

TABLE 6. THERMODYNAMIC PROPERTIES OF MOIST AIR^a, 29.921 IN. HG (CONTINUED)

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Chapter 1

1945 Guide

Thermodynamics of Air and Water Mixtures

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TEMP DEG F	SATURATION HUMIDITY RATIO W _s WEIGHT OF WATER PER LB OF DRY AIR		VOLUME CU FT PER LB DRY AIR			ENTHALPY BTU PER LB DRY AIR			SPECIFIC ENTHALPY OF LIQUID WATER BTU PER LB h _w	SATURATION PRESSURE p _s		TEMP DEG F
	Pounds	Grains	Dry Air v _a	v _{as} (v _s - v _a)	Saturated Mixture v _s	Dry Air h _a	h _{as} (h _s - h _a)	Saturated Mixture h _s		In. of Hg	Lb per Sq In.	
70	0.01574	110.2	13.34	0.34	13.68	16.79	17.17	33.96	38.0	0.73866	0.3028	70
71	.01631	114.2	13.37	.34	13.71	17.03	17.80	34.83	39.0	.76431	.3764	71
72	.01688	118.2	13.40	.35	13.75	17.27	18.43	35.70	40.0	.79058	.3883	72
73	.01748	122.4	13.42	.37	13.79	17.51	19.09	36.60	41.0	.81766	.4016	73
74	.01809	126.6	13.44	.39	13.83	17.76	19.76	37.51	42.0	.84555	.4153	74
75	0.01873	131.1	13.47	0.40	13.87	17.99	20.47	38.46	43.0	0.87448	0.4295	75
76	.01938	135.7	13.49	.42	13.91	18.23	21.19	39.42	44.0	.90398	.4440	76
77	.02005	140.4	13.52	.43	13.95	18.47	21.93	40.40	45.0	.93452	.4590	77
78	.02075	145.3	13.54	.45	13.99	18.71	22.71	41.42	46.0	.96588	.4744	78
79	.02147	150.3	13.57	.46	14.03	18.95	23.51	42.46	47.0	.99825	.4903	79
80	0.02221	155.5	13.59	0.49	14.08	19.19	24.32	43.51	48.0	1.0316	0.5067	80
81	.02298	160.9	13.62	.50	14.12	19.43	25.18	44.61	49.0	1.0661	.5236	81
82	.02377	166.4	13.64	.52	14.16	19.67	26.05	45.72	50.0	1.1013	.5409	82
83	.02459	172.1	13.67	.54	14.21	19.91	26.97	46.88	51.0	1.1377	.5588	83
84	.02543	178.0	13.69	.57	14.26	20.15	27.90	48.05	52.0	1.1752	.5772	84
85	0.02629	184.0	13.72	0.58	14.30	20.39	28.85	49.24	53.0	1.2135	0.5960	85
86	.02718	190.3	13.74	.60	14.34	20.63	29.84	50.47	54.0	1.2527	.6153	86
87	.02810	196.7	13.77	.62	14.39	20.87	30.87	51.74	55.0	1.2933	.6352	87
88	.02904	203.3	13.79	.65	14.44	21.11	31.91	53.02	56.0	1.3346	.6555	88
89	.03002	210.1	13.82	.66	14.48	21.35	33.00	54.35	57.0	1.3774	.6765	89
90	0.03102	217.1	13.84	0.69	14.53	21.59	34.11	55.70	58.0	1.4211	0.6980	90
91	.03205	224.4	13.87	.71	14.58	21.83	35.26	57.09	59.0	1.4661	.7201	91
92	.03312	231.8	13.89	.74	14.63	22.07	36.45	58.52	60.0	1.5125	.7429	92
93	.03421	239.5	13.92	.77	14.69	22.32	37.67	59.99	61.0	1.5600	.7662	93
94	.03535	247.5	13.94	.79	14.73	22.56	38.94	61.50	62.0	1.6088	.7902	94
95	0.03652	255.6	13.97	0.82	14.79	22.80	40.25	63.05	63.0	1.6591	0.8149	95
96	.03772	264.0	13.99	.85	14.84	23.04	41.58	64.62	64.0	1.7108	.8403	96
97	.03896	272.7	14.02	.88	14.90	23.28	42.97	66.25	65.0	1.7638	.8663	97
98	.04024	281.7	14.04	.91	14.95	23.52	44.40	67.92	66.0	1.8181	.8930	98
99	.04156	290.9	14.07	.94	15.01	23.76	45.87	69.63	67.0	1.8741	.9205	99
100	0.04293	300.5	14.10	0.97	15.07	24.00	47.40	71.40	68.0	1.9316	0.9487	100
101	.04433	310.3	14.12	1.00	15.12	24.24	48.97	73.21	69.0	1.9904	.9776	101
102	.04577	320.4	14.15	1.03	15.18	24.48	50.58	75.06	70.0	2.0507	1.0072	102
103	.04726	330.8	14.17	1.08	15.25	24.72	52.25	76.97	71.0	2.1128	1.0377	103
104	.04879	341.5	14.20	1.11	15.31	24.96	53.96	78.92	72.0	2.1763	1.0689	104

