TABLE 3. THERMODYNAMIC PROPERTIES OF WATER AT SATURATION[a]

Fahr. Temp. t(F)	Absolute Pressure $p_s \times 10^3$		Specific Volume, cu ft per lb			Enthalpy, Btu per lb			Entropy, Btu per (Lb) (°F)			Fahr. Temp. t(F)
	Lb/Sq In.	In. Hg	Sat. Solid v_i	Evap. $v_{ig} \times 10^{-6}$	Sat. Vapor $v_g \times 10^{-6}$	Sat. Solid h_i	Evap. h_{ig}	Sat. Vapor h_g	Sat. Solid s_i	Evap. s_{ig}	Sat. Vapor s_g	
−160	0.004949	0.01008	0.01722	36070	36070	−222.05	1212.43	990.38	−0.4907	4.0456	3.5549	−160
−155	0.009040	0.01840	0.01723	20080	20080	−220.44	1213.02	992.58	−0.4854	3.9812	3.4958	−155
−150	0.01620	0.03298	0.01723	11390	11390	−218.82	1213.62	994.80	−0.4801	3.9168	3.4367	−150
−145	0.02850	0.05803	0.01724	6577	6577	−217.17	1214.17	997.00	−0.4748	3.8583	3.3835	−145
−140	0.04928	0.1003	0.01724	3864	3864	−215.49	1214.70	999.21	−0.4695	3.7998	3.3301	−140
−135	0.08380	0.1706	0.01725	2308	2308	−213.80	1215.22	1001.42	−0.4643	3.7428	3.2785	−135
−130	0.1403	0.2856	0.01725	1400	1400	−212.08	1215.71	1003.63	−0.4590	3.6874	3.2284	−130
−125	0.2312	0.4708	0.01726	862.2	862.2	−210.34	1216.18	1005.84	−0.4538	3.6338	3.1800	−125
−120	0.3757	0.7649	0.01726	538.6	538.6	−208.58	1216.63	1008.05	−0.4485	3.5815	3.1330	−120
−115	0.6019	1.226	0.01727	341.1	341.1	−206.79	1217.05	1010.26	−0.4433	3.5308	3.0875	−115
−110	0.9517	1.938	0.01728	218.9	218.9	−204.98	1217.45	1012.47	−0.4381	3.4815	3.0434	−110
−105	1.486	3.025	0.01728	142.2	142.2	−203.14	1217.82	1014.68	−0.4329	3.4335	3.0006	−105
−100	2.291	4.664	0.01729	93.52	93.52	−201.28	1218.17	1016.89	−0.4277	3.3868	2.9591	−100
−95	3.491	7.108	0.01729	62.23	62.23	−199.40	1218.50	1019.10	−0.4225	3.3412	2.9187	−95
−90	5.260	10.71	0.01730	41.86	41.86	−197.49	1218.80	1021.31	−0.4173	3.2969	2.8796	−90
−85	7.841	15.96	0.01730	28.46	28.46	−195.56	1219.08	1023.52	−0.4121	3.2536	2.8415	−85
−80	11.57	23.55	0.01731	19.55	19.55	−193.60	1219.33	1025.73	−0.4069	3.2114	2.8045	−80
−75	16.89	34.39	0.01732	13.56	13.56	−191.62	1219.56	1027.94	−0.4017	3.1702	2.7685	−75
−70	24.43	49.74	0.01732	9.501	9.501	−189.61	1219.76	1030.15	−0.3965	3.1301	2.7336	−70
−65	35.01	71.25	0.01732	6.715	6.715	−187.58	1219.94	1032.36	−0.3914	3.0910	2.6996	−65
−60	49.72	101.2	0.01734	4.788	4.788	−185.52	1220.10	1034.58	−0.3862	3.0526	2.6664	−60
−55	70.01	142.6	0.01734	3.443	3.443	−183.44	1220.23	1038.79	−0.3810	3.0152	2.6342	−55
−50	97.76	199.0	0.01735	2.496	2.496	−181.34	1220.34	1039.00	−0.3758	2.9786	2.6028	−50
−48	111.5	227.0	0.01736	2.200	2.200	−180.49	1220.37	1039.88	−0.3738	2.9643	2.5905	−48
−46	127.0	258.5	0.01736	1.941	1.941	−179.64	1220.40	1040.76	−0.3717	2.9501	2.5784	−46
−44	144.4	294.0	0.01736	1.715	1.715	−178.78	1220.43	1041.65	−0.3696	2.9359	2.5663	−44
−42	164.1	334.0	0.01736	1.516	1.516	−177.92	1220.45	1042.53	−0.3676	2.9219	2.5543	−42
−40	186.1	379.0	0.01737	1.343	1.343	−177.06	1220.48	1043.42	−0.3655	2.9080	2.5425	−40
−38	211.0	429.5	0.01737	1.191	1.191	−176.19	1220.49	1044.30	−0.3634	2.8942	2.5308	−38
−36	238.8	486.2	0.01737	1.057	1.057	−175.32	1220.51	1045.19	−0.3614	2.8807	2.5193	−36
−34	270.0	549.7	0.01737	0.9391	0.9391	−174.45	1220.53	1046.07	−0.3593	2.8671	2.5078	−34
−32	304.9	620.8	0.01738	0.8355	0.8355	−173.57	1220.53	1046.95	−0.3573	2.8538	2.4965	−32

[a] Compiled by John A. Goff and S. Gratch.

