	133.3	0.2887	2.7032	133.2	0.2878	2.6015	133.2	0.2870	190
200	2.9795	135.7	0.2932	2.8586	135.6	0.2923	2.7470	135.6	0.2915	2.6437	135.6	0.2907	200
210	3.0268	138.1	0.2968	2.9041	138.0	0.2959	2.7908	138.0	0.2951	2.6859	138.0	0.2943	210
220	3.0740	140.5	0.3003	2.9494	140.4	0.2995	2.8345	140.4	0.2987	2.7280	140.4	0.2979	220
230	3.1211	142.9	0.3039	2.9947	142.9	0.3030	2.8781	142.9	0.3022	2.7701	142.8	0.3014	230
240	3.1682	145.4	0.3074	3.0400	145.3	0.3066	2.9217	145.3	0.3058	2.8121	145.3	0.3050	240
250	3.2153	147.8	0.3109	3.0853	147.8	0.3101	2.9652	147.8	0.3093	2.8541	147.8	0.3085	250
260	3.2623	150.3	0.3144	3.1304	150.3	0.3136	3.0087	150.3	0.3128	2.8960	150.3	0.3120	260
270	3.3093	152.9	0.3179	3.1756	152.8	0.3171	3.0522	152.8	0.3162	2.9379	152.8	0.3154	270
280	—	—	—	3.2207	155.4	0.3205	3.0956	155.4	0.3197	2.9797	155.3	0.3189	280

TEMP. °F	28.00			29.00			30.00			31.00			TEMP. °F
	(-24.42°F)			(-22.89°F)			(-21.40°F)			(-19.95°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(1.6092)	(87.7)	(0.2019)	(1.5566)	(87.9)	(0.2018)	(1.5073)	(88.1)	(0.2017)	(1.4611)	(88.4)	(0.2015)	
-20	1.6285	88.5	0.2038	1.5688	88.5	0.2030	1.5130	88.4	0.2023	—	—	—	-20
-10	1.6719	90.4	0.2081	1.6108	90.4	0.2073	1.5539	90.3	0.2065	1.5005	90.2	0.2058	-10
0	1.7150	92.3	0.2123	1.6527	92.3	0.2115	1.5944	92.2	0.2108	1.5400	92.2	0.2100	0
10	1.7580	94.3	0.2165	1.6942	94.2	0.2157	1.6348	94.2	0.2149	1.5791	94.1	0.2142	10
20	1.8007	96.2	0.2206	1.7356	96.2	0.2198	1.6749	96.1	0.2191	1.6181	96.1	0.2184	20
30	1.8432	98.2	0.2247	1.7768	98.2	0.2240	1.7149	98.1	0.2232	1.6569	98.1	0.2225	30
40	1.8856	100.2	0.2288	1.8178	100.2	0.2280	1.7546	100.1	0.2273	1.6955	100.1	0.2266	40
50	1.9278	102.3	0.2328	1.8587	102.2	0.2321	1.7942	102.2	0.2313	1.7339	102.1	0.2306	50
60	1.9699	104.3	0.2368	1.8994	104.3	0.2361	1.8337	104.2	0.2353	1.7722	104.2	0.2346	60
70	2.0118	106.4	0.2408	1.9400	106.4	0.2400	1.8730	106.3	0.2393	1.8103	106.3	0.2386	70
80	2.0536	108.5	0.2447	1.9805	108.5	0.2440	1.9122	108.4	0.2432	1.8484	108.4	0.2425	80
90	2.0953	110.6	0.2486	2.0208	110.6	0.2479	1.9513	110.6	0.2472	1.8862	110.5	0.2464	90
100	2.1368	112.8	0.2525	2.0610	112.8	0.2518	1.9902	112.7	0.2510	1.9240	112.7	0.2503	100
110	2.1783	115.0	0.2564	2.1011	114.9	0.2556	2.0291	114.9	0.2549	1.9617	114.9	0.2542	110
120	2.2197	117.2	0.2602	2.1411	117.1	0.2595	2.0679	117.1	0.2587	1.9993	117.1	0.2580	120
130	2.2609	119.4	0.2640	2.1811	119.4	0.2633	2.1065	119.3	0.2625	2.0368	119.3	0.2618	130
140	2.3021	121.6	0.2678	2.2209	121.6	0.2670	2.1451	121.6	0.2663	2.0742	121.5	0.2656	140
150	2.3432	123.9	0.2715	2.2607	123.9	0.2708	2.1836	123.8	0.2701	2.1115	123.8	0.2694	150
160	2.3843	126.2	0.2753	2.3004	126.2	0.2745	2.2220	126.1	0.2738	2.1488	126.1	0.2731	160
170	2.4252	128.5	0.2790	2.3400	128.5	0.2782	2.2604	128.4	0.2775	2.1859	128.4	0.2768	170
180	2.4661	130.8	0.2826	2.3795	130.8	0.2819	2.2987	130.8	0.2812	2.2230	130.7	0.2805	180
190	2.5070	133.2	0.2863	2.4190	133.2	0.2855	2.3369	133.1	0.2848	2.2601	133.1	0.2841	190
200	2.5478	135.6	0.2899	2.4584	135.5	0.2892	2.3750	135.5	0.2884	2.2971	135.5	0.2877	200
210	2.5885	138.0	0.2935	2.4978	137.9	0.2928	2.4132	137.9	0.2921	2.3340	137.9	0.2914	210
220	2.6291	140.4	0.2971	2.5371	140.4	0.2964	2.4512	140.3	0.2956	2.3708	140.3	0.2949	220
230	2.6698	142.8	0.3007	2.5764	142.8	0.2999	2.4892	142.8	0.2992	2.4077	142.7	0.2985	230
240	2.7103	145.3	0.3042	2.6156	145.2	0.3035	2.5271	145.2	0.3027	2.4444	145.2	0.3021	240
250	2.7508	147.8	0.3077	2.6547	147.7	0.3070	2.5651	147.7	0.3063	2.4811	147.7	0.3056	250
260	2.7913	150.3	0.3112	2.6939	150.2	0.3105	2.6029	150.2	0.3098	2.5178	150.2	0.3091	260
270	2.8317	152.8	0.3147	2.7329	152.7	0.3140	2.6407	152.7	0.3132	2.5545	152.7	0.3126	270
280	2.8721	155.3	0.3181	2.7720	155.3	0.3174	2.6785	155.3	0.3167	2.5911	155.2	0.3160	280
290	—	—	—	—	—	—	—	—	—	2.6276	157.8	0.3194	290

Suva® 404A (HP62) Superheated Vapor—Constant Pressure Tables

V = Volume in ft³/lb H = Enthalpy in Btu/lb S = Entropy in Btu/(lb) (°R) (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, psia													
TEMP. °F	32.00			33.00			34.00			35.00			TEMP. °F
	(-18.54°F)			(-17.15°F)			(-15.81°F)			(-14.49°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(1.4176)	(88.6)	(0.2014)	(1.3767)	(88.8)	(0.2013)	(1.3382)	(89.0)	(0.2012)	(1.3017)	(89.2)	(0.2011)	
-10	1.4506	90.2	0.2051	1.4036	90.1	0.2044	1.3594	90.1	0.2037	1.3177	90.0	0.2030	-10
0	1.4889	92.1	0.2093	1.4409	92.1	0.2086	1.3957	92.0	0.2079	1.3531	92.0	0.2073	0
10	1.5270	94.1	0.2135	1.4779	94.0	0.2128	1.4318	94.0	0.2121	1.3883	93.9	0.2115	10
20	1.5648	96.0	0.2177	1.5148	96.0	0.2170	1.4677	96.0	0.2163	1.4232	95.9	0.2156	20
30	1.6025	98.0	0.2218	1.5514	98.0	0.2211	1.5034	98.0	0.2204	1.4580	97.9	0.2198	30
40	1.6400	100.1	0.2259	1.5879	100.0	0.2252	1.5389	100.0	0.2245	1.4926	99.9	0.2239	40
50	1.6773	102.1	0.2299	1.6242	102.1	0.2292	1.5742	102.0	0.2286	1.5270	102.0	0.2279	50
60	1.7145	104.2	0.2339	1.6604	104.1	0.2332	1.6094	104.1	0.2326	1.5613	104.0	0.2319	60
70	1.7516	106.3	0.2379	1.6964	106.2	0.2372	1.6444	106.2	0.2366	1.5954	106.1	0.2359	70
80	1.7885	108.4	0.2418	1.7323	108.3	0.2412	1.6793	108.3	0.2405	1.6294	108.3	0.2399	80
90	1.8253	110.5	0.2458	1.7680	110.5	0.2451	1.7141	110.4	0.2444	1.6633	110.4	0.2438	90
100	1.8620	112.7	0.2496	1.8037	112.6	0.2490	1.7488	112.6	0.2483	1.6970	112.6	0.2477	100
110	1.8985	114.8	0.2535	1.8392	114.8	0.2528	1.7833	114.8	0.2522	1.7307	114.7	0.2516	110
120	1.9350	117.0	0.2573	1.8746	117.0	0.2567	1.8178	117.0	0.2560	1.7642	116.9	0.2554	120
130	1.9714	119.3	0.2611	1.9100	119.2	0.2605	1.8522	119.2	0.2598	1.7977	119.2	0.2592	130
140	2.0077	121.5	0.2649	1.9452	121.5	0.2643	1.8865	121.5	0.2636	1.8310	121.4	0.2630	140
150	2.0439	123.8	0.2687	1.9804	123.8	0.2680	1.9207	123.7	0.2674	1.8643	123.7	0.2668	150
160	2.0801	126.1	0.2724	2.0155	126.0	0.2717	1.9548	126.0	0.2711	1.8975	126.0	0.2705	160
170	2.1161	128.4	0.2761	2.0505	128.4	0.2755	1.9888	128.3	0.2748	1.9306	128.3	0.2742	170
180	2.1521	130.7	0.2798	2.0855	130.7	0.2791	2.0228	130.7	0.2785	1.9637	130.6	0.2779	180
190	2.1881	133.1	0.2834	2.1204	133.1	0.2828	2.0567	133.0	0.2822	1.9967	133.0	0.2815	190
200	2.2239	135.5	0.2871	2.1552	135.4	0.2864	2.0906	135.4	0.2858	2.0296	135.4	0.2852	200
210	2.2597	137.9	0.2907	2.1900	137.8	0.2900	2.1244	137.8	0.2894	2.0625	137.8	0.2888	210
220	2.2955	140.3	0.2943	2.2247	140.3	0.2936	2.1581	140.2	0.2930	2.0953	140.2	0.2924	220
230	2.3312	142.7	0.2978	2.2594	142.7	0.2972	2.1918	142.7	0.2966	2.1281	142.6	0.2959	230
240	2.3669	145.2	0.3014	2.2940	145.2	0.3007	2.2255	145.1	0.3001	2.1608	145.1	0.2995	240
250	2.4025	147.7	0.3049	2.3286	147.6	0.3043	2.2590	147.6	0.3036	2.1935	147.6	0.3030	250
260	2.4381	150.2	0.3084	2.3631	150.1	0.3078	2.2926	150.1	0.3071	2.2261	150.1	0.3065	260
270	2.4736	152.7	0.3119	2.3976	152.7	0.3112	2.3261	152.6	0.3106	2.2587	152.6	0.3100	270
280	2.5091	155.2	0.3153	2.4321	155.2	0.3147	2.3596	155.2	0.3141	2.2912	155.2	0.3135	280
290	2.5445	157.8	0.3188	2.4665	157.8	0.3181	2.3930	157.7	0.3175	2.3237	157.7	0.3169	290

TEMP. °F	36.00			37.00			38.00			39.00			TEMP. °F
	(-13.19°F)			(-11.93°F)			(-10.69°F)			(-9.48°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(1.2672)	(89.4)	(0.2010)	(1.2344)	(89.6)	(0.2009)	(1.2034)	(89.8)	(0.2008)	(1.1738)	(89.9)	(0.2007)	
-10	1.2783	90.0	0.2024	1.2410	89.9	0.2017	1.2057	89.9	0.2011	—	—	—	-10
0	1.3128	91.9	0.2066	1.2748	91.9	0.2060	1.2387	91.8	0.2054	1.2044	91.8	0.2048	0
10	1.3472	93.9	0.2108	1.3083	93.8	0.2102	1.2714	93.8	0.2096	1.2365	93.7	0.2090	10
20	1.3813	95.9	0.2150	1.3416	95.8	0.2144	1.3040	95.8	0.2138	1.2683	95.7	0.2132	20
30	1.4152	97.9	0.2191	1.3747	97.8	0.2185	1.3363	97.8	0.2179	1.2999	97.7	0.2173	30
40	1.4489	99.9	0.2232	1.4076	99.8	0.2226	1.3684	99.8	0.2220	1.3313	99.8	0.2214	40
50	1.4825	101.9	0.2273	1.4403	101.9	0.2267	1.4004	101.9	0.2261	1.3625	101.8	0.2255	50
60	1.5159	104.0	0.2313	1.4729	104.0	0.2307	1.4322	103.9	0.2301	1.3936	103.9	0.2295	60
70	1.5491	106.1	0.2353	1.5054	106.1	0.2347	1.4639	106.0	0.2341	1.4245	106.0	0.2335	70
80	1.5823	108.2	0.2393	1.5377	108.2	0.2386	1.4954	108.1	0.2381	1.4553	108.1	0.2375	80
90	1.6153	110.4	0.2432	1.5698	110.3	0.2426	1.5268	110.3	0.2420	1.4860	110.2	0.2414	90
100	1.6481	112.5	0.2471	1.6019	112.5	0.2465	1.5581	112.4	0.2459	1.5165	112.4	0.2453	100
110	1.6809	114.7	0.2509	1.6339	114.7	0.2503	1.5893	114.6	0.2498	1.5470	114.6	0.2492	110
120	1.7136	116.9	0.2548	1.6657	116.9	0.2542	1.6204	116.8	0.2536	1.5773	116.8	0.2530	120
130	1.7462	119.1	0.2586	1.6975	119.1	0.2580	1.6513	119.1	0.2574	1.6076	119.0	0.2569	130
140	1.7787	121.4	0.2624	1.7292	121.4	0.2618	1.6822	121.3	0.2612	1.6377	121.3	0.2606	140
150	1.8111	123.7	0.2661	1.7607	123.6	0.2656	1.7130	123.6	0.2650	1.6678	123.6	0.2644	150
160	1.8434	126.0	0.2699	1.7922	125.9	0.2693	1.7438	125.9	0.2687	1.6978	125.9	0.2681	160
170	1.8757	128.3	0.2736	1.8237	128.2	0.2730	1.7744	128.2	0.2724	1.7277	128.2	0.2719	170
180	1.9079	130.6	0.2773	1.8550	130.6	0.2767	1.8050	130.6	0.2761	1.7575	130.5	0.2756	180
190	1.9400	133.0	0.2809	1.8863	132.9	0.2803	1.8355	132.9	0.2798	1.7873	132.9	0.2792	190
200	1.9720	135.4	0.2846	1.9176	135.3	0.2840	1.8660	135.3	0.2834	1.8170	135.3	0.2829	200
210	2.0041	137.8	0.2882	1.9488	137.7	0.2876	1.8964	137.7	0.2870	1.8467	137.7	0.2865	210
220	2.0360	140.2	0.2918	1.9799	140.2	0.2912	1.9267	140.1	0.2906	1.8763	140.1	0.2901	220
230	2.0679	142.6	0.2953	2.0110	142.6	0.2948	1.9570	142.6	0.2942	1.9059	142.5	0.2936	230
240	2.0997	145.1	0.2989	2.0420	145.1	0.2983	1.9873	145.0	0.2977	1.9354	145.0	0.2972	240
250	2.1315	147.6	0.3024	2.0730	147.5	0.3018	2.0175	147.5	0.3013	1.9648	147.5	0.3007	250
260	2.1633	150.1	0.3059	2.1039	150.1	0.3053	2.0476	150.0	0.3048	1.9942	150.0	0.3042	260
270	2.1950	152.6	0.3094	2.1348	152.6	0.3088	2.0777	152.6	0.3083	2.0236	152.5	0.3077	270
280	2.2267	155.1	0.3129	2.1656	155.1	0.3123	2.1078	155.1	0.3117	2.0529	155.1	0.3112	280
290	2.2583	157.7	0.3163	2.1964	157.7	0.3157	2.1378	157.7	0.3152	2.0822	157.6	0.3146	290
300	—	—	—	—	—	—	—	—	—	2.1114	160.2	0.3180	300

Suva® 404A (HP62) Superheated Vapor—Constant Pressure Tables

V = Volume in ft³/lb H = Enthalpy in Btu/lb S = Entropy in Btu/(lb) (°R) (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, psia													
TEMP. °F	40.00			41.00			42.00			43.00			TEMP. °F
	(-8.29°F)			(-7.13°F)			(-5.98°F)			(-4.86°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(1.1457)	(90.1)	(0.2006)	(1.1189)	(90.3)	(0.2006)	(1.0933)	(90.5)	(0.2005)	(1.0689)	(90.6)	(0.2004)	
0	1.1719	91.7	0.2042	1.1409	91.7	0.2036	1.1114	91.6	0.2030	1.0833	91.6	0.2025	0
10	1.2032	93.7	0.2084	1.1716	93.6	0.2078	1.1415	93.6	0.2073	1.1128	93.5	0.2067	10
20	1.2344	95.7	0.2126	1.2021	95.6	0.2120	1.1714	95.6	0.2115	1.1420	95.5	0.2109	20
30	1.2653	97.7	0.2167	1.2323	97.6	0.2162	1.2010	97.6	0.2156	1.1711	97.5	0.2151	30
40	1.2960	99.7	0.2208	1.2624	99.7	0.2203	1.2304	99.6	0.2197	1.1999	99.6	0.2192	40
50	1.3265	101.8	0.2249	1.2923	101.7	0.2244	1.2597	101.7	0.2238	1.2286	101.6	0.2233	50
60	1.3569	103.8	0.2290	1.3220	103.8	0.2284	1.2888	103.8	0.2279	1.2571	103.7	0.2273	60
70	1.3871	105.9	0.2330	1.3516	105.9	0.2324	1.3177	105.9	0.2319	1.2854	105.8	0.2313	70
80	1.4172	108.1	0.2369	1.3810	108.0	0.2364	1.3465	108.0	0.2358	1.3136	108.0	0.2353	80
90	1.4472	110.2	0.2409	1.4103	110.2	0.2403	1.3752	110.1	0.2398	1.3417	110.1	0.2392	90
100	1.4771	112.4	0.2448	1.4395	112.3	0.2442	1.4037	112.3	0.2437	1.3696	112.3	0.2432	100
110	1.5068	114.6	0.2486	1.4686	114.5	0.2481	1.4322	114.5	0.2476	1.3975	114.5	0.2470	110
120	1.5364	116.8	0.2525	1.4975	116.7	0.2519	1.4605	116.7	0.2514	1.4252	116.7	0.2509	120
130	1.5660	119.0	0.2563	1.5264	119.0	0.2558	1.4887	118.9	0.2552	1.4528	118.9	0.2547	130
140	1.5954	121.3	0.2601	1.5552	121.2	0.2596	1.5169	121.2	0.2590	1.4804	121.2	0.2585	140
150	1.6248	123.5	0.2639	1.5839	123.5	0.2633	1.5450	123.5	0.2628	1.5078	123.4	0.2623	150
160	1.6541	125.8	0.2676	1.6125	125.8	0.2671	1.5729	125.8	0.2665	1.5352	125.8	0.2660	160
170	1.6833	128.2	0.2713	1.6411	128.1	0.2708	1.6009	128.1	0.2703	1.5625	128.1	0.2697	170
180	1.7124	130.5	0.2750	1.6695	130.5	0.2745	1.6287	130.4	0.2740	1.5897	130.4	0.2734	180
190	1.7415	132.9	0.2787	1.6980	132.8	0.2781	1.6565	132.8	0.2776	1.6169	132.8	0.2771	190
200	1.7705	135.2	0.2823	1.7263	135.2	0.2818	1.6842	135.2	0.2813	1.6440	135.2	0.2808	200
210	1.7995	137.7	0.2859	1.7546	137.6	0.2854	1.7118	137.6	0.2849	1.6710	137.6	0.2844	210
220	1.8284	140.1	0.2895	1.7828	140.1	0.2890	1.7394	140.0	0.2885	1.6980	140.0	0.2880	220
230	1.8572	142.5	0.2931	1.8110	142.5	0.2926	1.7670	142.5	0.2921	1.7250	142.5	0.2916	230
240	1.8860	145.0	0.2966	1.8391	145.0	0.2961	1.7945	144.9	0.2956	1.7519	144.9	0.2951	240
250	1.9148	147.5	0.3002	1.8672	147.5	0.2997	1.8219	147.4	0.2991	1.7787	147.4	0.2986	250
260	1.9435	150.0	0.3037	1.8952	150.0	0.3032	1.8493	149.9	0.3026	1.8055	149.9	0.3021	260
270	1.9722	152.5	0.3072	1.9232	152.5	0.3066	1.8766	152.5	0.3061	1.8322	152.4	0.3056	270
280	2.0008	155.1	0.3106	1.9512	155.0	0.3101	1.9040	155.0	0.3096	1.8589	155.0	0.3091	280
290	2.0294	157.6	0.3141	1.9791	157.6	0.3136	1.9312	157.6	0.3130	1.8856	157.6	0.3125	290
300	2.0579	160.2	0.3175	2.0070	160.2	0.3170	1.9585	160.2	0.3165	1.9122	160.1	0.3160	300

TEMP. °F	44.00			45.00			46.00			47.00			TEMP. °F
	(-3.75°F)			(-2.67°F)			(-1.60°F)			(-0.55°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(1.0455)	(90.8)	(0.2003)	(1.0232)	(90.9)	(0.2003)	(1.0017)	(91.1)	(0.2002)	(0.9812)	(91.3)	(0.2001)	
0	1.0565	91.5	0.2019	1.0308	91.5	0.2014	1.0062	91.4	0.2009	0.9827	91.4	0.2004	0
10	1.0854	93.5	0.2062	1.0592	93.4	0.2057	1.0341	93.4	0.2051	1.0101	93.3	0.2046	10
20	1.1141	95.5	0.2104	1.0873	95.4	0.2099	1.0617	95.4	0.2094	1.0372	95.3	0.2088	20
30	1.1425	97.5	0.2146	1.1152	97.5	0.2140	1.0891	97.4	0.2135	1.0641	97.4	0.2130	30
40	1.1708	99.5	0.2187	1.1430	99.5	0.2182	1.1163	99.5	0.2177	1.0908	99.4	0.2172	40
50	1.1989	101.6	0.2228	1.1705	101.6	0.2222	1.1434	101.5	0.2217	1.1174	101.5	0.2212	50
60	1.2268	103.7	0.2268	1.1979	103.6	0.2263	1.1702	103.6	0.2258	1.1437	103.6	0.2253	60
70	1.2546	105.8	0.2308	1.2251	105.7	0.2303	1.1969	105.7	0.2298	1.1699	105.7	0.2293	70
80	1.2822	107.9	0.2348	1.2522	107.9	0.2343	1.2235	107.8	0.2338	1.1960	107.8	0.2333	80
90	1.3097	110.1	0.2387	1.2791	110.0	0.2382	1.2499	110.0	0.2377	1.2219	110.0	0.2373	90
100	1.3371	112.2	0.2427	1.3059	112.2	0.2422	1.2762	112.2	0.2417	1.2477	112.1	0.2412	100
110	1.3643	114.4	0.2465	1.3326	114.4	0.2460	1.3024	114.4	0.2455	1.2733	114.3	0.2451	110
120	1.3915	116.6	0.2504	1.3593	116.6	0.2499	1.3284	116.6	0.2494	1.2989	116.5	0.2489	120
130	1.4185	118.9	0.2542	1.3858	118.8	0.2537	1.3544	118.8	0.2532	1.3244	118.8	0.2528	130
140	1.4455	121.1	0.2580	1.4122	121.1	0.2575	1.3803	121.1	0.2570	1.3498	121.0	0.2566	140
150	1.4724	123.4	0.2618	1.4385	123.4	0.2613	1.4061	123.4	0.2608	1.3751	123.3	0.2603	150
160	1.4992	125.7	0.2655	1.4647	125.7	0.2650	1.4318	125.7	0.2646	1.4003	125.6	0.2641	160
170	1.5259	128.0	0.2692	1.4909	128.0	0.2688	1.4575	128.0	0.2683	1.4254	128.0	0.2678	170
180	1.5526	130.4	0.2729	1.5170	130.4	0.2725	1.4830	130.3	0.2720	1.4505	130.3	0.2715	180
190	1.5791	132.8	0.2766	1.5430	132.7	0.2761	1.5085	132.7	0.2757	1.4755	132.7	0.2752	190
200	1.6057	135.1	0.2803	1.5690	135.1	0.2798	1.5340	135.1	0.2793	1.5004	135.1	0.2788	200
210	1.6321	137.6	0.2839	1.5949	137.5	0.2834	1.5594	137.5	0.2829	1.5253	137.5	0.2825	210
220	1.6585	140.0	0.2875	1.6208	140.0	0.2870	1.5847	139.9	0.2865	1.5501	139.9	0.2861	220
230	1.6849	142.4	0.2911	1.6466	142.4	0.2906	1.6099	142.4	0.2901	1.5749	142.4	0.2896	230
240	1.7112	144.9	0.2946	1.6723	144.9	0.2941	1.6352	144.8	0.2937	1.5996	144.8	0.2932	240
250	1.7374	147.4	0.2981	1.6980	147.4	0.2977	1.6603	147.3	0.2972	1.6242	147.3	0.2967	250
260	1.7637	149.9	0.3017	1.7237	149.9	0.3012	1.6855	149.8	0.3007	1.6489	149.8	0.3002	260
270	1.7898	152.4	0.3051	1.7493	152.4	0.3047	1.7105	152.4	0.3042	1.6734	152.4	0.3037	270
280	1.8159	155.0	0.3086	1.7749	154.9	0.3081	1.7356	154.9	0.3077	1.6980	154.9	0.3072	280
290	1.8420	157.5	0.3121	1.8004	157.5	0.3116	1.7606	157.5	0.3111	1.7225	157.5	0.3107	290
300	1.8681	160.1	0.3155	1.8259	160.1	0.3150	1.7855	160.1	0.3145	1.7469	160.1	0.3141	300