^aCompiled by W. M. Sawdon and extended by John A. Goff.TABLE 6. THERMODYNAMIC PROPERTIES OF MOIST AIR^a, 29.921 IN. HG (CONTINUED)

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	Pounds	Grains	Dry Air v _a	v _{as} (v _s - v _a)	Saturated Mixture v _s	Dry Air h _a	h _{as} (h _s - h _a)	Saturated Mixture h _s		In. of Hg	Lb per Sq In.	
105	0.05037	352.6	14.22	1.15	15.37	25.20	55.73	80.93	73.0	2.2414	1.1009	105
106	.05200	364.0	14.25	1.19	15.44	25.44	57.56	83.00	74.0	2.3084	1.1338	106
107	.05368	375.8	14.27	1.23	15.50	25.68	59.45	85.13	75.0	2.3770	1.1675	107
108	.05541	387.9	14.30	1.27	15.57	25.92	61.38	87.30	76.0	2.4473	1.2020	108
109	.05719	400.3	14.32	1.32	15.64	26.16	63.38	89.54	76.9	2.5196	1.2375	109
110	0.05904	413.3	14.35	1.36	15.71	26.40	65.46	91.86	77.9	2.5939	1.274	110
111	.06092	426.4	14.37	1.41	15.78	26.64	67.57	94.21	78.9	2.6692	1.311	111
112	.06292	440.4	14.39	1.46	15.85	26.88	69.62	96.70	79.0	2.7466	1.350	112
113	.06493	454.5	14.42	1.51	15.93	27.12	71.88	99.20	80.9	2.8280	1.389	113
114	.06700	469.0	14.45	1.55	16.00	27.36	74.40	101.76	81.9	2.9094	1.429	114
115	0.06913	483.9	14.47	1.61	16.08	27.60	76.80	104.40	82.9	2.9929	1.470	115
116	.07134	499.4	14.50	1.66	16.16	27.84	79.29	107.13	83.9	3.0784	1.512	116
117	.07361	515.3	14.52	1.72	16.24	28.08	81.84	109.92	84.9	3.1660	1.555	117
118	.07590	532.0	14.55	1.77	16.32	28.32	84.53	112.85	85.9	3.2576	1.600	118
119	.07840	548.8	14.57	1.84	16.41	28.56	87.24	115.80	86.9	3.3492	1.645	119
120	0.08093	566.5	14.60	1.90	16.50	28.80	90.09	118.89	87.9	3.4449	1.692	120
121	.08348	584.4	14.62	1.96	16.58	29.04	92.97	122.01	88.9	3.5406	1.739	121
122	.08616	603.1	14.65	2.03	16.68	29.28	95.89	125.27	89.9	3.6404	1.788	122
123	.08892	622.4	14.67	2.10	16.77	29.52	98.91	128.63	90.9	3.7422	1.838	123
124	.09175	642.3	14.70	2.17	16.87	29.76	102.30	132.06	91.9	3.8460	1.889	124
125	0.09466	662.6	14.72	2.24	16.96	30.00	105.59	135.59	92.9	3.9519	1.941	125
126	.09770	683.9	14.75	2.31	17.06	30.24	109.02	139.26	93.9	4.0618	1.995	126
127	.1008	705.6	14.77	2.40	17.17	30.48	112.53	143.01	94.9	4.1718	2.049	127
128	.1040	728.0	14.80	2.47	17.27	30.72	116.15	146.87	95.9	4.2858	2.105	128
129	.1074	751.8	14.83	2.55	17.38	30.96	120.00	150.96	96.9	4.4039	2.163	129
130	0.1107	774.9	14.85	2.64	17.49	31.20	123.73	154.93	97.9	4.5220	2.221	130
131	.1143	800.1	14.88	2.73	17.61	31.45	128.81	159.28	98.9	4.6441	2.281	131
132	.1180	826.0	14.90	2.83	17.73	31.69	131.99	163.68	99.9	4.7703	2.343	132
133	.1218	852.6	14.93	2.92	17.85	31.93	136.31	168.24	100.9	4.8986	2.406	133
134	.1257	879.9	14.95	3.02	17.97	32.17	140.72	172.89	101.9	5.0289	2.470	134
135	0.1297	907.9	14.98	3.12	18.10	32.41	145.26	177.67	102.9	5.1633	2.536	135
136	.1339	937.3	15.00	3.23	18.23	32.65	150.02	182.67	103.9	5.2997	2.603	136
137	.1382	967.4	15.03	3.33	18.36	32.89	154.91	187.80	104.9	5.4402	2.672	137
138	.1427	998.9	15.05	3.45	18.50	33.13	160.01	193.14	105.9	5.5827	2.742	138
139	.1473	1031.1	15.08	3.57	18.65	33.37	165.24	198.61	106.9	5.7293	2.814	139

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