TABLE 3. THERMODYNAMIC PROPERTIES OF WATER AT SATURATION[a] (*Continued*)

Fahr. Temp. t(F)	Absolute Pressure $p_s \times 10^3$		Specific Volume, cu ft per lb			Enthalpy Btu per lb			Entropy, Btu per (Lb) (°F)			Fahr. Temp. t(F)
	Lb/Sq In.	In. Hg	Sat. Solid v_i	Evap. $v_{ig} \times 10^{-6}$	Sat. Vapor $v_g \times 10^{-6}$	Sat. Solid h_i	Evap. h_{ig}	Sat. Vapor h_g	Sat. Solid s_i	Evap. s_{ig}	Sat. Vapor s_g	
−30	0.3440	0.7003	0.01738	7.441	7.441	−172.68	1220.52	1047.84	−0.3552	2.8405	2.4853	−30
−28	0.3876	0.7891	0.01738	6.634	6.634	−171.80	1220.52	1048.72	−0.3532	2.8274	2.4742	−28
−26	0.4363	0.8882	0.01738	5.921	5.921	−170.91	1220.51	1049.60	−0.3511	2.8143	2.4632	−26
−24	0.4905	0.9987	0.01739	5.290	5.290	−170.01	1220.50	1050.49	−0.3490	2.8013	2.4523	−24
−22	0.5509	1.122	0.01739	4.732	4.732	−169.12	1220.49	1051.37	−0.3470	2.7885	2.4415	−22
−20	0.6181	1.259	0.01739	4.237	4.237	−168.21	1220.47	1052.26	−0.3449	2.7757	2.4308	−20
−19	0.6545	1.333	0.01739	4.011	4.011	−167.76	1220.46	1052.70	−0.3439	2.7695	2.4256	−19
−18	0.6928	1.410	0.01740	3.797	3.797	−167.31	1220.45	1053.14	−0.3429	2.7632	2.4203	−18
−17	0.7332	1.493	0.01740	3.596	3.596	−166.85	1220.43	1053.58	−0.3418	2.7568	2.4150	−17
−16	0.7757	1.579	0.01740	3.407	3.407	−166.40	1220.42	1054.02	−0.3408	2.7506	2.4098	−16
−15	0.8204	1.670	0.01740	3.228	3.228	−165.94	1220.41	1054.47	−0.3398	2.7444	2.4046	−15
−14	0.8676	1.766	0.01740	3.060	3.060	−165.48	1220.39	1054.91	−0.3388	2.7383	2.3995	−14
−13	0.9172	1.867	0.01740	2.901	2.901	−165.03	1220.38	1055.35	−0.3377	2.7320	2.3943	−13
−12	0.9694	1.974	0.01740	2.750	2.750	−164.57	1220.36	1055.79	−0.3367	2.7259	2.3892	−12
−11	1.024	2.086	0.01740	2.609	2.609	−164.11	1220.34	1056.23	−0.3357	2.7198	2.3841	−11
−10	1.082	2.203	0.01741	2.475	2.475	−163.65	1220.32	1056.67	−0.3347	2.7138	2.3791	−10
−9	1.143	2.327	0.01741	2.349	2.349	−163.18	1220.30	1057.12	−0.3336	2.7076	2.3740	−9
−8	1.207	2.457	0.01741	2.229	2.229	−162.72	1220.28	1057.56	−0.3326	2.7016	2.3690	−8
−7	1.274	2.594	0.01741	2.116	2.116	−162.26	1220.26	1058.00	−0.3316	2.6956	2.3640	−7
−6	1.344	2.737	0.01741	2.010	2.010	−161.79	1220.23	1058.44	−0.3306	2.6896	2.3590	−6
−5	1.419	2.888	0.01741	1.909	1.909	−161.33	1220.21	1058.88	−0.3295	2.6836	2.3541	−5
−4	1.496	3.047	0.01742	1.814	1.814	−160.86	1220.18	1059.32	−0.3285	2.6777	2.3492	−4
−3	1.578	3.213	0.01742	1.723	1.723	−160.39	1220.15	1059.76	−0.3275	2.6718	2.3443	−3
−2	1.664	3.388	0.01742	1.638	1.638	−159.92	1220.13	1060.21	−0.3264	2.6658	2.3394	−2
−1	1.754	3.572	0.01742	1.557	1.557	−159.45	1220.10	1060.65	−0.3254	2.6600	2.3346	−1
0	1.849	3.764	0.01742	1.481	1.481	−158.98	1220.07	1061.09	−0.3244	2.6541	2.3297	0
1	1.948	3.966	0.01742	1.408	1.408	−158.51	1220.04	1061.53	−0.3234	2.6483	2.3249	1
2	2.052	4.178	0.01742	1.340	1.340	−158.04	1220.01	1061.97	−0.3224	2.6425	2.3201	2
3	2.161	4.400	0.01742	1.275	1.275	−157.56	1219.97	1062.41	−0.3213	2.6367	2.3154	3
4	2.276	4.633	0.01743	1.214	1.214	−157.09	1219.94	1062.85	−0.3203	2.6309	2.3106	4
5	2.396	4.878	0.01743	1.155	1.155	−156.61	1219.90	1063.29	−0.3193	2.6252	2.3059	5
6	2.521	5.134	0.01743	1.100	1.100	−156.14	1219.88	1063.74	−0.3182	2.6194	2.3012	6

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