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WEIGHTS PER UNITED STATES GALLON AND WEIGHTS PER CUBIC FOOT OF SUGAR SOLUTIONS

By
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WEIGHTS PER UNITED STATES GALLON AND WEIGHTS PER CUBIC FOOT OF SUGAR SOLUTIONS

Compiled by Carl F. Snyder and Lester D. Hammond

ABSTRACT

A table is presented showing the weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C. The table comprises the weights (metric and avoirdupois) per gallon in air; weights (avoirdupois) per cubic foot in air; true specific gravities 20°/20° C and 20°/4° C; apparent specific gravities; grams of sucrose per 100 ml of solution in vacuum; and degrees Baumé; all from 0° to 95° Brix, at intervals of 0.1° Brix. The calculations are based on the density values of Plato. The degrees Baumé are taken from the table of Bates and Bearce. A supplementary table is included, giving the weights per gallon in air at different temperatures.

This Circular is a revision of Circular No. C375 (1929); it also replaces Letter Circular LC770.

It is frequently necessary to express the density of a sugar sirup or molasses in terms of weight per gallon or weight per cubic foot. Consequently, numerous requests for a table giving these weights have been received at the National Bureau of Standards. The sixth edition of Spencer's "Handbook for Cane-Sugar Manufacturers and Their Chemists" contained a table based on the density values of Stammer, standard at 17.5° C. It was obvious that a table standard at 20° C would be more desirable. For that reason, a table was constructed, based on the density values of Plato,[1] which are considered to be the most reliable of those available, and on the standard temperature of 20° C. This table was published in Circular No. C375 of this Bureau [2] and gave the values for each whole degree Brix (percentage of sucrose by weight). In the seventh edition of Spencer's Handbook,[3] revised by George P. Meade, the new table standard at 20° C was reprinted by permission of the National Bureau of Standards. It appears that it has found general use in the gaging of sugar sirups and molasses.

In the laboratories of this Bureau where large numbers of density determinations on sirups and molasses are made, it was found expedient to expand the original table to intervals of one-tenth degree Brix, thereby simplifying the interpolations. The weights per gallon in vacuum were deleted and in their place the values for apparent specific gravity in air and the grams of sucrose per 100 ml of solution in vacuum were substituted.

The weight of one United States gallon (231 cubic inches) of water at 20° C in vacuum is 3,778.649 grams, or 8.33049 pounds avoirdupois.[4]

[1] Wiss. Abhandl. Kaiserlichen-Normal-Eichungs-Kommission 2, 153 (1900).
[2] Out of print.
[3] G. L. Spencer and G. P. Meade, Handbook for Cane-Sugar Manufacturers and Their Chemists, 7th edition, page 476 (John Wiley & Sons, Inc., New York, 1929). See also 8th edition, page 731 (1945).
[4] Circular BS 19, 6th edition, page 48 (1924).

In the original calculations the weights per gallon in vacuum for each whole degree Brix were computed [5] from the specific gravities at 20°/20° C,[6] which are based on the density values of Plato. The weights in grams per gallon in vacuum were converted to weights in air (barometer reading, 760 mm of mercury; temperature, 20° C; density of air, 0.0012) for brass weights (density, 8.4). The resulting metric weights were then converted to pounds per gallon in air through dividing them by the equivalent of one pound avoirdupois in grams, which is 453.5924. Pounds per cubic foot in air were computed from the results of this conversion by multiplying them by the gallons per cubic foot (1,728/231). In constructing the expanded table, the values for the fractional degrees Brix were obtained by straight-line interpolation between the computed values for whole degrees Brix, retaining sufficient figures to fix the last figure given.

Various methods of determining the density of molasses and sugar sirups are employed, for example by the use of the Brix hydrometer, Baumé hydrometer, picnometer, direct-reading density balance, etc. Therefore, to facilitate the conversion of such measurements to weights per gallon or per cubic foot, the data of table 1 relate to sugar (sucrose) solutions at 20° C and consist of the following: Weights (metric and avoirdupois) per gallon in air; weights (avoirdupois) per cubic foot in air; degrees Baumé and true specific gravity, 20°/20° C[7]; true density, 20°/4° C[8]; apparent specific gravity in air at 20° C; and grams of sucrose per 100 ml of solution in vacuum [9] for each tenth degree Brix from 0° to 95° C.

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[5] A complete and independent series of computations was made by each author in every case where computations were required.

[6] F. J. Bates and H. W. Bearce, Tech. Pap. BS **11** (1918) T115.

[7] The calculation of the degrees Baumé was made by means of the equation:

$$d = 145 - \frac{145}{s}$$

in which d = degrees Baumé, and s = specific gravity, 20°/20° C.

[8] See footnote 1.

[9] Circular NBS C440, page 632, table 114 (1942).

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]

This table is based on the density values of Plato [b] for solutions of sucrose. The Baumé values are from the table of Bates and Bearce.[c] The weights are for brass weights, density 8.4; 1 United States gallon, 231 cubic inches; 1 pound (avoirdupois), 453.5924 grams; 1 United States gallon of water weighs 3,778.649 grams (8.33049 pounds avoirdupois) in vacuum]

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
0.0	0.00	0.99823	1.00000	0.000	1.00000	8.322	3774.6	62.25
.1	.06	.99862	.00039	.100	.00039	.325	3776.1	.27
.2	.11	.99901	.00078	.200	.00078	.328	3777.6	.30
.3	.17	.99940	.00117	.300	.00117	.331	3779.1	.32
.4	.22	.99979	.00155	.400	.00156	.335	3780.5	.35
.5	.28	1.00017	.00194	.500	.00194	.338	3782.0	.37
.6	.34	.00056	.00233	.600	.00233	.341	3783.5	.40
.7	.39	.00095	.00272	.701	.00272	.344	3784.9	.42
.8	.45	.00134	.00311	.801	.00312	.348	3786.4	.44
.9	.51	.00173	.00350	.902	.00351	.351	3787.9	47
1.0	0.56	1.00212	1.00389	1.002	1.00390	8.354	3789.3	62.49
.1	.62	.00251	.00428	.103	.00429	.357	3790.8	.52
.2	.67	.00290	.00467	.203	.00468	.361	3792.3	.54
.3	.73	.00329	.00506	.304	.00507	.364	3793.8	.57
.4	.79	.00368	.00545	.405	.00546	.367	3795.2	.59
.5	.84	.00406	.00584	.506	.00585	.370	3796.7	.61
.6	.90	.00445	.00623	.607	.00624	.374	3798.2	.64
.7	.95	.00484	.00662	.708	.00663	.377	3799.7	.66
.8	1.01	.00523	.00701	.809	.00702	.380	3801.1	.69
.9	.07	.00562	.00740	.911	.00741	.383	3802.6	.71
2.0	1.12	1.00602	1.00779	2.012	1.00780	8.387	3804.1	62.74
.1	.18	.00641	.00818	.113	.00819	.390	3805.6	.76
.2	.23	.00680	.00858	.215	.00859	.393	3807.1	.78
.3	.29	.00719	.00897	.317	.00898	.396	3808.5	.81
.4	.34	.00758	.00936	.418	.00937	.400	3810.0	.83
.5	.40	.00797	.00976	.520	.00977	.403	3811.5	.86
.6	.46	.00836	.01015	.622	.01016	.406	3813.0	.88
.7	.51	.00876	.01054	.724	.01055	.409	3814.5	.91
.8	.57	.00915	.01093	.826	.01094	.413	3816.0	.93
.9	.62	.00954	.01133	.928	.01134	.416	3817.5	.96
3.0	1.68	1.00993	1.01172	3.030	1.01173	8.419	3818.9	62.98
.1	.74	.01033	.01211	.132	01213	.423	3820.4	63.01
.2	.79	.01072	.01251	.234	.01252	.426	3821.9	.03
.3	.85	.01112	.01290	.337	.01292	.429	3823.4	.05
.4	.90	.01151	.01330	.439	.01331	.432	3824.9	.08
.5	.96	.01190	.01369	.542	.01371	.436	3826.4	.10
.6	2.02	.01230	.01409	.644	.01410	.439	3827.9	.13
.7	.07	.01269	.01448	.747	.01450	.442	3829.4	.15
.8	.13	.01309	.01488	.850	.01490	.446	3830.9	.18
.9	.18	.01348	.01528	.953	.01529	.449	3832.4	.20

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
4.0	2.24	1.01388	1.01567	4.056	1.01569	8.452	3833.9	63.23
.1	.29	.01428	.01607	.159	.01609	.456	3835.4	.25
.2	.35	.01467	.01647	.262	.01649	.459	3836.9	.28
.3	.40	.01507	.01687	.365	.01688	.462	3838.4	.30
.4	.46	.01547	.01726	.468	.01728	.465	3839.9	.33
.5	.52	.01586	.01766	.571	.01768	.469	3841.4	.35
.6	.57	.01626	.01806	.675	.01808	.472	3842.9	.38
.7	.63	.01666	.01846	.778	.01848	.475	3844.4	.40
.8	.68	.01706	.01886	.882	.01888	.479	3845.9	.43
.9	.74	.01746	.01926	.986	.01928	.482	3847.4	.45
5.0	2.79	1.01785	1.01965	5.089	1.01968	8.485	3848.9	63.48
.1	.85	.01825	.02005	.193	.02008	.489	3850.4	.50
.2	.91	.01865	.02045	.297	.02048	.492	3851.9	.53
.3	.96	.01905	.02085	.401	.02088	.495	3853.5	.55
.4	3.02	.01945	.02125	.506	.02128	.499	3855.0	.58
.5	.07	.01985	.02165	.609	.02168	.502	3856.5	.60
.6	.13	.02025	.02206	.713	.02208	.505	3858.0	.63
.7	.18	.02065	.02246	.818	.02248	.509	3859.5	.65
.8	.24	.02105	.02286	.922	.02289	.512	3861.0	.68
.9	.30	.02145	.02321	6.027	.02329	.515	3862.5	.70
6.0	3.35	1.02186	1.02366	6.131	1.02369	8.519	3864.1	63.73
.1	.41	.02226	.02407	.236	.02409	.522	3865.6	.75
.2	.46	.02266	.02447	.340	.02450	.526	3867.1	.78
.3	.52	.02306	.02487	.445	.02490	.529	3868.6	.80
.4	.57	.02346	.02527	.550	.02530	.532	3870.2	.83
.5	.63	.02387	.02568	.655	.02571	.536	3871.7	.85
.6	.69	.02427	.02608	.760	.02611	.539	3873.2	.88
.7	.74	.02467	.02648	.865	.02652	.542	3874.7	.90
.8	.80	.02508	.02689	.971	.02692	.546	3876.3	.93
.9	.85	.02548	.02729	7.076	.02733	.549	3877.8	.95
7.0	3.91	1.02588	1.02770	7.181	1.02773	8.552	3879.3	63.98
.1	.96	.02629	.02810	.287	.02814	.556	3880.9	64.00
.2	4.02	.02669	.02851	.392	.02854	.559	3882.4	.03
.3	.08	.02710	.02892	.498	.02895	.563	3883.9	.05
.4	.13	.02750	.02932	.604	.02936	.566	3885.5	.08
.5	.19	.02791	.02973	.709	.02976	.569	3887.0	.10
.6	.24	.02832	.03013	.815	.03017	.573	3888.5	.13
.7	.30	.02872	.03054	.921	.03058	.576	3890.1	.15
.8	.35	.02913	.03095	8.027	.03098	.580	3891.6	.18
.9	.41	.02954	.03136	.133	.03139	.583	3893.1	.20