Suva® 404A (HP62) Superheated Vapor—Constant Pressure Tables

V = Volume in ft³/lb H = Enthalpy in Btu/lb S = Entropy in Btu/(lb) (°R) (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, psia													
TEMP. °F	48.00			49.00			50.00			55.00			TEMP °F
	(0.48°F)			(1.49°F)			(2.49°F)			(7.27°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.9614)	(91.4)	(0.2001)	(0.9425)	(91.6)	(0.2000)	(0.9242)	(91.7)	(0.2000)	(0.8426)	(92.4)	(0.1997)	
10	0.9871	93.3	0.2041	0.9650	93.2	0.2036	0.9438	93.2	0.2032	0.8492	92.9	0.2008	10
20	1.0137	95.3	0.2084	0.9912	95.2	0.2079	0.9695	95.2	0.2074	0.8731	95.0	0.2051	20
30	1.0402	97.3	0.2125	1.0172	97.3	0.2120	0.9951	97.2	0.2116	0.8967	97.0	0.2093	30
40	1.0664	99.4	0.2167	1.0429	99.3	0.2162	1.0204	99.3	0.2157	0.9201	99.1	0.2135	40
50	1.0924	101.4	0.2208	1.0685	101.4	0.2203	1.0456	101.3	0.2198	0.9433	101.1	0.2176	50
60	1.1183	103.5	0.2248	1.0940	103.5	0.2243	1.0706	103.4	0.2239	0.9663	103.2	0.2217	60
70	1.1440	105.6	0.2288	1.1192	105.6	0.2284	1.0954	105.6	0.2279	0.9892	105.4	0.2257	70
80	1.1696	107.8	0.2328	1.1443	107.7	0.2324	1.1201	107.7	0.2319	1.0119	107.5	0.2297	80
90	1.1950	109.9	0.2368	1.1693	109.9	0.2363	1.1446	109.8	0.2359	1.0345	109.7	0.2337	90
100	1.2204	112.1	0.2407	1.1941	112.1	0.2402	1.1690	112.0	0.2398	1.0569	111.8	0.2376	100
110	1.2455	114.3	0.2446	1.2189	114.3	0.2441	1.1933	114.2	0.2437	1.0792	114.0	0.2415	110
120	1.2706	116.5	0.2485	1.2435	116.5	0.2480	1.2175	116.4	0.2475	1.1014	116.3	0.2454	120
130	1.2956	118.8	0.2523	1.2680	118.7	0.2518	1.2415	118.7	0.2514	1.1235	118.5	0.2493	130
140	1.3205	121.0	0.2561	1.2925	121.0	0.2556	1.2655	121.0	0.2552	1.1455	120.8	0.2531	140
150	1.3453	123.3	0.2599	1.3168	123.3	0.2594	1.2894	123.2	0.2590	1.1675	123.1	0.2569	150
160	1.3701	125.6	0.2636	1.3411	125.6	0.2632	1.3133	125.5	0.2627	1.1893	125.4	0.2606	160
170	1.3947	127.9	0.2674	1.3653	127.9	0.2669	1.3370	127.9	0.2665	1.2110	127.7	0.2644	170
180	1.4193	130.3	0.2711	1.3894	130.3	0.2706	1.3607	130.2	0.2702	1.2327	130.1	0.2681	180
190	1.4438	132.6	0.2747	1.4134	132.6	0.2743	1.3843	132.6	0.2738	1.2543	132.5	0.2718	190
200	1.4683	135.0	0.2784	1.4374	135.0	0.2779	1.4078	135.0	0.2775	1.2759	134.9	0.2754	200
210	1.4926	137.4	0.2820	1.4613	137.4	0.2816	1.4313	137.4	0.2811	1.2974	137.3	0.2790	210
220	1.5170	139.9	0.2856	1.4852	139.9	0.2852	1.4547	139.8	0.2847	1.3188	139.7	0.2827	220
230	1.5412	142.3	0.2892	1.5090	142.3	0.2887	1.4780	142.3	0.2883	1.3401	142.2	0.2862	230
240	1.5655	144.8	0.2927	1.5328	144.8	0.2923	1.5014	144.8	0.2919	1.3615	144.6	0.2898	240
250	1.5896	147.3	0.2963	1.5565	147.3	0.2958	1.5246	147.2	0.2954	1.3827	147.1	0.2933	250
260	1.6138	149.8	0.2998	1.5801	149.8	0.2994	1.5478	149.8	0.2989	1.4040	149.6	0.2969	260
270	1.6379	152.3	0.3033	1.6038	152.3	0.3028	1.5710	152.3	0.3024	1.4251	152.2	0.3004	270
280	1.6619	154.9	0.3068	1.6273	154.9	0.3063	1.5941	154.8	0.3059	1.4463	154.7	0.3038	280
290	1.6859	157.5	0.3102	1.6509	157.4	0.3098	1.6172	157.4	0.3093	1.4674	157.3	0.3073	290
300	1.7099	160.0	0.3136	1.6744	160.0	0.3132	1.6403	160.0	0.3128	1.4884	159.9	0.3107	300
310	1.7338	162.6	0.3170	1.6978	162.6	0.3166	1.6633	162.6	0.3162	1.5094	162.5	0.3141	310

TEMP. °F	60.00			65.00			70.00			75.00			TEMP °F
	(11.73°F)			(15.92°F)			(19.86°F)			(23.60°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.7741)	(93.0)	(0.1994)	(0.7158)	(93.6)	(0.1992)	(0.6654)	(94.2)	(0.1991)	(0.6215)	(94.7)	(0.1989)	
20	0.7925	94.7	0.2030	0.7243	94.5	0.2010	0.6657	94.2	0.1991	—	—	—	20
30	0.8146	96.8	0.2072	0.7450	96.5	0.2052	0.6853	96.3	0.2034	0.6334	96.0	0.2016	30
40	0.8364	98.8	0.2114	0.7655	98.6	0.2094	0.7046	98.4	0.2076	0.6518	98.1	0.2059	40
50	0.8580	100.9	0.2155	0.7857	100.7	0.2136	0.7237	100.5	0.2118	0.6699	100.2	0.2101	50
60	0.8794	103.0	0.2196	0.8058	102.8	0.2177	0.7426	102.6	0.2159	0.6878	102.4	0.2142	60
70	0.9007	105.1	0.2237	0.8257	104.9	0.2218	0.7614	104.7	0.2200	0.7056	104.5	0.2183	70
80	0.9217	107.3	0.2277	0.8454	107.1	0.2258	0.7799	106.9	0.2241	0.7231	106.7	0.2224	80
90	0.9427	109.5	0.2317	0.8649	109.3	0.2298	0.7983	109.1	0.2281	0.7405	108.9	0.2264	90
100	0.9635	111.7	0.2356	0.8844	111.5	0.2338	0.8165	111.3	0.2320	0.7577	111.1	0.2304	100
110	0.9841	113.9	0.2396	0.9037	113.7	0.2377	0.8346	113.5	0.2360	0.7748	113.3	0.2344	110
120	1.0047	116.1	0.2434	0.9228	115.9	0.2416	0.8526	115.8	0.2399	0.7918	115.6	0.2383	120
130	1.0252	118.4	0.2473	0.9419	118.2	0.2455	0.8705	118.0	0.2438	0.8086	117.9	0.2422	130
140	1.0455	120.6	0.2511	0.9609	120.5	0.2493	0.8883	120.3	0.2476	0.8254	120.1	0.2460	140
150	1.0658	122.9	0.2549	0.9797	122.8	0.2531	0.9060	122.6	0.2514	0.8420	122.5	0.2498	150
160	1.0860	125.2	0.2587	0.9985	125.1	0.2569	0.9236	124.9	0.2552	0.8586	124.8	0.2536	160
170	1.1061	127.6	0.2624	1.0172	127.4	0.2606	0.9411	127.3	0.2590	0.8751	127.1	0.2574	170
180	1.1261	129.9	0.2661	1.0359	129.8	0.2644	0.9585	129.7	0.2627	0.8914	129.5	0.2611	180
190	1.1460	132.3	0.2698	1.0544	132.2	0.2681	0.9759	132.0	0.2664	0.9078	131.9	0.2648	190
200	1.1659	134.7	0.2735	1.0729	134.6	0.2717	0.9931	134.5	0.2701	0.9240	134.3	0.2685	200
210	1.1858	137.1	0.2771	1.0913	137.0	0.2754	1.0104	136.9	0.2737	0.9402	136.7	0.2722	210
220	1.2055	139.6	0.2808	1.1097	139.5	0.2790	1.0275	139.3	0.2774	0.9563	139.2	0.2758	220
230	1.2252	142.0	0.2843	1.1280	141.9	0.2826	1.0446	141.8	0.2810	0.9724	141.7	0.2794	230
240	1.2449	144.5	0.2879	1.1462	144.4	0.2862	1.0617	144.3	0.2845	0.9884	144.2	0.2830	240
250	1.2645	147.0	0.2915	1.1644	146.9	0.2897	1.0787	146.8	0.2881	1.0043	146.7	0.2866	250
260	1.2840	149.5	0.2950	1.1826	149.4	0.2932	1.0956	149.3	0.2916	1.0203	149.2	0.2901	260
270	1.3036	152.1	0.2985	1.2007	152.0	0.2967	1.1125	151.9	0.2951	1.0361	151.7	0.2936	270
280	1.3230	154.6	0.3020	1.2188	154.5	0.3002	1.1294	154.4	0.2986	1.0519	154.3	0.2971	280
290	1.3425	157.2	0.3054	1.2368	157.1	0.3037	1.1462	157.0	0.3021	1.0677	156.9	0.3006	290
300	1.3619	159.8	0.3089	1.2548	159.7	0.3071	1.1630	159.6	0.3055	1.0834	159.5	0.3040	300
310	1.3812	162.4	0.3123	1.2727	162.3	0.3106	1.1797	162.2	0.3089	1.0991	162.1	0.3074	310
320	1.4005	165.0	0.3157	1.2906	164.9	0.3140	1.1964	164.8	0.3124	1.1148	164.7	0.3109	320
330	—	—	—	—	—	—	—	—	—	1.1304	167.4	0.3142	330

Suva® 404A (HP62) Superheated Vapor—Constant Pressure Tables

V = Volume in ft³/lb H = Enthalpy in Btu/lb S = Entropy in Btu/(lb) (°R) (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, psia													
TEMP. °F	80.00			85.00			90.00			95.00			TEMP. °F
	(27.16°F)			(30.54°F)			(33.79°F)			(36.89°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.5829)	(95.2)	(0.1987)	(0.5487)	(95.6)	(0.1986)	(0.5181)	(96.0)	(0.1985)	(0.4905)	(96.5)	(0.1983)	
30	0.5879	95.8	0.2000	—	—	—	—	—	—	—	—	—	30
40	0.6055	97.9	0.2042	0.5646	97.6	0.2026	0.5281	97.4	0.2011	0.4954	97.1	0.1997	40
50	0.6228	100.0	0.2084	0.5811	99.8	0.2069	0.5440	99.5	0.2054	0.5107	99.3	0.2040	50
60	0.6398	102.2	0.2126	0.5974	101.9	0.2111	0.5597	101.7	0.2096	0.5258	101.5	0.2082	60
70	0.6567	104.3	0.2167	0.6135	104.1	0.2152	0.5751	103.9	0.2138	0.5407	103.7	0.2124	70
80	0.6734	106.5	0.2208	0.6294	106.3	0.2193	0.5903	106.1	0.2179	0.5553	105.9	0.2165	80
90	0.6899	108.7	0.2249	0.6452	108.5	0.2234	0.6054	108.3	0.2220	0.5698	108.1	0.2206	90
100	0.7062	110.9	0.2289	0.6607	110.7	0.2274	0.6203	110.5	0.2260	0.5841	110.3	0.2246	100
110	0.7224	113.2	0.2328	0.6762	113.0	0.2314	0.6350	112.8	0.2300	0.5982	112.6	0.2287	110
120	0.7385	115.4	0.2368	0.6915	115.2	0.2353	0.6496	115.1	0.2339	0.6122	114.9	0.2326	120
130	0.7544	117.7	0.2407	0.7066	117.5	0.2392	0.6641	117.3	0.2378	0.6260	117.2	0.2365	130
140	0.7703	120.0	0.2445	0.7217	119.8	0.2431	0.6785	119.7	0.2417	0.6398	119.5	0.2404	140
150	0.7861	122.3	0.2483	0.7366	122.1	0.2469	0.6927	122.0	0.2456	0.6534	121.8	0.2443	150
160	0.8017	124.6	0.2521	0.7515	124.5	0.2507	0.7069	124.3	0.2494	0.6669	124.2	0.2481	160
170	0.8173	127.0	0.2559	0.7663	126.8	0.2545	0.7210	126.7	0.2532	0.6804	126.5	0.2519	170
180	0.8328	129.4	0.2597	0.7810	129.2	0.2583	0.7349	129.1	0.2569	0.6937	128.9	0.2557	180
190	0.8482	131.8	0.2634	0.7956	131.6	0.2620	0.7488	131.5	0.2607	0.7070	131.3	0.2594	190
200	0.8635	134.2	0.2671	0.8101	134.0	0.2657	0.7627	133.9	0.2644	0.7202	133.8	0.2631	200
210	0.8788	136.6	0.2707	0.8246	136.5	0.2694	0.7764	136.4	0.2681	0.7333	136.2	0.2668	210
220	0.8940	139.1	0.2744	0.8390	138.9	0.2730	0.7901	138.8	0.2717	0.7464	138.7	0.2705	220
230	0.9092	141.5	0.2780	0.8534	141.4	0.2766	0.8038	141.3	0.2753	0.7594	141.2	0.2741	230
240	0.9243	144.0	0.2816	0.8677	143.9	0.2802	0.8174	143.8	0.2789	0.7724	143.7	0.2777	240
250	0.9393	146.5	0.2851	0.8819	146.4	0.2838	0.8309	146.3	0.2825	0.7852	146.2	0.2813	250
260	0.9543	149.1	0.2887	0.8961	149.0	0.2873	0.8444	148.9	0.2860	0.7981	148.7	0.2848	260
270	0.9692	151.6	0.2922	0.9102	151.5	0.2908	0.8578	151.4	0.2896	0.8109	151.3	0.2884	270
280	0.9842	154.2	0.2957	0.9243	154.1	0.2943	0.8712	154.0	0.2931	0.8236	153.9	0.2919	280
290	0.9990	156.8	0.2992	0.9384	156.7	0.2978	0.8845	156.6	0.2966	0.8363	156.5	0.2954	290
300	1.0138	159.4	0.3026	0.9524	159.3	0.3013	0.8978	159.2	0.3000	0.8490	159.1	0.2988	300
310	1.0286	162.0	0.3060	0.9664	161.9	0.3047	0.9111	161.8	0.3035	0.8616	161.7	0.3023	310
320	1.0434	164.7	0.3094	0.9803	164.6	0.3081	0.9243	164.5	0.3069	0.8742	164.4	0.3057	320
330	1.0581	167.3	0.3128	0.9943	167.2	0.3115	0.9375	167.1	0.3103	0.8867	167.0	0.3091	330
340	—	—	—	1.0081	169.9	0.3149	0.9507	169.8	0.3136	0.8993	169.7	0.3124	340

TEMP. °F	100.00			110.00			120.00			130.00			TEMP. °F
	(39.88°F)			(45.53°F)			(50.81°F)			(55.76°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.4657)	(96.8)	(0.1982)	(0.4225)	(97.5)	(0.1980)	(0.3862)	(98.2)	(0.1978)	(0.3552)	(98.8)	(0.1976)	
40	0.4659	96.9	0.1983	—	—	—	—	—	—	—	—	—	40
50	0.4807	99.0	0.2026	0.4287	98.5	0.1999	—	—	—	—	—	—	50
60	0.4953	101.2	0.2068	0.4425	100.7	0.2042	0.3982	100.3	0.2018	0.3605	99.7	0.1994	60
70	0.5097	103.4	0.2110	0.4559	103.0	0.2085	0.4110	102.5	0.2061	0.3728	102.0	0.2038	70
80	0.5238	105.7	0.2152	0.4692	105.2	0.2127	0.4235	104.8	0.2103	0.3847	104.3	0.2081	80
90	0.5377	107.9	0.2193	0.4822	107.5	0.2168	0.4358	107.0	0.2145	0.3964	106.6	0.2123	90
100	0.5514	110.1	0.2234	0.4950	109.7	0.2209	0.4479	109.3	0.2186	0.4079	108.9	0.2165	100
110	0.5650	112.4	0.2274	0.5076	112.0	0.2250	0.4597	111.6	0.2227	0.4191	111.2	0.2206	110
120	0.5784	114.7	0.2314	0.5201	114.3	0.2290	0.4715	114.0	0.2267	0.4302	113.6	0.2246	120
130	0.5918	117.0	0.2353	0.5325	116.6	0.2329	0.4831	116.3	0.2307	0.4411	115.9	0.2287	130
140	0.6049	119.3	0.2392	0.5447	119.0	0.2369	0.4945	118.6	0.2347	0.4519	118.3	0.2326	140
150	0.6180	121.7	0.2431	0.5568	121.3	0.2407	0.5058	121.0	0.2386	0.4626	120.7	0.2366	150
160	0.6310	124.0	0.2469	0.5688	123.7	0.2446	0.5170	123.4	0.2425	0.4731	123.1	0.2405	160
170	0.6439	126.4	0.2507	0.5807	126.1	0.2484	0.5281	125.8	0.2463	0.4836	125.5	0.2443	170
180	0.6566	128.8	0.2545	0.5926	128.5	0.2522	0.5391	128.2	0.2501	0.4939	127.9	0.2481	180
190	0.6694	131.2	0.2582	0.6043	130.9	0.2560	0.5500	130.6	0.2539	0.5041	130.3	0.2519	190
200	0.6820	133.6	0.2619	0.6159	133.4	0.2597	0.5609	133.1	0.2576	0.5143	132.8	0.2557	200
210	0.6945	136.1	0.2656	0.6275	135.8	0.2634	0.5717	135.5	0.2613	0.5244	135.3	0.2594	210
220	0.7070	138.6	0.2693	0.6390	138.3	0.2671	0.5823	138.0	0.2650	0.5344	137.8	0.2631	220
230	0.7195	141.0	0.2729	0.6505	140.8	0.2707	0.5930	140.5	0.2687	0.5443	140.3	0.2668	230
240	0.7318	143.6	0.2765	0.6619	143.3	0.2743	0.6035	143.1	0.2723	0.5542	142.8	0.2704	240
250	0.7442	146.1	0.2801	0.6732	145.8	0.2779	0.6140	145.6	0.2759	0.5640	145.4	0.2740	250
260	0.7564	148.6	0.2837	0.6845	148.4	0.2815	0.6245	148.2	0.2795	0.5737	147.9	0.2776	260
270	0.7686	151.2	0.2872	0.6957	151.0	0.2850	0.6349	150.7	0.2830	0.5834	150.5	0.2812	270
280	0.7808	153.8	0.2907	0.7069	153.5	0.2886	0.6452	153.3	0.2866	0.5931	153.1	0.2847	280
290	0.7929	156.4	0.2942	0.7180	156.1	0.2921	0.6556	155.9	0.2901	0.6027	155.7	0.2882	290
300	0.8050	159.0	0.2977	0.7291	158.8	0.2955	0.6658	158.6	0.2936	0.6123	158.4	0.2917	300
310	0.8171	161.6	0.3011	0.7401	161.4	0.2990	0.6760	161.2	0.2970	0.6218	161.0	0.2952	310
320	0.8291	164.3	0.3045	0.7512	164.1	0.3024	0.6862	163.9	0.3005	0.6313	163.7	0.2986	320
330	0.8411	166.9	0.3079	0.7621	166.7	0.3058	0.6964	166.5	0.3039	0.6407	166.4	0.3021	330
340	0.8530	169.6	0.3113	0.7731	169.4	0.3092	0.7065	169.2	0.3073	0.6502	169.1	0.3055	340
350	—	—	—	0.7840	172.1	0.3126	0.7166	171.9	0.3106	0.6595	171.8	0.3088	350
360	—	—	—	—	—	—	0.7266	174.7	0.3140	0.6689	174.5	0.3122	360

Suva® 404A (HP62) Superheated Vapor—Constant Pressure Tables

V = Volume in ft³/lb H = Enthalpy in Btu/lb S = Entropy in Btu/(lb) (°R) (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, psia													
TEMP. °F	140.00			150.00			160.00			170.00			TEMP. °F
	(60.44°F)			(64.87°F)			(69.09°F)			(73.11°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.3285)	(99.3)	(0.1974)	(0.3052)	(99.8)	(0.1972)	(0.2847)	(100.2)	(0.1970)	(0.2665)	(100.6)	(0.1968)	
70	0.3398	101.5	0.2016	0.3111	101.0	0.1995	0.2857	100.4	0.1974	—	—	—	70
80	0.3513	103.8	0.2059	0.3222	103.3	0.2039	0.2966	102.8	0.2019	0.2738	102.3	0.1999	80
90	0.3625	106.2	0.2102	0.3330	105.7	0.2082	0.3071	105.2	0.2063	0.2841	104.7	0.2044	90
100	0.3735	108.5	0.2144	0.3436	108.1	0.2124	0.3173	107.6	0.2105	0.2940	107.1	0.2087	100
110	0.3842	110.8	0.2186	0.3539	110.4	0.2166	0.3273	110.0	0.2148	0.3037	109.6	0.2130	110
120	0.3948	113.2	0.2227	0.3640	112.8	0.2208	0.3370	112.4	0.2189	0.3131	112.0	0.2172	120
130	0.4052	115.6	0.2267	0.3739	115.2	0.2248	0.3465	114.8	0.2231	0.3223	114.4	0.2213	130
140	0.4154	117.9	0.2307	0.3837	117.6	0.2289	0.3559	117.2	0.2271	0.3313	116.8	0.2254	140
150	0.4255	120.3	0.2347	0.3933	120.0	0.2328	0.3651	119.6	0.2311	0.3402	119.3	0.2295	150
160	0.4355	122.7	0.2386	0.4028	122.4	0.2368	0.3742	122.1	0.2351	0.3489	121.7	0.2334	160
170	0.4453	125.2	0.2425	0.4122	124.8	0.2407	0.3831	124.5	0.2390	0.3575	124.2	0.2374	170
180	0.4551	127.6	0.2463	0.4214	127.3	0.2445	0.3920	127.0	0.2429	0.3659	126.7	0.2413	180
190	0.4647	130.0	0.2501	0.4306	129.7	0.2484	0.4007	129.4	0.2467	0.3743	129.1	0.2451	190
200	0.4743	132.5	0.2539	0.4397	132.2	0.2522	0.4093	131.9	0.2505	0.3826	131.6	0.2490	200
210	0.4838	135.0	0.2576	0.4487	134.7	0.2559	0.4179	134.4	0.2543	0.3907	134.2	0.2528	210
220	0.4932	137.5	0.2613	0.4576	137.2	0.2596	0.4263	137.0	0.2580	0.3988	136.7	0.2565	220
230	0.5026	140.0	0.2650	0.4664	139.8	0.2633	0.4347	139.5	0.2617	0.4068	139.2	0.2602	230
240	0.5119	142.6	0.2687	0.4752	142.3	0.2670	0.4431	142.1	0.2654	0.4147	141.8	0.2639	240
250	0.5211	145.1	0.2723	0.4839	144.9	0.2706	0.4513	144.6	0.2691	0.4226	144.4	0.2676	250
260	0.5302	147.7	0.2759	0.4925	147.5	0.2742	0.4595	147.2	0.2727	0.4304	147.0	0.2712	260
270	0.5393	150.3	0.2795	0.5011	150.0	0.2778	0.4677	149.8	0.2763	0.4382	149.6	0.2748	270
280	0.5484	152.9	0.2830	0.5097	152.7	0.2814	0.4758	152.4	0.2798	0.4459	152.2	0.2784	280
290	0.5574	155.5	0.2865	0.5182	155.3	0.2849	0.4838	155.1	0.2834	0.4535	154.9	0.2819	290
300	0.5664	158.1	0.2900	0.5266	157.9	0.2884	0.4918	157.7	0.2869	0.4611	157.5	0.2855	300
310	0.5753	160.8	0.2935	0.5350	160.6	0.2919	0.4998	160.4	0.2904	0.4687	160.2	0.2890	310
320	0.5842	163.5	0.2969	0.5434	163.3	0.2954	0.5077	163.1	0.2938	0.4762	162.9	0.2924	320
330	0.5930	166.2	0.3004	0.5517	166.0	0.2988	0.5156	165.8	0.2973	0.4837	165.6	0.2959	330
340	0.6019	168.9	0.3038	0.5600	168.7	0.3022	0.5234	168.5	0.3007	0.4911	168.3	0.2993	340
350	0.6106	171.6	0.3072	0.5683	171.4	0.3056	0.5312	171.2	0.3041	0.4985	171.0	0.3027	350
360	0.6194	174.3	0.3105	0.5765	174.1	0.3089	0.5390	174.0	0.3075	0.5059	173.8	0.3061	360
370	0.6281	177.1	0.3138	0.5847	176.9	0.3123	0.5467	176.7	0.3108	0.5132	176.5	0.3094	370
380	—	—	—	—	—	—	—	—	—	0.5205	179.3	0.3128	380

