



**TABLE No. 6**  
**SHOWING**  
**RESPECTIVE VOLUMES OF ALCOHOL AND WATER**  
**AND THE SPECIFIC GRAVITY IN BOTH AIR**  
**AND VACUUM OF SPIRITUOUS LIQUOR**

**(Prepared by the National Bureau of Standards and based on information published in Bulletin of the Bureau of Standards, Vol. 9, No. 3, pages 227-474, Oct. 15, 1913)**



**RESPECTIVE VOLUMES OF ALCOHOL AND WATER  
AND SPECIFIC GRAVITY**

Proof	Alcohol	Water	Specific gravity in air	Specific gravity in vacuum
	<i>Volumes</i>	<i>Volumes</i>		
1	0.50	99.53	0.99925	0.99925
2	1.00	99.06	.99850	.99850
3	1.50	98.58	.99776	.99776
4	2.00	98.12	.99703	.99703
5	2.50	97.65	.99630	.99630
6	3.00	97.18	.99559	.99559
7	3.50	96.71	.99487	.99488
8	4.00	96.24	.99418	.99419
9	4.50	95.78	.99349	.99350
10	5.00	95.31	.99281	.99282
11	5.50	94.85	.99214	.99215
12	6.00	94.39	.99149	.99150
13	6.50	93.93	.99084	.99085
14	7.00	93.46	.99021	.99022
15	7.50	93.01	.98959	.98960
16	8.00	92.55	.98898	.98899
17	8.50	92.09	.98837	.98838
18	9.00	91.63	.98778	.98779
19	9.50	91.18	.98719	.98720
20	10.00	90.72	.98660	.98661
21	10.50	90.27	.98601	.98602
22	11.00	89.81	.98543	.98544
23	11.50	89.36	.98485	.98487
24	12.00	88.90	.98428	.98430
25	12.50	88.45	.98372	.98374
26	13.00	88.00	.98317	.98319
27	13.50	87.55	.98262	.98264
28	14.00	87.10	.98208	.98210
29	14.50	86.65	.98155	.98157
30	15.00	86.20	.98102	.98104
31	15.50	85.75	.98049	.98051
32	16.00	85.30	.97996	.97998
33	16.50	84.85	.97944	.97946
34	17.00	84.40	.97893	.97895
35	17.50	83.95	.97842	.97844
36	18.00	83.50	.97792	.97794
37	18.50	83.06	.97742	.97744
38	19.00	82.61	.97692	.97694
39	19.50	82.16	.97643	.97645
40	20.00	81.72	.97594	.97596
41	20.50	81.27	.97544	.97546
42	21.00	80.82	.97492	.97496
43	21.50	80.38	.97442	.97446
44	22.00	79.93	.97391	.97395
45	22.50	79.48	.97340	.97344
46	23.00	79.03	.97289	.97293
47	23.50	78.58	.97237	.97241
48	24.00	78.14	.97185	.97189
49	24.50	77.69	.97133	.97137
50	25.00	77.24	.97080	.97084

**RESPECTIVE VOLUMES OF ALCOHOL AND WATER  
AND SPECIFIC GRAVITY**

<b>Proof</b>	<b>Alcohol</b>	<b>Water</b>	<b>Specific gravity in air</b>	<b>Specific gravity in vacuum</b>
	<i>Volume</i>	<i>Volume</i>		
51	25. 50	76. 79	0. 97027	0. 97031
52	26. 00	76. 34	. 96974	. 96978
53	26. 50	75. 89	. 96920	. 96924
54	27. 00	75. 44	. 96866	. 96870
55	27. 50	74. 98	. 96811	. 96815
56	28. 00	74. 53	. 96756	. 96760
57	28. 50	74. 08	. 96700	. 96704
58	29. 00	73. 62	. 96644	. 96648
59	29. 50	73. 17	. 96587	. 96591
60	30. 00	72. 72	. 96530	. 96534
61	30. 50	72. 26	. 96471	. 96476
62	31. 00	71. 81	. 96413	. 96418
63	31. 50	71. 35	. 96353	. 96358
64	32. 00	70. 89	. 96291	. 96296
65	32. 50	70. 43	. 96229	. 96234
66	33. 00	69. 97	. 96165	. 96170
67	33. 50	69. 51	. 96101	. 96106
68	34. 00	69. 05	. 96036	. 96041
69	34. 50	68. 59	. 95970	. 95975
70	35. 00	68. 12	. 95903	. 95908
71	35. 50	67. 66	. 95835	. 95840
72	36. 00	67. 19	. 95765	. 95770
73	36. 50	66. 72	. 95695	. 95700
74	37. 00	66. 25	. 95623	. 95628
75	37. 50	65. 78	. 95551	. 95556
76	38. 00	65. 31	. 95476	. 95482
77	38. 50	64. 84	. 95402	. 95408
78	39. 00	64. 37	. 95326	. 95332
79	39. 50	63. 90	. 95250	. 95256
80	40. 00	63. 42	. 95172	. 95178
81	40. 50	62. 95	. 95094	. 95100
82	41. 00	62. 47	. 95014	. 95020
83	41. 50	61. 99	. 94934	. 94940
84	42. 00	61. 52	. 94852	. 94858
85	42. 50	61. 04	. 94770	. 94776
86	43. 00	60. 56	. 94687	. 94693
87	43. 50	60. 08	. 94603	. 94609
88	44. 00	59. 59	. 94518	. 94524
89	44. 50	59. 11	. 94431	. 94438
90	45. 00	58. 63	. 94344	. 94351
91	45. 50	58. 14	. 94256	. 94263
92	46. 00	57. 66	. 94167	. 94174
93	46. 50	57. 17	. 94077	. 94084
94	47. 00	56. 68	. 93986	. 93993
95	47. 50	56. 19	. 93894	. 93901
96	48. 00	55. 70	. 93801	. 93808
97	48. 50	55. 21	. 93707	. 93714
98	49. 00	54. 72	. 93612	. 93619
99	49. 50	54. 22	. 93516	. 93523
100	50. 00	53. 73	. 93418	. 93426