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
8.0	4.46	1.02994	1.03176	8.240	1.03180	8.586	3894.7	64.23
.1	.52	.03035	.03217	.346	.03221	.590	3896.2	.26
.2	.58	.03076	.03258	.452	.03262	.593	3897.8	.28
.3	.63	.03116	.03299	.559	.03303	.597	3899.3	.31
.4	.69	.03157	.03340	.665	.03344	.600	3900.9	.33
.5	.74	.03198	.03381	.772	.03385	.603	3902.4	.36
.6	.80	.03239	.03422	.879	.03426	.607	3904.0	.38
.7	.85	.03280	.03463	.985	.03467	.610	3905.5	.41
.8	.91	.03321	.03504	9.092	.03508	.614	3907.1	.43
.9	.96	.03362	.03545	.199	.03549	.617	3908.6	.46
9.0	5.02	1.03403	1.03586	9.306	1.03590	8.620	3910.2	64.49
.1	.07	.03444	.03627	.413	.03631	.624	3911.7	.51
.2	.13	.03485	.03668	.521	.03672	.627	3913.3	.54
.3	.19	.03526	.03709	.628	.03713	.631	3914.8	.56
.4	.24	.03567	.03750	.735	.03755	.634	3916.4	.59
.5	.30	.03608	.03792	.843	.03796	.638	3918.0	.61
.6	.35	.03649	.03833	.950	.03837	.641	3919.5	.64
.7	.41	.03691	.03874	10.058	.03879	.644	3921.1	.67
.8	.46	.03732	.03915	.166	.03920	.648	3922.6	.69
.9	.52	.03773	.03957	.274	.03961	.651	3924.2	.72
10.0	5.57	1.03814	1.03998	10.381	1.04003	8.655	3925.7	64.74
.1	.63	.03856	.04039	.489	.04044	.658	3927.3	.77
.2	.68	.03897	.04081	.597	.04086	.662	3928.9	.79
.3	.74	.03938	.04122	.706	.04127	.665	3930.4	.82
.4	.80	.03980	.04164	.814	.04169	.669	3932.0	.85
.5	.85	.04021	.04205	.922	.04210	.672	3933.6	.87
.6	.91	.04063	.04247	11.031	.04252	.675	3935.1	.90
.7	.96	.04104	.04288	.139	.04293	.679	3936.7	.92
.8	6.02	.04146	.04330	.248	.04335	.682	3938.3	.95
.9	.07	.04187	.04371	356	.04377	.686	3939.9	.97
11.0	6.13	1.04229	1.04413	11.465	1.04418	8.689	3941.4	65.00
.1	.18	.04270	.04455	.574	.04460	.693	3943.0	.03
.2	.24	.04312	.04497	.683	.04502	.696	3944.6	.05
.3	.30	.04354	.04538	.792	.04544	.700	3946.2	.08
.4	.35	.04395	.04580	.901	.04585	.703	3947.7	.11
.5	.41	.04437	.04622	12.010	.04627	.707	3949.3	.13
.6	.46	.04479	.04664	.120	.04669	.710	3950.9	.16
.7	.52	.04521	.04706	.229	.04711	.714	3952.5	.18
.8	.57	04562	.04747	.338	.04753	.717	3954.1	.21
.9	.63	.04604	.04789	.448	.04795	.721	3955.6	.24

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
12.0	6.68	1.04646	1.04831	12.558	1.04837	8.724	3957.2	65.26
.1	.74	.04688	.04873	.667	.04879	.728	3958.8	.29
.2	.79	.04730	.04915	.777	.04921	.731	3960.4	.31
.3	.85	.04772	.04957	.887	.04963	.735	3962.0	.34
.4	.90	.04814	.04999	.997	.05005	.738	3963.6	.37
.5	.96	.04856	.05041	13.107	.05047	.742	3965.2	.39
.6	7.02	.04898	.05084	.217	.05090	.745	3966.8	.42
.7	.07	.04940	.05126	.327	.05132	.749	3968.4	.44
.8	.13	.04982	.05168	.438	.05174	.752	3969.9	.47
.9	.18	.05024	.05210	.548	.05216	.756	3971.5	.50
13.0	7.24	1.05066	1.05252	13.659	1.05259	8.759	3973.1	65.52
.1	.29	.05109	.05295	.769	.05301	.763	3974.7	.55
.2	.35	.05151	.05337	.880	.05343	.766	3976.3	.58
.3	.40	.05193	.05379	.991	.05386	.770	3977.9	.60
.4	.46	.05236	.05422	14.102	.05428	.773	3979.6	.63
.5	.51	.05278	.05464	.213	.05470	.777	3981.2	.66
.6	.57	.05320	.05506	.324	.05513	.781	3982.8	.68
.7	.62	.05363	.05549	.435	.05556	.784	3984.4	.71
.8	.68	.05405	.05591	.546	.05598	.788	3986.0	.74
.9	.73	.05448	.05634	.657	.05641	.791	3987.6	.76
14.0	7.79	1.05490	1.05677	14.769	1.05683	8.795	3989.2	65.79
.1	.84	.05532	.05719	.880	.05726	.798	3990.8	.82
.2	.90	.05575	.05762	.992	.05769	.802	3992.4	.84
.3	.96	.05618	.05804	15.103	.05811	.805	3994.0	.87
.4	8.01	.05660	.05847	.215	.05854	.809	3995.6	.90
.5	.07	.05703	.05890	.327	.05897	.812	3997.3	.92
.6	.12	.05746	.05933	.439	.05940	.816	3998.9	.95
.7	.18	.05788	.05975	.551	.05982	.820	4000.5	.97
.8	.23	.05831	.06018	.663	.06025	.823	4002.1	66.00
.9	.29	.05874	.06061	.775	.06068	.827	4003.7	.03
15.0	8.34	1.05916	1.06104	15.887	1.06111	8.830	4005.3	66.05
.1	.40	.05959	.06147	16.000	.06154	.834	4007.0	.08
.2	.45	.06002	.06190	.112	.06197	.837	4008.6	.11
.3	.51	.06045	.06233	.225	.06240	.841	4010.2	.14
.4	.56	.06088	.06276	.338	.06283	.845	4011.8	.16
.5	.62	.06131	.06319	.450	.06326	.848	4013.5	.19
.6	.67	.06174	.06362	.563	.06369	.852	4015.1	.22
.7	.73	.06217	.06405	.676	.06412	.855	4016.7	.24
.8	.78	.06260	.06448	.789	.06455	.859	4018.3	.27
.9	.84	.06303	.06491	.902	.06499	.863	4020.0	.30

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20 ° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
16. 0	8. 89	1. 06346	1. 06534	17. 015	1. 06542	8. 866	4021. 6	66. 32
. 1	. 95	. 06389	. 06577	. 129	. 06585	. 870	4023. 2	. 35
. 2	9. 00	. 06432	. 06621	. 242	. 06629	. 873	4024. 9	. 38
. 3	. 06	. 06476	. 06664	. 356	. 06672	. 877	4026. 5	. 40
. 4	. 11	. 06519	. 06707	. 469	. 06715	. 881	4028. 1	. 43
. 5	. 17	. 06562	. 06751	. 583	. 06759	. 884	4029. 8	. 46
. 6	. 22	. 06605	. 06794	. 697	. 06802	. 888	4031. 4	. 49
. 7	. 28	. 06649	. 06837	. 810	. 06845	. 891	4033. 1	. 51
. 8	. 33	. 06692	. 06881	. 924	. 06889	. 895	4034. 7	. 54
. 9	. 39	. 06736	. 06924	18. 038	. 06933	. 899	4036. 3	. 57
17. 0	9. 45	1. 06779	1. 06968	18. 152	1. 06976	8. 902	4038. 0	66. 59
. 1	. 50	. 06822	. 07011	. 267	. 07020	. 906	4039. 6	. 62
. 2	. 56	. 06866	. 07055	. 381	. 07063	. 909	4041. 3	. 65
. 3	. 61	. 06909	. 07098	. 495	. 07107	. 913	4042. 9	. 67
. 4	. 67	. 06953	. 07142	. 610	. 07151	. 917	4044. 6	. 70
. 5	. 72	. 06996	. 07186	. 724	. 07194	. 920	4046. 2	. 73
. 6	. 78	. 07040	. 07229	. 839	. 07238	. 924	4047. 9	. 76
. 7	. 83	. 07084	. 07273	. 954	. 07282	. 928	4049. 5	. 78
. 8	. 89	. 07127	. 07317	19. 069	. 07325	. 931	4051. 2	. 81
. 9	. 94	. 07171	. 07361	. 184	. 07369	. 935	4052. 8	. 84
18. 0	10. 00	1. 07215	1. 07404	19. 299	1. 07413	8. 939	4054. 5	66. 87
. 1	. 05	. 07258	. 07448	. 414	. 07457	. 942	4056. 1	. 89
. 2	. 11	. 07302	. 07492	. 529	. 07501	. 946	4057. 8	. 92
. 3	. 16	. 07346	. 07536	. 644	. 07545	. 950	4059. 4	. 95
. 4	. 22	. 07390	. 07580	. 760	. 07589	. 953	4061. 1	. 97
. 5	. 27	. 07434	. 07624	. 875	. 07633	. 957	4062. 8	67. 00
. 6	. 33	. 07478	. 07668	. 991	. 07677	. 961	4064. 4	. 03
. 7	. 38	. 07522	. 07712	20. 107	. 07721	. 964	4066. 1	. 06
. 8	. 44	. 07566	. 07756	. 222	. 07765	. 968	4067. 8	. 08
. 9	. 49	. 07610	. 07800	. 338	. 07809	. 972	4069. 4	. 11
19. 0	10. 55	1. 07654	1. 07844	20. 454	1. 07853	8. 975	4071. 1	67. 14
. 1	. 60	. 07698	. 07888	. 570	. 07898	. 979	4072. 8	. 17
. 2	. 66	. 07742	. 07932	. 686	. 07942	. 983	4074. 4	. 19
. 3	. 71	. 07786	. 07977	. 803	. 07986	. 986	4076. 1	. 22
. 4	. 77	. 07830	. 08021	. 919	. 08030	. 990	4077. 8	. 25
. 5	. 82	. 07874	. 08065	21. 036	. 08075	. 994	4079. 5	. 28
. 6	. 88	. 07919	. 08110	. 152	. 08119	. 997	4081. 1	. 30
. 7	. 93	. 07963	. 08154	. 269	. 08164	9. 001	4082. 8	. 33
. 8	. 99	. 08007	. 08198	. 385	. 08208	. 005	4084. 5	. 36
. 9	11. 04	. 08052	. 08243	. 502	. 08252	. 008	4086. 2	. 39

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C
						Pounds	Grams	Pounds
1	2	3	4	5	6	7	8	9
20. 0	11. 10	1. 08096	1. 08287	21. 619	1. 08297	9. 012	4087. 8	67. 42
. 1	. 15	. 08140	. 08332	. 736	. 08342	. 016	4089. 5	. 44
. 2	. 21	. 08185	. 08376	. 853	. 08386	. 020	4091. 2	. 47
. 3	. 26	. 08229	. 08421	. 971	. 08431	. 023	4092. 9	. 50
. 4	. 32	. 08274	. 08465	22. 088	. 08475	. 027	4094. 6	. 53
. 5	. 37	. 08318	. 08510	. 205	. 08520	. 031	4096. 3	. 55
. 6	. 43	. 08363	. 08554	. 323	. 08565	. 034	4097. 9	. 58
. 7	. 48	. 08407	. 08599	. 440	. 08609	. 038	4099. 6	. 61
. 8	. 54	. 08452	. 08644	. 558	. 08654	. 042	4101. 3	. 64
. 9	. 59	. 08497	. 08689	. 676	. 08699	. 046	4103. 0	. 67
21. 0	11. 65	1. 08541	1. 08733	22. 794	1. 08744	9. 049	4104. 7	67. 69
. 1	. 70	. 08586	. 08778	. 912	. 08789	. 053	4106. 4	. 72
. 2	. 76	. 08631	. 08823	23. 030	. 08834	. 057	4108. 1	. 75
. 3	. 81	. 08676	. 08868	. 148	. 08879	. 061	4109. 8	. 78
. 4	. 87	. 08720	. 08913	. 266	. 08923	. 064	4111. 5	. 81
. 5	. 92	. 08765	. 08958	. 385	. 08968	. 068	4113. 2	. 83
. 6	. 98	. 08810	. 09003	. 503	. 09013	. 072	4114. 9	. 86
. 7	12. 03	. 08855	. 09048	. 622	. 09058	. 076	4116. 6	. 89
. 8	. 09	. 08900	. 09093	. 740	. 09103	. 079	4118. 3	. 92
. 9	. 14	. 08945	. 09138	. 859	. 09149	. 083	4120. 0	. 95
22. 0	12. 20	1. 08990	1. 09183	23. 978	1. 09194	9. 087	4121. 7	67. 97
. 1	. 25	. 09035	. 09228	24. 097	. 09239	. 091	4123. 4	68. 00
. 2	. 31	. 09080	. 09273	. 216	. 09284	. 094	4125. 1	. 03
. 3	. 36	. 09125	. 09318	. 335	. 09329	. 098	4126. 8	. 06
. 4	. 42	. 09170	. 09364	. 454	. 09375	. 102	4128. 5	. 09
. 5	. 47	. 09216	. 09409	. 573	. 09420	. 106	4130. 2	. 11
. 6	. 52	. 09261	. 09454	. 693	. 09465	. 109	4132. 0	. 14
. 7	. 58	. 09306	. 09499	. 812	. 09511	. 113	4133. 7	. 17
. 8	. 63	. 09351	. 09545	. 932	. 09556	. 117	4135. 4	. 20
. 9	. 69	. 09397	. 09590	25. 052	. 09602	. 121	4137. 1	. 23
23. 0	12. 74	1. 09442	1. 09636	25. 172	1. 09647	9. 125	4138. 8	68. 26
. 1	. 80	. 09487	. 09681	. 292	. 09693	. 128	4140. 5	. 28
. 2	. 85	. 09533	. 09727	. 412	. 09738	. 132	4142. 3	. 31
. 3	. 91	. 09578	. 09772	. 532	. 09784	. 136	4144. 0	. 34
. 4	. 96	. 09624	. 09818	. 652	. 09829	. 140	4145. 7	. 37
. 5	13. 02	. 09669	. 09863	. 772	. 09875	. 143	4147. 4	. 40
. 6	. 07	. 09715	. 09909	. 893	. 09921	. 147	4149. 1	. 43
. 7	. 13	. 09760	. 09954	26. 013	. 09966	. 151	4150. 9	. 46
. 8	. 18	. 09806	. 10000	. 134	. 10012	. 155	4152. 6	. 48
. 9	. 24	. 09851	. 10046	. 255	. 10058	. 159	4154. 3	. 51