TEMP. °F	180.00			190.00			200.00			220.00			TEMP. °F
	(76.96°F)			(80.65°F)			(84.20°F)			(90.91°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.2502)	(101.0)	(0.1966)	(0.2356)	(101.3)	(0.1964)	(0.2223)	(101.6)	(0.1962)	(0.1992)	(102.2)	(0.1957)	
80	0.2534	101.8	0.1980	—	—	—	—	—	—	—	—	—	80
90	0.2635	104.2	0.2025	0.2449	103.7	0.2007	0.2280	103.1	0.1989	—	—	—	90
100	0.2732	106.7	0.2069	0.2545	106.2	0.2052	0.2375	105.7	0.2034	0.2078	104.6	0.2000	100
110	0.2826	109.1	0.2112	0.2637	108.6	0.2095	0.2466	108.2	0.2079	0.2167	107.2	0.2046	110
120	0.2918	111.5	0.2155	0.2726	111.1	0.2138	0.2553	110.7	0.2122	0.2252	109.7	0.2091	120
130	0.3007	114.0	0.2197	0.2813	113.6	0.2181	0.2638	113.2	0.2165	0.2334	112.3	0.2135	130
140	0.3094	116.4	0.2238	0.2898	116.1	0.2222	0.2721	115.7	0.2207	0.2413	114.8	0.2177	140
150	0.3180	118.9	0.2279	0.2981	118.5	0.2263	0.2801	118.1	0.2248	0.2490	117.4	0.2219	150
160	0.3264	121.4	0.2319	0.3062	121.0	0.2304	0.2880	120.7	0.2289	0.2565	119.9	0.2261	160
170	0.3347	123.8	0.2358	0.3142	123.5	0.2344	0.2958	123.2	0.2329	0.2638	122.5	0.2302	170
180	0.3428	126.3	0.2398	0.3220	126.0	0.2383	0.3034	125.7	0.2369	0.2710	125.0	0.2342	180
190	0.3508	128.8	0.2436	0.3298	128.5	0.2422	0.3108	128.2	0.2408	0.2781	127.6	0.2381	190
200	0.3587	131.3	0.2475	0.3374	131.0	0.2461	0.3182	130.7	0.2447	0.2850	130.1	0.2421	200
210	0.3666	133.9	0.2513	0.3449	133.6	0.2499	0.3254	133.3	0.2485	0.2918	132.7	0.2459	210
220	0.3743	136.4	0.2551	0.3524	136.1	0.2537	0.3326	135.9	0.2523	0.2985	135.3	0.2498	220
230	0.3820	139.0	0.2588	0.3597	138.7	0.2574	0.3397	138.4	0.2561	0.3051	137.9	0.2536	230
240	0.3895	141.5	0.2625	0.3670	141.3	0.2611	0.3467	141.0	0.2598	0.3116	140.5	0.2573	240
250	0.3971	144.1	0.2662	0.3742	143.9	0.2648	0.3536	143.6	0.2635	0.3181	143.1	0.2610	250
260	0.4045	146.7	0.2698	0.3814	146.5	0.2685	0.3605	146.3	0.2672	0.3245	145.8	0.2647	260
270	0.4119	149.4	0.2734	0.3884	149.1	0.2721	0.3673	148.9	0.2708	0.3308	148.4	0.2684	270
280	0.4193	152.0	0.2770	0.3955	151.8	0.2757	0.3741	151.5	0.2744	0.3371	151.1	0.2720	280
290	0.4266	154.6	0.2806	0.4025	154.4	0.2792	0.3808	154.2	0.2780	0.3433	153.7	0.2756	290
300	0.4338	157.3	0.2841	0.4094	157.1	0.2828	0.3874	156.9	0.2815	0.3495	156.4	0.2792	300
310	0.4410	160.0	0.2876	0.4163	159.8	0.2863	0.3940	159.6	0.2850	0.3556	159.1	0.2827	310
320	0.4482	162.7	0.2911	0.4231	162.5	0.2898	0.4006	162.3	0.2885	0.3616	161.9	0.2862	320
330	0.4553	165.4	0.2945	0.4299	165.2	0.2932	0.4071	165.0	0.2920	0.3677	164.6	0.2897	330
340	0.4624	168.1	0.2980	0.4367	167.9	0.2967	0.4136	167.7	0.2955	0.3736	167.3	0.2932	340
350	0.4694	170.8	0.3014	0.4434	170.7	0.3001	0.4200	170.5	0.2989	0.3796	170.1	0.2966	350
360	0.4764	173.6	0.3047	0.4501	173.4	0.3035	0.4264	173.2	0.3023	0.3855	172.9	0.3000	360
370	0.4834	176.4	0.3081	0.4568	176.2	0.3068	0.4328	176.0	0.3056	0.3914	175.7	0.3034	370
380	0.4904	179.2	0.3114	0.4634	179.0	0.3102	0.4391	178.8	0.3090	0.3972	178.5	0.3067	380
390	—	—	—	0.4700	181.8	0.3135	0.4455	181.6	0.3123	0.4031	181.3	0.3101	390
400	—	—	—	—	—	—	—	—	—	0.4088	184.1	0.3134	400

Suva® 404A (HP62) Superheated Vapor—Constant Pressure Tables

V = Volume in ft³/lb H = Enthalpy in Btu/lb S = Entropy in Btu/(lb) (°R) (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, psia													
TEMP. °F	240.00			260.00			280.00			300.00			TEMP. °F
	(97.19°F)			(103.08°F)			(108.65°F)			(113.92°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.1798)	(102.6)	(0.1952)	(0.1631)	(103.0)	(0.1947)	(0.1487)	(103.2)	(0.1941)	(0.1360)	(103.4)	(0.1935)	
100	0.1824	103.4	0.1966	—	—	—	—	—	—	—	—	—	100
110	0.1913	106.1	0.2014	0.1694	104.9	0.1982	0.1499	103.6	0.1949	—	—	—	110
120	0.1998	108.7	0.2060	0.1779	107.7	0.2030	0.1587	106.5	0.1999	0.1415	105.3	0.1968	120
130	0.2078	111.4	0.2105	0.1859	110.4	0.2076	0.1667	109.3	0.2048	0.1498	108.2	0.2019	130
140	0.2155	114.0	0.2149	0.1934	113.1	0.2121	0.1743	112.1	0.2094	0.1575	111.1	0.2067	140
150	0.2229	116.6	0.2192	0.2007	115.7	0.2165	0.1815	114.8	0.2139	0.1646	113.9	0.2113	150
160	0.2301	119.2	0.2234	0.2077	118.4	0.2208	0.1883	117.5	0.2183	0.1714	116.7	0.2158	160
170	0.2371	121.7	0.2275	0.2145	121.0	0.2250	0.1949	120.2	0.2226	0.1779	119.4	0.2202	170
180	0.2440	124.3	0.2316	0.2210	123.6	0.2292	0.2013	122.9	0.2268	0.1841	122.1	0.2245	180
190	0.2507	126.9	0.2356	0.2274	126.2	0.2332	0.2075	125.5	0.2309	0.1901	124.8	0.2287	190
200	0.2572	129.5	0.2396	0.2337	128.9	0.2372	0.2135	128.2	0.2350	0.1959	127.5	0.2328	200
210	0.2637	132.1	0.2435	0.2399	131.5	0.2412	0.2194	130.9	0.2390	0.2016	130.2	0.2369	210
220	0.2700	134.7	0.2474	0.2459	134.1	0.2451	0.2252	133.5	0.2429	0.2072	132.9	0.2409	220
230	0.2762	137.3	0.2512	0.2518	136.8	0.2490	0.2308	136.2	0.2468	0.2126	135.6	0.2448	230
240	0.2824	140.0	0.2550	0.2576	139.4	0.2528	0.2364	138.9	0.2507	0.2180	138.3	0.2487	240
250	0.2885	142.6	0.2587	0.2634	142.1	0.2566	0.2419	141.6	0.2545	0.2232	141.0	0.2525	250
260	0.2945	145.3	0.2624	0.2690	144.8	0.2603	0.2472	144.3	0.2583	0.2284	143.7	0.2563	260
270	0.3004	147.9	0.2661	0.2746	147.4	0.2640	0.2526	147.0	0.2620	0.2334	146.5	0.2601	270
280	0.3063	150.6	0.2698	0.2802	150.1	0.2677	0.2578	149.7	0.2657	0.2384	149.2	0.2638	280
290	0.3121	153.3	0.2734	0.2856	152.8	0.2713	0.2630	152.4	0.2693	0.2434	151.9	0.2675	290
300	0.3178	156.0	0.2770	0.2911	155.6	0.2749	0.2681	155.1	0.2730	0.2483	154.7	0.2711	300
310	0.3235	158.7	0.2805	0.2964	158.3	0.2785	0.2732	157.9	0.2766	0.2531	157.4	0.2747	310
320	0.3292	161.5	0.2841	0.3017	161.0	0.2820	0.2782	160.6	0.2801	0.2578	160.2	0.2783	320
330	0.3348	164.2	0.2876	0.3070	163.8	0.2855	0.2832	163.4	0.2837	0.2626	163.0	0.2819	330
340	0.3404	167.0	0.2910	0.3122	166.6	0.2890	0.2881	166.2	0.2872	0.2673	165.8	0.2854	340
350	0.3459	169.7	0.2945	0.3174	169.4	0.2925	0.2930	169.0	0.2906	0.2719	168.6	0.2889	350
360	0.3514	172.5	0.2979	0.3226	172.2	0.2959	0.2979	171.8	0.2941	0.2765	171.4	0.2923	360
370	0.3569	175.3	0.3013	0.3277	175.0	0.2993	0.3027	174.6	0.2975	0.2811	174.3	0.2958	370
380	0.3623	178.1	0.3047	0.3328	177.8	0.3027	0.3075	177.4	0.3009	0.2856	177.1	0.2992	380
390	0.3677	181.0	0.3080	0.3379	180.6	0.3061	0.3123	180.3	0.3043	0.2901	180.0	0.3026	390
400	0.3731	183.8	0.3113	0.3429	183.5	0.3094	0.3170	183.1	0.3076	0.2946	182.8	0.3059	400
410	—	—	—	0.3479	186.3	0.3127	0.3217	186.0	0.3109	0.2990	185.7	0.3092	410
420	—	—	—	—	—	—	—	—	—	0.3034	188.6	0.3125	420

TEMP. °F	320.00			340.00			360.00			380.00			TEMP. °F
	(118.93°F)			(123.72°F)			(128.30°F)			(132.69°F)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.1248)	(103.5)	(0.1928)	(0.1148)	(103.5)	(0.1921)	(0.1057)	(103.4)	(0.1912)	(0.0974)	(103.2)	(0.1903)	
120	0.1258	103.8	0.1934	—	—	—	—	—	—	—	—	—	120
130	0.1346	107.0	0.1989	0.1206	105.6	0.1957	0.1074	104.0	0.1923	—	—	—	130
140	0.1424	110.0	0.2039	0.1288	108.8	0.2011	0.1163	107.5	0.1982	0.1046	106.0	0.1950	140
150	0.1496	112.9	0.2088	0.1362	111.9	0.2062	0.1240	110.7	0.2035	0.1128	109.5	0.2007	150
160	0.1564	115.8	0.2134	0.1430	114.8	0.2110	0.1310	113.8	0.2085	0.1200	112.7	0.2060	160
170	0.1628	118.6	0.2179	0.1494	117.7	0.2156	0.1374	116.8	0.2133	0.1265	115.8	0.2110	170
180	0.1689	121.3	0.2223	0.1555	120.5	0.2200	0.1435	119.7	0.2179	0.1326	118.8	0.2157	180
190	0.1748	124.1	0.2265	0.1613	123.3	0.2244	0.1492	122.6	0.2223	0.1383	121.8	0.2202	190
200	0.1805	126.8	0.2307	0.1669	126.1	0.2287	0.1547	125.4	0.2267	0.1437	124.6	0.2247	200
210	0.1861	129.6	0.2348	0.1723	128.9	0.2328	0.1600	128.2	0.2309	0.1489	127.5	0.2290	210
220	0.1914	132.3	0.2389	0.1775	131.7	0.2369	0.1651	131.0	0.2350	0.1540	130.4	0.2332	220
230	0.1967	135.0	0.2428	0.1826	134.4	0.2410	0.1701	133.8	0.2391	0.1588	133.2	0.2373	230
240	0.2018	137.8	0.2468	0.1876	137.2	0.2449	0.1749	136.6	0.2431	0.1635	136.0	0.2414	240
250	0.2069	140.5	0.2507	0.1924	139.9	0.2488	0.1796	139.4	0.2471	0.1681	138.8	0.2454	250
260	0.2118	143.2	0.2545	0.1972	142.7	0.2527	0.1842	142.2	0.2510	0.1726	141.6	0.2493	260
270	0.2167	146.0	0.2583	0.2019	145.5	0.2565	0.1888	144.9	0.2548	0.1770	144.4	0.2532	270
280	0.2215	148.7	0.2620	0.2065	148.2	0.2603	0.1932	147.7	0.2586	0.1813	147.2	0.2570	280
290	0.2262	151.5	0.2657	0.2111	151.0	0.2640	0.1976	150.5	0.2624	0.1855	150.1	0.2608	290
300	0.2309	154.2	0.2694	0.2155	153.8	0.2677	0.2019	153.3	0.2661	0.1897	152.9	0.2645	300
310	0.2355	157.0	0.2730	0.2199	156.6	0.2713	0.2061	156.1	0.2698	0.1938	155.7	0.2682	310
320	0.2400	159.8	0.2766	0.2243	159.4	0.2750	0.2103	159.0	0.2734	0.1978	158.5	0.2719	320
330	0.2445	162.6	0.2802	0.2286	162.2	0.2785	0.2145	161.8	0.2770	0.2018	161.4	0.2755	330
340	0.2490	165.4	0.2837	0.2329	165.0	0.2821	0.2186	164.6	0.2806	0.2058	164.2	0.2791	340
350	0.2534	168.2	0.2872	0.2371	167.8	0.2856	0.2226	167.5	0.2841	0.2097	167.1	0.2826	350
360	0.2578	171.1	0.2907	0.2413	170.7	0.2891	0.2266	170.3	0.2876	0.2135	169.9	0.2861	360
370	0.2621	173.9	0.2941	0.2454	173.5	0.2926	0.2306	173.2	0.2911	0.2173	172.8	0.2896	370
380	0.2664	176.8	0.2975	0.2495	176.4	0.2960	0.2345	176.1	0.2945	0.2211	175.7	0.2931	380
390	0.2707	179.6	0.3009	0.2536	179.3	0.2994	0.2384	178.9	0.2979	0.2248	178.6	0.2965	390
400	0.2749	182.5	0.3043	0.2576	182.2	0.3028	0.2423	181.8	0.3013	0.2285	181.5	0.2999	400
410	0.2792	185.4	0.3076	0.2616	185.1	0.3061	0.2461	184.7	0.3047	0.2322	184.4	0.3033	410
420	0.2833	188.3	0.3110	0.2656	188.0	0.3095	0.2499	187.7	0.3080	0.2358	187.4	0.3066	420
430	—	—	—	0.2696	190.9	0.3128	0.2537	190.6	0.3113	0.2395	190.3	0.3100	430
440	—	—	—	—	—	—	—	—	—	0.2431	193.2	0.3133	440

Suva® 404A (HP62) Superheated Vapor—Constant Pressure Tables

V = Volume in ft³/lb H = Enthalpy in Btu/lb S = Entropy in Btu/(lb) (°R) (Saturation Properties in parentheses)

ABSOLUTE PRESSURE, psia												
TEMP. °F	400.00			450.00			500.00					
	(136.90°F)			(146.79°F)			(155.86°F)					
	V	H	S	V	H	S	V	H	S			
	(0.0898)	(102.9)	(0.1892)	(0.0730)	(101.7)	(0.1859)	(0.0575)	(99.1)	(0.1808)			
140	0.0932	104.3	0.1915	—	—	—	—	—	—			140
150	0.1023	108.1	0.1978	0.0772	103.5	0.1890	—	—	—			150
160	0.1098	111.5	0.2034	0.0871	108.1	0.1964	0.0652	102.8	0.1867			160
170	0.1166	114.8	0.2086	0.0948	111.9	0.2024	0.0758	108.2	0.1953			170
180	0.1227	117.9	0.2135	0.1014	115.4	0.2079	0.0834	112.4	0.2019			180
190	0.1284	120.9	0.2182	0.1073	118.6	0.2130	0.0898	116.1	0.2077			190
200	0.1338	123.9	0.2227	0.1127	121.8	0.2179	0.0955	119.5	0.2129			200
210	0.1390	126.8	0.2271	0.1178	124.9	0.2225	0.1006	122.8	0.2179			210
220	0.1439	129.7	0.2314	0.1226	127.9	0.2270	0.1054	126.0	0.2226			220
230	0.1487	132.5	0.2356	0.1272	130.9	0.2313	0.1100	129.1	0.2272			230
240	0.1533	135.4	0.2397	0.1316	133.8	0.2356	0.1143	132.2	0.2316			240
250	0.1578	138.2	0.2437	0.1359	136.8	0.2397	0.1184	135.2	0.2359			250
260	0.1622	141.1	0.2477	0.1401	139.7	0.2438	0.1224	138.2	0.2401			260
270	0.1664	143.9	0.2516	0.1441	142.6	0.2478	0.1262	141.2	0.2442			270
280	0.1706	146.7	0.2555	0.1480	145.5	0.2517	0.1300	144.2	0.2482			280
290	0.1747	149.6	0.2593	0.1519	148.4	0.2556	0.1336	147.1	0.2522			290
300	0.1787	152.4	0.2630	0.1556	151.2	0.2595	0.1371	150.1	0.2561			300
310	0.1827	155.3	0.2667	0.1593	154.1	0.2632	0.1406	153.0	0.2600			310
320	0.1866	158.1	0.2704	0.1629	157.0	0.2670	0.1440	155.9	0.2637			320
330	0.1905	161.0	0.2741	0.1665	159.9	0.2707	0.1473	158.9	0.2675			330
340	0.1943	163.8	0.2777	0.1700	162.8	0.2743	0.1506	161.8	0.2712			340
350	0.1980	166.7	0.2812	0.1734	165.7	0.2779	0.1538	164.8	0.2748			350
360	0.2017	169.6	0.2848	0.1769	168.6	0.2815	0.1570	167.7	0.2785			360
370	0.2054	172.5	0.2883	0.1802	171.6	0.2850	0.1602	170.7	0.2820			370
380	0.2090	175.4	0.2917	0.1836	174.5	0.2885	0.1633	173.6	0.2856			380
390	0.2126	178.3	0.2952	0.1869	177.4	0.2920	0.1663	176.6	0.2891			390
400	0.2162	181.2	0.2986	0.1901	180.4	0.2954	0.1693	179.5	0.2926			400
410	0.2197	184.1	0.3020	0.1933	183.3	0.2989	0.1723	182.5	0.2960			410
420	0.2232	187.0	0.3053	0.1965	186.3	0.3022	0.1753	185.5	0.2994			420
430	0.2267	190.0	0.3087	0.1997	189.2	0.3056	0.1782	188.5	0.3028			430
440	0.2301	192.9	0.3120	0.2029	192.2	0.3089	0.1811	191.5	0.3061			440
450	—	—	—	0.2060	195.2	0.3122	0.1840	194.5	0.3095			450
460	—	—	—	—	—	—	0.1868	197.5	0.3128			460
470	—	—	—	—	—	—	—	—	—			470

PHỤ LỤC 10: BẢNG TRA MÔI CHẤT R410A
Suva® 410A Saturation Properties—Temperature Table

TEMP. °C	PRESSURE kPa		VOLUME m³/kg		DENSITY kg/m³		ENTHALPY kJ/kg			ENTROPY kJ/(kg)(K)		TEMP. °C
	LIQUID p _f	VAPOR p _g	LIQUID v _f	VAPOR v _g	LIQUID 1/v _f	VAPOR 1/v _g	LIQUID h _f	LATENT h _{fg}	VAPOR h _g	LIQUID s _f	VAPOR s _g	
-100	3.8	3.7	0.0007	5.3267	1509.0	0.188	63.3	311.4	374.7	0.3789	2.1774	-100
-99	4.1	4.1	0.0007	4.8882	1506.2	0.205	64.5	310.8	375.3	0.3857	2.1703	-99
-98	4.5	4.4	0.0007	4.4913	1503.4	0.223	65.7	310.2	375.8	0.3925	2.1633	-98
-97	4.9	4.9	0.0007	4.1317	1500.6	0.242	66.9	309.5	376.4	0.3993	2.1565	-97
-96	5.4	5.3	0.0007	3.8053	1497.8	0.263	68.1	308.9	377.0	0.4061	2.1498	-96
-95	5.9	5.8	0.0007	3.5088	1494.9	0.285	69.3	308.3	377.6	0.4128	2.1432	-95
-94	6.4	6.3	0.0007	3.2391	1492.1	0.309	70.5	307.6	378.2	0.4196	2.1367	-94
-93	6.9	6.8	0.0007	2.9935	1489.3	0.334	71.7	307.0	378.7	0.4263	2.1304	-93
-92	7.5	7.4	0.0007	2.7694	1486.4	0.361	73.0	306.3	379.3	0.4330	2.1241	-92
-91	8.2	8.1	0.0007	2.5649	1483.6	0.390	74.2	305.7	379.9	0.4398	2.1180	-91
-90	8.8	8.8	0.0007	2.3780	1480.7	0.421	75.4	305.0	380.5	0.4465	2.1120	-90
-89	9.6	9.5	0.0007	2.2069	1477.9	0.453	76.6	304.4	381.0	0.4532	2.1061	-89
-88	10.3	10.2	0.0007	2.0502	1475.0	0.488	77.9	303.7	381.6	0.4599	2.1003	-88
-87	11.2	11.1	0.0007	1.9065	1472.1	0.525	79.1	303.0	382.2	0.4666	2.0945	-87
-86	12.0	12.0	0.0007	1.7746	1469.2	0.564	80.4	302.4	382.7	0.4732	2.0889	-86
-85	13.0	12.9	0.0007	1.6534	1466.3	0.605	81.6	301.7	383.3	0.4799	2.0834	-85
-84	14.0	13.9	0.0007	1.5419	1463.4	0.649	82.9	301.0	383.9	0.4866	2.0780	-84
-83	15.0	14.9	0.0007	1.4391	1460.5	0.695	84.1	300.3	384.4	0.4932	2.0727	-83
-82	16.2	16.1	0.0007	1.3445	1457.6	0.744	85.4	299.7	385.0	0.4998	2.0674	-82
-81	17.4	17.3	0.0007	1.2571	1454.7	0.795	86.6	299.0	385.6	0.5064	2.0623	-81
-80	18.6	18.5	0.0007	1.1764	1451.7	0.850	87.9	298.3	386.1	0.5130	2.0572	-80
-79	20.0	19.9	0.0007	1.1019	1448.8	0.908	89.2	297.6	386.7	0.5196	2.0523	-79
-78	21.4	21.3	0.0007	1.0328	1445.8	0.968	90.4	296.9	387.3	0.5262	2.0474	-78
-77	22.9	22.8	0.0007	0.9689	1442.8	1.032	91.7	296.1	387.8	0.5328	2.0426	-77
-76	24.5	24.4	0.0007	0.9097	1439.9	1.099	93.0	295.4	388.4	0.5393	2.0378	-76
-75	26.2	26.1	0.0007	0.8547	1436.9	1.170	94.2	294.7	389.0	0.5459	2.0332	-75
-74	27.9	27.8	0.0007	0.8037	1433.9	1.244	95.5	294.0	389.5	0.5524	2.0286	-74
-73	29.8	29.7	0.0007	0.7563	1430.9	1.322	96.8	293.2	390.1	0.5589	2.0241	-73
-72	31.8	31.7	0.0007	0.7121	1427.9	1.404	98.1	292.5	390.6	0.5654	2.0196	-72
-71	33.9	33.7	0.0007	0.6711	1424.8	1.490	99.4	291.8	391.2	0.5719	2.0153	-71
-70	36.0	35.9	0.0007	0.6328	1421.8	1.580	100.7	291.0	391.7	0.5784	2.0110	-70
-69	38.3	38.2	0.0007	0.5972	1418.8	1.675	102.0	290.3	392.3	0.5849	2.0067	-69
-68	40.7	40.6	0.0007	0.5639	1415.7	1.773	103.3	289.5	392.8	0.5913	2.0026	-68
-67	43.3	43.2	0.0007	0.5328	1412.7	1.877	104.6	288.8	393.4	0.5978	1.9985	-67
-66	45.9	45.8	0.0007	0.5038	1409.6	1.985	105.9	288.0	393.9	0.6042	1.9944	-66
-65	48.7	48.6	0.0007	0.4766	1406.5	2.098	107.2	287.2	394.4	0.6106	1.9904	-65
-64	51.7	51.5	0.0007	0.4512	1403.4	2.216	108.5	286.4	395.0	0.6170	1.9865	-64
-63	54.7	54.6	0.0007	0.4274	1400.3	2.340	109.9	285.7	395.5	0.6234	1.9827	-63
-62	57.9	57.8	0.0007	0.4051	1397.2	2.469	111.2	284.9	396.0	0.6298	1.9788	-62
-61	61.3	61.2	0.0007	0.3842	1394.1	2.603	112.5	284.1	396.6	0.6361	1.9751	-61
-60	64.8	64.7	0.0007	0.3646	1390.9	2.743	113.8	283.3	397.1	0.6425	1.9714	-60
-59	68.5	68.3	0.0007	0.3461	1387.8	2.889	115.2	282.5	397.6	0.6488	1.9678	-59
-58	72.3	72.2	0.0007	0.3288	1384.6	3.041	116.5	281.6	398.2	0.6551	1.9642	-58
-57	76.4	76.2	0.0007	0.3126	1381.4	3.199	117.9	280.8	398.7	0.6614	1.9606	-57
-56	80.6	80.4	0.0007	0.2972	1378.3	3.364	119.2	280.0	399.2	0.6677	1.9571	-56
-55	84.9	84.7	0.0007	0.2828	1375.1	3.536	120.5	279.2	399.7	0.6740	1.9537	-55
-54	89.5	89.3	0.0007	0.2692	1371.9	3.714	121.9	278.3	400.2	0.6803	1.9503	-54
-53	94.2	94.0	0.0007	0.2565	1368.7	3.899	123.2	277.5	400.7	0.6865	1.9470	-53
-52	99.2	99.0	0.0007	0.2444	1365.4	4.092	124.6	276.6	401.2	0.6928	1.9437	-52
-51	104.3	104.1	0.0007	0.2330	1362.2	4.292	126.0	275.8	401.7	0.6990	1.9404	-51
-50	109.7	109.4	0.0007	0.2222	1358.9	4.500	127.3	274.9	402.2	0.7052	1.9372	-50
-49	115.3	115.0	0.0007	0.2121	1355.7	4.715	128.7	274.1	402.7	0.7114	1.9340	-49
-48	121.1	120.8	0.0007	0.2025	1352.4	4.939	130.1	273.2	403.2	0.7176	1.9309	-48
-47	127.1	126.8	0.0007	0.1934	1349.1	5.171	131.4	272.3	403.7	0.7238	1.9278	-47
-46	133.4	133.0	0.0007	0.1848	1345.8	5.411	132.8	271.4	404.2	0.7299	1.9248	-46
-45	139.9	139.5	0.0007	0.1767	1342.5	5.660	134.2	270.5	404.7	0.7361	1.9217	-45
-44	146.6	146.3	0.0008	0.1690	1339.2	5.918	135.6	269.6	405.2	0.7422	1.9188	-44
-43	153.6	153.2	0.0008	0.1617	1335.8	6.186	137.0	268.7	405.7	0.7483	1.9158	-43
-42	160.9	160.5	0.0008	0.1547	1332.5	6.462	138.4	267.8	406.1	0.7544	1.9129	-42
-41	168.4	168.0	0.0008	0.1482	1329.1	6.749	139.7	266.9	406.6	0.7605	1.9101	-41