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
24. 0	13. 29	1. 09897	1. 10092	26. 375	1. 10104	9. 163	4156. 0	68. 54
. 1	. 35	. 09943	. 10137	. 496	. 10149	. 166	4157. 8	. 57
. 2	. 40	. 09989	. 10183	. 617	. 10195	. 170	4159. 5	. 60
. 3	. 46	. 10034	. 10229	. 738	. 10241	. 174	4161. 2	. 63
. 4	. 51	. 10080	. 10275	. 860	. 10287	. 178	4163. 0	. 65
. 5	. 57	. 10126	. 10321	. 981	. 10333	. 182	4164. 7	. 68
. 6	. 62	. 10172	. 10367	27. 102	. 10370	. 185	4166. 4	. 71
. 7	. 67	. 10218	. 10413	. 224	. 10425	. 189	4168. 2	. 74
. 8	. 73	. 10264	. 10459	. 345	. 10471	. 193	4169. 9	. 77
. 9	. 78	. 10310	. 10505	. 467	. 10517	. 197	4171. 7	. 80
25. 0	13. 84	1. 10356	1. 10551	27. 589	1. 10564	9. 201	4173. 4	68. 83
. 1	. 89	. 10402	. 10597	. 710	. 10610	. 205	4175. 1	. 86
. 2	. 95	. 10448	. 10643	. 833	. 10656	. 208	4176. 9	. 88
. 3	14. 00	. 10494	. 10689	. 955	. 10702	. 212	4178. 6	. 91
. 4	. 06	. 10540	. 10736	28. 077	. 10748	. 216	4180. 4	. 94
. 5	. 11	. 10586	. 10782	. 199	. 10795	. 220	4182. 1	. 97
. 6	. 17	. 10632	. 10828	. 322	. 10841	. 224	4183. 9	69. 00
. 7	. 22	. 10679	. 10874	. 444	. 10887	. 228	4185. 6	. 03
. 8	. 28	. 10725	. 10921	. 567	. 10934	. 232	4187. 4	. 06
. 9	. 33	. 10771	. 10967	. 690	. 10980	. 235	4189. 1	. 09
26. 0	14. 39	1. 10818	1. 11014	28. 813	1. 11027	9. 239	4190. 9	69. 11
. 1	. 44	. 10864	. 11060	. 935	. 11073	. 243	4192. 6	. 14
. 2	. 49	. 10910	. 11106	29. 059	. 11120	. 247	4194. 4	. 17
. 3	. 55	. 10957	. 11153	. 182	. 11166	. 251	4196. 2	. 20
. 4	. 60	. 11003	. 11200	. 305	. 11213	. 255	4197. 9	. 23
. 5	. 66	. 11050	. 11246	. 428	. 11260	. 259	4199. 7	. 26
. 6	. 71	. 11096	. 11293	. 552	. 11306	. 263	4201. 5	. 29
. 7	. 77	. 11143	. 11339	. 675	. 11353	. 266	4203. 2	. 32
. 8	. 82	. 11190	. 11386	. 799	. 11400	. 270	4205. 0	. 35
. 9	. 88	. 11236	. 11433	. 923	. 11447	. 274	4206. 7	. 38
27. 0	14. 93	1. 11283	1. 11480	30. 046	1. 11493	9. 278	4208. 5	69. 41
. 1	. 99	. 11330	. 11526	. 170	. 11540	. 282	4210. 3	. 43
. 2	15. 04	. 11376	. 11573	. 294	. 11587	. 286	4212. 0	. 46
. 3	. 09	. 11423	. 11620	. 418	. 11634	. 290	4213. 8	. 49
. 4	. 15	. 11470	. 11667	. 543	. 11681	. 294	4215. 6	. 52
. 5	. 20	. 11517	. 11714	. 667	. 11728	. 298	4217. 4	. 55
. 6	. 26	. 11564	. 11761	. 792	. 11775	. 302	4219. 1	. 58
. 7	. 31	. 11610	. 11808	. 916	. 11822	. 305	4220. 9	. 61
. 8	. 37	. 11657	. 11855	31. 041	. 11869	. 309	4222. 7	. 64
. 9	. 42	. 11704	. 11902	. 165	. 11916	. 313	4224. 4	. 67

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
28. 0	15. 48	1. 11751	1. 11949	31. 290	1. 11963	9. 317	4226. 2	69. 70
. 1	. 53	. 11798	. 11996	. 415	. 12010	. 321	4228. 0	. 73
. 2	. 59	. 11845	. 12043	. 540	. 12058	. 325	4229. 8	. 76
. 3	. 64	. 11892	. 12090	. 666	. 12105	. 329	4231. 6	. 79
. 4	. 69	. 11940	. 12138	. 791	. 12152	. 333	4233. 4	. 82
. 5	. 75	. 11987	. 12185	. 916	. 12199	. 337	4235. 2	. 85
. 6	. 80	. 12034	. 12232	32. 042	. 12247	. 341	4236. 9	. 87
. 7	. 86	. 12081	. 12280	. 167	. 12294	. 345	4238. 7	. 90
. 8	. 91	. 12128	. 12327	. 293	. 12342	. 349	4240. 5	. 93
. 9	. 97	. 12176	. 12374	. 419	. 12389	. 353	4242. 3	. 96
29. 0	16. 02	1. 12223	1. 12422	32. 545	1. 12436	9. 357	4244. 1	69. 99
. 1	. 08	. 12270	. 12469	. 671	. 12484	. 361	4245. 9	70. 02
. 2	. 13	. 12318	. 12517	. 797	. 12532	. 365	4247. 7	. 05
. 3	. 18	. 12365	. 12564	. 923	. 12579	. 369	4249. 5	. 08
. 4	. 24	. 12413	. 12612	33. 049	. 12627	. 372	4251. 3	. 11
. 5	. 29	. 12460	. 12659	. 176	. 12674	376	4253. 1	. 14
. 6	. 35	. 12508	. 12707	. 302	. 12722	. 380	4254. 9	. 17
. 7	. 40	. 12556	. 12755	. 429	. 12770	. 384	4256. 7	. 20
. 8	. 46	. 12603	. 12802	. 556	. 12817	. 388	4258. 5	. 23
. 9	. 51	. 12651	. 12850	. 683	. 12865	. 392	4260. 3	. 26
30. 0	16. 57	1. 12698	1. 12898	33. 810	1. 12913	9. 396	4262. 1	70. 29
. 1	. 62	. 12746	. 12946	. 937	. 12961	. 400	4263. 9	. 32
. 2	. 67	. 12794	. 12993	34. 064	. 13009	. 404	4265. 7	. 35
. 3	. 73	. 12842	. 13041	. 191	. 13057	. 408	4267. 5	. 38
. 4	. 78	. 12890	. 13089	. 318	. 13105	. 412	4269. 3	. 41
. 5	. 84	. 12937	. 13137	. 446	. 13153	. 416	4271. 2	. 44
. 6	. 89	. 12985	. 13185	. 574	. 13201	. 420	4273. 0	. 47
. 7	. 95	. 13033	. 13233	. 701	. 13249	. 424	4274. 8	. 50
. 8	17. 00	. 13081	. 13281	. 829	. 13297	. 428	4276. 6	. 53
. 9	. 05	. 13129	. 13329	. 957	. 13345	. 432	4278. 4	. 56
31. 0	17. 11	1. 13177	1. 13378	35. 085	1. 13394	9. 436	4280. 2	70. 59
. 1	. 16	. 13225	. 13426	. 213	. 13442	. 440	4282. 1	. 62
. 2	. 22	. 13274	. 13474	. 341	. 13490	. 444	4283. 9	. 65
. 3	. 27	. 13322	. 13522	. 470	. 13538	. 448	4285. 7	. 68
. 4	. 33	. 13370	. 13570	. 598	. 13587	. 452	4287. 5	. 71
. 5	. 38	. 13418	. 13619	. 727	. 13635	. 456	4289. 4	. 74
. 6	. 43	. 13466	. 13667	. 855	. 13683	. 460	4291. 2	. 77
. 7	. 49	. 13515	. 13715	. 984	. 13732	. 464	4293. 0	. 80
. 8	. 54	. 13563	. 13764	36. 113	. 13780	. 468	4294. 8	. 83
. 9	. 60	. 13611	. 13812	. 242	. 13829	. 472	4296. 7	. 86

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
32. 0	17. 65	1. 13660	1. 13861	36. 371	1, 13877	9. 477	4298. 5	70. 89
. 1	. 70	. 13708	. 13909	. 500	. 13926	. 481	4300. 3	. 92
. 2	. 76	. 13756	. 13958	. 630	. 13974	. 485	4302. 2	. 95
. 3	. 81	. 13805	. 14006	. 759	. 14023	. 489	4304. 0	. 98
. 4	. 87	. 13853	. 14055	. 889	. 14072	. 493	4305. 8	71. 01
. 5	. 92	. 13902	. 14103	37. 018	. 14120	. 497	4307. 7	. 04
. 6	. 98	. 13951	. 14152	. 148	. 14169	. 501	4309. 5	. 07
. 7	18. 03	. 13999	. 14201	. 278	. 14218	. 505	4311. 3	. 10
. 8	. 08	. 14048	. 14250	. 408	. 14267	. 509	4313. 2	. 13
. 9	. 14	. 14097	. 14298	. 538	. 14316	. 513	4315. 0	. 16
33. 0	18. 19	1. 14145	1. 14347	37. 668	1. 14364	9. 517	4316. 8	71. 19
. 1	. 25	. 14194	. 14396	. 798	. 14413	. 521	4318. 7	. 22
. 2	. 30	. 14243	. 14445	. 929	. 14462	. 525	4320. 6	. 25
. 3	. 36	. 14292	. 14494	38. 059	. 14511	. 529	4322. 4	. 28
. 4	. 41	. 14340	. 14543	. 190	. 14560	. 533	4324. 3	. 31
. 5	. 46	. 14389	. 14592	. 320	. 14609	. 537	4326. 1	. 34
. 6	. 52	. 14438	. 14641	. 451	. 14658	. 541	4328. 0	. 38
. 7	. 57	. 14487	. 14690	. 582	. 14708	. 546	4329. 8	. 41
. 8	. 63	. 14536	. 14739	. 713	. 14757	. 550	4331. 7	. 44
. 9	. 68	. 14585	. 14788	. 844	. 14806	. 554	4333. 5	. 47
34. 0	18. 73	1. 14634	1. 14837	38. 976	1. 14855	9. 558	4335. 4	71. 50
. 1	. 79	. 14684	. 14886	. 107	. 14904	. 562	4337. 2	. 53
. 2	. 84	. 14733	. 14936	. 239	. 14954	. 566	4339. 1	. 56
. 3	. 90	. 14782	. 14985	. 370	. 15003	. 570	4341. 0	. 59
. 4	. 95	. 14831	. 15034	. 502	. 15052	. 574	4342. 8	. 62
. 5	19. 00	. 14880	. 15084	. 634	. 15102	. 578	4344. 7	. 65
. 6	. 06	. 14930	. 15133	. 766	. 15151	. 583	4346. 6	. 68
. 7	. 11	. 14979	. 15183	. 898	. 15201	. 587	4348. 4	. 71
. 8	. 17	. 15029	. 15232	40. 030	. 15250	. 591	4350. 3	. 74
. 9	. 22	. 15078	. 15282	. 162	. 15300	. 595	4352. 2	. 77
35. 0	19. 28	1. 15128	1. 15331	40. 295	1. 15350	9. 599	4354. 0	71. 81
. 1	. 33	. 15177	. 15381	. 427	. 15399	. 603	4355. 9	. 84
. 2	. 38	. 15226	. 15430	. 560	. 15449	. 607	4357. 8	. 87
. 3	. 44	. 15276	. 15480	. 692	. 15498	. 611	4359. 7	. 90
. 4	. 49	. 15326	. 15530	. 825	. 15548	. 616	4361. 5	. 93
. 5	. 55	. 15375	. 15579	. 958	. 15598	. 620	4363. 4	. 96
. 6	. 60	. 15425	. 15629	41. 091	. 15648	. 624	4365. 3	. 99
. 7	. 65	. 15475	. 15679	. 224	. 15698	. 628	4367. 2	72. 02
. 8	. 71	. 15524	. 15729	. 358	. 15747	. 632	4369. 1	. 05
. 9	. 76	. 15574	. 15778	. 491	. 15797	. 636	4370. 9	. 08

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
36.0	19.81	1.15624	1.15828	41.625	1.15847	9.640	4372.8	72.12
.1	.87	.15674	.15878	.758	.15897	.645	4374.7	.15
.2	.92	.15724	.15928	.892	.15947	.649	4376.6	.18
.3	.98	.15773	.15978	42.026	.15997	.653	4378.5	.21
.4	20.03	.15823	.16028	.160	.16047	.657	4380.4	.24
.5	.08	.15873	.16078	.294	.16098	.661	4382.3	.27
.6	.14	.15923	.16128	.428	.16148	.665	4384.2	.30
.7	.19	.15973	.16178	.562	.16198	.670	4386.1	.33
.8	.25	.16023	.16228	.697	.16248	.674	4388.0	.37
.9	.30	.16073	.16279	.831	.16298	.678	4389.9	.40
37.0	20.35	1.16124	1.16329	42.966	1.16349	9.682	4391.8	72.43
.1	.41	.16174	.16379	43.100	.16399	.686	4393.7	.46
.2	.46	.16224	.16430	.235	.16449	.691	4395.6	.49
.3	.52	.16274	.16480	.370	.16500	.695	4397.5	.52
.4	.57	.16324	.16530	.505	.16550	.699	4399.4	.55
.5	.62	.16375	.16581	.641	.16601	.703	4401.3	.58
.6	.68	.16425	.16631	.776	.16652	.707	4403.2	.62
.7	.73	.16476	.16682	.911	.16702	.712	4405.1	.65
.8	.78	.16526	.16732	44.047	.16752	.716	4407.0	.68
.9	.84	.16576	.16783	.182	.16803	.720	4408.9	.71
38.0	20.89	1.16627	1.16833	44.318	1.16853	9.724	4410.8	72.74
.1	.94	.16678	.16884	.454	.16904	.728	4412.7	.77
.2	21.00	.16728	.16934	.590	.16955	.733	4414.6	.80
.3	.05	.16779	.16985	.726	.17006	.737	4416.6	.84
.4	.11	.16829	.17036	.862	.17056	.741	4418.5	.87
.5	.16	.16880	.17087	.999	.17107	.745	4420.4	.90
.6	.21	.16931	.17138	45.135	.17158	.749	4422.3	.93
.7	.27	.16982	.17188	.272	.17209	.754	4424.2	.96
.8	.32	.17032	.17239	.408	.17260	.758	4426.2	.99
.9	.38	.17083	.17290	.545	.17311	.762	4428.1	73.03
39.0	21.43	1.17134	1.17341	45.682	1.17362	9.766	4430.0	73.06
.1	.48	.17185	.17392	.819	.17413	.771	4431.9	.09
.2	.54	.17236	.17443	.956	.17464	.775	4433.9	.12
.3	.59	.17287	.17494	46.094	.17515	.779	4435.8	.15
.4	.64	.17338	.17545	.231	.17566	.783	4437.7	.19
.5	.70	.17389	.17596	.369	.17618	.788	4439.7	.22
.6	.75	.17440	.17648	.506	.17669	.792	4441.6	.25
.7	.80	.17491	.17699	.644	.17720	.796	4443.5	.28
.8	.86	.17542	.17750	.782	.17772	.801	4445.5	.31
.9	.91	.17594	.17802	.920	.17823	.805	4447.4	.35

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé *m*=145	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
40. 0	21. 97	1. 17645	1. 17853	47. 058	1. 17874	9. 809	4449. 3	73. 38
. 1	22. 02	. 17696	. 17904	. 196	. 17926	. 813	4451. 3	. 41
. 2	. 07	. 17747	. 17956	. 334	. 17977	. 818	4453. 2	. 44
. 3	. 13	. 17799	. 18007	. 473	. 18029	. 822	4455. 2	. 47
. 4	. 18	. 17850	. 18058	. 611	. 18080	. 826	4457. 1	. 51
. 5	. 23	. 17901	. 18110	. 750	. 18132	. 831	4459. 1	. 54
. 6	. 29	. 17953	. 18162	. 889	. 18183	. 835	4461. 0	. 57
. 7	. 34	. 18004	. 18213	48. 028	. 18235	. 839	4463. 0	. 60
. 8	. 39	. 18056	. 18265	. 167	. 18287	. 843	4464. 9	. 63
. 9	. 45	. 18108	. 18316	. 306	. 18339	. 848	4466. 9	. 67
41. 0	22. 50	1. 18159	1. 18368	48. 445	1. 18390	9. 852	4468. 8	73. 70
. 1	. 55	. 18211	. 18420	. 585	. 18442	. 856	4470. 8	. 73
. 2	. 61	. 18262	. 18472	. 724	. 18494	. 861	4472. 7	. 76
. 3	. 66	. 18314	. 18524	. 864	. 18546	. 865	4474. 7	. 80
. 4	. 72	. 18366	. 18575	49. 004	. 18598	. 869	4476. 7	. 83
. 5	. 77	. 18418	. 18627	. 143	. 18650	. 874	4478. 6	. 86
. 6	. 82	. 18470	. 18679	. 283	. 18702	. 878	4480. 6	. 89
. 7	. 88	. 18522	. 18731	. 424	. 18754	. 882	4482. 5	. 92
. 8	. 93	. 18573	. 18783	. 564	. 18806	. 887	4484. 5	. 96
. 9	. 98	. 18625	. 18835	. 704	. 18858	. 891	4486. 5	. 99
42. 0	23. 04	1. 18677	1. 18887	49. 845	1. 18910	9. 895	4488. 4	74. 02
. 1	. 09	. 18729	. 18939	. 985	. 18962	. 900	4490. 4	. 05
. 2	. 14	. 18781	. 18992	50. 126	. 19014	. 904	4492. 4	. 09
. 3	. 20	. 18834	. 19044	. 267	. 19062	. 908	4494. 4	. 12
. 4	. 25	. 18886	. 19096	. 408	. 19119	. 913	4496. 3	. 15
. 5	. 30	. 18938	. 19148	. 549	. 19171	. 917	4498. 3	. 18
. 6	. 36	. 18990	. 19201	. 690	. 19224	. 921	4500. 3	. 22
. 7	. 41	. 19042	. 19253	. 831	. 19276	. 926	4502. 3	. 25
. 8	. 46	. 19095	. 19305	. 973	. 19329	. 930	4504. 2	. 28
. 9	. 52	. 19147	. 19358	51. 114	. 19381	. 935	4506. 2	. 32
43. 0	23. 57	1. 19199	1. 19410	51. 256	1. 19434	9. 939	4508. 2	74. 35
. 1	. 62	. 19252	. 19463	. 398	. 19486	. 943	4510. 2	. 38
. 2	. 68	. 19304	. 19515	. 539	. 19539	. 948	4512. 2	. 41
. 3	. 73	. 19356	. 19568	. 681	. 19591	. 952	4514. 2	. 45
. 4	. 78	. 19409	. 19620	. 824	. 19644	. 956	4516. 1	. 48
. 5	. 84	. 19462	. 19673	. 966	. 19697	. 961	4518. 1	. 51
. 6	. 89	. 19514	. 19726	52. 108	. 19749	. 965	4520. 1	. 54
. 7	. 94	. 19567	. 19778	. 251	. 19802	. 970	4522. 1	. 58
. 8	24. 00	. 19619	. 19831	. 393	. 19855	. 974	4524. 1	. 61
. 9	. 05	. 19672	. 19884	. 536	. 19908	. 978	4526. 1	. 64

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
44. 0	24. 10	1. 19725	1. 19936	52. 679	1. 19961	9. 983	4528. 1	74. 68
. 1	. 16	. 19778	. 19989	. 822	. 20013	. 987	4530. 1	. 71
. 2	. 21	. 19830	. 20042	. 965	. 22066	. 992	4532. 1	. 74
. 3	. 26	. 19883	. 20095	53. 108	. 20119	. 996	4534. 1	. 77
. 4	. 32	. 19936	. 20148	. 252	. 20172	10. 000	4536. 1	. 81
. 5	. 37	. 19989	. 20201	. 395	. 20226	. 005	4538. 1	. 84
. 6	. 42	. 20042	. 20254	. 539	. 20279	. 009	4540. 1	. 87
. 7	. 48	. 20095	. 20307	. 683	. 20332	. 014	4542. 1	. 91
. 8	. 53	. 20148	. 20360	. 826	. 20385	. 018	4544. 1	. 94
. 9	. 58	. 20201	. 20414	. 970	. 20438	. 022	4546. 1	. 97
45. 0	24. 63	1. 20254	1. 20467	54. 114	1. 20491	10. 027	4548. 1	75. 01
. 1	. 69	. 20307	. 20520	. 259	. 20545	. 031	4550. 2	. 04
. 2	. 74	. 20360	. 20573	. 403	. 20598	. 036	4552. 2	. 07
. 3	. 79	. 20414	. 20627	. 547	. 20651	. 040	4554. 2	. 11
. 4	. 85	. 20467	. 20680	. 692	. 20705	. 045	4556. 2	. 14
. 5	. 90	. 20520	. 20733	. 837	. 20758	. 049	4558. 2	. 17
. 6	. 95	. 20573	. 20787	. 981	. 20812	. 054	4560. 2	. 21
. 7	25. 01	. 20627	. 20840	55. 126	. 20865	. 058	4562. 3	. 24
. 8	. 06	. 20680	. 20894	. 272	. 20919	. 063	4564. 3	. 27
. 9	. 11	. 20734	. 20947	. 417	. 20972	. 067	4566. 3	. 31
46. 0	25. 17	1. 20787	1. 21001	55. 562	1. 21026	10. 071	4568. 3	75. 34
. 1	. 22	. 20840	. 21054	. 708	. 21080	. 076	4570. 3	. 37
. 2	. 27	. 20894	. 21108	. 853	. 21133	. 080	4572. 4	. 41
. 3	. 32	. 20948	. 21162	. 999	. 21187	. 085	4574. 4	. 44
. 4	. 38	. 21001	. 21215	56. 145	. 21241	. 089	4576. 4	. 47
. 5	. 43	. 21055	. 21269	. 291	. 21295	. 094	4578. 5	. 51
. 6	. 48	. 21109	. 21323	. 437	. 21349	. 098	4580. 5	. 54
. 7	. 54	. 21162	. 21377	. 583	. 21402	. 103	4582. 5	. 57
. 8	. 59	. 21216	. 21431	. 729	. 21456	. 107	4584. 5	. 61
. 9	. 64	. 21270	. 21484	. 876	. 21510	. 112	4586. 6	. 64
47. 0	25. 70	1. 21324	1. 21538	57. 022	1. 21564	10. 116	4588. 6	75. 67
. 1	. 75	. 21378	. 21592	. 169	. 21618	. 121	4590. 7	. 71
. 2	. 80	. 21432	. 21646	. 316	. 21673	. 125	4592. 7	. 74
. 3	. 86	. 21486	. 21700	. 463	. 21727	. 130	4594. 8	. 78
. 4	. 91	. 21540	. 21755	. 610	. 21781	. 134	4596. 8	. 81
. 5	. 96	. 21594	. 21809	. 757	. 21835	. 139	4598. 9	. 84
. 6	26. 01	. 21648	. 21863	. 904	. 21889	. 143	4600. 9	. 88
. 7	. 07	. 21702	. 21917	58. 052	. 21943	. 148	4602. 9	. 91
. 8	. 12	. 21756	. 21971	. 199	. 21998	. 152	4605. 0	. 94
. 9	. 17	. 21810	. 22026	. 347	. 22052	. 157	4607. 0	. 98