Suva® 410A Saturation Properties—Temperature Table

TEMP. °C	PRESSURE kPa		VOLUME m³/kg		DENSITY kg/m³		ENTHALPY kJ/kg			ENTROPY kJ/(kg)(K)		TEMP. °C
	LIQUID p _f	VAPOR p _g	LIQUID v _f	VAPOR v _g	LIQUID 1/v _f	VAPOR 1/v _g	LIQUID h _f	LATENT h _{fg}	VAPOR h _g	LIQUID s _f	VAPOR s _g	
-40	176.2	175.8	0.0008	0.1419	1325.7	7.045	141.1	265.9	407.1	0.7666	1.9072	-40
-39	184.3	183.8	0.0008	0.1360	1322.3	7.352	142.5	265.0	407.6	0.7727	1.9045	-39
-38	192.7	192.2	0.0008	0.1304	1318.9	7.669	144.0	264.1	408.0	0.7787	1.9017	-38
-37	201.3	200.8	0.0008	0.1251	1315.5	7.996	145.4	263.1	408.5	0.7847	1.8990	-37
-36	210.3	209.8	0.0008	0.1200	1312.1	8.335	146.8	262.2	408.9	0.7908	1.8963	-36
-35	219.6	219.0	0.0008	0.1151	1308.6	8.685	148.2	261.2	409.4	0.7968	1.8936	-35
-34	229.2	228.6	0.0008	0.1105	1305.2	9.046	149.6	260.2	409.8	0.8028	1.8910	-34
-33	239.1	238.4	0.0008	0.1062	1301.7	9.419	151.0	259.3	410.3	0.8088	1.8884	-33
-32	249.3	248.6	0.0008	0.1020	1298.2	9.805	152.4	258.3	410.7	0.8148	1.8858	-32
-31	259.9	259.2	0.0008	0.0980	1294.7	10.202	153.9	257.3	411.2	0.8207	1.8832	-31
-30	270.8	270.1	0.0008	0.0942	1291.2	10.613	155.3	256.3	411.6	0.8267	1.8807	-30
-29	282.1	281.3	0.0008	0.0906	1287.6	11.036	156.7	255.3	412.0	0.8326	1.8782	-29
-28	293.7	292.9	0.0008	0.0872	1284.1	11.473	158.2	254.3	412.5	0.8385	1.8757	-28
-27	305.7	304.9	0.0008	0.0839	1280.5	11.923	159.6	253.3	412.9	0.8445	1.8733	-27
-26	318.1	317.2	0.0008	0.0807	1276.9	12.388	161.1	252.2	413.3	0.8504	1.8709	-26
-25	330.9	329.9	0.0008	0.0777	1273.3	12.866	162.5	251.2	413.7	0.8562	1.8685	-25
-24	344.0	343.0	0.0008	0.0749	1269.7	13.360	164.0	250.1	414.1	0.8621	1.8661	-24
-23	357.6	356.6	0.0008	0.0721	1266.0	13.868	165.4	249.1	414.5	0.8680	1.8638	-23
-22	371.5	370.5	0.0008	0.0695	1262.3	14.391	166.9	248.0	414.9	0.8738	1.8614	-22
-21	385.9	384.8	0.0008	0.0670	1258.7	14.931	168.4	247.0	415.3	0.8797	1.8591	-21
-20	400.7	399.5	0.0008	0.0646	1255.0	15.486	169.8	245.9	415.7	0.8855	1.8569	-20
-19	415.9	414.7	0.0008	0.0623	1251.3	16.058	171.3	244.8	416.1	0.8913	1.8546	-19
-18	431.6	430.3	0.0008	0.0601	1247.5	16.647	172.8	243.7	416.5	0.8971	1.8523	-18
-17	447.7	446.4	0.0008	0.0580	1243.8	17.253	174.3	242.6	416.9	0.9029	1.8501	-17
-16	464.3	462.9	0.0008	0.0559	1240.0	17.877	175.7	241.5	417.2	0.9087	1.8479	-16
-15	481.3	479.9	0.0008	0.0540	1236.2	18.519	177.2	240.4	417.6	0.9145	1.8457	-15
-14	498.9	497.4	0.0008	0.0521	1232.4	19.179	178.7	239.3	418.0	0.9203	1.8436	-14
-13	516.9	515.3	0.0008	0.0504	1228.6	19.859	180.2	238.1	418.3	0.9260	1.8414	-13
-12	535.4	533.7	0.0008	0.0486	1224.7	20.558	181.7	237.0	418.7	0.9318	1.8393	-12
-11	554.4	552.7	0.0008	0.0470	1220.8	21.276	183.2	235.8	419.1	0.9375	1.8372	-11
-10	573.9	572.1	0.0008	0.0454	1216.9	22.016	184.7	234.7	419.4	0.9432	1.8351	-10
-9	593.9	592.1	0.0008	0.0439	1213.0	22.776	186.2	233.5	419.7	0.9489	1.8330	-9
-8	614.4	612.6	0.0008	0.0425	1209.1	23.558	187.7	232.3	420.1	0.9547	1.8309	-8
-7	635.5	633.6	0.0008	0.0411	1205.1	24.361	189.3	231.1	420.4	0.9604	1.8288	-7
-6	657.2	655.1	0.0008	0.0397	1201.1	25.187	190.8	229.9	420.7	0.9660	1.8268	-6
-5	679.3	677.3	0.0008	0.0384	1197.1	26.036	192.3	228.7	421.0	0.9717	1.8247	-5
-4	702.1	699.9	0.0008	0.0372	1193.1	26.909	193.8	227.5	421.4	0.9774	1.8227	-4
-3	725.4	723.2	0.0008	0.0360	1189.0	27.806	195.4	226.3	421.7	0.9830	1.8207	-3
-2	749.3	747.0	0.0008	0.0348	1184.9	28.728	196.9	225.1	422.0	0.9887	1.8187	-2
-1	773.9	771.4	0.0009	0.0337	1180.8	29.675	198.5	223.8	422.3	0.9943	1.8167	-1
0	799.0	796.5	0.0009	0.0326	1176.7	30.649	200.0	222.5	422.5	1.0000	1.8147	0
1	824.7	822.1	0.0009	0.0316	1172.5	31.649	201.6	221.3	422.8	1.0056	1.8128	1
2	851.0	848.4	0.0009	0.0306	1168.3	32.676	203.1	220.0	423.1	1.0112	1.8108	2
3	878.0	875.3	0.0009	0.0297	1164.1	33.732	204.7	218.7	423.4	1.0168	1.8088	3
4	905.6	902.8	0.0009	0.0287	1159.8	34.817	206.2	217.4	423.6	1.0225	1.8069	4
5	933.9	931.0	0.0009	0.0278	1155.5	35.931	207.8	216.1	423.9	1.0281	1.8049	5
6	962.9	959.8	0.0009	0.0270	1151.2	37.076	209.4	214.8	424.1	1.0337	1.8030	6
7	992.5	989.3	0.0009	0.0261	1146.9	38.252	211.0	213.4	424.4	1.0392	1.8011	7
8	1022.8	1019.5	0.0009	0.0253	1142.5	39.461	212.6	212.1	424.6	1.0448	1.7991	8
9	1053.8	1050.4	0.0009	0.0246	1138.1	40.702	214.1	210.7	424.9	1.0504	1.7972	9
10	1085.5	1082.0	0.0009	0.0238	1133.7	41.977	215.7	209.3	425.1	1.0560	1.7953	10
11	1117.9	1114.3	0.0009	0.0231	1129.2	43.288	217.3	207.9	425.3	1.0616	1.7934	11
12	1151.0	1147.3	0.0009	0.0224	1124.7	44.634	219.0	206.5	425.5	1.0671	1.7914	12
13	1184.9	1181.1	0.0009	0.0217	1120.1	46.017	220.6	205.1	425.7	1.0727	1.7895	13
14	1219.5	1215.6	0.0009	0.0211	1115.6	47.437	222.2	203.7	425.9	1.0783	1.7876	14
15	1254.9	1250.8	0.0009	0.0205	1110.9	48.897	223.8	202.2	426.1	1.0838	1.7857	15
16	1291.0	1286.9	0.0009	0.0198	1106.3	50.398	225.4	200.8	426.2	1.0894	1.7838	16
17	1328.0	1323.7	0.0009	0.0193	1101.6	51.939	227.1	199.3	426.4	1.0949	1.7818	17
18	1365.7	1361.3	0.0009	0.0187	1096.9	53.523	228.7	197.8	426.5	1.1005	1.7799	18
19	1404.2	1399.6	0.0009	0.0181	1092.1	55.152	230.4	196.3	426.7	1.1060	1.7780	19

Suva® 410A Saturation Properties—Temperature Table

TEMP. °C	PRESSURE kPa		VOLUME m³/kg		DENSITY kg/m³		ENTHALPY kJ/kg			ENTROPY kJ/(kg)(K)		TEMP. °C
	LIQUID p _f	VAPOR p _g	LIQUID v _f	VAPOR v _g	LIQUID 1/v _f	VAPOR 1/v _g	LIQUID h _f	LATENT h _{fg}	VAPOR h _g	LIQUID s _f	VAPOR s _g	
20	1443.6	1438.8	0.0009	0.0176	1087.2	56.825	232.0	194.8	426.8	1.1116	1.7760	20
21	1483.7	1478.9	0.0009	0.0171	1082.4	58.545	233.7	193.2	426.9	1.1172	1.7741	21
22	1524.7	1519.7	0.0009	0.0166	1077.5	60.314	235.4	191.7	427.1	1.1227	1.7721	22
23	1566.6	1561.4	0.0009	0.0161	1072.5	62.132	237.1	190.1	427.2	1.1283	1.7702	23
24	1609.3	1604.0	0.0009	0.0156	1067.5	64.001	238.7	188.5	427.3	1.1338	1.7682	24
25	1652.9	1647.4	0.0009	0.0152	1062.4	65.924	240.4	186.9	427.3	1.1394	1.7662	25
26	1697.3	1691.7	0.0010	0.0147	1057.3	67.901	242.1	185.3	427.4	1.1450	1.7643	26
27	1742.7	1736.9	0.0010	0.0143	1052.1	69.935	243.9	183.6	427.5	1.1506	1.7623	27
28	1788.9	1783.0	0.0010	0.0139	1046.9	72.028	245.6	181.9	427.5	1.1562	1.7603	28
29	1836.1	1830.0	0.0010	0.0135	1041.6	74.181	247.3	180.2	427.5	1.1618	1.7582	29
30	1884.2	1877.9	0.0010	0.0131	1036.3	76.398	249.1	178.5	427.6	1.1674	1.7562	30
31	1933.3	1926.8	0.0010	0.0127	1030.9	78.679	250.8	176.8	427.6	1.1730	1.7541	31
32	1983.3	1976.6	0.0010	0.0123	1025.4	81.028	252.6	175.0	427.6	1.1786	1.7521	32
33	2034.3	2027.4	0.0010	0.0120	1019.9	83.447	254.3	173.2	427.5	1.1843	1.7500	33
34	2086.3	2079.2	0.0010	0.0116	1014.2	85.939	256.1	171.4	427.5	1.1899	1.7479	34
35	2139.2	2132.0	0.0010	0.0113	1008.6	88.506	257.9	169.5	427.5	1.1956	1.7458	35
36	2193.2	2185.7	0.0010	0.0110	1002.8	91.151	259.7	167.7	427.4	1.2013	1.7436	36
37	2248.1	2240.5	0.0010	0.0107	996.9	93.879	261.5	165.8	427.3	1.2070	1.7414	37
38	2304.2	2296.3	0.0010	0.0103	991.0	96.691	263.4	163.8	427.2	1.2127	1.7392	38
39	2361.2	2353.2	0.0010	0.0100	985.0	99.592	265.2	161.9	427.1	1.2185	1.7370	39
40	2419.3	2411.1	0.0010	0.0098	978.9	102.585	267.1	159.9	427.0	1.2243	1.7348	40
41	2478.5	2470.1	0.0010	0.0095	972.7	105.674	269.0	157.8	426.8	1.2301	1.7325	41
42	2538.8	2530.2	0.0010	0.0092	966.4	108.864	270.9	155.8	426.7	1.2359	1.7302	42
43	2600.1	2591.3	0.0010	0.0089	960.0	112.159	272.8	153.7	426.5	1.2418	1.7278	43
44	2662.6	2653.6	0.0011	0.0087	953.4	115.564	274.8	151.5	426.3	1.2477	1.7255	44
45	2726.1	2717.0	0.0011	0.0084	946.8	119.085	276.7	149.3	426.0	1.2537	1.7230	45
46	2790.9	2781.6	0.0011	0.0082	940.0	122.727	278.7	147.1	425.8	1.2597	1.7206	46
47	2856.7	2847.3	0.0011	0.0079	933.1	126.497	280.7	144.8	425.5	1.2658	1.7181	47
48	2923.8	2914.2	0.0011	0.0077	926.0	130.402	282.7	142.5	425.2	1.2719	1.7156	48
49	2991.9	2982.2	0.0011	0.0074	918.8	134.448	284.8	140.1	424.9	1.2781	1.7130	49
50	3061.3	3051.5	0.0011	0.0072	911.4	138.645	286.9	137.7	424.6	1.2843	1.7104	50
51	3131.9	3122.0	0.0011	0.0070	903.9	143.001	289.0	135.2	424.2	1.2906	1.7077	51
52	3203.7	3193.7	0.0011	0.0068	896.1	147.527	291.2	132.6	423.8	1.2971	1.7050	52
53	3276.7	3266.6	0.0011	0.0066	888.2	152.235	293.4	130.0	423.4	1.3036	1.7022	53
54	3351.0	3340.9	0.0011	0.0064	880.0	157.139	295.6	127.3	423.0	1.3102	1.6994	54
55	3426.5	3416.3	0.0012	0.0062	871.5	162.252	297.9	124.6	422.5	1.3169	1.6965	55
56	3503.3	3493.1	0.0012	0.0060	862.8	167.594	300.3	121.7	422.0	1.3238	1.6935	56
57	3581.3	3571.2	0.0012	0.0058	853.8	173.187	302.7	118.7	421.4	1.3308	1.6904	57
58	3660.7	3650.7	0.0012	0.0056	844.5	179.056	305.1	115.7	420.8	1.3380	1.6873	58
59	3741.3	3731.5	0.0012	0.0054	834.8	185.232	307.7	112.5	420.2	1.3453	1.6841	59
60	3823.3	3813.6	0.0012	0.0052	824.7	191.757	310.3	109.2	419.5	1.3529	1.6808	60
61	3906.6	3897.1	0.0012	0.0050	814.1	198.680	313.0	105.8	418.8	1.3608	1.6773	61
62	3991.2	3982.0	0.0013	0.0049	802.9	206.069	315.9	102.2	418.1	1.3689	1.6738	62
63	4077.2	4068.4	0.0013	0.0047	791.1	214.014	318.8	98.4	417.2	1.3774	1.6700	63
64	4164.5	4156.1	0.0013	0.0045	778.5	222.641	322.0	94.3	416.3	1.3863	1.6661	64
65	4253.2	4245.4	0.0013	0.0043	765.0	232.131	325.3	90.0	415.3	1.3958	1.6620	65
66	4343.3	4336.1	0.0013	0.0041	750.3	242.755	328.8	85.3	414.2	1.4059	1.6575	66
67	4434.7	4428.2	0.0014	0.0039	734.2	254.940	332.7	80.3	412.9	1.4168	1.6527	67
68	4527.6	4521.9	0.0014	0.0037	716.0	269.366	336.9	74.6	411.5	1.4289	1.6476	68
69	4621.8	4617.2	0.0014	0.0035	694.9	287.059	341.7	68.4	410.1	1.4425	1.6424	69
70	4717.5	4713.9	0.0015	0.0032	669.1	308.947	347.3	61.6	408.9	1.4586	1.6380	70

Suva® 410A Superheated Vapor—Constant Pressure Tables

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

ABSOLUTE PRESSURE, kPa													
TEMP. °C	10.0			20.0			30.0			40.0			TEMP. °C
	(-88.31°C)			(-78.91°C)			(-72.84°C)			(-68.26°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(2.0972)	(381.4)	(2.1020)	(1.0953)	(386.8)	(2.0518)	(0.7491)	(390.2)	(2.0234)	(0.5721)	(392.7)	(2.0036)	
-85	2.1363	383.5	2.1134	—	—	—	—	—	—	—	—	—	-85
-80	2.1951	386.8	2.1304	—	—	—	—	—	—	—	—	—	-80
-75	2.2538	390.1	2.1472	1.1188	389.4	2.0651	—	—	—	—	—	—	-75
-70	2.3123	393.4	2.1637	1.1487	392.7	2.0819	0.7607	392.1	2.0331	—	—	—	-70
-65	2.3707	396.7	2.1800	1.1784	396.2	2.0985	0.7810	395.6	2.0499	0.5822	395.0	2.0147	-65
-60	2.4290	400.1	2.1962	1.2081	399.6	2.1148	0.8011	399.0	2.0664	0.5976	398.5	2.0315	-60
-55	2.4872	403.6	2.2121	1.2377	403.1	2.1309	0.8211	402.6	2.0827	0.6129	402.0	2.0479	-55
-50	2.5453	407.0	2.2278	1.2672	406.6	2.1468	0.8411	406.1	2.0988	0.6280	405.6	2.0642	-50
-45	2.6033	410.5	2.2434	1.2966	410.1	2.1625	0.8609	409.7	2.1146	0.6431	409.2	2.0802	-45
-40	2.6613	414.1	2.2588	1.3259	413.7	2.1780	0.8807	413.3	2.1303	0.6581	412.9	2.0960	-40
-35	2.7192	417.7	2.2740	1.3551	417.3	2.1934	0.9005	416.9	2.1458	0.6731	416.6	2.1116	-35
-30	2.7770	421.3	2.2891	1.3844	421.0	2.2086	0.9201	420.6	2.1610	0.6880	420.3	2.1270	-30
-25	2.8348	425.0	2.3040	1.4135	424.7	2.2236	0.9397	424.3	2.1762	0.7028	424.0	2.1422	-25
-20	2.8926	428.7	2.3188	1.4426	428.4	2.2385	0.9593	428.1	2.1911	0.7176	427.8	2.1573	-20
-15	2.9503	432.4	2.3334	1.4717	432.2	2.2532	0.9788	431.9	2.2059	0.7324	431.6	2.1721	-15
-10	3.0079	436.2	2.3479	1.5007	436.0	2.2678	0.9983	435.7	2.2206	0.7471	435.4	2.1869	-10
-5	3.0656	440.0	2.3623	1.5297	439.8	2.2822	1.0178	439.5	2.2351	0.7618	439.3	2.2014	-5
0	3.1232	443.9	2.3766	1.5587	443.7	2.2966	1.0372	443.4	2.2495	0.7764	443.2	2.2159	0
5	3.1808	447.8	2.3908	1.5876	447.6	2.3108	1.0566	447.4	2.2637	0.7911	447.1	2.2302	5
10	3.2383	451.7	2.4048	1.6166	451.5	2.3248	1.0760	451.3	2.2779	0.8057	451.1	2.2444	10
15	3.2958	455.7	2.4187	1.6455	455.5	2.3388	1.0953	455.3	2.2919	0.8203	455.1	2.2584	15
20	3.3534	459.7	2.4325	1.6743	459.5	2.3527	1.1147	459.4	2.3057	0.8348	459.2	2.2723	20
25	3.4109	463.8	2.4462	1.7032	463.6	2.3664	1.1340	463.4	2.3195	0.8494	463.3	2.2861	25
30	3.4683	467.9	2.4598	1.7320	467.7	2.3800	1.1533	467.5	2.3332	0.8639	467.4	2.2998	30
35	3.5258	472.0	2.4733	1.7609	471.8	2.3936	1.1726	471.7	2.3468	0.8784	471.5	2.3134	35
40	3.5833	476.2	2.4868	1.7897	476.0	2.4070	1.1918	475.9	2.3602	0.8929	475.7	2.3269	40
45	3.6407	480.4	2.5001	1.8185	480.2	2.4204	1.2111	480.1	2.3736	0.9074	480.0	2.3403	45
50	3.6981	484.6	2.5133	1.8473	484.5	2.4336	1.2303	484.3	2.3869	0.9219	484.2	2.3536	50
55	3.7555	488.9	2.5264	1.8761	488.8	2.4468	1.2496	488.6	2.4000	0.9363	488.5	2.3668	55
60	3.8130	493.2	2.5395	1.9048	493.1	2.4598	1.2688	493.0	2.4131	0.9508	492.8	2.3799	60
65	3.8704	497.6	2.5524	1.9336	497.4	2.4728	1.2880	497.3	2.4261	0.9652	497.2	2.3929	65
70	—	—	—	1.9624	501.8	2.4857	1.3072	501.7	2.4390	0.9797	501.6	2.4058	70
75	—	—	—	1.9911	506.3	2.4985	1.3264	506.2	2.4518	0.9941	506.1	2.4187	75
80	—	—	—	—	—	—	1.3456	510.6	2.4646	1.0085	510.5	2.4314	80
85	—	—	—	—	—	—	—	—	—	1.0229	515.0	2.4441	85