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
48. 0	26. 23	1. 21864	1. 22080	58. 495	1. 22106	10. 161	4609. 1	76. 01
. 1	. 28	. 21918	. 22134	. 643	. 22161	. 166	4611. 2	. 05
. 2	. 33	. 21973	. 22189	. 791	. 22215	. 170	4613. 2	. 08
. 3	. 38	. 22027	. 22243	. 939	. 22270	. 175	4615. 3	. 11
. 4	. 44	. 22082	. 22298	59. 087	. 22324	. 179	4617. 3	. 15
. 5	. 49	. 22136	. 22352	. 236	. 22379	. 184	4619. 4	. 18
. 6	. 54	. 22190	. 22406	. 385	. 22434	. 189	4621. 4	. 22
. 7	. 59	. 22245	. 22461	. 533	. 22488	. 193	4623. 5	. 25
. 8	. 65	. 22300	. 22516	. 682	. 22543	. 198	4625. 6	. 28
. 9	. 70	. 22354	. 22570	. 831	. 22598	. 202	4627. 6	. 32
49. 0	26. 75	1. 22409	1. 22625	59. 980	1. 22652	10. 207	4629. 7	76. 35
. 1	. 81	. 22463	. 22680	60. 129	. 22707	. 211	4631. 8	. 39
. 2	. 86	. 22518	. 22735	. 279	. 22762	. 216	4633. 8	. 42
. 3	. 91	. 22573	. 22789	. 428	. 22817	. 220	4635. 9	. 45
. 4	. 96	. 22627	. 22844	. 578	. 22872	. 225	4638. 0	. 49
. 5	27. 02	. 22682	. 22899	. 728	. 22927	. 230	4640. 1	. 52
. 6	. 07	. 22737	. 22954	. 878	. 22982	. 234	4642. 1	. 56
. 7	. 12	. 22792	. 23009	61. 028	. 23037	. 239	4644. 2	. 59
. 8	. 18	. 22847	. 23064	. 178	. 23092	. 243	4646. 3	. 63
. 9	. 23	. 22902	. 23119	. 328	. 23147	. 248	4648. 4	. 66
50. 0	27. 28	1. 22957	1. 23174	61. 478	1. 23202	10. 252	4650. 4	76. 69
. 1	. 33	. 23012	. 23229	. 629	. 23257	. 257	4652. 5	. 73
. 2	. 39	. 23067	. 23284	. 780	. 23313	. 262	4654. 6	. 76
. 3	. 44	. 23122	. 23340	. 930	. 23368	. 266	4656. 7	. 80
. 4	. 49	. 23177	. 23395	62. 081	. 23423	. 271	4658. 8	. 83
. 5	. 54	. 23232	. 23450	. 232	. 23478	. 275	4660. 9	. 87
. 6	. 60	. 23287	. 23506	. 383	. 23534	. 280	4663. 0	. 90
. 7	. 65	. 23343	. 23561	. 535	. 23589	. 285	4665. 1	. 93
. 8	. 70	. 23398	. 23616	. 686	. 23645	. 289	4667. 2	. 97
. 9	. 75	. 23453	. 23672	. 838	. 23700	. 294	4669. 2	77. 00
51. 0	27. 81	1. 23508	1. 23727	62. 989	1. 23756	10. 299	4671. 3	77. 04
. 1	. 86	. 23564	. 23782	63. 141	. 23811	. 303	4673. 4	. 07
. 2	. 91	. 23619	. 23838	. 293	. 23867	. 308	4675. 5	. 11
. 3	. 96	. 23675	. 23894	. 445	. 23922	. 312	4677. 6	. 14
. 4	28. 02	. 23730	. 23949	. 597	. 23978	. 317	4679. 8	. 18
. 5	. 07	. 23786	. 24005	. 750	. 24034	. 322	4681. 9	. 21
. 6	. 12	. 23841	. 24060	. 902	. 24089	. 326	4684. 0	. 25
. 7	. 17	. 23897	. 24116	64. 055	. 24145	. 331	4686. 1	. 28
. 8	. 23	. 23953	. 24172	. 208	. 24201	. 336	4688. 2	. 32
. 9	. 28	. 24008	. 24228	. 360	. 24257	. 340	4690. 3	. 35

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density [20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
52. 0	28. 33	1. 24064	1. 24284	64. 513	1. 24313	10. 345	4692. 4	77. 39
. 1	. 38	. 24120	. 24339	. 666	. 24369	. 350	4694. 5	. 42
. 2	. 44	. 24176	. 24395	. 820	. 24425	. 354	4696. 6	. 46
. 3	. 49	. 24232	. 24451	. 973	. 24481	. 359	4698. 7	. 49
. 4	. 54	. 24287	. 24507	65. 127	. 24537	. 364	4700. 8	. 53
. 5	. 59	. 24343	. 24563	. 280	. 24593	. 368	4703. 0	. 56
. 6	. 65	. 24399	. 24619	. 433	. 24649	. 373	4705. 1	. 59
. 7	. 70	. 24455	. 24675	. 588	. 24705	. 378	4707. 2	. 63
. 8	. 75	. 24511	. 24731	. 742	. 24761	. 382	4709. 3	. 66
. 9	. 80	. 24567	. 24788	. 896	. 24818	. 387	4711. 4	. 70
53. 0	28. 86	1. 24623	1. 24844	66. 050	1. 24874	10. 392	4713. 5	77. 73
. 1	. 91	. 24680	. 24900	. 205	. 24930	. 396	4715. 7	. 77
. 2	. 96	. 24736	. 24956	. 359	. 24987	. 401	4717. 8	. 80
. 3	29. 01	. 24792	. 25013	. 514	. 25043	. 406	4719. 9	. 84
. 4	. 06	. 24848	. 25069	. 669	. 25099	. 410	4722. 1	. 88
. 5	. 12	. 24905	. 25126	. 824	. 25156	. 415	4724. 2	. 91
. 6	. 17	. 24961	. 25182	. 979	. 25212	. 420	4726. 3	. 95
. 7	. 22	. 25017	. 25238	67. 134	. 25269	. 425	4728. 5	. 98
. 8	. 27	. 25074	. 25295	. 290	. 25325	. 429	4730. 6	78. 02
. 9	. 32	. 25130	. 25351	. 445	. 25382	. 434	4732. 7	. 05
54. 0	29. 38	1. 25187	1. 25408	67. 601	1. 25439	10. 439	4734. 9	78. 09
. 1	. 43	. 25243	. 25465	. 757	. 25495	. 443	4737. 0	. 12
. 2	. 48	. 25300	. 25521	. 912	. 25552	. 448	4739. 2	. 16
. 3	. 53	. 25356	. 25578	68. 069	. 25609	. 453	4741. 3	. 19
. 4	. 59	. 25413	. 25635	. 225	. 25666	. 458	4743. 4	. 23
. 5	. 64	. 25470	. 25692	. 381	. 25723	. 462	4745. 6	. 26
. 6	. 69	. 25526	. 25748	. 537	. 25780	. 467	4747. 7	. 30
. 7	. 74	. 25583	. 25805	. 694	. 25836	. 472	4749. 9	. 33
. 8	. 80	. 25640	. 25862	. 851	. 25893	. 476	4752. 0	. 37
. 9	. 85	. 25697	. 25919	69. 008	. 25950	. 481	4754. 2	. 40
55. 0	29. 90	1. 25754	1. 25976	69. 164	1. 26007	10. 486	4756. 3	78. 44
. 1	. 95	. 25810	. 26033	. 322	. 26064	. 491	4758. 5	. 48
. 2	30. 00	. 25867	. 26090	. 479	. 26122	. 495	4760. 7	. 51
. 3	. 06	. 25924	. 26147	. 636	. 26179	. 500	4762. 8	. 55
. 4	. 11	. 25982	. 26204	. 794	. 26236	. 505	4765. 0	. 58
. 5	. 16	. 26039	. 26261	. 951	. 26293	. 510	4767. 1	. 62
. 6	. 21	. 26096	. 26319	70. 109	. 26350	. 515	4769. 3	. 65
. 7	. 26	. 26153	. 26376	. 267	. 26408	. 519	4771. 5	. 69
. 8	. 32	. 26210	. 26433	. 425	. 26465	. 524	4773. 6	. 73
. 9	. 37	. 26267	. 26490	. 583	. 26522	. 529	4775. 8	. 76

See footnote at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20 ° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
56. 0	30. 42	1. 26324	1. 26548	70. 742	1. 26580	10. 534	4777. 9	78. 80
. 1	. 47	. 26382	. 26605	. 900	. 26637	. 538	4780. 1	. 83
. 2	. 52	. 26439	. 26663	71. 059	. 26695	. 543	4782. 3	. 87
. 3	. 57	. 26496	. 26720	. 217	. 26752	. 548	4784. 5	. 90
. 4	. 63	. 26554	. 26778	. 376	. 26810	. 553	4786. 6	. 94
. 5	. 68	. 26611	. 26835	. 535	. 26868	. 558	4788. 8	. 98
. 6	. 73	. 26669	. 26893	. 694	. 26925	. 562	4791. 0	79. 01
. 7	. 78	. 26726	. 26950	. 854	. 26983	. 567	4793. 2	. 05
. 8	. 83	. 26784	. 27008	72. 013	. 27041	. 572	4795. 3	. 08
. 9	. 89	. 26841	. 27066	. 173	. 27098	. 577	4797. 5	. 12
57. 0	30. 94	1. 26899	1. 27123	72. 332	1. 27156	10. 581	4799. 7	79. 15
. 1	. 99	. 26956	. 27181	. 492	. 27214	. 586	4801. 9	. 19
. 2	31. 04	. 27014	. 27239	. 652	. 27272	. 591	4804. 1	. 23
. 3	. 09	. 27072	. 27297	. 812	. 27330	. 596	4806. 3	. 26
. 4	. 15	. 27130	. 27355	. 973	. 27388	. 601	4808. 4	. 30
. 5	. 20	. 27188	. 27413	73. 133	. 27446	. 606	4810. 6	. 34
. 6	. 25	. 27246	. 27471	. 293	. 27504	. 610	4812. 8	. 37
. 7	. 30	. 27304	. 27529	. 454	. 27562	. 615	4815. 0	. 41
. 8	. 35	. 27361	. 27587	. 615	. 27620	. 620	4817. 2	. 44
. 9	. 40	. 27419	. 27645	. 776	. 27678	. 625	4819. 4	. 48
58. 0	31. 46	1. 27477	1. 27703	73. 937	1. 27736	10. 630	4821. 6	79. 52
. 1	. 51	. 27535	. 27761	74. 098	. 27794	. 635	4823. 8	. 55
. 2	. 56	. 27594	. 27819	. 260	. 27853	. 640	4826. 0	. 59
. 3	. 61	. 27652	. 27878	. 421	. 27911	. 644	4828. 2	. 63
. 4	. 66	. 27710	. 27936	. 583	. 27969	. 649	4830. 4	. 66
. 5	. 71	. 27768	. 27994	. 744	. 28028	. 654	4832. 6	. 70
. 6	. 76	. 27826	. 28052	. 906	. 28086	. 659	4834. 8	. 73
. 7	. 82	. 27884	. 28111	75. 068	. 28145	. 664	4837. 0	. 77
. 8	. 87	. 27943	. 28169	. 230	. 28203	. 669	4839. 2	. 81
. 9	. 92	. 28001	. 28228	. 393	. 28262	. 674	4841. 4	. 84
59. 0	31. 97	1. 28060	1. 28286	75. 555	1. 28320	10. 678	4843. 6	79. 88
. 1	32. 02	. 28118	. 28345	. 718	. 28379	. 683	4845. 8	. 92
. 2	. 07	. 28176	. 28404	. 880	. 28437	. 688	4848. 1	. 95
. 3	. 13	. 28235	. 28462	76. 043	. 28497	. 693	4850. 3	. 99
. 4	. 18	. 28294	. 28520	. 207	. 28555	. 698	4852. 5	80. 03
. 5	. 23	. 28352	. 28579	. 369	. 28614	. 703	4854. 7	. 06
. 6	. 28	. 28411	. 28638	. 533	. 28672	. 708	4856. 9	. 10
. 7	. 33	. 28469	. 28697	. 696	. 28731	. 713	4859. 2	. 14
. 8	. 38	. 28528	. 28755	. 860	. 28789	. 718	4861. 4	. 17
. 9	. 43	. 28587	. 28814	77. 024	. 28849	. 722	4863. 6	. 21

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C*[a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
60. 0	32. 49	1. 28646	1. 28873	77. 188	1. 28908	10. 727	4865. 8	80. 25
. 1	. 54	. 28704	. 28932	. 351	. 28966	. 732	4868. 0	. 28
. 2	. 59	. 28763	. 28991	. 515	. 29025	. 737	4870. 3	. 32
. 3	. 64	. 28822	. 29050	. 680	. 29084	. 742	4872. 5	. 36
. 4	. 69	. 28881	. 29109	. 844	. 29143	. 747	4874. 7	. 39
. 5	. 74	. 28940	. 29168	78. 009	. 29203	. 752	4877. 0	. 43
. 6	. 79	. 28999	. 29227	. 173	. 29262	. 757	4879. 2	. 47
. 7	. 85	. 29058	. 29286	. 338	. 29321	. 762	4881. 4	. 50
. 8	. 90	. 29117	. 29346	. 503	. 29380	. 767	4883. 7	. 54
. 9	. 95	. 29176	. 29405	. 668	. 29439	. 772	4885. 9	. 58
61. 0	33. 00	1. 29235	1. 29464	78. 833	1. 29498	10. 777	4888. 1	80. 61
. 1	. 05	. 29295	. 29523	. 999	. 29559	. 781	4890. 4	. 65
. 2	. 10	. 29354	. 29583	79. 165	. 29618	. 786	4892. 6	. 69
. 3	. 15	. 29413	. 29642	. 330	. 29677	. 791	4894. 9	. 73
. 4	. 20	. 29472	. 29701	. 496	. 29736	. 796	4897. 1	. 76
. 5	. 26	. 29532	. 29761	. 662	. 29796	. 801	4899. 4	. 80
. 6	. 31	. 29591	. 29820	. 828	. 29855	. 806	4901. 6	. 84
. 7	. 36	. 29651	. 29880	. 995	. 29915	. 811	4903. 9	. 87
. 8	. 41	. 29710	. 29940	80. 161	. 29975	. 816	4906. 1	. 91
. 9	. 46	. 29770	. 29999	. 328	. 30034	. 821	4908. 4	. 95
62. 0	33. 51	1. 29829	1. 30059	80. 494	1. 30093	10. 826	4910. 6	80. 98
. 1	. 56	. 29889	. 30118	. 661	. 30153	. 831	4912. 9	81. 02
. 2	. 61	. 29948	. 30178	. 828	. 30212	. 836	4915. 2	. 06
. 3	. 67	. 30008	. 30238	. 995	. 30273	. 841	4917. 4	. 10
. 4	. 72	. 30068	. 30298	81. 162	. 30334	. 846	4919. 7	. 13
. 5	. 77	. 30127	. 30358	. 329	. 30393	. 851	4921. 9	. 17
. 6	. 82	. 30187	. 30418	. 497	. 30453	. 856	4924. 2	. 21
. 7	. 87	. 30247	. 30477	. 665	. 30513	. 861	4926. 5	. 25
. 8	. 92	. 30307	. 30537	. 833	. 30573	. 866	4928. 7	. 28
. 9	. 97	. 30367	. 30597	82. 001	. 30633	. 871	4931. 0	. 32
63. 0	34. 02	1. 30427	1. 30657	82. 169	1. 30694	10. 876	4933. 2	81. 36
. 1	. 07	. 30487	. 30718	. 337	. 30754	. 881	4935. 5	. 40
. 2	. 12	. 30547	. 30778	. 506	. 30815	. 886	4937. 8	. 43
. 3	. 18	. 30607	. 30838	. 674	. 30875	. 891	4940. 1	. 47
. 4	. 23	. 30667	. 30898	. 843	. 30936	. 896	4942. 3	. 51
. 5	. 28	. 30727	. 30958	83. 012	. 30994	. 901	4944. 6	. 55
. 6	. 33	. 30787	. 31019	. 180	. 31055	. 906	4946. 9	. 58
. 7	. 38	. 30848	. 31079	. 350	. 31117	. 911	4949. 2	. 62
. 8	. 43	. 30908	. 31139	. 519	. 31177	. 916	4951. 5	. 66
. 9	. 48	. 30968	. 31200	. 688	. 31237	. 921	4953. 7	. 70

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
64. 0	34. 53	1. 31028	1. 31260	83. 858	1. 31297	10. 926	4956. 0	81. 73
. 1	. 58	. 31088	. 31320	84. 028	. 31359	. 931	4958. 3	. 77
. 2	. 63	. 31149	. 31381	. 198	. 31418	. 936	4960. 6	. 81
. 3	. 68	. 31209	. 31441	. 367	. 31479	. 941	4962. 9	. 85
. 4	. 74	. 31270	. 31502	. 538	. 31540	. 946	4965. 2	. 88
. 5	. 79	. 31330	. 31563	. 708	. 31600	. 951	4967. 5	. 92
. 6	. 84	. 31391	. 31623	. 879	. 31661	. 956	4969. 8	. 96
. 7	. 89	. 31452	. 31684	85. 049	. 31723	. 961	4972. 1	82. 00
. 8	. 94	. 31512	. 31745	. 220	. 31784	. 967	4974. 3	. 04
. 9	. 99	. 31573	. 31806	. 391	. 31845	. 972	4976. 6	. 07
65. 0	35. 04	1. 31633	1. 31866	85. 561	1. 31905	10. 977	4978. 9	82. 11
. 1	. 09	. 31694	. 31927	. 733	. 31966	. 982	4981. 2	. 15
. 2	. 14	. 31755	. 31988	. 904	. 32028	. 987	4983. 5	. 19
. 3	. 19	. 31816	. 32049	86. 076	. 32089	. 992	4985. 8	. 23
. 4	. 24	. 31877	. 32110	. 248	. 32150	. 997	4988. 1	. 26
. 5	. 29	. 31937	. 32171	. 419	. 32210	11. 002	4990. 4	. 30
. 6	. 34	. 31998	. 32232	. 591	. 32271	. 007	4992. 8	. 34
. 7	. 39	. 32059	. 32293	. 763	. 32332	. 012	4995. 1	. 38
. 8	. 45	. 32120	. 32354	. 935	. 32393	. 017	4997. 4	. 42
. 9	. 50	. 32181	. 32415	87. 107	. 32455	. 022	4999. 7	. 45
66. 0	35. 55	1. 32242	1. 32476	87. 280	1. 32516	11. 027	5002. 0	82. 49
. 1	. 60	. 32304	. 32538	. 453	. 32577	. 033	5004. 3	. 53
. 2	. 65	. 32365	. 32599	. 626	. 32638	. 038	5006. 6	. 57
. 3	. 70	. 32426	. 32660	. 798	. 32699	. 043	5008. 9	. 61
. 4	. 75	. 32487	. 32722	. 971	. 32759	. 048	5011. 3	. 64
. 5	. 80	. 32548	. 32783	88. 142	. 32820	. 053	5013. 6	. 68
. 6	. 85	. 32610	. 32844	. 318	. 32884	. 058	5015. 9	. 72
. 7	. 90	. 32671	. 32906	. 492	. 32945	. 063	5018. 2	. 76
. 8	. 95	. 32732	. 32967	. 666	. 33007	. 068	5020. 5	. 80
. 9	36. 00	. 32794	. 33029	. 839	. 33068	. 073	5022. 9	. 84
67. 0	36. 05	1. 32855	1. 33090	89. 012	1. 33129	11. 079	5025. 2	82. 87
. 1	. 10	. 32917	. 33152	. 187	. 33192	. 084	5027. 5	. 91
. 2	. 15	. 32978	. 33214	. 361	. 33254	. 089	5029. 9	. 95
. 3	. 20	. 33040	. 33275	. 536	. 33315	. 094	5032. 2	. 99
. 4	. 25	. 33102	. 33337	. 711	. 33377	. 099	5034. 5	83. 03
. 5	. 30	. 33163	. 33399	. 885	. 33438	. 104	5036. 9	. 07
. 6	. 35	. 33225	. 33460	90. 060	. 33500	. 110	5039. 2	. 10
. 7	. 40	. 33287	. 33523	. 235	. 33562	. 115	5041. 5	. 14
. 8	. 45	. 33348	. 33584	. 411	. 33625	. 120	5043. 9	. 18
. 9	. 50	. 33410	. 33646	. 585	. 33686	. 125	5046. 2	. 22

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
68. 0	36. 55	1. 33472	1. 33708	90. 761	1. 33748	11. 130	5048. 5	83. 26
. 1	. 61	. 33534	. 33770	. 937	. 33810	. 135	5050. 9	. 30
. 2	. 66	. 33596	. 33832	91. 112	. 33872	. 140	5053. 2	. 34
. 3	. 71	. 33658	. 33894	. 288	. 33935	. 146	5055. 6	. 38
. 4	. 76	. 33720	. 33957	. 464	. 33997	. 151	5057. 9	. 41
. 5	. 81	. 33782	. 34019	. 641	. 34059	. 156	5060. 3	. 45
. 6	. 86	. 33844	. 34081	. 817	. 34121	. 161	5062. 6	. 49
. 7	. 91	. 33906	. 34143	. 993	. 34183	. 166	5065. 0	. 53
. 8	. 96	. 33968	. 34205	92. 169	. 34245	. 172	5067. 3	. 57
. 9	37. 01	. 34031	. 34268	. 347	. 34309	. 177	5069. 7	. 61
69. 0	37. 06	1. 34093	1. 34330	92. 524	1. 34371	11. 182	5072. 0	83. 65
. 1	. 11	. 34155	. 34392	. 701	. 34433	. 187	5074. 4	. 69
. 2	. 16	. 34217	. 34455	. 878	. 34495	. 192	5076. 8	. 72
. 3	. 21	. 34280	. 34517	93. 056	. 34558	. 198	5079. 1	. 76
. 4	. 26	. 34342	. 34580	. 233	. 34621	. 203	5081. 5	. 80
. 5	. 31	. 34405	. 34642	. 411	. 34684	. 208	5083. 9	. 84
. 6	. 36	. 34467	. 34705	. 589	. 34746	. 213	5086. 2	. 88
. 7	. 41	. 34530	. 34768	. 767	. 34809	. 218	5088. 6	. 92
. 8	. 46	. 34592	. 34830	. 945	. 34871	. 224	5091. 0	. 96
. 9	. 51	. 34655	. 34893	94. 123	. 34934	. 229	5093. 3	84. 00
70. 0	37. 56	1. 34717	1. 34956	94. 302	1. 34997	11. 234	5095. 7	84. 04
. 1	. 61	. 34780	. 35019	. 481	. 35060	. 239	5098. 1	. 08
. 2	. 66	. 34843	. 35081	. 660	. 35123	. 245	5100. 5	. 12
. 3	. 71	. 34906	. 35144	. 839	. 35186	. 250	5102. 8	. 15
. 4	. 76	. 34968	. 35207	95. 017	. 35248	. 255	5105. 2	. 19
. 5	. 81	. 35031	. 35270	. 197	. 35311	. 260	5107. 6	. 23
. 6	. 86	. 35094	. 35333	. 376	. 35375	. 265	5110. 0	. 27
. 7	. 91	. 35157	. 35396	. 556	. 35438	. 271	5112. 3	. 31
. 8	. 96	. 35220	. 35459	. 736	. 35501	. 276	5114. 7	. 35
. 9	38. 01	. 35283	. 35522	. 916	. 35564	. 281	5117. 1	. 39
71. 0	38. 06	1. 35346	1. 35585	96. 096	1. 35627	11. 286	5119. 5	84. 43
. 1	. 11	. 35409	. 35648	. 276	. 35691	. 292	5121. 9	. 47
. 2	. 16	. 35472	. 35711	. 456	. 35754	. 297	5124. 3	. 51
. 3	. 21	. 35535	. 35775	. 636	. 35817	. 302	5126. 6	. 55
. 4	. 26	. 35598	. 35838	. 817	. 35881	. 308	5129. 0	. 59
. 5	. 30	. 35661	. 35901	. 998	. 35944	. 313	5131. 4	. 63
. 6	. 35	. 35724	. 35964	97. 179	. 36008	. 318	5133. 8	. 67
. 7	. 40	. 35788	. 36028	. 360	. 36072	. 323	5136. 2	. 71
. 8	. 45	. 35851	. 36091	. 541	. 36135	. 329	5138. 6	. 74
. 9	. 50	. 35914	. 36155	. 722	. 36198	. 334	5141. 0	. 78

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
72. 0	38. 55	1. 35978	1. 36218	97. 904	1. 36261	11. 339	5143. 4	84. 82
. 1	. 60	. 36041	. 36282	98. 085	. 36324	. 345	5145. 8	. 86
. 2	. 65	. 36105	. 36346	. 268	. 36389	. 350	5148. 2	. 90
. 3	. 70	. 36168	. 36409	. 449	. 36452	. 355	5150. 6	. 94
. 4	. 75	. 36232	. 36473	. 632	. 36516	. 360	5153. 0	. 98
. 5	. 80	. 36295	. 36536	. 814	. 36579	. 366	5155. 4	85. 02
. 6	. 85	. 36359	. 36600	. 997	. 36643	. 371	5157. 9	. 06
. 7	. 90	. 36423	. 36664	99. 179	. 36707	. 376	5160. 3	. 10
. 8	. 95	. 36486	. 36728	. 362	. 36771	. 382	5162. 7	. 14
. 9	39. 00	. 36550	. 36792	. 545	. 36836	. 387	5165. 1	. 18
73. 0	39. 05	1. 36614	1. 36856	99. 728	1. 36900	11. 392	5167. 5	85. 22
. 1	. 10	. 36678	. 36919	. 912	. 36964	. 398	5169. 9	. 26
. 2	. 15	. 36742	. 36983	100. 095	. 37028	. 403	5172. 3	. 30
. 3	. 20	. 36805	. 37047	. 278	. 37092	. 408	5174. 8	. 34
. 4	. 25	. 36869	. 37111	. 462	. 37156	. 414	5177. 2	. 38
. 5	. 30	. 36933	. 37176	. 646	. 37220	. 419	5179. 6	. 42
. 6	. 35	. 36997	. 37240	. 827	. 37283	. 424	5182. 0	. 46
. 7	. 39	. 37061	. 37304	101. 014	. 37347	. 430	5184. 4	. 50
. 8	. 44	. 37125	. 37368	. 198	. 37411	. 435	5186. 9	. 54
. 9	. 49	. 37189	. 37432	. 383	. 37476	. 440	5189. 3	. 58
74. 0	39. 54	1. 37254	1. 37496	101. 568	1. 37541	11. 446	5191. 7	85. 62
. 1	. 59	. 37318	. 37561	. 753	. 37605	. 451	5194. 1	. 66
. 2	. 64	. 37382	. 37625	. 937	. 37669	. 456	5196. 6	. 70
. 3	. 69	. 37446	. 37689	102. 122	. 37733	. 462	5199. 0	. 74
. 4	. 74	. 37510	. 37754	. 308	. 37798	. 467	5201. 4	. 78
. 5	. 79	. 37575	. 37818	. 493	. 37864	. 473	5203. 9	. 82
. 6	. 84	. 37639	. 37883	. 679	. 37928	. 478	5206. 3	. 86
. 7	. 89	. 37704	. 37947	. 865	. 37993	. 483	5208. 8	. 90
. 8	. 94	. 37768	. 38012	103. 050	. 38057	. 489	5211. 2	. 94
. 9	. 99	. 37833	. 38076	. 237	. 38122	. 494	5213. 6	. 98
75. 0	40. 03	1. 37897	1. 38141	103. 423	1. 38187	11. 499	5216. 1	86. 02
. 1	. 08	. 37962	. 38206	. 609	. 38252	. 505	5218. 5	. 06
. 2	. 13	. 38026	. 38270	. 796	. 38316	. 510	5221. 0	. 10
. 3	. 18	. 38091	. 38335	. 983	. 38381	. 516	5223. 4	. 14
. 4	. 23	. 38156	. 38400	104. 170	. 38445	. 521	5225. 9	. 18
. 5	. 28	. 38220	. 38465	. 356	. 38510	. 526	5228. 3	. 22
. 6	. 33	. 38285	. 38530	. 543	. 38575	. 532	5230. 8	. 26
. 7	. 38	. 38350	. 38595	. 731	. 38640	. 537	5233. 2	. 31
. 8	. 43	. 38415	. 38660	. 919	. 38705	. 543	5235. 7	. 35
. 9	. 48	. 38480	. 38725	105. 106	. 38770	. 548	5238. 1	. 39