TEMP. °C	50.0			60.0			70.0			80.0			TEMP. °C
	(-64.52°C)			(-61.34°C)			(-58.56°C)			(-56.09°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.4641)	(394.7)	(1.9885)	(0.3911)	(396.4)	(1.9764)	(0.3384)	(397.9)	(1.9662)	(0.2985)	(399.1)	(1.9574)	
-60	0.4754	397.9	2.0039	0.3940	397.4	1.9810	—	—	—	—	—	—	-60
-55	0.4879	401.5	2.0206	0.4045	401.0	1.9979	0.3449	400.5	1.9783	0.3003	400.0	1.9612	-55
-50	0.5002	405.2	2.0370	0.4149	404.7	2.0145	0.3540	404.2	1.9951	0.3083	403.7	1.9782	-50
-45	0.5124	408.8	2.0532	0.4253	408.4	2.0308	0.3630	407.9	2.0116	0.3163	407.5	1.9948	-45
-40	0.5246	412.5	2.0691	0.4355	412.1	2.0469	0.3719	411.7	2.0279	0.3242	411.2	2.0112	-40
-35	0.5367	416.2	2.0848	0.4457	415.8	2.0627	0.3807	415.4	2.0438	0.3320	415.0	2.0273	-35
-30	0.5487	419.9	2.1003	0.4558	419.6	2.0783	0.3895	419.2	2.0596	0.3397	418.9	2.0431	-30
-25	0.5607	423.7	2.1156	0.4659	423.4	2.0937	0.3982	423.0	2.0751	0.3474	422.7	2.0588	-25
-20	0.5726	427.5	2.1308	0.4759	427.2	2.1090	0.4069	426.9	2.0904	0.3551	426.5	2.0742	-20
-15	0.5845	431.3	2.1457	0.4859	431.0	2.1240	0.4155	430.7	2.1055	0.3627	430.4	2.0894	-15
-10	0.5964	435.2	2.1605	0.4959	434.9	2.1389	0.4241	434.6	2.1205	0.3703	434.3	2.1044	-10
-5	0.6082	439.0	2.1752	0.5058	438.8	2.1536	0.4327	438.5	2.1352	0.3778	438.3	2.1192	-5
0	0.6200	443.0	2.1897	0.5157	442.7	2.1681	0.4412	442.5	2.1498	0.3853	442.3	2.1339	0
5	0.6318	446.9	2.2040	0.5255	446.7	2.1825	0.4497	446.5	2.1643	0.3928	446.3	2.1484	5
10	0.6435	450.9	2.2182	0.5354	450.7	2.1968	0.4581	450.5	2.1786	0.4002	450.3	2.1628	10
15	0.6552	454.9	2.2323	0.5452	454.7	2.2109	0.4666	454.5	2.1928	0.4076	454.4	2.1770	15
20	0.6669	459.0	2.2463	0.5550	458.8	2.2250	0.4750	458.6	2.2068	0.4150	458.4	2.1911	20
25	0.6786	463.1	2.2601	0.5647	462.9	2.2388	0.4834	462.7	2.2207	0.4224	462.6	2.2050	25
30	0.6903	467.2	2.2739	0.5745	467.1	2.2526	0.4918	466.9	2.2345	0.4298	466.7	2.2188	30
35	0.7019	471.4	2.2875	0.5842	471.2	2.2662	0.5002	471.1	2.2482	0.4371	470.9	2.2325	35
40	0.7135	475.6	2.3010	0.5940	475.4	2.2798	0.5085	475.3	2.2618	0.4445	475.1	2.2461	40
45	0.7252	479.8	2.3144	0.6037	479.7	2.2932	0.5169	479.5	2.2752	0.4518	479.4	2.2596	45
50	0.7368	484.1	2.3277	0.6134	483.9	2.3065	0.5252	483.8	2.2886	0.4591	483.7	2.2730	50
55	0.7484	488.4	2.3409	0.6231	488.3	2.3198	0.5336	488.1	2.3018	0.4664	488.0	2.2863	55
60	0.7600	492.7	2.3541	0.6327	492.6	2.3329	0.5419	492.5	2.3150	0.4737	492.4	2.2994	60
65	0.7715	497.1	2.3671	0.6424	497.0	2.3460	0.5502	496.9	2.3281	0.4810	496.7	2.3125	65
70	0.7831	501.5	2.3800	0.6521	501.4	2.3589	0.5585	501.3	2.3410	0.4883	501.2	2.3255	70
75	0.7947	505.9	2.3929	0.6617	505.8	2.3718	0.5668	505.7	2.3539	0.4956	505.6	2.3384	75
80	0.8062	510.4	2.4057	0.6714	510.3	2.3846	0.5751	510.2	2.3667	0.5028	510.1	2.3512	80
85	0.8178	514.9	2.4183	0.6810	514.8	2.3973	0.5834	514.7	2.3794	0.5101	514.6	2.3639	85
90	0.8294	519.5	2.4309	0.6907	519.4	2.4099	0.5916	519.3	2.3920	0.5174	519.2	2.3766	90
95	—	—	—	—	—	—	0.5999	523.9	2.4046	0.5246	523.8	2.3891	95

Suva® 410A Superheated Vapor—Constant Pressure Tables

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

ABSOLUTE PRESSURE, kPa													
TEMP. °C	90.0			100.0			101.325			110.0			TEMP. °C
	(-53.84°C)			(-51.79°C)			(-51.53°C)			(-49.90°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.2672)	(400.3)	(1.9498)	(0.2420)	(401.3)	(1.9430)	(0.2390)	(401.5)	(1.9421)	(0.2212)	(402.3)	(1.9369)	
-50	0.2728	403.2	1.9630	0.2443	402.7	1.9492	0.2410	402.7	1.9474	—	—	—	-50
-45	0.2800	407.0	1.9798	0.2509	406.6	1.9662	0.2475	406.5	1.9645	0.2271	406.1	1.9537	-45
-40	0.2870	410.8	1.9963	0.2573	410.4	1.9828	0.2538	410.3	1.9811	0.2330	410.0	1.9705	-40
-35	0.2941	414.6	2.0125	0.2637	414.3	1.9992	0.2602	414.2	1.9975	0.2389	413.9	1.9870	-35
-30	0.3010	418.5	2.0285	0.2701	418.1	2.0153	0.2664	418.1	2.0136	0.2447	417.8	2.0032	-30
-25	0.3079	422.4	2.0442	0.2763	422.0	2.0311	0.2726	422.0	2.0295	0.2505	421.7	2.0192	-25
-20	0.3148	426.2	2.0597	0.2826	425.9	2.0467	0.2788	425.9	2.0451	0.2562	425.6	2.0349	-20
-15	0.3216	430.1	2.0750	0.2887	429.9	2.0621	0.2849	429.8	2.0605	0.2618	429.6	2.0503	-15
-10	0.3284	434.1	2.0901	0.2949	433.8	2.0773	0.2909	433.8	2.0756	0.2675	433.5	2.0655	-10
-5	0.3351	438.0	2.1050	0.3010	437.8	2.0922	0.2970	437.7	2.0906	0.2730	437.5	2.0806	-5
0	0.3418	442.0	2.1197	0.3071	441.8	2.1070	0.3030	441.8	2.1054	0.2786	441.5	2.0954	0
5	0.3485	446.0	2.1343	0.3131	445.8	2.1216	0.3089	445.8	2.1200	0.2841	445.6	2.1101	5
10	0.3552	450.1	2.1487	0.3191	449.9	2.1361	0.3149	449.8	2.1345	0.2896	449.7	2.1246	10
15	0.3618	454.2	2.1630	0.3251	454.0	2.1504	0.3208	453.9	2.1488	0.2951	453.8	2.1390	15
20	0.3684	458.3	2.1771	0.3311	458.1	2.1646	0.3267	458.0	2.1630	0.3005	457.9	2.1532	20
25	0.3750	462.4	2.1911	0.3370	462.2	2.1786	0.3326	462.2	2.1770	0.3060	462.0	2.1672	25
30	0.3816	466.6	2.2049	0.3430	466.4	2.1925	0.3384	466.4	2.1909	0.3114	466.2	2.1811	30
35	0.3881	470.8	2.2187	0.3489	470.6	2.2062	0.3443	470.6	2.2047	0.3168	470.4	2.1949	35
40	0.3947	475.0	2.2323	0.3548	474.8	2.2199	0.3501	474.8	2.2183	0.3222	474.7	2.2086	40
45	0.4012	479.3	2.2458	0.3607	479.1	2.2334	0.3559	479.1	2.2319	0.3276	479.0	2.2222	45
50	0.4077	483.5	2.2592	0.3666	483.4	2.2468	0.3617	483.4	2.2453	0.3329	483.3	2.2356	50
55	0.4142	487.9	2.2725	0.3725	487.7	2.2601	0.3675	487.7	2.2586	0.3383	487.6	2.2489	55
60	0.4207	492.2	2.2857	0.3783	492.1	2.2733	0.3733	492.1	2.2718	0.3436	492.0	2.2622	60
65	0.4272	496.6	2.2988	0.3842	496.5	2.2865	0.3791	496.5	2.2849	0.3490	496.4	2.2753	65
70	0.4337	501.1	2.3118	0.3900	501.0	2.2995	0.3849	500.9	2.2979	0.3543	500.8	2.2883	70
75	0.4402	505.5	2.3247	0.3959	505.4	2.3124	0.3907	505.4	2.3109	0.3596	505.3	2.3013	75
80	0.4467	510.0	2.3375	0.4017	509.9	2.3252	0.3964	509.9	2.3237	0.3649	509.8	2.3141	80
85	0.4531	514.5	2.3502	0.4075	514.4	2.3380	0.4022	514.4	2.3364	0.3702	514.4	2.3268	85
90	0.4596	519.1	2.3629	0.4134	519.0	2.3506	0.4079	519.0	2.3491	0.3755	518.9	2.3395	90
95	0.4660	523.7	2.3754	0.4192	523.6	2.3632	0.4137	523.6	2.3617	0.3808	523.5	2.3521	95
100	0.4725	528.3	2.3879	0.4250	528.2	2.3757	0.4194	528.2	2.3742	0.3861	528.2	2.3646	100
105	—	—	—	—	—	—	—	—	—	0.3914	532.8	2.3770	105

TEMP. °C	120.0			130.0			140.0			150.0			TEMP. °C
	(-48.13°C)			(-46.48°C)			(-44.93°C)			(-43.46°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.2037)	(403.2)	(1.9313)	(0.1889)	(404.0)	(1.9262)	(0.1761)	(404.7)	(1.9215)	(0.1650)	(405.5)	(1.9172)	
-45	0.2072	405.6	1.9421	0.1904	405.2	1.9314	—	—	—	—	—	—	-45
-40	0.2128	409.5	1.9591	0.1956	409.1	1.9485	0.1809	408.7	1.9386	0.1681	408.2	1.9292	-40
-35	0.2182	413.5	1.9758	0.2007	413.1	1.9653	0.1857	412.7	1.9555	0.1727	412.3	1.9463	-35
-30	0.2236	417.4	1.9921	0.2057	417.0	1.9818	0.1904	416.7	1.9721	0.1771	416.3	1.9630	-30
-25	0.2289	421.3	2.0082	0.2107	421.0	1.9979	0.1950	420.7	1.9884	0.1815	420.3	1.9794	-25
-20	0.2342	425.3	2.0239	0.2156	425.0	2.0138	0.1996	424.7	2.0044	0.1858	424.3	1.9955	-20
-15	0.2394	429.3	2.0395	0.2205	429.0	2.0294	0.2042	428.7	2.0201	0.1901	428.4	2.0113	-15
-10	0.2446	433.3	2.0548	0.2253	433.0	2.0448	0.2087	432.7	2.0355	0.1943	432.4	2.0268	-10
-5	0.2498	437.3	2.0699	0.2301	437.0	2.0600	0.2132	436.8	2.0508	0.1985	436.5	2.0421	-5
0	0.2549	441.3	2.0848	0.2348	441.1	2.0750	0.2176	440.8	2.0658	0.2027	440.6	2.0572	0
5	0.2600	445.4	2.0995	0.2395	445.1	2.0898	0.2220	444.9	2.0807	0.2068	444.7	2.0721	5
10	0.2650	449.5	2.1141	0.2442	449.2	2.1044	0.2264	449.0	2.0953	0.2110	448.8	2.0868	10
15	0.2701	453.6	2.1285	0.2489	453.4	2.1188	0.2308	453.2	2.1098	0.2151	453.0	2.1014	15
20	0.2751	457.7	2.1427	0.2536	457.5	2.1331	0.2351	457.3	2.1241	0.2191	457.1	2.1157	20
25	0.2801	461.9	2.1568	0.2582	461.7	2.1472	0.2394	461.5	2.1383	0.2232	461.3	2.1299	25
30	0.2851	466.1	2.1708	0.2628	465.9	2.1612	0.2437	465.7	2.1523	0.2272	465.6	2.1440	30
35	0.2901	470.3	2.1846	0.2674	470.1	2.1750	0.2480	470.0	2.1662	0.2312	469.8	2.1579	35
40	0.2950	474.5	2.1983	0.2720	474.4	2.1888	0.2523	474.2	2.1799	0.2352	474.1	2.1717	40
45	0.3000	478.8	2.2119	0.2766	478.7	2.2024	0.2566	478.5	2.1936	0.2392	478.4	2.1853	45
50	0.3049	483.1	2.2253	0.2812	483.0	2.2159	0.2608	482.9	2.2071	0.2432	482.7	2.1988	50
55	0.3098	487.5	2.2387	0.2857	487.4	2.2292	0.2651	487.2	2.2205	0.2472	487.1	2.2123	55
60	0.3147	491.9	2.2519	0.2903	491.8	2.2425	0.2693	491.6	2.2337	0.2511	491.5	2.2256	60
65	0.3196	496.3	2.2651	0.2948	496.2	2.2556	0.2735	496.1	2.2469	0.2551	495.9	2.2388	65
70	0.3245	500.7	2.2781	0.2993	500.6	2.2687	0.2777	500.5	2.2600	0.2590	500.4	2.2518	70
75	0.3294	505.2	2.2911	0.3038	505.1	2.2817	0.2819	505.0	2.2730	0.2629	504.9	2.2648	75
80	0.3343	509.7	2.3039	0.3083	509.6	2.2945	0.2861	509.5	2.2858	0.2669	509.4	2.2777	80
85	0.3392	514.3	2.3167	0.3129	514.2	2.3073	0.2903	514.1	2.2986	0.2708	514.0	2.2905	85
90	0.3440	518.8	2.3294	0.3174	518.7	2.3200	0.2945	518.6	2.3113	0.2747	518.5	2.3032	90
95	0.3489	523.4	2.3420	0.3219	523.3	2.3326	0.2987	523.3	2.3240	0.2786	523.2	2.3159	95
100	0.3537	528.1	2.3545	0.3263	528.0	2.3451	0.3029	527.9	2.3365	0.2825	527.8	2.3284	100
105	0.3586	532.7	2.3669	0.3308	532.7	2.3576	0.3070	532.6	2.3489	0.2864	532.5	2.3409	105
110	—	—	—	—	—	—	0.3112	537.3	2.3613	0.2903	537.2	2.3533	110

Suva® 410A Superheated Vapor—Constant Pressure Tables

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

ABSOLUTE PRESSURE, kPa													
TEMP. °C	160.0			170.0			180.0			190.0			TEMP. °C
	(-42.07°C)			(-40.74°C)			(-39.47°C)			(-38.26°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.1552)	(406.1)	(1.9131)	(0.1465)	(406.7)	(1.9093)	(0.1388)	(407.3)	(1.9058)	(0.1318)	(407.9)	(1.9024)	
-40	0.1570	407.8	1.9204	0.1471	407.4	1.9119	—	—	—	—	—	—	-40
-35	0.1613	411.9	1.9376	0.1512	411.4	1.9293	0.1423	411.0	1.9214	0.1342	410.6	1.9139	-35
-30	0.1655	415.9	1.9544	0.1552	415.5	1.9463	0.1461	415.1	1.9385	0.1379	414.8	1.9311	-30
-25	0.1696	420.0	1.9709	0.1591	419.6	1.9629	0.1498	419.3	1.9553	0.1415	418.9	1.9480	-25
-20	0.1737	424.0	1.9871	0.1630	423.7	1.9792	0.1535	423.4	1.9716	0.1450	423.0	1.9645	-20
-15	0.1778	428.1	2.0030	0.1669	427.8	1.9952	0.1572	427.5	1.9877	0.1485	427.2	1.9806	-15
-10	0.1818	432.2	2.0186	0.1707	431.9	2.0109	0.1608	431.6	2.0035	0.1520	431.3	1.9965	-10
-5	0.1857	436.2	2.0340	0.1744	436.0	2.0263	0.1644	435.7	2.0190	0.1554	435.5	2.0121	-5
0	0.1897	440.3	2.0492	0.1781	440.1	2.0416	0.1679	439.9	2.0343	0.1588	439.6	2.0274	0
5	0.1936	444.5	2.0641	0.1818	444.2	2.0566	0.1714	444.0	2.0494	0.1621	443.8	2.0426	5
10	0.1974	448.6	2.0789	0.1855	448.4	2.0714	0.1749	448.2	2.0642	0.1654	448.0	2.0575	10
15	0.2013	452.8	2.0934	0.1892	452.6	2.0860	0.1784	452.4	2.0789	0.1687	452.2	2.0722	15
20	0.2051	456.9	2.1078	0.1928	456.8	2.1004	0.1818	456.6	2.0934	0.1720	456.4	2.0867	20
25	0.2089	461.2	2.1221	0.1964	461.0	2.1147	0.1852	460.8	2.1077	0.1752	460.6	2.1011	25
30	0.2127	465.4	2.1362	0.2000	465.2	2.1288	0.1886	465.1	2.1219	0.1784	464.9	2.1152	30
35	0.2165	469.7	2.1501	0.2035	469.5	2.1428	0.1920	469.3	2.1359	0.1817	469.2	2.1293	35
40	0.2203	473.9	2.1639	0.2071	473.8	2.1566	0.1954	473.6	2.1497	0.1849	473.5	2.1432	40
45	0.2240	478.3	2.1776	0.2106	478.1	2.1703	0.1987	478.0	2.1634	0.1880	477.8	2.1569	45
50	0.2278	482.6	2.1911	0.2141	482.5	2.1839	0.2020	482.3	2.1770	0.1912	482.2	2.1705	50
55	0.2315	487.0	2.2046	0.2177	486.9	2.1973	0.2054	486.7	2.1905	0.1944	486.6	2.1840	55
60	0.2352	491.4	2.2179	0.2212	491.3	2.2107	0.2087	491.1	2.2039	0.1975	491.0	2.1974	60
65	0.2389	495.8	2.2311	0.2247	495.7	2.2239	0.2120	495.6	2.2171	0.2007	495.5	2.2107	65
70	0.2426	500.3	2.2442	0.2282	500.2	2.2370	0.2153	500.1	2.2303	0.2038	499.9	2.2238	70
75	0.2463	504.8	2.2572	0.2317	504.7	2.2501	0.2186	504.6	2.2433	0.2070	504.5	2.2369	75
80	0.2500	509.3	2.2701	0.2351	509.2	2.2630	0.2219	509.1	2.2562	0.2101	509.0	2.2498	80
85	0.2537	513.9	2.2829	0.2386	513.8	2.2758	0.2252	513.7	2.2691	0.2132	513.6	2.2627	85
90	0.2574	518.5	2.2957	0.2421	518.4	2.2885	0.2285	518.3	2.2818	0.2163	518.2	2.2754	90
95	0.2610	523.1	2.3083	0.2455	523.0	2.3012	0.2317	522.9	2.2945	0.2194	522.8	2.2881	95
100	0.2647	527.7	2.3209	0.2490	527.6	2.3137	0.2350	527.5	2.3070	0.2225	527.5	2.3007	100
105	0.2684	532.4	2.3333	0.2524	532.3	2.3262	0.2383	532.2	2.3195	0.2256	532.2	2.3132	105
110	0.2720	537.1	2.3457	0.2559	537.0	2.3386	0.2415	537.0	2.3319	0.2287	536.9	2.3256	110
115	—	—	—	—	—	—	0.2448	541.7	2.3442	0.2318	541.6	2.3379	115

TEMP. °C	200.0			210.0			220.0			230.0			TEMP. °C
	(-37.09°C)			(-35.97°C)			(-34.89°C)			(-33.85°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.1255)	(408.4)	(1.8992)	(0.1198)	(409.0)	(1.8962)	(0.1146)	(409.4)	(1.8933)	(0.1099)	(409.9)	(1.8906)	
-35	0.1270	410.2	1.9066	0.1205	409.8	1.8997	—	—	—	—	—	—	-35
-30	0.1306	414.4	1.9240	0.1239	414.0	1.9172	0.1178	413.6	1.9106	0.1123	413.2	1.9043	-30
-25	0.1340	418.5	1.9410	0.1272	418.2	1.9343	0.1210	417.8	1.9278	0.1154	417.5	1.9216	-25
-20	0.1374	422.7	1.9576	0.1305	422.4	1.9510	0.1242	422.0	1.9446	0.1184	421.7	1.9385	-20
-15	0.1407	426.9	1.9738	0.1337	426.6	1.9673	0.1273	426.3	1.9611	0.1214	425.9	1.9551	-15
-10	0.1440	431.0	1.9898	0.1368	430.7	1.9834	0.1303	430.5	1.9772	0.1243	430.2	1.9713	-10
-5	0.1473	435.2	2.0055	0.1400	434.9	1.9991	0.1333	434.7	1.9930	0.1272	434.4	1.9872	-5
0	0.1505	439.4	2.0209	0.1431	439.1	2.0146	0.1363	438.9	2.0086	0.1301	438.6	2.0028	0
5	0.1537	443.5	2.0361	0.1461	443.3	2.0298	0.1392	443.1	2.0239	0.1329	442.8	2.0182	5
10	0.1569	447.7	2.0510	0.1491	447.5	2.0449	0.1421	447.3	2.0390	0.1357	447.1	2.0333	10
15	0.1600	452.0	2.0658	0.1521	451.8	2.0597	0.1450	451.6	2.0538	0.1385	451.3	2.0482	15
20	0.1631	456.2	2.0803	0.1551	456.0	2.0743	0.1479	455.8	2.0685	0.1412	455.6	2.0629	20
25	0.1662	460.4	2.0947	0.1581	460.3	2.0887	0.1507	460.1	2.0829	0.1439	459.9	2.0774	25
30	0.1693	464.7	2.1090	0.1610	464.6	2.1030	0.1535	464.4	2.0972	0.1466	464.2	2.0917	30
35	0.1724	469.0	2.1230	0.1640	468.9	2.1170	0.1563	468.7	2.1113	0.1493	468.5	2.1058	35
40	0.1754	473.3	2.1369	0.1669	473.2	2.1310	0.1591	473.0	2.1253	0.1520	472.9	2.1198	40
45	0.1785	477.7	2.1507	0.1698	477.5	2.1448	0.1619	477.4	2.1391	0.1547	477.3	2.1337	45
50	0.1815	482.1	2.1644	0.1727	481.9	2.1585	0.1647	481.8	2.1528	0.1573	481.7	2.1474	50
55	0.1845	486.5	2.1779	0.1755	486.3	2.1720	0.1674	486.2	2.1664	0.1600	486.1	2.1610	55
60	0.1875	490.9	2.1913	0.1784	490.8	2.1854	0.1701	490.6	2.1798	0.1626	490.5	2.1744	60
65	0.1905	495.3	2.2045	0.1813	495.2	2.1987	0.1729	495.1	2.1931	0.1652	495.0	2.1878	65
70	0.1935	499.8	2.2177	0.1841	499.7	2.2119	0.1756	499.6	2.2063	0.1678	499.5	2.2010	70
75	0.1965	504.3	2.2308	0.1870	504.2	2.2250	0.1783	504.1	2.2194	0.1704	504.0	2.2141	75
80	0.1994	508.9	2.2437	0.1898	508.8	2.2379	0.1810	508.7	2.2324	0.1730	508.6	2.2271	80
85	0.2024	513.5	2.2566	0.1926	513.4	2.2508	0.1837	513.3	2.2453	0.1756	513.2	2.2400	85
90	0.2054	518.1	2.2694	0.1955	518.0	2.2636	0.1864	517.9	2.2581	0.1782	517.8	2.2528	90
95	0.2083	522.7	2.2820	0.1983	522.6	2.2763	0.1891	522.5	2.2708	0.1808	522.4	2.2655	95
100	0.2113	527.4	2.2946	0.2011	527.3	2.2889	0.1918	527.2	2.2834	0.1834	527.1	2.2781	100
105	0.2142	532.1	2.3071	0.2039	532.0	2.3014	0.1945	531.9	2.2959	0.1860	531.8	2.2906	105
110	0.2171	536.8	2.3195	0.2067	536.7	2.3138	0.1972	536.6	2.3083	0.1885	536.6	2.3031	110
115	0.2201	541.6	2.3319	0.2095	541.5	2.3261	0.1999	541.4	2.3207	0.1911	541.3	2.3154	115
120	—	—	—	—	—	—	0.2026	546.2	2.3329	0.1936	546.1	2.3277	120

Suva® 410ASuperheated Vapor—Constant Pressure Tables

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

ABSOLUTE PRESSURE, kPa													
TEMP. °C	240.0			250.0			260.0			270.0			TEMP. °C
	(-32.84°C)			(-31.87°C)			(-30.92°C)			(-30.01°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.1055)	(410.4)	(1.8880)	(0.1015)	(410.8)	(1.8854)	(0.0977)	(411.2)	(1.8830)	(0.0943)	(411.6)	(1.8807)	
-30	0.1072	412.8	1.8981	0.1026	412.4	1.8922	0.0983	412.0	1.8864	0.0943	411.6	1.8807	-30
-25	0.1102	417.1	1.9156	0.1055	416.7	1.9098	0.1011	416.4	1.9041	0.0970	416.0	1.8986	-25
-20	0.1132	421.4	1.9326	0.1083	421.0	1.9269	0.1038	420.7	1.9214	0.0997	420.4	1.9160	-20
-15	0.1160	425.6	1.9493	0.1111	425.3	1.9437	0.1065	425.0	1.9382	0.1023	424.7	1.9330	-15
-10	0.1189	429.9	1.9656	0.1138	429.6	1.9601	0.1092	429.3	1.9547	0.1049	429.0	1.9495	-10
-5	0.1216	434.1	1.9815	0.1165	433.9	1.9761	0.1118	433.6	1.9708	0.1074	433.3	1.9657	-5
0	0.1244	438.4	1.9972	0.1192	438.1	1.9919	0.1144	437.9	1.9867	0.1099	437.6	1.9816	0
5	0.1271	442.6	2.0126	0.1218	442.4	2.0073	0.1169	442.1	2.0022	0.1123	441.9	1.9972	5
10	0.1298	446.9	2.0278	0.1244	446.7	2.0226	0.1194	446.4	2.0175	0.1148	446.2	2.0126	10
15	0.1325	451.1	2.0428	0.1270	450.9	2.0376	0.1219	450.7	2.0325	0.1172	450.5	2.0277	15
20	0.1351	455.4	2.0575	0.1295	455.2	2.0523	0.1244	455.0	2.0473	0.1196	454.8	2.0425	20
25	0.1377	459.7	2.0720	0.1321	459.5	2.0669	0.1268	459.4	2.0620	0.1219	459.2	2.0572	25
30	0.1404	464.0	2.0864	0.1346	463.9	2.0813	0.1292	463.7	2.0764	0.1243	463.5	2.0716	30
35	0.1429	468.4	2.1006	0.1371	468.2	2.0955	0.1316	468.1	2.0906	0.1266	467.9	2.0859	35
40	0.1455	472.7	2.1146	0.1395	472.6	2.1096	0.1340	472.4	2.1047	0.1289	472.3	2.1000	40
45	0.1481	477.1	2.1285	0.1420	477.0	2.1235	0.1364	476.8	2.1186	0.1312	476.7	2.1140	45
50	0.1506	481.5	2.1422	0.1445	481.4	2.1372	0.1388	481.2	2.1324	0.1335	481.1	2.1278	50
55	0.1532	485.9	2.1558	0.1469	485.8	2.1509	0.1411	485.7	2.1461	0.1358	485.6	2.1415	55
60	0.1557	490.4	2.1693	0.1493	490.3	2.1643	0.1435	490.1	2.1596	0.1380	490.0	2.1550	60
65	0.1582	494.9	2.1826	0.1517	494.8	2.1777	0.1458	494.6	2.1730	0.1403	494.5	2.1684	65
70	0.1607	499.4	2.1959	0.1542	499.3	2.1910	0.1481	499.2	2.1862	0.1425	499.0	2.1817	70
75	0.1632	503.9	2.2090	0.1566	503.8	2.2041	0.1504	503.7	2.1994	0.1448	503.6	2.1948	75
80	0.1657	508.5	2.2220	0.1590	508.4	2.2171	0.1527	508.3	2.2124	0.1470	508.2	2.2079	80
85	0.1682	513.1	2.2349	0.1614	513.0	2.2300	0.1551	512.9	2.2253	0.1492	512.8	2.2208	85
90	0.1707	517.7	2.2477	0.1638	517.6	2.2429	0.1574	517.5	2.2382	0.1514	517.4	2.2337	90
95	0.1732	522.3	2.2604	0.1661	522.3	2.2556	0.1596	522.2	2.2509	0.1536	522.1	2.2464	95
100	0.1756	527.0	2.2731	0.1685	526.9	2.2682	0.1619	526.8	2.2636	0.1558	526.8	2.2591	100
105	0.1781	531.7	2.2856	0.1709	531.6	2.2808	0.1642	531.6	2.2761	0.1581	531.5	2.2716	105
110	0.1806	536.5	2.2980	0.1733	536.4	2.2932	0.1665	536.3	2.2886	0.1603	536.2	2.2841	110
115	0.1830	541.2	2.3104	0.1756	541.2	2.3056	0.1688	541.1	2.3010	0.1624	541.0	2.2965	115
120	0.1855	546.0	2.3227	0.1780	546.0	2.3179	0.1711	545.9	2.3133	0.1646	545.8	2.3088	120