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
76. 0	40. 53	1. 38545	1. 38790	105. 294	1. 38835	11. 554	5240. 6	86. 43
. 1	. 57	. 38610	. 38855	. 482	. 38902	. 559	5243. 1	. 47
. 2	. 62	. 38675	. 38920	. 670	. 38967	. 564	5245. 5	. 51
. 3	. 67	. 38740	. 38985	. 859	. 39032	. 570	5248. 0	. 55
. 4	. 72	. 38805	. 39050	106. 047	. 39097	. 575	5250. 5	. 59
. 5	. 77	. 38870	. 39115	. 236	. 39162	. 581	5252. 9	. 63
. 6	. 82	. 38935	. 39180	. 424	. 39228	. 586	5255. 4	. 67
. 7	. 87	. 39000	. 39246	. 613	. 39293	. 592	5257. 8	. 71
. 8	. 92	. 39065	. 39311	. 802	. 39358	. 597	5260. 3	. 75
. 9	. 97	. 39130	. 39376	. 991	. 39423	. 602	5262. 8	. 79
77. 0	41. 01	1. 39196	1. 39442	107. 181	1. 39489	11. 608	5265. 2	86. 83
. 1	. 06	. 39261	. 39507	. 370	. 39554	. 613	5267. 7	. 87
. 2	. 11	. 39326	. 39573	. 560	. 39619	. 619	5270. 2	. 91
. 3	. 16	. 39392	. 39638	. 750	. 39685	. 624	5272. 7	. 96
. 4	. 21	. 39457	. 39704	. 940	. 39750	. 630	5275. 2	87. 00
. 5	. 26	. 39523	. 39769	108. 130	. 39816	. 635	5277. 6	. 04
. 6	. 31	. 39588	. 39835	. 320	. 39882	. 641	5280. 1	. 08
. 7	. 36	. 39654	. 39901	. 511	. 39949	. 646	5282. 6	. 12
. 8	. 40	. 39719	. 39966	. 701	. 40014	. 652	5285. 1	. 16
. 9	. 45	. 39785	. 40032	. 892	. 40080	. 657	5287. 5	. 20
78. 0	41. 50	1. 39850	1. 40098	109. 084	1. 40146	11. 663	5290. 0	87. 24
. 1	. 55	. 39916	. 40164	. 274	. 40211	. 668	5292. 5	. 28
. 2	. 60	. 39982	. 40230	. 466	. 40277	. 673	5295. 0	. 32
. 3	. 65	. 40048	. 40295	. 657	. 40344	. 679	5297. 5	. 37
. 4	. 70	. 40113	. 40361	. 848	. 40409	. 684	5300. 0	. 41
. 5	. 74	. 40179	. 40427	110. 041	. 40475	. 690	5302. 5	. 45
. 6	. 79	. 40245	. 40493	. 232	. 40541	. 695	5305. 0	. 49
. 7	. 84	. 40311	. 40559	. 425	. 40607	. 701	5307. 5	. 53
. 8	. 89	. 40377	. 40625	. 617	. 40674	. 706	5310. 0	. 57
. 9	. 94	. 40443	. 40691	. 809	. 40740	. 712	5312. 5	. 61
79. 0	41. 99	1. 40509	1. 40758	111. 002	1. 40806	11. 717	5315. 0	87. 65
. 1	42. 03	. 40575	. 40824	. 195	. 40872	. 723	5317. 5	. 69
. 2	. 08	. 40641	. 40890	. 388	. 40938	. 728	5320. 0	. 74
. 3	. 13	. 40707	. 40956	. 581	. 41005	. 734	5322. 5	. 78
. 4	. 18	. 40774	. 41023	. 775	. 41072	. 740	5325. 0	. 82
. 5	. 23	. 40840	. 41089	. 968	. 41138	. 745	5327. 5	. 86
. 6	. 28	. 40906	. 41155	112. 161	. 41204	. 751	5330. 0	. 90
. 7	. 32	. 40972	. 41222	. 354	. 41270	. 756	5332. 5	. 94
. 8	. 37	. 41039	. 41288	. 549	. 41337	. 762	5335. 0	. 98
. 9	. 42	. 41105	. 41355	. 743	. 41404	. 767	5337. 5	88. 02

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
80. 0	42. 47	1. 41172	1. 41421	112. 938	1. 41471	11. 773	5340. 0	88. 07
. 1	. 52	. 41238	. 41488	113. 131	. 41537	. 778	5342. 5	. 11
. 2	. 57	. 41304	. 41554	. 326	. 41603	. 784	5345. 1	. 15
. 3	. 61	. 41371	. 41621	. 521	. 41670	. 789	5347. 6	. 19
. 4	. 66	. 41437	. 41688	. 715	. 41737	. 795	5350. 1	. 23
. 5	. 71	. 41504	. 41754	. 911	. 41804	. 801	5252. 6	. 27
. 6	. 76	. 41571	. 41821	114. 106	. 41872	. 806	5355. 1	. 32
. 7	. 81	. 41637	. 41888	. 301	. 41937	. 812	5357. 7	. 36
. 8	. 85	. 41704	. 41955	. 497	. 42004	. 817	5360. 2	. 40
9	. 90	. 41771	. 42022	. 692	. 42072	. 823	5362. 7	. 44
81. 0	42. 95	1. 41837	1. 42088	114. 888	1. 42138	11. 828	5365. 2	88. 48
. 1	43. 00	. 41904	. 42155	115. 084	. 42205	. 834	5367. 8	. 52
. 2	. 05	. 41971	. 42222	. 280	. 42272	. 839	5370. 3	. 57
. 3	. 10	. 42038	. 42289	. 477	. 42339	. 845	5372. 8	. 61
. 4	. 14	. 42105	. 42356	. 673	. 42406	. 851	5375. 4	. 65
. 5	. 19	. 42172	. 42423	. 870	. 42474	. 856	5277. 9	. 69
. 6	. 24	. 42239	. 42490	116. 067	. 42541	. 862	5380. 4	. 73
. 7	. 29	42306	. 42558	. 264	. 42608	. 867	5383. 0	. 77
. 8	. 33	. 42373	. 42625	. 461	. 42675	. 873	5385. 5	. 82
. 9	. 38	. 42440	. 42692	. 658	. 42742	. 879	5388. 1	. 86
82. 0	43. 43	1. 42507	1. 42759	116. 856	1. 42810	11. 884	5390. 6	88. 90
. 1	. 48	. 42574	. 42827	117. 053	. 42878	. 890	5393. 1	. 94
. 2	. 53	. 42642	. 42894	. 252	. 42946	. 895	5395. 7	. 98
. 3	. 57	. 42709	. 42961	. 449	. 43013	. 901	5398. 2	89. 03
. 4	. 62	. 42776	. 43029	. 647	. 43080	. 907	5400. 8	. 07
. 5	. 67	. 42844	. 43096	. 845	. 43148	. 912	5403. 3	. 11
. 6	. 72	. 42911	. 43164	118. 044	. 43214	. 918	5405. 9	. 15
. 7	. 77	. 42978	. 43231	. 243	. 43282	. 924	5408. 4	. 19
. 8	. 81	. 43046	43298	. 442	. 43350	. 929	5411. 0	. 24
. 9	. 86	. 43113	. 43366	. 641	. 43417	. 935	5413. 5	. 28
83. 0	43. 91	1, 43181	1. 43434	118. 840	1. 43486	11. 940	5416. 1	89. 32
. 1	. 96	. 43248	. 43502	119. 039	. 43553	. 946	5418. 7	. 36
. 2	44. 00	. 43316	. 43569	. 239	. 43621	. 952	5421. 2	. 41
. 3	. 05	. 43384	. 43637	. 438	. 43688	. 957	5423. 8	. 45
. 4	. 10	. 43451	. 43705	. 638	. 43756	. 963	5426. 3	. 49
. 5	. 15	. 43519	43773	. 838	. 43824	. 969	5428 9	. 53
. 6	. 19	. 43587	. 43841	120. 039	. 43894	. 974	5431. 5	. 57
. 7	. 24	. 43654	. 43908	. 238	. 43961	. 980	5434. 0	. 62
. 8	. 29	. 43722	. 43976	. 439	. 44029	. 986	5436. 6	. 66
. 9	. 34	. 43790	. 44044	. 640	. 44097	. 991	5439. 2	. 70

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
84. 0	44. 38	1. 43858	1. 44112	120. 841	1. 44165	11. 997	5441. 7	89. 74
. 1	. 43	. 43926	. 44180	121. 042	. 44234	12. 003	5444. 3	. 79
. 2	. 48	. 43994	. 44249	. 243	. 44302	. 008	5446. 9	. 83
. 3	. 53	. 44062	. 44317	. 444	. 44370	. 014	5449. 5	. 87
. 4	. 57	. 44130	. 44385	. 646	. 44438	. 020	5452. 0	. 91
. 5	. 62	. 44198	. 44453	. 847	. 44507	. 025	5454. 6	. 96
. 6	. 67	. 44266	. 44521	122. 049	. 44575	. 031	5457. 2	90. 00
. 7	. 72	. 44334	. 44590	. 251	. 44643	. 037	5459. 8	. 04
. 8	. 76	. 44402	. 44658	. 453	. 44712	. 042	5462. 3	. 08
9	. 81	. 44470	. 44726	. 655	. 44780	. 048	5464. 9	. 13
85. 0	44. 86	1. 44539	1. 44794	122. 858	1. 44848	12. 054	5467. 5	90. 17
. 1	. 91	. 44607	. 44863	123. 061	. 44917	. 060	5470. 1	. 21
. 2	. 95	. 44675	. 44931	. 263	. 44985	. 065	5472. 7	. 25
. 3	45. 00	. 44744	. 45000	. 466	. 45054	. 071	5475. 3	. 30
. 4	. 05	. 44812	. 45068	. 670	. 45123	. 077	5477. 9	. 34
. 5	. 09	. 44881	. 45137	. 873	. 45191	. 082	5480. 5	. 38
. 6	. 14	. 44949	. 45205	124. 076	. 45260	. 088	5483. 1	. 42
. 7	. 19	. 45018	. 45274	. 280	. 45329	. 094	5485. 6	. 47
. 8	. 24	. 45086	. 45343	. 484	. 45397	. 099	5488. 2	. 51
. 9	. 28	. 45154	. 45411	. 688	. 45466	. 105	5490. 8	. 55
86. 0	45. 33	1. 45223	1. 45480	124. 892	1. 45535	12. 111	5493. 4	90. 60
. 1	. 38	. 45292	. 45549	125. 096	. 45604	. 117	5496. 0	. 64
. 2	. 42	. 45360	. 45618	. 301	. 45673	. 122	5498. 6	. 68
. 3	. 47	. 45429	. 45686	. 505	. 45741	. 128	5501. 2	. 73
. 4	. 52	. 45498	. 45755	. 710	. 45810	. 134	5503. 9	. 77
. 5	. 57	. 45567	. 45824	. 915	. 45879	. 140	5506. 5	. 81
. 6	. 61	. 45636	. 45893	126. 121	. 45949	. 145	5509. 1	. 85
. 7	. 66	. 45704	. 45962	. 326	. 46018	. 151	5511. 7	. 90
. 8	. 71	. 45773	. 46031	. 531	. 46087	. 157	5514. 3	. 94
. 9	. 75	. 45842	. 46100	. 737	. 46156	. 163	5516. 9	. 98
87. 0	45. 80	1. 45911	1. 46170	126. 943	1. 46225	12. 168	5519. 5	91. 03
. 1	. 85	. 45980	. 46239	127. 149	. 46294	. 174	5522. 1	. 07
. 2	. 89	. 46050	. 46308	. 355	. 46364	. 180	5524. 7	. 11
. 3	. 94	. 46119	. 46377	. 562	. 46433	. 186	5527. 3	. 16
. 4	. 99	. 46188	. 46446	. 768	. 46502	. 191	5530. 0	. 20
. 5	46. 03	. 46257	. 46516	. 975	. 46572	. 197	5532. 6	. 24
. 6	. 08	. 46326	. 46585	128. 182	. 46641	. 203	5535. 2	. 28
. 7	. 13	. 46395	. 46654	. 389	. 46710	. 209	5537. 8	. 33
. 8	. 17	. 46464	. 46724	. 596	. 46780	. 215	5540. 4	. 37
. 9	. 22	. 46534	. 46793	. 803	. 46849	. 220	5543. 0	. 41