TEMP. °C	280.0			290.0			300.0			310.0			TEMP. °C
	(-29.12°C)			(-28.25°C)			(-27.40°C)			(-26.58°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0910)	(412.0)	(1.8785)	(0.0880)	(412.4)	(1.8764)	(0.0852)	(412.7)	(1.8743)	(0.0825)	(413.1)	(1.8723)	
-25	0.0932	415.6	1.8933	0.0897	415.2	1.8881	0.0864	414.9	1.8830	0.0833	414.5	1.8781	-25
-20	0.0958	420.0	1.9108	0.0922	419.7	1.9057	0.0889	419.3	1.9008	0.0857	419.0	1.8959	-20
-15	0.0984	424.4	1.9279	0.0947	424.0	1.9229	0.0913	423.7	1.9180	0.0881	423.4	1.9133	-15
-10	0.1009	428.7	1.9445	0.0971	428.4	1.9396	0.0937	428.1	1.9349	0.0904	427.8	1.9302	-10
-5	0.1033	433.0	1.9608	0.0995	432.8	1.9560	0.0960	432.5	1.9513	0.0927	432.2	1.9468	-5
0	0.1057	437.4	1.9768	0.1019	437.1	1.9720	0.0983	436.8	1.9674	0.0949	436.6	1.9629	0
5	0.1081	441.7	1.9924	0.1042	441.4	1.9877	0.1005	441.2	1.9832	0.0971	441.0	1.9788	5
10	0.1105	446.0	2.0078	0.1065	445.8	2.0032	0.1027	445.5	1.9987	0.0992	445.3	1.9944	10
15	0.1128	450.3	2.0229	0.1087	450.1	2.0184	0.1049	449.9	2.0140	0.1014	449.7	2.0096	15
20	0.1151	454.6	2.0379	0.1110	454.5	2.0333	0.1071	454.3	2.0289	0.1035	454.1	2.0247	20
25	0.1174	459.0	2.0526	0.1132	458.8	2.0481	0.1093	458.6	2.0437	0.1056	458.4	2.0395	25
30	0.1197	463.4	2.0670	0.1154	463.2	2.0626	0.1114	463.0	2.0583	0.1077	462.8	2.0541	30
35	0.1219	467.7	2.0814	0.1176	467.6	2.0769	0.1135	467.4	2.0727	0.1097	467.2	2.0685	35
40	0.1242	472.1	2.0955	0.1197	472.0	2.0911	0.1156	471.8	2.0869	0.1117	471.7	2.0827	40
45	0.1264	476.5	2.1095	0.1219	476.4	2.1051	0.1177	476.2	2.1009	0.1138	476.1	2.0968	45
50	0.1286	481.0	2.1233	0.1240	480.8	2.1190	0.1198	480.7	2.1148	0.1158	480.6	2.1107	50
55	0.1308	485.4	2.1370	0.1261	485.3	2.1327	0.1218	485.2	2.1285	0.1178	485.0	2.1244	55
60	0.1330	489.9	2.1505	0.1283	489.8	2.1462	0.1239	489.7	2.1421	0.1198	489.5	2.1381	60
65	0.1351	494.4	2.1640	0.1304	494.3	2.1597	0.1259	494.2	2.1555	0.1218	494.0	2.1515	65
70	0.1373	498.9	2.1772	0.1325	498.8	2.1730	0.1280	498.7	2.1689	0.1237	498.6	2.1649	70
75	0.1395	503.5	2.1904	0.1346	503.4	2.1862	0.1300	503.3	2.1821	0.1257	503.2	2.1781	75
80	0.1416	508.1	2.2035	0.1366	508.0	2.1993	0.1320	507.9	2.1952	0.1276	507.8	2.1912	80
85	0.1438	512.7	2.2164	0.1387	512.6	2.2122	0.1340	512.5	2.2081	0.1296	512.4	2.2042	85
90	0.1459	517.3	2.2293	0.1408	517.2	2.2251	0.1360	517.1	2.2210	0.1315	517.0	2.2171	90
95	0.1481	522.0	2.2421	0.1429	521.9	2.2379	0.1380	521.8	2.2338	0.1335	521.7	2.2299	95
100	0.1502	526.7	2.2547	0.1449	526.6	2.2505	0.1400	526.5	2.2465	0.1354	526.4	2.2426	100
105	0.1523	531.4	2.2673	0.1470	531.3	2.2631	0.1420	531.2	2.2591	0.1373	531.1	2.2552	105
110	0.1544	536.1	2.2798	0.1490	536.1	2.2756	0.1440	536.0	2.2716	0.1393	535.9	2.2677	110
115	0.1566	540.9	2.2922	0.1511	540.8	2.2880	0.1460	540.8	2.2840	0.1412	540.7	2.2801	115
120	0.1587	545.7	2.3045	0.1531	545.7	2.3003	0.1480	545.6	2.2963	0.1431	545.5	2.2924	120
125	0.1608	550.6	2.3167	0.1552	550.5	2.3126	0.1499	550.4	2.3086	0.1450	550.4	2.3047	125

Suva® 410A Superheated Vapor—Constant Pressure Tables

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

ABSOLUTE PRESSURE, kPa													
TEMP. °C	320.0			330.0			340.0			350.0			TEMP. °C
	(-25.78°C)			(-24.99°C)			(-24.23°C)			(-23.48°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0800)	(413.4)	(1.8703)	(0.0777)	(413.7)	(1.8685)	(0.0755)	(414.0)	(1.8667)	(0.0734)	(414.3)	(1.8649)	
-25	0.0804	414.1	1.8732	—	—	—	—	—	—	—	—	—	-25
-20	0.0828	418.6	1.8912	0.0800	418.3	1.8866	0.0774	417.9	1.8821	0.0750	417.5	1.8776	-20
-15	0.0851	423.1	1.9087	0.0823	422.8	1.9042	0.0796	422.4	1.8998	0.0771	422.1	1.8955	-15
-10	0.0873	427.5	1.9257	0.0845	427.2	1.9213	0.0818	426.9	1.9170	0.0792	426.6	1.9128	-10
-5	0.0896	431.9	1.9423	0.0866	431.7	1.9380	0.0839	431.4	1.9338	0.0813	431.1	1.9297	-5
0	0.0917	436.3	1.9586	0.0888	436.1	1.9543	0.0860	435.8	1.9502	0.0833	435.5	1.9461	0
5	0.0939	440.7	1.9745	0.0908	440.5	1.9703	0.0880	440.2	1.9662	0.0853	440.0	1.9622	5
10	0.0960	445.1	1.9901	0.0929	444.9	1.9860	0.0900	444.6	1.9820	0.0873	444.4	1.9780	10
15	0.0980	449.5	2.0055	0.0949	449.3	2.0014	0.0920	449.1	1.9974	0.0892	448.8	1.9935	15
20	0.1001	453.9	2.0205	0.0969	453.7	2.0165	0.0939	453.5	2.0126	0.0911	453.3	2.0088	20
25	0.1021	458.3	2.0354	0.0989	458.1	2.0314	0.0958	457.9	2.0275	0.0930	457.7	2.0237	25
30	0.1041	462.7	2.0500	0.1009	462.5	2.0461	0.0978	462.3	2.0422	0.0948	462.1	2.0385	30
35	0.1061	467.1	2.0645	0.1028	466.9	2.0606	0.0996	466.7	2.0567	0.0967	466.6	2.0530	35
40	0.1081	471.5	2.0787	0.1047	471.3	2.0749	0.1015	471.2	2.0711	0.0985	471.0	2.0674	40
45	0.1101	475.9	2.0928	0.1066	475.8	2.0890	0.1034	475.7	2.0852	0.1003	475.5	2.0815	45
50	0.1120	480.4	2.1067	0.1085	480.3	2.1029	0.1052	480.1	2.0992	0.1021	480.0	2.0955	50
55	0.1140	484.9	2.1205	0.1104	484.8	2.1167	0.1071	484.6	2.1130	0.1039	484.5	2.1094	55
60	0.1159	489.4	2.1341	0.1123	489.3	2.1303	0.1089	489.1	2.1266	0.1057	489.0	2.1230	60
65	0.1178	493.9	2.1476	0.1142	493.8	2.1438	0.1107	493.7	2.1402	0.1075	493.6	2.1366	65
70	0.1198	498.5	2.1610	0.1160	498.4	2.1572	0.1125	498.3	2.1536	0.1092	498.1	2.1500	70
75	0.1217	503.1	2.1742	0.1179	502.9	2.1705	0.1143	502.8	2.1668	0.1110	502.7	2.1633	75
80	0.1236	507.7	2.1873	0.1197	507.5	2.1836	0.1161	507.4	2.1800	0.1127	507.3	2.1764	80
85	0.1255	512.3	2.2003	0.1216	512.2	2.1966	0.1179	512.1	2.1930	0.1145	512.0	2.1895	85
90	0.1273	516.9	2.2132	0.1234	516.8	2.2095	0.1197	516.7	2.2059	0.1162	516.6	2.2024	90
95	0.1292	521.6	2.2260	0.1252	521.5	2.2223	0.1215	521.4	2.2187	0.1179	521.3	2.2152	95
100	0.1311	526.3	2.2387	0.1271	526.2	2.2351	0.1233	526.1	2.2315	0.1197	526.1	2.2280	100
105	0.1330	531.1	2.2514	0.1289	531.0	2.2477	0.1250	530.9	2.2441	0.1214	530.8	2.2406	105
110	0.1349	535.8	2.2639	0.1307	535.7	2.2602	0.1268	535.7	2.2566	0.1231	535.6	2.2531	110
115	0.1367	540.6	2.2763	0.1325	540.5	2.2726	0.1285	540.5	2.2691	0.1248	540.4	2.2656	115
120	0.1386	545.4	2.2886	0.1343	545.4	2.2850	0.1303	545.3	2.2814	0.1265	545.2	2.2780	120
125	0.1404	550.3	2.3009	0.1361	550.2	2.2972	0.1321	550.1	2.2937	0.1282	550.1	2.2902	125
130	0.1379	555.1	2.3094	0.1338	555.0	2.3059	0.1299	554.9	2.3024	—	—	—	130

TEMP. °C	360.0			370.0			380.0			390.0			TEMP. °C
	(-22.75°C)			(-22.03°C)			(-21.33°C)			(-20.64°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0714)	(414.6)	(1.8632)	(0.0696)	(414.9)	(1.8615)	(0.0678)	(415.2)	(1.8599)	(0.0661)	(415.5)	(1.8583)	
-20	0.0726	417.2	1.8733	0.0704	416.8	1.8690	0.0683	416.4	1.8648	0.0664	416.1	1.8607	-20
-15	0.0748	421.8	1.8912	0.0725	421.4	1.8871	0.0704	421.1	1.8830	0.0684	420.8	1.8790	-15
-10	0.0768	426.3	1.9087	0.0745	426.0	1.9046	0.0724	425.7	1.9006	0.0703	425.4	1.8968	-10
-5	0.0788	430.8	1.9256	0.0765	430.5	1.9217	0.0743	430.2	1.9178	0.0722	430.0	1.9140	-5
0	0.0808	435.3	1.9422	0.0785	435.0	1.9383	0.0762	434.8	1.9345	0.0741	434.5	1.9308	0
5	0.0828	439.7	1.9583	0.0804	439.5	1.9545	0.0781	439.3	1.9508	0.0759	439.0	1.9472	5
10	0.0847	444.2	1.9742	0.0822	444.0	1.9704	0.0799	443.7	1.9668	0.0777	443.5	1.9632	10
15	0.0866	448.6	1.9897	0.0841	448.4	1.9860	0.0817	448.2	1.9824	0.0795	448.0	1.9789	15
20	0.0884	453.1	2.0050	0.0859	452.9	2.0014	0.0835	452.7	1.9978	0.0812	452.5	1.9943	20
25	0.0903	457.5	2.0200	0.0877	457.3	2.0164	0.0853	457.1	2.0129	0.0829	457.0	2.0094	25
30	0.0921	462.0	2.0348	0.0895	461.8	2.0313	0.0870	461.6	2.0278	0.0846	461.4	2.0243	30
35	0.0939	466.4	2.0494	0.0912	466.2	2.0459	0.0887	466.1	2.0424	0.0863	465.9	2.0390	35
40	0.0957	470.9	2.0638	0.0930	470.7	2.0603	0.0904	470.6	2.0568	0.0880	470.4	2.0535	40
45	0.0974	475.4	2.0780	0.0947	475.2	2.0745	0.0921	475.1	2.0711	0.0896	474.9	2.0678	45
50	0.0992	479.9	2.0920	0.0964	479.7	2.0885	0.0938	479.6	2.0851	0.0913	479.4	2.0818	50
55	0.1009	484.4	2.1058	0.0981	484.2	2.1024	0.0954	484.1	2.0990	0.0929	484.0	2.0958	55
60	0.1027	488.9	2.1195	0.0998	488.8	2.1161	0.0971	488.6	2.1128	0.0945	488.5	2.1095	60
65	0.1044	493.4	2.1331	0.1015	493.3	2.1297	0.0987	493.2	2.1264	0.0961	493.1	2.1231	65
70	0.1061	498.0	2.1465	0.1032	497.9	2.1431	0.1004	497.8	2.1398	0.0977	497.7	2.1366	70
75	0.1078	502.6	2.1598	0.1048	502.5	2.1564	0.1020	502.4	2.1532	0.0993	502.3	2.1500	75
80	0.1095	507.2	2.1730	0.1065	507.1	2.1696	0.1036	507.0	2.1664	0.1009	506.9	2.1632	80
85	0.1112	511.9	2.1860	0.1081	511.8	2.1827	0.1052	511.7	2.1794	0.1024	511.6	2.1763	85
90	0.1129	516.5	2.1990	0.1098	516.5	2.1957	0.1068	516.4	2.1924	0.1040	516.3	2.1892	90
95	0.1146	521.2	2.2118	0.1114	521.2	2.2085	0.1084	521.1	2.2053	0.1056	521.0	2.2021	95
100	0.1163	526.0	2.2246	0.1131	525.9	2.2213	0.1100	525.8	2.2180	0.1071	525.7	2.2149	100
105	0.1179	530.7	2.2372	0.1147	530.6	2.2339	0.1116	530.5	2.2307	0.1087	530.5	2.2276	105
110	0.1196	535.5	2.2498	0.1163	535.4	2.2465	0.1132	535.3	2.2433	0.1102	535.2	2.2401	110
115	0.1213	540.3	2.2622	0.1179	540.2	2.2589	0.1148	540.1	2.2557	0.1118	540.1	2.2526	115
120	0.1229	545.1	2.2746	0.1196	545.0	2.2713	0.1164	545.0	2.2681	0.1133	544.9	2.2650	120
125	0.1246	550.0	2.2869	0.1212	549.9	2.2836	0.1179	549.8	2.2804	0.1149	549.8	2.2773	125
130	0.1263	554.9	2.2991	0.1228	554.8	2.2958	0.1195	554.7	2.2926	0.1164	554.7	2.2895	130

Suva® 410A Superheated Vapor—Constant Pressure Tables

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

ABSOLUTE PRESSURE, kPa													
TEMP. °C	400.0			425.0			450.0			475.0			TEMP. °C
	(-19.97°C)			(-18.34°C)			(-16.78°C)			(-15.29°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0645)	(415.7)	(1.8568)	(0.0608)	(416.4)	(1.8531)	(0.0575)	(417.0)	(1.8496)	(0.0545)	(417.5)	(1.8464)	
-15	0.0665	420.4	1.8751	0.0621	419.6	1.8655	0.0582	418.7	1.8563	0.0546	417.8	1.8474	-15
-10	0.0684	425.1	1.8929	0.0639	424.3	1.8837	0.0599	423.5	1.8747	0.0564	422.7	1.8661	-10
-5	0.0703	429.7	1.9103	0.0657	428.9	1.9012	0.0617	428.2	1.8925	0.0580	427.5	1.8842	-5
0	0.0721	434.2	1.9271	0.0675	433.6	1.9183	0.0633	432.9	1.9098	0.0597	432.2	1.9017	0
5	0.0739	438.8	1.9436	0.0692	438.1	1.9349	0.0650	437.5	1.9266	0.0612	436.9	1.9187	5
10	0.0756	443.3	1.9597	0.0708	442.7	1.9512	0.0666	442.1	1.9430	0.0628	441.5	1.9352	10
15	0.0774	447.8	1.9754	0.0725	447.2	1.9670	0.0682	446.7	1.9591	0.0643	446.1	1.9514	15
20	0.0791	452.3	1.9909	0.0741	451.8	1.9826	0.0697	451.3	1.9748	0.0658	450.7	1.9672	20
25	0.0807	456.8	2.0061	0.0757	456.3	1.9979	0.0712	455.8	1.9902	0.0672	455.3	1.9828	25
30	0.0824	461.3	2.0210	0.0773	460.8	2.0130	0.0727	460.4	2.0053	0.0687	459.9	1.9980	30
35	0.0841	465.8	2.0357	0.0789	465.3	2.0278	0.0742	464.9	2.0202	0.0701	464.5	2.0130	35
40	0.0857	470.3	2.0502	0.0804	469.9	2.0423	0.0757	469.5	2.0348	0.0715	469.1	2.0277	40
45	0.0873	474.8	2.0645	0.0819	474.4	2.0567	0.0772	474.0	2.0493	0.0729	473.6	2.0422	45
50	0.0889	479.3	2.0786	0.0834	478.9	2.0709	0.0786	478.6	2.0635	0.0743	478.2	2.0565	50
55	0.0905	483.8	2.0926	0.0849	483.5	2.0849	0.0800	483.2	2.0776	0.0756	482.8	2.0706	55
60	0.0921	488.4	2.1064	0.0864	488.1	2.0987	0.0814	487.8	2.0915	0.0770	487.4	2.0846	60
65	0.0936	493.0	2.1200	0.0879	492.7	2.1124	0.0829	492.4	2.1052	0.0783	492.1	2.0983	65
70	0.0952	497.6	2.1335	0.0894	497.3	2.1259	0.0843	497.0	2.1188	0.0797	496.7	2.1119	70
75	0.0967	502.2	2.1468	0.0909	501.9	2.1393	0.0856	501.6	2.1322	0.0810	501.4	2.1254	75
80	0.0983	506.8	2.1601	0.0923	506.6	2.1526	0.0870	506.3	2.1455	0.0823	506.0	2.1387	80
85	0.0998	511.5	2.1732	0.0938	511.2	2.1657	0.0884	511.0	2.1587	0.0836	510.7	2.1519	85
90	0.1013	516.2	2.1862	0.0952	515.9	2.1787	0.0898	515.7	2.1717	0.0849	515.4	2.1650	90
95	0.1029	520.9	2.1990	0.0967	520.6	2.1916	0.0912	520.4	2.1846	0.0862	520.2	2.1780	95
100	0.1044	525.6	2.2118	0.0981	525.4	2.2044	0.0925	525.2	2.1975	0.0875	524.9	2.1908	100
105	0.1059	530.4	2.2245	0.0995	530.2	2.2171	0.0939	529.9	2.2102	0.0888	529.7	2.2036	105
110	0.1074	535.2	2.2371	0.1010	535.0	2.2297	0.0952	534.7	2.2228	0.0901	534.5	2.2162	110
115	0.1089	540.0	2.2496	0.1024	539.8	2.2422	0.0966	539.6	2.2353	0.0914	539.4	2.2288	115
120	0.1104	544.8	2.2620	0.1038	544.6	2.2547	0.0979	544.4	2.2478	0.0926	544.2	2.2412	120
125	0.1119	549.7	2.2743	0.1052	549.5	2.2670	0.0993	549.3	2.2601	0.0939	549.1	2.2536	125
130	0.1134	554.6	2.2865	0.1066	554.4	2.2792	0.1006	554.2	2.2724	0.0952	554.0	2.2658	130
135	0.1149	559.5	2.2986	0.1080	559.3	2.2914	0.1019	559.2	2.2845	0.0965	559.0	2.2780	135

TEMP. °C	500.0			525.0			550.0			575.0			TEMP. °C
	(-13.85°C)			(-12.47°C)			(-11.14°C)			(-9.85°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0519)	(418.0)	(1.8432)	(0.0494)	(418.5)	(1.8403)	(0.0472)	(419.0)	(1.8375)	(0.0452)	(419.4)	(1.8347)	
-10	0.0532	421.8	1.8578	0.0502	421.0	1.8497	0.0476	420.2	1.8419	—	—	—	-10
-5	0.0548	426.7	1.8761	0.0518	425.9	1.8683	0.0491	425.2	1.8607	0.0466	424.4	1.8533	-5
0	0.0563	431.5	1.8938	0.0533	430.8	1.8862	0.0506	430.1	1.8789	0.0481	429.4	1.8717	0
5	0.0579	436.2	1.9110	0.0548	435.6	1.9036	0.0520	434.9	1.8965	0.0495	434.3	1.8895	5
10	0.0593	440.9	1.9277	0.0562	440.3	1.9205	0.0534	439.7	1.9135	0.0508	439.1	1.9068	10
15	0.0608	445.6	1.9441	0.0576	445.0	1.9370	0.0548	444.5	1.9302	0.0521	443.9	1.9236	15
20	0.0622	450.2	1.9600	0.0590	449.7	1.9531	0.0561	449.2	1.9464	0.0534	448.7	1.9399	20
25	0.0636	454.9	1.9757	0.0604	454.4	1.9688	0.0574	453.9	1.9623	0.0547	453.4	1.9559	25
30	0.0650	459.5	1.9910	0.0617	459.0	1.9843	0.0587	458.5	1.9778	0.0559	458.1	1.9715	30
35	0.0664	464.1	2.0060	0.0630	463.6	1.9994	0.0599	463.2	1.9930	0.0571	462.8	1.9869	35
40	0.0677	468.7	2.0209	0.0643	468.3	2.0143	0.0612	467.9	2.0080	0.0583	467.4	2.0019	40
45	0.0690	473.3	2.0354	0.0656	472.9	2.0290	0.0624	472.5	2.0227	0.0595	472.1	2.0167	45
50	0.0704	477.9	2.0498	0.0668	477.5	2.0434	0.0636	477.2	2.0372	0.0607	476.8	2.0313	50
55	0.0717	482.5	2.0640	0.0681	482.1	2.0576	0.0648	481.8	2.0515	0.0618	481.5	2.0456	55
60	0.0730	487.1	2.0780	0.0693	486.8	2.0717	0.0660	486.5	2.0656	0.0630	486.1	2.0598	60
65	0.0742	491.8	2.0918	0.0705	491.4	2.0855	0.0672	491.1	2.0795	0.0641	490.8	2.0738	65
70	0.0755	496.4	2.1054	0.0718	496.1	2.0992	0.0684	495.8	2.0933	0.0653	495.5	2.0876	70
75	0.0768	501.1	2.1190	0.0730	500.8	2.1128	0.0695	500.5	2.1069	0.0664	500.2	2.1012	75
80	0.0780	505.8	2.1323	0.0742	505.5	2.1262	0.0707	505.2	2.1203	0.0675	505.0	2.1147	80
85	0.0793	510.5	2.1456	0.0754	510.2	2.1394	0.0718	510.0	2.1336	0.0686	509.7	2.1280	85
90	0.0805	515.2	2.1587	0.0766	515.0	2.1526	0.0730	514.7	2.1468	0.0697	514.5	2.1412	90
95	0.0818	519.9	2.1717	0.0778	519.7	2.1656	0.0741	519.5	2.1598	0.0708	519.2	2.1543	95
100	0.0830	524.7	2.1845	0.0789	524.5	2.1785	0.0752	524.3	2.1727	0.0719	524.0	2.1672	100
105	0.0842	529.5	2.1973	0.0801	529.3	2.1913	0.0764	529.1	2.1855	0.0729	528.9	2.1800	105
110	0.0855	534.3	2.2100	0.0813	534.1	2.2040	0.0775	533.9	2.1983	0.0740	533.7	2.1928	110
115	0.0867	539.2	2.2225	0.0825	539.0	2.2166	0.0786	538.8	2.2109	0.0751	538.6	2.2054	115
120	0.0879	544.0	2.2350	0.0836	543.9	2.2290	0.0797	543.7	2.2234	0.0762	543.5	2.2179	120
125	0.0891	548.9	2.2474	0.0848	548.8	2.2414	0.0808	548.6	2.2358	0.0772	548.4	2.2303	125
130	0.0903	553.9	2.2596	0.0859	553.7	2.2537	0.0819	553.5	2.2481	0.0783	553.3	2.2427	130
135	0.0915	558.8	2.2718	0.0871	558.6	2.2660	0.0830	558.5	2.2603	0.0793	558.3	2.2549	135
140	0.0927	563.8	2.2840	0.0882	563.6	2.2781	0.0841	563.5	2.2725	0.0804	563.3	2.2671	140
145	—	—	—	0.0815	568.3	2.2791	—	—	—	—	—	—	145

Suva® 410A Superheated Vapor—Constant Pressure Tables

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

ABSOLUTE PRESSURE, kPa													
TEMP. °C	600.0			625.0			650.0			675.0			TEMP. °C
	(-8.61°C)			(-7.40°C)			(-6.24°C)			(-5.10°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0433)	(419.9)	(1.8322)	(0.0416)	(420.3)	(1.8297)	(0.0400)	(420.6)	(1.8273)	(0.0385)	(421.0)	(1.8249)	
- 5	0.0444	423.6	1.8461	0.0423	422.8	1.8390	0.0404	422.0	1.8321	0.0386	421.1	1.8253	- 5
0	0.0458	428.6	1.8648	0.0437	427.9	1.8580	0.0417	427.1	1.8513	0.0399	426.4	1.8448	0
5	0.0471	433.6	1.8828	0.0450	432.9	1.8762	0.0430	432.2	1.8698	0.0411	431.5	1.8635	5
10	0.0484	438.5	1.9002	0.0463	437.9	1.8938	0.0442	437.2	1.8876	0.0424	436.6	1.8815	10
15	0.0497	443.3	1.9172	0.0475	442.8	1.9109	0.0454	442.2	1.9049	0.0435	441.6	1.8990	15
20	0.0510	448.1	1.9337	0.0487	447.6	1.9276	0.0466	447.0	1.9217	0.0447	446.5	1.9159	20
25	0.0522	452.9	1.9498	0.0499	452.4	1.9438	0.0478	451.9	1.9380	0.0458	451.4	1.9324	25
30	0.0534	457.6	1.9655	0.0511	457.2	1.9597	0.0489	456.7	1.9540	0.0469	456.2	1.9485	30
35	0.0546	462.3	1.9809	0.0522	461.9	1.9752	0.0500	461.5	1.9696	0.0480	461.0	1.9642	35
40	0.0557	467.0	1.9961	0.0533	466.6	1.9904	0.0511	466.2	1.9849	0.0491	465.8	1.9796	40
45	0.0569	471.7	2.0110	0.0544	471.3	2.0054	0.0522	471.0	2.0000	0.0501	470.6	1.9947	45
50	0.0580	476.4	2.0256	0.0555	476.1	2.0201	0.0532	475.7	2.0147	0.0511	475.3	2.0095	50
55	0.0591	481.1	2.0400	0.0566	480.8	2.0345	0.0543	480.4	2.0293	0.0521	480.1	2.0241	55
60	0.0602	485.8	2.0542	0.0577	485.5	2.0488	0.0553	485.2	2.0436	0.0531	484.8	2.0385	60
65	0.0613	490.5	2.0682	0.0587	490.2	2.0629	0.0563	489.9	2.0577	0.0541	489.6	2.0527	65
70	0.0624	495.2	2.0820	0.0598	494.9	2.0767	0.0574	494.6	2.0716	0.0551	494.3	2.0666	70
75	0.0635	500.0	2.0957	0.0608	499.7	2.0904	0.0584	499.4	2.0854	0.0561	499.1	2.0804	75
80	0.0645	504.7	2.1092	0.0618	504.4	2.1040	0.0594	504.2	2.0989	0.0570	503.9	2.0941	80
85	0.0656	509.4	2.1226	0.0629	509.2	2.1174	0.0603	508.9	2.1124	0.0580	508.7	2.1075	85
90	0.0667	514.2	2.1358	0.0639	514.0	2.1307	0.0613	513.7	2.1257	0.0590	513.5	2.1208	90
95	0.0677	519.0	2.1489	0.0649	518.8	2.1438	0.0623	518.5	2.1388	0.0599	518.3	2.1340	95
100	0.0688	523.8	2.1619	0.0659	523.6	2.1568	0.0633	523.4	2.1518	0.0608	523.1	2.1471	100
105	0.0698	528.6	2.1748	0.0669	528.4	2.1697	0.0642	528.2	2.1647	0.0618	528.0	2.1600	105
110	0.0708	533.5	2.1875	0.0679	533.3	2.1824	0.0652	533.1	2.1775	0.0627	532.9	2.1728	110
115	0.0719	538.4	2.2001	0.0689	538.2	2.1951	0.0662	538.0	2.1902	0.0636	537.8	2.1855	115
120	0.0729	543.3	2.2127	0.0699	543.1	2.2076	0.0671	542.9	2.2028	0.0646	542.7	2.1981	120
125	0.0739	548.2	2.2251	0.0709	548.0	2.2201	0.0681	547.8	2.2153	0.0655	547.6	2.2106	125
130	0.0749	553.1	2.2375	0.0719	553.0	2.2325	0.0690	552.8	2.2277	0.0664	552.6	2.2230	130
135	0.0760	558.1	2.2497	0.0728	557.9	2.2447	0.0700	557.8	2.2399	0.0673	557.6	2.2353	135
140	0.0770	563.1	2.2619	0.0738	562.9	2.2569	0.0709	562.8	2.2521	0.0682	562.6	2.2475	140
145	0.0780	568.1	2.2740	0.0748	568.0	2.2690	0.0718	567.8	2.2642	0.0691	567.6	2.2596	145

TEMP. °C	700.0			725.0			750.0			800.0			TEMP. °C
	(-4.00°C)			(-2.92°C)			(-1.88°C)			(0.14°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0372)	(421.4)	(1.8227)	(0.0359)	(421.7)	(1.8206)	(0.0347)	(422.0)	(1.8185)	(0.0325)	(422.6)	(1.8145)	
0	0.0382	425.6	1.8384	0.0366	424.8	1.8322	0.0351	424.1	1.8260	0	427.9	1.8339	5
5	0.0394	430.8	1.8574	0.0378	430.1	1.8514	0.0363	429.4	1.8454	0.0336	433.3	1.8530	10
10	0.0406	436.0	1.8756	0.0390	435.3	1.8698	0.0375	434.6	1.8641	0.0347	438.6	1.8714	15
15	0.0418	441.0	1.8932	0.0401	440.4	1.8876	0.0386	439.8	1.8821	0.0358	443.7	1.8891	20
20	0.0429	446.0	1.9103	0.0412	445.4	1.9048	0.0397	444.8	1.8995	0.0368	448.8	1.9062	25
25	0.0440	450.9	1.9269	0.0423	450.3	1.9216	0.0407	449.8	1.9164	0.0378	453.8	1.9229	30
30	0.0451	455.7	1.9431	0.0433	455.3	1.9379	0.0417	454.8	1.9328	0.0388	458.8	1.9392	35
35	0.0461	460.6	1.9589	0.0444	460.1	1.9538	0.0427	459.7	1.9488	0.0398	463.7	1.9550	40
40	0.0471	465.4	1.9744	0.0454	465.0	1.9694	0.0437	464.5	1.9645	0.0407	468.6	1.9705	45
45	0.0482	470.2	1.9896	0.0464	469.8	1.9847	0.0447	469.4	1.9798	0.0416	473.5	1.9857	50
50	0.0492	475.0	2.0045	0.0473	474.6	1.9996	0.0456	474.2	1.9949	0.0425	478.3	2.0007	55
55	0.0501	479.7	2.0192	0.0483	479.4	2.0144	0.0465	479.0	2.0097	0.0434	483.2	2.0153	60
60	0.0511	484.5	2.0336	0.0492	484.2	2.0288	0.0475	483.8	2.0242	0.0443	488.0	2.0297	65
65	0.0521	489.3	2.0478	0.0502	489.0	2.0431	0.0484	488.6	2.0385	0.0451	492.8	2.0439	70
70	0.0530	494.0	2.0618	0.0511	493.7	2.0572	0.0493	493.4	2.0526	0.0460	497.7	2.0579	75
75	0.0540	498.8	2.0757	0.0520	498.5	2.0710	0.0502	498.3	2.0666	0.0468	502.5	2.0718	80
80	0.0549	503.6	2.0893	0.0529	503.3	2.0847	0.0510	503.1	2.0803	0.0477	507.4	2.0854	85
85	0.0558	508.4	2.1028	0.0538	508.2	2.0983	0.0519	507.9	2.0939	0.0485	512.2	2.0989	90
90	0.0568	513.2	2.1162	0.0547	513.0	2.1117	0.0528	512.7	2.1073	0.0493	517.1	2.1122	95
95	0.0577	518.1	2.1294	0.0556	517.8	2.1249	0.0536	517.6	2.1205	0.0501	522.0	2.1254	100
100	0.0586	522.9	2.1425	0.0565	522.7	2.1380	0.0545	522.5	2.1337	0.0509	526.9	2.1384	105
105	0.0595	527.8	2.1554	0.0573	527.6	2.1510	0.0554	527.3	2.1467	0.0517	531.8	2.1514	110
110	0.0604	532.7	2.1683	0.0582	532.5	2.1638	0.0562	532.2	2.1596	0.0525	536.8	2.1642	115
115	0.0613	537.6	2.1810	0.0591	537.4	2.1766	0.0570	537.2	2.1723	0.0533	541.7	2.1768	120
120	0.0622	542.5	2.1936	0.0600	542.3	2.1892	0.0579	542.1	2.1850	0.0541	546.7	2.1894	125
125	0.0631	547.4	2.2061	0.0608	547.3	2.2017	0.0587	547.1	2.1975	0.0549	551.7	2.2019	130
130	0.0639	552.4	2.2185	0.0617	552.2	2.2142	0.0595	552.0	2.2100	0.0557	556.7	2.2143	135
135	0.0648	557.4	2.2308	0.0625	557.2	2.2265	0.0604	557.1	2.2223	0.0565	561.7	2.2266	140
140	0.0657	562.4	2.2431	0.0634	562.3	2.2387	0.0612	562.1	2.2345	0.0573	566.8	2.2387	145
145	0.0666	567.5	2.2552	0.0642	567.3	2.2509	0.0620	567.1	2.2467	0.0580	571.9	2.2508	150
150	0.0675	572.5	2.2672	0.0651	572.4	2.2629	0.0628	572.2	2.2588	0.0588	577.0	2.2629	155
155	—	—	—	—	—	—	—	—	—	0.0596	577.0	2.2629	155

Suva® 410A Superheated Vapor—Constant Pressure Tables

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

ABSOLUTE PRESSURE, kPa													
TEMP. °C	850.0			900.0			950.0			1000.0			TEMP. °C
	(2.06°C)			(3.90°C)			(5.66°C)			(7.36°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0305)	(423.1)	(1.8107)	(0.0288)	(423.6)	(1.8071)	(0.0273)	(424.1)	(1.8036)	(0.0259)	(424.5)	(1.8004)	
5	0.0312	426.4	1.8226	0.0291	424.9	1.8116	—	—	—	—	—	—	5
10	0.0323	431.9	1.8422	0.0301	430.5	1.8318	0.0282	429.1	1.8215	0.0264	427.6	1.8115	10
15	0.0333	437.3	1.8610	0.0311	436.0	1.8510	0.0291	434.7	1.8412	0.0274	433.4	1.8316	15
20	0.0343	442.6	1.8791	0.0321	441.4	1.8694	0.0301	440.2	1.8600	0.0283	438.9	1.8508	20
25	0.0353	447.7	1.8965	0.0330	446.6	1.8872	0.0310	445.5	1.8781	0.0292	444.4	1.8693	25
30	0.0362	452.8	1.9135	0.0339	451.8	1.9044	0.0319	450.8	1.8956	0.0300	449.7	1.8870	30
35	0.0372	457.8	1.9299	0.0348	456.9	1.9211	0.0327	455.9	1.9125	0.0309	455.0	1.9042	35
40	0.0380	462.8	1.9460	0.0357	461.9	1.9373	0.0336	461.1	1.9290	0.0317	460.2	1.9209	40
45	0.0389	467.8	1.9617	0.0365	467.0	1.9532	0.0344	466.1	1.9450	0.0324	465.3	1.9371	45
50	0.0398	472.7	1.9770	0.0374	471.9	1.9687	0.0352	471.1	1.9607	0.0332	470.4	1.9529	50
55	0.0406	477.6	1.9921	0.0382	476.9	1.9839	0.0360	476.1	1.9760	0.0340	475.4	1.9684	55
60	0.0415	482.5	2.0068	0.0390	481.8	1.9988	0.0367	481.1	1.9910	0.0347	480.4	1.9836	60
65	0.0423	487.4	2.0214	0.0397	486.7	2.0134	0.0375	486.1	2.0058	0.0354	485.4	1.9984	65
70	0.0431	492.2	2.0357	0.0405	491.6	2.0278	0.0382	491.0	2.0203	0.0361	490.4	2.0130	70
75	0.0439	497.1	2.0498	0.0413	496.5	2.0420	0.0389	495.9	2.0345	0.0368	495.3	2.0274	75
80	0.0447	502.0	2.0637	0.0420	501.4	2.0560	0.0397	500.9	2.0486	0.0375	500.3	2.0415	80
85	0.0455	506.8	2.0774	0.0428	506.3	2.0697	0.0404	505.8	2.0625	0.0382	505.3	2.0555	85
90	0.0463	511.7	2.0909	0.0435	511.2	2.0834	0.0411	510.7	2.0761	0.0389	510.2	2.0692	90
95	0.0470	516.6	2.1043	0.0443	516.1	2.0968	0.0418	515.7	2.0896	0.0396	515.2	2.0828	95
100	0.0478	521.5	2.1175	0.0450	521.1	2.1101	0.0425	520.6	2.1030	0.0402	520.1	2.0962	100
105	0.0486	526.5	2.1306	0.0457	526.0	2.1232	0.0432	525.6	2.1162	0.0409	525.1	2.1094	105
110	0.0493	531.4	2.1436	0.0464	531.0	2.1362	0.0439	530.5	2.1292	0.0416	530.1	2.1225	110
115	0.0501	536.3	2.1565	0.0472	535.9	2.1491	0.0446	535.5	2.1422	0.0422	535.1	2.1355	115
120	0.0508	541.3	2.1692	0.0479	540.9	2.1619	0.0452	540.5	2.1550	0.0429	540.1	2.1484	120
125	0.0516	546.3	2.1818	0.0486	545.9	2.1745	0.0459	545.5	2.1677	0.0435	545.2	2.1611	125
130	0.0523	551.3	2.1943	0.0493	550.9	2.1871	0.0466	550.6	2.1802	0.0441	550.2	2.1737	130
135	0.0530	556.3	2.2067	0.0500	556.0	2.1995	0.0472	555.6	2.1927	0.0448	555.3	2.1862	135
140	0.0538	561.4	2.2190	0.0507	561.1	2.2119	0.0479	560.7	2.2051	0.0454	560.4	2.1986	140
145	0.0545	566.5	2.2312	0.0514	566.1	2.2241	0.0486	565.8	2.2173	0.0461	565.5	2.2109	145
150	0.0552	571.6	2.2433	0.0521	571.3	2.2362	0.0492	570.9	2.2295	0.0467	570.6	2.2231	150
155	0.0560	576.7	2.2554	0.0528	576.4	2.2483	0.0499	576.1	2.2416	0.0473	575.8	2.2352	155
160	0.0505	581.2	2.2536	0.0479	580.9	2.2472	—	—	—	—	—	—	160

TEMP. °C	1100.0			1200.0			1300.0			1400.0			TEMP. °C
	(10.56°C)			(13.55°C)			(16.36°C)			(19.01°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0234)	(425.2)	(1.7942)	(0.0214)	(425.8)	(1.7885)	(0.0196)	(426.3)	(1.7831)	(0.0181)	(426.7)	(1.7780)	
15	0.0243	430.6	1.8130	0.0216	427.6	1.7948	—	—	—	—	—	—	15
20	0.0251	436.4	1.8331	0.0225	433.8	1.8159	0.0203	431.0	1.7991	0.0183	428.0	1.7825	20
25	0.0260	442.1	1.8523	0.0233	439.7	1.8359	0.0211	437.2	1.8201	0.0191	434.5	1.8045	25
30	0.0268	447.6	1.8707	0.0241	445.4	1.8550	0.0218	443.1	1.8399	0.0198	440.7	1.8251	30
35	0.0276	453.0	1.8884	0.0249	451.0	1.8733	0.0226	448.9	1.8588	0.0206	446.7	1.8447	35
40	0.0284	458.3	1.9055	0.0256	456.5	1.8909	0.0233	454.5	1.8769	0.0212	452.5	1.8635	40
45	0.0291	463.6	1.9221	0.0263	461.8	1.9079	0.0239	460.0	1.8944	0.0219	458.2	1.8814	45
50	0.0298	468.8	1.9383	0.0270	467.1	1.9245	0.0246	465.5	1.9113	0.0225	463.8	1.8988	50
55	0.0305	473.9	1.9541	0.0276	472.4	1.9406	0.0252	470.8	1.9278	0.0231	469.2	1.9156	55
60	0.0312	479.0	1.9695	0.0283	477.6	1.9563	0.0258	476.1	1.9438	0.0237	474.6	1.9319	60
65	0.0319	484.1	1.9846	0.0289	482.7	1.9716	0.0264	481.3	1.9594	0.0243	480.0	1.9477	65
70	0.0325	489.1	1.9994	0.0296	487.8	1.9866	0.0270	486.5	1.9746	0.0248	485.2	1.9632	70
75	0.0332	494.1	2.0139	0.0302	492.9	2.0014	0.0276	491.7	1.9896	0.0254	490.5	1.9784	75
80	0.0338	499.2	2.0282	0.0308	498.0	2.0159	0.0282	496.9	2.0042	0.0259	495.7	1.9933	80
85	0.0345	504.2	2.0423	0.0314	503.1	2.0301	0.0287	502.0	2.0186	0.0265	500.9	2.0078	85
90	0.0351	509.2	2.0562	0.0320	508.1	2.0441	0.0293	507.1	2.0328	0.0270	506.0	2.0222	90
95	0.0357	514.2	2.0699	0.0325	513.2	2.0580	0.0298	512.2	2.0468	0.0275	511.2	2.0362	95
100	0.0363	519.2	2.0834	0.0331	518.2	2.0716	0.0304	517.3	2.0605	0.0280	516.3	2.0501	100
105	0.0370	524.2	2.0968	0.0337	523.3	2.0850	0.0309	522.4	2.0741	0.0285	521.5	2.0638	105
110	0.0376	529.2	2.1100	0.0342	528.4	2.0983	0.0314	527.5	2.0875	0.0290	526.6	2.0773	110
115	0.0382	534.3	2.1230	0.0348	533.4	2.1115	0.0319	532.6	2.1007	0.0295	531.7	2.0906	115
120	0.0388	539.3	2.1360	0.0354	538.5	2.1245	0.0325	537.7	2.1138	0.0300	536.9	2.1038	120
125	0.0394	544.4	2.1488	0.0359	543.6	2.1374	0.0330	542.8	2.1268	0.0305	542.0	2.1168	125
130	0.0399	549.5	2.1614	0.0364	548.7	2.1501	0.0335	548.0	2.1396	0.0309	547.2	2.1297	130
135	0.0405	554.6	2.1740	0.0370	553.8	2.1627	0.0340	553.1	2.1523	0.0314	552.4	2.1425	135
140	0.0411	559.7	2.1864	0.0375	559.0	2.1752	0.0345	558.3	2.1648	0.0319	557.6	2.1551	140
145	0.0417	564.8	2.1988	0.0381	564.1	2.1876	0.0350	563.4	2.1773	0.0324	562.8	2.1676	145
150	0.0423	569.9	2.2110	0.0386	569.3	2.1999	0.0355	568.6	2.1896	0.0328	568.0	2.1800	150
155	0.0429	575.1	2.2232	0.0391	574.5	2.2121	0.0360	573.8	2.2019	0.0333	573.2	2.1923	155
160	0.0434	580.3	2.2352	0.0397	579.7	2.2242	0.0365	579.1	2.2140	0.0338	578.5	2.2045	160
165	0.0440	585.5	2.2472	0.0402	584.9	2.2362	0.0370	584.3	2.2261	0.0342	583.7	2.2166	165
170	0.0375	589.6	2.2380	0.0347	589.0	2.2286	—	—	—	—	—	—	170

Suva® 410A Superheated Vapor—Constant Pressure Tables

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

ABSOLUTE PRESSURE, kPa													
TEMP. °C	1500.0			1600.0			1700.0			1800.0			TEMP. °C
	(21.52°C)			(23.91°C)			(26.19°C)			(28.36°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0168)	(427.0)	(1.7731)	(0.0157)	(427.2)	(1.7684)	(0.0146)	(427.4)	(1.7639)	(0.0137)	(427.5)	(1.7595)	
25	0.0174	431.7	1.7891	0.0158	428.8	1.7736	—	—	—	—	—	—	25
30	0.0181	438.2	1.8107	0.0166	435.6	1.7963	0.0152	432.9	1.7820	0.0140	430.0	1.7676	30
35	0.0188	444.5	1.8310	0.0173	442.1	1.8176	0.0159	439.7	1.8042	0.0147	437.1	1.7910	35
40	0.0195	450.5	1.8504	0.0179	448.3	1.8376	0.0165	446.1	1.8251	0.0153	443.8	1.8126	40
45	0.0201	456.3	1.8689	0.0185	454.4	1.8567	0.0172	452.3	1.8447	0.0159	450.3	1.8330	45
50	0.0207	462.0	1.8867	0.0191	460.2	1.8749	0.0177	458.4	1.8635	0.0165	456.5	1.8523	50
55	0.0213	467.6	1.9038	0.0197	465.9	1.8925	0.0183	464.2	1.8815	0.0170	462.5	1.8708	55
60	0.0219	473.1	1.9205	0.0202	471.5	1.9095	0.0188	470.0	1.8989	0.0175	468.3	1.8886	60
65	0.0224	478.5	1.9366	0.0208	477.1	1.9260	0.0193	475.6	1.9157	0.0180	474.1	1.9057	65
70	0.0229	483.9	1.9524	0.0213	482.5	1.9420	0.0198	481.1	1.9320	0.0185	479.7	1.9223	70
75	0.0235	489.2	1.9678	0.0218	487.9	1.9576	0.0203	486.6	1.9478	0.0190	485.3	1.9384	75
80	0.0240	494.5	1.9828	0.0223	493.3	1.9728	0.0208	492.0	1.9633	0.0195	490.8	1.9541	80
85	0.0245	499.7	1.9976	0.0228	498.6	1.9878	0.0213	497.4	1.9784	0.0199	496.3	1.9694	85
90	0.0250	505.0	2.0120	0.0232	503.9	2.0024	0.0217	502.8	1.9932	0.0203	501.7	1.9844	90
95	0.0255	510.2	2.0263	0.0237	509.1	2.0168	0.0222	508.1	2.0077	0.0208	507.0	1.9990	95
100	0.0260	515.3	2.0403	0.0242	514.4	2.0309	0.0226	513.4	2.0220	0.0212	512.4	2.0134	100
105	0.0264	520.5	2.0541	0.0246	519.6	2.0448	0.0230	518.6	2.0360	0.0216	517.7	2.0276	105
110	0.0269	525.7	2.0677	0.0251	524.8	2.0586	0.0235	523.9	2.0499	0.0220	523.0	2.0415	110
115	0.0274	530.9	2.0811	0.0255	530.0	2.0721	0.0239	529.2	2.0635	0.0224	528.3	2.0553	115
120	0.0278	536.1	2.0944	0.0260	535.2	2.0854	0.0243	534.4	2.0769	0.0228	533.6	2.0688	120
125	0.0283	541.2	2.1075	0.0264	540.5	2.0986	0.0247	539.6	2.0902	0.0232	538.8	2.0821	125
130	0.0287	546.4	2.1204	0.0268	545.7	2.1116	0.0251	544.9	2.1033	0.0236	544.1	2.0953	130
135	0.0292	551.6	2.1332	0.0272	550.9	2.1245	0.0255	550.2	2.1162	0.0240	549.4	2.1083	135
140	0.0296	556.8	2.1459	0.0277	556.1	2.1373	0.0259	555.4	2.1290	0.0244	554.7	2.1212	140
145	0.0301	562.1	2.1585	0.0281	561.4	2.1499	0.0263	560.7	2.1417	0.0248	560.0	2.1340	145
150	0.0305	567.3	2.1709	0.0285	566.6	2.1624	0.0267	566.0	2.1543	0.0251	565.3	2.1466	150
155	0.0310	572.6	2.1833	0.0289	571.9	2.1748	0.0271	571.3	2.1667	0.0255	570.6	2.1591	155
160	0.0314	577.8	2.1955	0.0293	577.2	2.1871	0.0275	576.6	2.1791	0.0259	575.9	2.1714	160
165	0.0318	583.1	2.2077	0.0297	582.5	2.1992	0.0279	581.9	2.1913	0.0263	581.3	2.1837	165
170	0.0323	588.4	2.2197	0.0302	587.8	2.2113	0.0283	587.2	2.2034	0.0266	586.6	2.1959	170
175	0.0327	593.7	2.2316	0.0306	593.2	2.2233	0.0287	592.6	2.2154	0.0270	592.0	2.2079	175
180	—	—	—	—	—	—	0.0291	598.0	2.2274	0.0274	597.4	2.2199	180