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
88.0	46.27	1.46603	1.46862	129.011	1.46919	12.226	5545.6	91.46
.1	.31	.46673	.46932	.219	.46989	.232	5548.3	.50
.2	.36	.46742	.47002	.426	.47058	.238	5550.9	.54
.3	.41	.46812	.47071	.635	.47128	.243	5553.6	.59
.4	.45	.46881	.47141	.843	.47198	.249	5556.2	.63
.5	.50	.46950	.47210	130.051	.47267	.255	5558.8	.67
.6	.55	.47020	.47280	.260	.47337	.261	5561.5	.72
.7	.59	.47090	.47350	.468	.47407	.267	5564.1	.76
.8	.64	.47159	.47420	.677	.47477	.273	5566.7	.80
.9	.69	.47229	.47489	.886	.47547	.278	5569.4	.85
89.0	46.73	1.47299	1.47559	131.096	1.47616	12.284	5572.0	91.89
.1	.78	.47368	.47629	.305	.47686	.290	5574.6	.94
.2	.83	.47438	.47699	.515	.47756	.296	5577.3	.98
.3	.87	.47508	.47769	.725	.47826	.302	5579.9	92.02
.4	.92	.47578	.47839	.935	.47897	.307	5582.6	.07
.5	.97	.47648	.47909	132.145	.47967	.313	5585.2	.11
.6	47.01	.47718	.47979	.355	.48037	.319	5587.9	.15
.7	.06	.47788	.48049	.565	.48107	.325	5590.5	.20
.8	.11	.47858	.48119	.776	.48177	.331	5593.2	.24
.9	.15	.47928	.48189	.987	.48247	.337	5595.8	.28
90.0	47.20	1.47998	1.48259	133.198	1.48317	12.342	5598.4	92.33
.1	.24	.48068	.48330	.409	.48388	.348	5601.1	.37
.2	.29	.48138	.48400	.620	.48458	.354	5603.8	.42
.3	.34	.48028	.48470	.832	.48529	.360	5606.4	.46
.4	.38	.48278	.48540	134.043	.48599	.366	5609.1	.50
.5	.43	.48348	.48611	.255	.48669	.372	5611.7	.55
.6	.48	.48419	.48681	.467	.48740	.378	5614.4	.59
.7	.52	.48489	.48752	.680	.48810	.383	5617.1	.64
.8	.57	.48559	.48822	.892	.48881	.389	5619.7	.68
.9	.61	.48630	.48893	135.104	.48951	.395	5622.4	.72
91.0	47.66	1.48700	1.48963	135.317	1.49022	12.401	5625.1	92.77
.1	.71	.48771	.49034	.530	.49093	.407	5627.7	.81
.2	.75	.48841	.49104	.743	.49164	.413	5630.4	.86
.3	.80	.48912	.49175	.956	.49234	.419	5633.1	.90
.4	.84	.48982	.49246	136.170	.49305	.425	5635.8	.94
.5	.89	.49053	.49316	.383	.49376	.431	5638.4	.99
.6	.94	.49123	.49387	.597	.49447	.437	5641.1	93.03
.7	.98	.49194	.49458	.811	.49518	.442	5643.8	.08
.8	48.03	.49265	.49529	137.025	.49588	.448	5646.5	.12
.9	.08	.49336	.49600	.239	.49659	.454	5649.1	.16

See footnotes at end of table.

TABLE 1.—*Weights per United States gallon and weights per cubic foot of sugar (sucrose) solutions at 20° C* [a]—Continued

Percentage of sucrose by weight (Brix)	Baumé $m=145$	True density 20°/4° C	True specific gravity 20°/20° C	Grams of sucrose per 100 ml of solution in vacuum	Apparent specific gravity 20°/20° C	Weight per U. S. gallon in air at 20° C		Weight per cubic foot in air at 20° C Pounds
						Pounds	Grams	
1	2	3	4	5	6	7	8	9
92. 0	48. 12	1. 49406	1. 49671	137. 454	1. 49730	12. 460	5651. 8	93. 21
. 1	. 17	. 49477	. 49741	. 668	. 49801	. 466	5654. 5	. 25
. 2	. 21	. 49548	. 49812	. 883	. 49872	. 472	5657. 2	. 30
. 3	. 26	. 49619	. 49883	138. 098	. 49944	. 478	5659. 9	. 34
. 4	. 30	. 49690	. 49954	. 313	. 50015	. 484	5662. 5	. 39
. 5	. 35	. 49761	. 50026	. 529	. 50086	. 490	5665. 2	. 43
. 6	. 40	. 49832	. 50097	. 744	. 50157	. 496	5667. 9	. 47
. 7	. 44	. 49903	. 50168	. 960	. 50228	. 502	5670. 6	. 52
. 8	. 49	. 49974	. 50239	139. 176	. 50299	. 507	5673. 3	. 56
. 9	. 53	. 50045	. 50310	. 392	. 50371	. 513	5676. 0	. 61
93. 0	48. 58	1. 50116	1. 50381	139. 608	1. 50442	12. 519	5678. 6	93. 65
. 1	. 62	. 50187	. 50453	. 824	. 50513	. 525	5681. 3	. 70
. 2	. 67	. 50258	. 50524	140. 041	. 50585	. 531	5684. 0	. 74
. 3	. 72	. 50329	. 50595	. 257	. 50656	. 537	5686. 7	. 78
. 4	. 76	. 50401	. 50667	. 474	. 50728	. 543	5689. 4	. 83
. 5	. 81	. 50472	. 50738	. 691	. 50799	. 549	5692. 1	. 87
. 6	. 85	. 50543	. 50810	. 908	. 50871	. 555	5694. 9	. 92
. 7	. 90	. 50615	. 50881	141. 126	. 50942	. 561	5697. 6	. 96
. 8	. 94	. 50686	. 50952	. 343	. 51014	. 567	5700. 3	94. 01
. 9	. 99	. 50757	. 51024	. 561	. 51086	. 573	5703. 0	. 05
94. 0	49. 03	1. 50829	1. 51096	141. 779	1. 51157	12. 579	5705. 7	94. 10
. 1	. 08	. 50900	. 51167	. 997	. 51229	. 585	5708. 4	. 14
. 2	. 12	. 50972	. 51239	142. 216	. 51301	. 591	5711. 1	. 19
. 3	. 17	. 51044	. 51311	. 434	. 51372	. 597	5713. 8	. 23
. 4	. 22	. 51115	. 51382	. 653	. 51444	. 603	5716. 5	. 28
. 5	. 26	. 51187	. 51454	. 872	. 51516	. 609	5719. 2	. 32
. 6	. 31	. 51258	. 51526	143. 091	. 51588	. 615	5721. 9	. 36
. 7	. 35	. 51330	. 51598	. 310	. 51660	. 621	5724. 7	. 41
. 8	. 40	. 51402	. 51670	. 529	. 51732	. 627	5727. 4	. 45
. 9	. 44	. 51474	. 51742	. 749	. 51804	. 633	5730. 1	. 50
95. 0	49. 49	1. 51546	1. 51814	143. 968	1. 51876	12. 639	5732. 8	94. 54

[a] After the computations were completed, the tabulations were made by rounding off the results to the last figure given.

[b] Wiss. Abhandl. Kaiserlichen-Normal-Eichungs-Kommission **2**, 153 (1900).

[c] F. J. Bates and H. W. Bearce, Tech. Pap. BS **11** (1918) T115.

The densities of solutions of sucrose have been determined by Plato at different temperatures. His results have been reported in three tables: First, densities at 15°/15° C at concentrations from 0 to 100 percent sucrose; second, densities at t°/15° C at temperatures from 0 to 60° C in 1° C intervals at concentrations from 0 to 70 percent sucrose; and third, densities at 20°/4° C at concentrations from 0 to 100 percent sucrose. From these data a supplementary table of the weights per gallon in air was calculated at the several temperatures indicated in table 2 by the method of computation already described. It seemed desirable to extend the values to include the higher concentrations at temperatures other than those of 15° and 20° C, which are the only ones in which Plato's values extend to 100 percent sucrose. Accordingly, by means of a series of graphic extrapolations conforming with the trend of Plato's 20° C values, the values from 75 to 95 percent sucrose, inclusive, were obtained at the temperatures 10°, 15°, 25°, and 30° C. It is interesting to note that the weights per gallon at 15° C calculated from Plato's table [10] at 15°/15° C agreed, to less than one in the last figure given, with the values obtained by extrapolation. In table 2 the values obtained by extrapolation are given in italics.

TABLE 2.—*Weights per United States gallon of sugar (sucrose) solutions at different temperatures*

Sucrose by weight (Brix)	Weights per gallon in air at t° C									
	t=10° C		t=15° C		t=20° C		t=25° C		t=30° C	
%	*Pounds*	*Grams*	*Pounds*	*Grams*	*Pounds*	*Grams*	*Pounds*	*Grams*	*Pounds*	*Grams*
0	8. 334	3, 780	8. 329	3, 778	8. 322	3, 775	8. 312	3, 770	8. 301	3, 765
5	8. 500	3, 856	8. 494	3, 853	8. 485	3, 849	8. 475	3, 844	8. 463	3, 839
10	8. 672	3, 933	8. 664	3, 930	8. 655	3, 926	8. 644	3, 921	8. 631	3, 915
15	8. 849	4, 014	8. 841	4, 010	8. 830	4, 005	8. 818	4, 000	8. 805	3, 994
20	9. 034	4, 098	9. 023	4, 093	9. 012	4, 088	8. 999	4, 082	8. 985	4, 075
25	9. 225	4, 184	9. 213	4, 179	9. 201	4, 173	9. 187	4, 167	9. 171	4, 160
30	9. 423	4, 274	9. 410	4, 268	9. 396	4, 262	9. 381	4, 255	9. 365	4, 248
35	9. 628	4, 367	9. 614	4, 361	9. 599	4, 354	9. 583	4, 347	9. 566	4, 339
40	9. 840	4, 464	9. 825	4, 457	9. 809	4, 449	9. 792	4, 442	9. 774	4, 433
45	10. 060	4, 563	10. 044	4, 556	10. 027	4, 548	10. 009	4, 540	9. 990	4, 531
50	10. 288	4, 667	10. 271	4, 659	10. 252	4, 650	10. 234	4, 642	10. 214	4, 633
55	10. 523	4, 773	10. 505	4, 765	10. 486	4, 756	10. 466	4. 747	10. 446	4, 738
60	10. 767	4, 884	10. 747	4, 875	10. 727	4, 866	10. 707	4, 856	10. 685	4, 847
65	11. 018	4, 998	10. 997	4, 988	10. 977	4, 979	10. 955	4, 969	10. 933	4, 959
70	11. 277	5, 115	11. 256	5, 105	11. 234	5, 096	11. 212	5, 086	11. 189	5, 075
75	*11. 544*	*5, 236*	11. 522	5, 226	11. 499	5, 216	*11. 477*	*5, 206*	*11. 453*	*5, 195*
80	*11. 818*	*5, 361*	11. 796	5, 351	11. 773	5, 340	*11. 749*	*5, 329*	*11. 725*	*5, 319*
85	*12. 101*	*5, 489*	12. 078	5, 478	12. 054	5, 467	*12. 030*	*5, 457*	*12. 005*	*5, 445*
90	*12. 391*	*5, 620*	12. 367	5, 610	12. 342	5, 598	*12. 318*	*5, 587*	*12. 293*	*5, 576*
95	*12. 688*	*5, 755*	12. 644	5, 744	12. 639	5, 733	*12. 613*	*5, 721*	*12. 587*	*5, 709*

[10] Wiss. Abhandl. Kaiserlichen-Normal-Eichungs-Kommission **2**, 140 (1900).

In the calculation of tables 1 and 2, the density of air (at 20° C, and barometer reading 760 mm of mercury) was taken as 0.0012. The effect of differences of barometric pressure on the weights of a gallon of a 70-percent solution of sucrose in air is shown in table 3.

TABLE 3.—*Weight in air of 1 gallon of a 70-percent solution of sucrose at 20° C at different barometric pressures*

Pressure	Density of air	Weight per gallon in air	
mm Hg		*Pounds*	*Grams*
780	0.00124	11.234	5,095.6
760	.00120	11.234	5,095.7
740	.00117	11.234	5,095.8
720	.00114	11.235	5,095.9
700	.00111	11.235	5,096.0
680	.00108	11.235	5,096.1
660	.00105	11.235	5,096.2

Detailed information on the analysis of sugars and sugar products, including sirups and molasses, together with numerous tables relating to various properties of these materials, are contained in National Bureau of Standards Circular C440, "Polarimetry, Saccharimetry, and the Sugars", by Frederick Bates and Associates. This Circular (810 pages) can be secured from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., for $2.00.

WASHINGTON, July 29, 1946.

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