TEMP. °C	1900.0			2000.0			2200.0			2400.0			TEMP. °C
	(30.45°C)			(32.46°C)			(36.26°C)			(39.81°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0129)	(427.6)	(1.7553)	(0.0122)	(427.6)	(1.7511)	(0.0109)	(427.4)	(1.7430)	(0.0098)	(427.0)	(1.7352)	
35	0.0136	434.4	1.7776	0.0125	431.5	1.7641	—	—	—	—	—	—	35
40	0.0142	441.4	1.8003	0.0132	438.9	1.7879	0.0114	433.5	1.7627	0.0098	427.3	1.7363	40
45	0.0148	448.1	1.8214	0.0138	445.9	1.8099	0.0120	441.1	1.7868	0.0105	435.8	1.7632	45
50	0.0154	454.5	1.8414	0.0143	452.5	1.8305	0.0126	448.2	1.8090	0.0110	443.6	1.7874	50
55	0.0159	460.7	1.8603	0.0149	458.8	1.8500	0.0131	455.0	1.8297	0.0116	450.8	1.8096	55
60	0.0164	466.7	1.8785	0.0154	465.0	1.8686	0.0136	461.4	1.8493	0.0120	457.7	1.8305	60
65	0.0169	472.5	1.8960	0.0158	471.0	1.8865	0.0140	467.7	1.8680	0.0125	464.3	1.8501	65
70	0.0174	478.3	1.9128	0.0163	476.8	1.9037	0.0145	473.8	1.8859	0.0129	470.7	1.8688	70
75	0.0178	484.0	1.9292	0.0167	482.6	1.9203	0.0149	479.8	1.9032	0.0134	476.9	1.8867	75
80	0.0183	489.5	1.9451	0.0172	488.3	1.9365	0.0153	485.6	1.9199	0.0137	482.9	1.9040	80
85	0.0187	495.1	1.9607	0.0176	493.9	1.9522	0.0157	491.4	1.9360	0.0141	488.8	1.9206	85
90	0.0191	500.5	1.9758	0.0180	499.4	1.9676	0.0161	497.1	1.9518	0.0145	494.7	1.9368	90
95	0.0195	506.0	1.9907	0.0184	504.9	1.9826	0.0165	502.7	1.9671	0.0149	500.4	1.9525	95
100	0.0199	511.3	2.0052	0.0188	510.3	1.9973	0.0169	508.2	1.9821	0.0152	506.1	1.9679	100
105	0.0203	516.7	2.0195	0.0192	515.7	2.0117	0.0172	513.8	1.9968	0.0156	511.7	1.9828	105
110	0.0207	522.1	2.0335	0.0196	521.1	2.0259	0.0176	519.2	2.0112	0.0159	517.3	1.9975	110
115	0.0211	527.4	2.0474	0.0199	526.5	2.0398	0.0179	524.7	2.0254	0.0162	522.9	2.0119	115
120	0.0215	532.7	2.0610	0.0203	531.9	2.0535	0.0183	530.1	2.0393	0.0166	528.4	2.0260	120
125	0.0219	538.0	2.0744	0.0207	537.2	2.0670	0.0186	535.6	2.0530	0.0169	533.9	2.0399	125
130	0.0223	543.3	2.0877	0.0210	542.6	2.0804	0.0189	541.0	2.0665	0.0172	539.4	2.0536	130
135	0.0226	548.7	2.1008	0.0214	547.9	2.0935	0.0193	546.4	2.0799	0.0175	544.8	2.0671	135
140	0.0230	554.0	2.1137	0.0218	553.2	2.1066	0.0196	551.8	2.0930	0.0178	550.3	2.0804	140
145	0.0234	559.3	2.1265	0.0221	558.6	2.1194	0.0199	557.2	2.1060	0.0181	555.7	2.0935	145
150	0.0237	564.6	2.1392	0.0225	563.9	2.1321	0.0202	562.6	2.1188	0.0184	561.2	2.1065	150
155	0.0241	570.0	2.1517	0.0228	569.3	2.1447	0.0206	568.0	2.1315	0.0187	566.6	2.1193	155
160	0.0244	575.3	2.1642	0.0231	574.7	2.1572	0.0209	573.4	2.1441	0.0190	572.1	2.1319	160
165	0.0248	580.7	2.1765	0.0235	580.1	2.1696	0.0212	578.8	2.1566	0.0193	577.6	2.1445	165
170	0.0251	586.0	2.1887	0.0238	585.5	2.1818	0.0215	584.2	2.1689	0.0196	583.0	2.1569	170
175	0.0255	591.4	2.2008	0.0242	590.9	2.1939	0.0218	589.7	2.1811	0.0199	588.5	2.1692	175
180	0.0258	596.9	2.2128	0.0245	596.3	2.2060	0.0221	595.2	2.1932	0.0202	594.0	2.1814	180
185	0.0262	602.3	2.2247	0.0248	601.7	2.2179	0.0224	600.6	2.2052	0.0205	599.5	2.1935	185
190	—	—	—	—	—	—	0.0227	606.1	2.2171	0.0207	605.0	2.2054	190

Suva® 410A Superheated Vapor—Constant Pressure Tables

V = Volume in m³/kg

H = Enthalpy in kJ/kg

S = Entropy in kJ/(kg) (K)

(Saturated Vapor Properties in parentheses)

ABSOLUTE PRESSURE, kPa													
TEMP. °C	2600.0			2800.0			3000.0			3200.0			TEMP. °C
	(43.14°C)			(46.28°C)			(49.26°C)			(52.09°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0089)	(426.4)	(1.7275)	(0.0081)	(425.7)	(1.7199)	(0.0074)	(424.8)	(1.7123)	(0.0068)	(423.8)	(1.7047)	
45	0.0091	429.9	1.7384	—	—	—	—	—	—	—	—	—	45
50	0.0097	438.5	1.7653	0.0086	432.9	1.7422	0.0075	426.4	1.7172	—	—	—	50
55	0.0103	446.4	1.7894	0.0091	441.5	1.7688	0.0081	436.2	1.7472	0.0071	430.1	1.7242	55
60	0.0107	453.7	1.8117	0.0096	449.5	1.7928	0.0086	444.9	1.7735	0.0077	439.8	1.7534	60
65	0.0112	460.7	1.8325	0.0101	456.9	1.8149	0.0091	452.8	1.7972	0.0082	448.4	1.7791	65
70	0.0116	467.4	1.8521	0.0105	463.9	1.8355	0.0095	460.3	1.8191	0.0086	456.4	1.8025	70
75	0.0120	473.8	1.8707	0.0109	470.7	1.8551	0.0099	467.4	1.8396	0.0090	463.9	1.8241	75
80	0.0124	480.1	1.8886	0.0113	477.2	1.8736	0.0103	474.1	1.8589	0.0094	471.0	1.8444	80
85	0.0128	486.2	1.9058	0.0116	483.5	1.8914	0.0106	480.7	1.8774	0.0097	477.8	1.8636	85
90	0.0131	492.2	1.9224	0.0120	489.7	1.9085	0.0110	487.1	1.8951	0.0101	484.4	1.8818	90
95	0.0135	498.1	1.9386	0.0123	495.7	1.9251	0.0113	493.3	1.9121	0.0104	490.8	1.8994	95
100	0.0138	503.9	1.9542	0.0126	501.7	1.9412	0.0116	499.4	1.9286	0.0107	497.1	1.9163	100
105	0.0142	509.7	1.9695	0.0130	507.6	1.9568	0.0119	505.4	1.9445	0.0110	503.2	1.9327	105
110	0.0145	515.4	1.9845	0.0133	513.4	1.9720	0.0122	511.3	1.9601	0.0113	509.3	1.9485	110
115	0.0148	521.0	1.9991	0.0136	519.1	1.9869	0.0125	517.2	1.9752	0.0116	515.2	1.9640	115
120	0.0151	526.6	2.0135	0.0139	524.8	2.0015	0.0128	523.0	1.9901	0.0118	521.1	1.9791	120
125	0.0154	532.2	2.0276	0.0142	530.5	2.0158	0.0131	528.7	2.0046	0.0121	526.9	1.9938	125
130	0.0157	537.7	2.0414	0.0144	536.1	2.0299	0.0133	534.4	2.0188	0.0124	532.7	2.0083	130
135	0.0160	543.3	2.0551	0.0147	541.7	2.0437	0.0136	540.1	2.0328	0.0126	538.5	2.0224	135
140	0.0163	548.8	2.0685	0.0150	547.3	2.0573	0.0139	545.7	2.0466	0.0129	544.2	2.0364	140
145	0.0166	554.3	2.0818	0.0153	552.8	2.0707	0.0141	551.4	2.0601	0.0131	549.9	2.0500	145
150	0.0169	559.8	2.0948	0.0155	558.4	2.0839	0.0144	557.0	2.0735	0.0134	555.6	2.0635	150
155	0.0171	565.3	2.1078	0.0158	564.0	2.0969	0.0146	562.6	2.0866	0.0136	561.2	2.0768	155
160	0.0174	570.8	2.1205	0.0161	569.5	2.1098	0.0149	568.2	2.0996	0.0139	566.9	2.0899	160
165	0.0177	576.3	2.1332	0.0163	575.1	2.1225	0.0151	573.8	2.1125	0.0141	572.5	2.1029	165
170	0.0180	581.8	2.1457	0.0166	580.6	2.1351	0.0154	579.4	2.1252	0.0143	578.1	2.1157	170
175	0.0182	587.3	2.1581	0.0168	586.2	2.1476	0.0156	585.0	2.1377	0.0145	583.8	2.1283	175
180	0.0185	592.9	2.1703	0.0171	591.7	2.1599	0.0159	590.6	2.1501	0.0148	589.4	2.1408	180
185	0.0188	598.4	2.1825	0.0173	597.3	2.1722	0.0161	596.2	2.1624	0.0150	595.0	2.1532	185
190	0.0190	604.0	2.1945	0.0176	602.9	2.1843	0.0163	601.8	2.1746	0.0152	600.7	2.1655	190
195	0.0193	609.5	2.2065	0.0178	608.5	2.1963	0.0166	607.4	2.1867	0.0155	606.3	2.1776	195
200	—	—	—	0.0181	614.1	2.2082	0.0168	613.0	2.1987	0.0157	612.0	2.1896	200
205	—	—	—	—	—	—	—	—	—	0.0159	617.7	2.2016	205

TEMP. °C	3400.0			3600.0			3800.0			4000.0			TEMP. °C
	(54.78°C)			(57.36°C)			(59.84°C)			(62.21°C)			
	V	H	S	V	H	S	V	H	S	V	H	S	
	(0.0062)	(422.6)	(1.6971)	(0.0057)	(421.2)	(1.6893)	(0.0052)	(419.7)	(1.6813)	(0.0048)	(417.9)	(1.6730)	
55	0.0062	423.1	1.6987	—	—	—	—	—	—	—	—	—	55
60	0.0068	434.1	1.7321	0.0060	427.7	1.7089	0.0053	420.1	1.6827	—	—	—	60
65	0.0074	443.7	1.7604	0.0066	438.4	1.7408	0.0059	432.5	1.7195	0.0052	425.6	1.6959	65
70	0.0078	452.2	1.7856	0.0071	447.8	1.7682	0.0064	442.8	1.7500	0.0058	437.4	1.7305	70
75	0.0082	460.2	1.8086	0.0075	456.2	1.7928	0.0068	452.0	1.7766	0.0062	447.4	1.7596	75
80	0.0086	467.6	1.8299	0.0079	464.1	1.8153	0.0072	460.4	1.8005	0.0066	456.5	1.7853	80
85	0.0089	474.8	1.8499	0.0082	471.6	1.8362	0.0076	468.3	1.8225	0.0070	464.7	1.8086	85
90	0.0093	481.6	1.8688	0.0086	478.7	1.8559	0.0079	475.7	1.8431	0.0073	472.5	1.8302	90
95	0.0096	488.2	1.8869	0.0089	485.5	1.8747	0.0082	482.8	1.8625	0.0076	479.9	1.8504	95
100	0.0099	494.7	1.9043	0.0092	492.2	1.8926	0.0085	489.6	1.8810	0.0079	487.0	1.8695	100
105	0.0102	501.0	1.9211	0.0095	498.6	1.9098	0.0088	496.3	1.8987	0.0082	493.8	1.8877	105
110	0.0105	507.1	1.9373	0.0097	505.0	1.9264	0.0091	502.7	1.9157	0.0085	500.5	1.9051	110
115	0.0107	513.2	1.9531	0.0100	511.2	1.9425	0.0093	509.1	1.9321	0.0087	506.9	1.9220	115
120	0.0110	519.2	1.9684	0.0103	517.3	1.9581	0.0096	515.3	1.9481	0.0090	513.3	1.9382	120
125	0.0113	525.1	1.9834	0.0105	523.3	1.9734	0.0098	521.4	1.9636	0.0092	519.5	1.9540	125
130	0.0115	531.0	1.9981	0.0108	529.3	1.9882	0.0101	527.5	1.9787	0.0095	525.7	1.9694	130
135	0.0118	536.8	2.0124	0.0110	535.2	2.0028	0.0103	533.5	1.9935	0.0097	531.8	1.9844	135
140	0.0120	542.6	2.0265	0.0112	541.0	2.0171	0.0105	539.4	2.0079	0.0099	537.8	1.9990	140
145	0.0122	548.4	2.0404	0.0115	546.9	2.0311	0.0108	545.3	2.0221	0.0101	543.8	2.0134	145
150	0.0125	554.1	2.0540	0.0117	552.7	2.0449	0.0110	551.2	2.0360	0.0103	549.7	2.0275	150
155	0.0127	559.8	2.0674	0.0119	558.4	2.0584	0.0112	557.0	2.0497	0.0106	555.6	2.0413	155
160	0.0129	565.5	2.0807	0.0121	564.2	2.0718	0.0114	562.8	2.0632	0.0108	561.4	2.0549	160
165	0.0132	571.2	2.0937	0.0123	569.9	2.0849	0.0116	568.6	2.0765	0.0110	567.3	2.0683	165
170	0.0134	576.9	2.1066	0.0126	575.6	2.0979	0.0118	574.4	2.0896	0.0112	573.1	2.0815	170
175	0.0136	582.6	2.1193	0.0128	581.4	2.1108	0.0120	580.1	2.1025	0.0114	578.9	2.0946	175
180	0.0138	588.2	2.1319	0.0130	587.1	2.1234	0.0122	585.9	2.1153	0.0116	584.7	2.1074	180
185	0.0140	593.9	2.1444	0.0132	592.8	2.1360	0.0124	591.6	2.1279	0.0117	590.5	2.1201	185
190	0.0143	599.6	2.1567	0.0134	598.5	2.1484	0.0126	597.4	2.1404	0.0119	596.3	2.1327	190
195	0.0145	605.3	2.1689	0.0136	604.2	2.1607	0.0128	603.1	2.1527	0.0121	602.1	2.1451	195
200	0.0147	611.0	2.1810	0.0138	609.9	2.1728	0.0130	608.9	2.1649	0.0123	607.8	2.1574	200
205	0.0149	616.7	2.1930	0.0140	615.7	2.1849	0.0132	614.6	2.1771	0.0125	613.6	2.1696	205
210	—	—	—	0.0142	621.4	2.1968	0.0134	620.4	2.1891	0.0127	619.4	2.1816	210
215	—	—	—	—	—	—	—	—	—	0.0129	625.2	2.1936	215

PHỤ LỤC 11: BẢNG TRA MÔI CHẤT R717

Properties of Saturated Ammonia (Liquid–Vapor): Temperature Table

Temp. °C	Press. bar	Specific Volume m ³ /kg		Internal Energy kJ/kg		Enthalpy kJ/kg			Entropy kJ/kg [#] K		Temp. °C
		Sat. Liquid $v_f \times 10^3$	Sat. Vapor v_g	Sat. Liquid u_f	Sat. Vapor u_g	Sat. Liquid h_f	Evap. h_{fg}	Sat. Vapor h_g	Sat. Liquid s_f	Sat. Vapor s_g	
—50	0.4086	1.4245	2.6265	—43.94	1264.99	—43.88	1416.20	1372.32	—0.1922	6.1543	—50
—45	0.5453	1.4367	2.0060	—22.03	1271.19	—21.95	1402.52	1380.57	—0.0951	6.0523	—45
—40	0.7174	1.4493	1.5524	—0.10	1277.20	0.00	1388.56	1388.56	0.0000	5.9557	—40
—36	0.8850	1.4597	1.2757	17.47	1281.87	17.60	1377.17	1394.77	0.0747	5.8819	—36
—32	1.0832	1.4703	1.0561	35.09	1286.41	35.25	1365.55	1400.81	0.1484	5.8111	—32
—30	1.1950	1.4757	0.9634	43.93	1288.63	44.10	1359.65	1403.75	0.1849	5.7767	—30
—28	1.3159	1.4812	0.8803	52.78	1290.82	52.97	1353.68	1406.66	0.2212	5.7430	—28
—26	1.4465	1.4867	0.8056	61.65	1292.97	61.86	1347.65	1409.51	0.2572	5.7100	—26
—22	1.7390	1.4980	0.6780	79.46	1297.18	79.72	1335.36	1415.08	0.3287	5.6457	—22
—20	1.9019	1.5038	0.6233	88.40	1299.23	88.68	1329.10	1417.79	0.3642	5.6144	—20
—18	2.0769	1.5096	0.5739	97.36	1301.25	97.68	1322.77	1420.45	0.3994	5.5837	—18
—16	2.2644	1.5155	0.5291	106.36	1303.23	106.70	1316.35	1423.05	0.4346	5.5536	—16
—14	2.4652	1.5215	0.4885	115.37	1305.17	115.75	1309.86	1425.61	0.4695	5.5239	—14
—12	2.6798	1.5276	0.4516	124.42	1307.08	124.83	1303.28	1428.11	0.5043	5.4948	—12
—10	2.9089	1.5338	0.4180	133.50	1308.95	133.94	1296.61	1430.55	0.5389	5.4662	—10
—8	3.1532	1.5400	0.3874	142.60	1310.78	143.09	1289.86	1432.95	0.5734	5.4380	—8
—6	3.4134	1.5464	0.3595	151.74	1312.57	152.26	1283.02	1435.28	0.6077	5.4103	—6
—4	3.6901	1.5528	0.3340	160.88	1314.32	161.46	1276.10	1437.56	0.6418	5.3831	—4
—2	3.9842	1.5594	0.3106	170.07	1316.04	170.69	1269.08	1439.78	0.6759	5.3562	—2
0	4.2962	1.5660	0.2892	179.29	1317.71	179.96	1261.97	1441.94	0.7097	5.3298	0
2	4.6270	1.5727	0.2695	188.53	1319.34	189.26	1254.77	1444.03	0.7435	5.3038	2
4	4.9773	1.5796	0.2514	197.80	1320.92	198.59	1247.48	1446.07	0.7770	5.2781	4
6	5.3479	1.5866	0.2348	207.10	1322.47	207.95	1240.09	1448.04	0.8105	5.2529	6
8	5.7395	1.5936	0.2195	216.42	1323.96	217.34	1232.61	1449.94	0.8438	5.2279	8
10	6.1529	1.6008	0.2054	225.77	1325.42	226.75	1225.03	1451.78	0.8769	5.2033	10
12	6.5890	1.6081	0.1923	235.14	1326.82	236.20	1217.35	1453.55	0.9099	5.1791	12
16	7.5324	1.6231	0.1691	253.95	1329.48	255.18	1201.70	1456.87	0.9755	5.1314	16
20	8.5762	1.6386	0.1492	272.86	1331.94	274.26	1185.64	1459.90	1.0404	5.0849	20
24	9.7274	1.6547	0.1320	291.84	1334.19	293.45	1169.16	1462.61	1.1048	5.0394	24
28	10.993	1.6714	0.1172	310.92	1336.20	312.75	1152.24	1465.00	1.1686	4.9948	28
32	12.380	1.6887	0.1043	330.07	1337.97	332.17	1134.87	1467.03	1.2319	4.9509	32
36	13.896	1.7068	0.0930	349.32	1339.47	351.69	1117.00	1468.70	1.2946	4.9078	36
40	15.549	1.7256	0.0831	368.67	1340.70	371.35	1098.62	1469.97	1.3569	4.8652	40
45	17.819	1.7503	0.0725	393.01	1341.81	396.13	1074.84	1470.96	1.4341	4.8125	45
50	20.331	1.7765	0.0634	417.56	1342.42	421.17	1050.09	1471.26	1.5109	4.7604	50

Source: Tables A-13 through A-15 are calculated based on equations from L. Haar and J. S. Gallagher, “Thermodynamic Properties of Ammonia,” *J. Phys. Chem. Reference Data*, Vol. 7, 1978, pp. 635–792.

T °C	v m ³ /kg	u kJ/kg	h kJ/kg	s kJ/kg # K	v m ³ /kg	u kJ/kg	h kJ/kg	s kJ/kg # K
$p = 12.0 \text{ bar} = 1.20 \text{ MPa}$ ($T_{\text{sat}} = 30.94^\circ\text{C}$)					$p = 14.0 \text{ bar} = 1.40 \text{ MPa}$ ($T_{\text{sat}} = 36.26^\circ\text{C}$)			
Sat.	0.10751	1337.52	1466.53	4.9625	0.09231	1339.56	1468.79	4.9050
40	0.11287	1359.73	1495.18	5.0553	0.09432	1349.29	1481.33	4.9453
60	0.12378	1404.54	1553.07	5.2347	0.10423	1396.97	1542.89	5.1360
80	0.13387	1445.91	1606.56	5.3906	0.11324	1440.06	1598.59	5.2984
100	0.14347	1485.55	1657.71	5.5315	0.12172	1480.79	1651.20	5.4433
120	0.15275	1524.41	1707.71	5.6620	0.12986	1520.41	1702.21	5.5765
140	0.16181	1563.09	1757.26	5.7850	0.13777	1559.63	1752.52	5.7013
160	0.17072	1601.95	1806.81	5.9021	0.14552	1598.92	1802.65	5.8198
180	0.17950	1641.23	1856.63	6.0145	0.15315	1638.53	1852.94	5.9333
200	0.18819	1681.05	1906.87	6.1230	0.16068	1678.64	1903.59	6.0427
220	0.19680	1721.50	1957.66	6.2282	0.16813	1719.35	1954.73	6.1485
240	0.20534	1762.63	2009.04	6.3303	0.17551	1760.72	2006.43	6.2513
260	0.21382	1804.48	2061.06	6.4297	0.18283	1802.78	2058.75	6.3513
280	0.22225	1847.04	2113.74	6.5267	0.19010	1845.55	2111.69	6.4488
$p = 16.0 \text{ bar} = 1.60 \text{ MPa}$ ($T_{\text{sat}} = 41.03^\circ\text{C}$)					$p = 18.0 \text{ bar} = 1.80 \text{ MPa}$ ($T_{\text{sat}} = 45.38^\circ\text{C}$)			
Sat.	0.08079	1340.97	1470.23	4.8542	0.07174	1341.88	1471.01	4.8086
60	0.08951	1389.06	1532.28	5.0461	0.07801	1380.77	1521.19	4.9627
80	0.09774	1434.02	1590.40	5.2156	0.08565	1427.79	1581.97	5.1399
100	0.10539	1475.93	1644.56	5.3648	0.09267	1470.97	1637.78	5.2937
120	0.11268	1516.34	1696.64	5.5008	0.09931	1512.22	1690.98	5.4326
140	0.11974	1556.14	1747.72	5.6276	0.10570	1552.61	1742.88	5.5614
160	0.12663	1595.85	1798.45	5.7475	0.11192	1592.76	1794.23	5.6828
180	0.13339	1635.81	1849.23	5.8621	0.11801	1633.08	1845.50	5.7985
200	0.14005	1676.21	1900.29	5.9723	0.12400	1673.78	1896.98	5.9096
220	0.14663	1717.18	1951.79	6.0789	0.12991	1715.00	1948.83	6.0170
240	0.15314	1758.79	2003.81	6.1823	0.13574	1756.85	2001.18	6.1210
260	0.15959	1801.07	2056.42	6.2829	0.14152	1799.35	2054.08	6.2222
280	0.16599	1844.05	2109.64	6.3809	0.14724	1842.55	2107.58	6.3207
$p = 20.0 \text{ bar} = 2.00 \text{ MPa}$ ($T_{\text{sat}} = 49.37^\circ\text{C}$)								
Sat.	0.06445	1342.37	1471.26	4.7670				
60	0.06875	1372.05	1509.54	4.8838				
80	0.07596	1421.36	1573.27	5.0696				
100	0.08248	1465.89	1630.86	5.2283				
120	0.08861	1508.03	1685.24	5.3703				
140	0.09447	1549.03	1737.98	5.5012				
160	0.10016	1589.65	1789.97	5.6241				
180	0.10571	1630.32	1841.74	5.7409				
200	0.11116	1671.33	1893.64	5.8530				
220	0.11652	1712.82	1945.87	5.9611				
240	0.12182	1754.90	1998.54	6.0658				
260	0.12706	1797.63	2051.74	6.1675				
280	0.13224	1841.03	2105.50	6.2665				