**RESPECTIVE VOLUMES OF ALCOHOL AND WATER  
AND SPECIFIC GRAVITY**

Proof	Alcohol	Water	Specific gravity in air	Specific gravity in vacuum
	<i>Volumes</i>	<i>Volumes</i>		
101	50. 50	53. 24	0. 93320	0. 93328
102	51. 00	52. 74	. 93222	. 93230
103	51. 50	52. 25	. 93123	. 93131
104	52. 00	51. 75	. 93023	. 93031
105	52. 50	51. 25	. 92923	. 92931
106	53. 00	50. 75	. 92822	. 92830
107	53. 50	50. 26	. 92720	. 92728
108	54. 00	49. 76	. 92618	. 92626
109	54. 50	49. 26	. 92515	. 92523
110	55. 00	48. 76	. 92409	. 92419
111	55. 50	48. 25	. 92305	. 92315
112	56. 00	47. 75	. 92200	. 92210
113	56. 50	47. 25	. 92095	. 92105
114	57. 00	46. 75	. 91989	. 91999
115	57. 50	46. 24	. 91882	. 91892
116	58. 00	45. 74	. 91774	. 91784
117	58. 50	45. 23	. 91665	. 91675
118	59. 00	44. 72	. 91555	. 91565
119	59. 50	44. 22	. 91444	. 91455
120	60. 00	43. 71	. 91333	. 91344
121	60. 50	43. 20	. 91221	. 91232
122	61. 00	42. 69	. 91109	. 91120
123	61. 50	42. 18	. 90996	. 91007
124	62. 00	41. 67	. 90882	. 90893
125	62. 50	41. 16	. 90768	. 90779
126	63. 00	40. 65	. 90653	. 90664
127	63. 50	40. 14	. 90538	. 90549
128	64. 00	39. 62	. 90422	. 90434
129	64. 50	39. 11	. 90306	. 90318
130	65. 00	38. 60	. 90190	. 90202
131	65. 50	38. 08	. 90073	. 90085
132	66. 00	37. 57	. 89955	. 89967
133	66. 50	37. 05	. 89836	. 89848
134	67. 00	36. 54	. 89717	. 89729
135	67. 50	36. 02	. 89597	. 89609
136	68. 00	35. 50	. 89476	. 89489
137	68. 50	34. 99	. 89355	. 89368
138	69. 00	34. 47	. 89232	. 89245
139	69. 50	33. 95	. 89109	. 89122
140	70. 00	33. 43	. 88986	. 88999
141	70. 50	32. 91	. 88862	. 88875
142	71. 00	32. 38	. 88738	. 88751
143	71. 50	31. 86	. 88612	. 88625
144	72. 00	31. 34	. 88485	. 88499
145	72. 50	30. 82	. 88358	. 88372
146	73. 00	30. 29	. 88230	. 88244
147	73. 50	29. 76	. 88102	. 88116
148	74. 00	29. 24	. 87973	. 87987
149	74. 50	28. 71	. 87844	. 87858
150	75. 00	28. 19	. 87714	. 87728

**RESPECTIVE VOLUMES OF ALCOHOL AND WATER  
AND SPECIFIC GRAVITY**

<b>Proof</b>	<b>Alcohol</b>	<b>Water</b>	<b>Specific gravity in air</b>	<b>Specific gravity in vacuum</b>
	<i>Volume</i>	<i>Volume</i>		
151	75. 50	27. 66	0. 87583	0. 87597
152	76. 00	27. 13	. 87450	. 87465
153	76. 50	26. 60	. 87317	. 87332
154	77. 00	26. 07	. 87184	. 87199
155	77. 50	25. 54	. 87050	. 87065
156	78. 00	25. 01	. 86914	. 86929
157	78. 50	24. 47	. 86778	. 86793
158	79. 00	23. 94	. 86641	. 86656
159	79. 50	23. 40	. 86503	. 86518
160	80. 00	22. 87	. 86364	. 86380
161	80. 50	22. 33	. 86225	. 86241
162	81. 00	21. 80	. 86084	. 86100
163	81. 50	21. 26	. 85943	. 85959
164	82. 00	20. 72	. 85801	. 85817
165	82. 50	20. 18	. 85658	. 85674
166	83. 00	19. 64	. 85515	. 85531
167	83. 50	19. 10	. 85369	. 85386
168	84. 00	18. 55	. 85223	. 85240
169	84. 50	18. 01	. 85076	. 85093
170	85. 00	17. 46	. 84927	. 84944
171	85. 50	16. 92	. 84777	. 84794
172	86. 00	16. 37	. 84625	. 84642
173	86. 50	15. 82	. 84471	. 84490
174	87. 00	15. 27	. 84317	. 84336
175	87. 50	14. 72	. 84162	. 84181
176	88. 00	14. 16	. 84006	. 84025
177	88. 50	13. 61	. 83848	. 83867
178	89. 00	13. 05	. 83688	. 83707
179	89. 50	12. 49	. 83526	. 83545
180	90. 00	11. 93	. 83362	. 83382
181	90. 50	11. 37	. 83196	. 83216
182	91. 00	10. 80	. 83029	. 83049
183	91. 50	10. 24	. 82859	. 82879
184	92. 00	9. 67	. 82685	. 82705
185	92. 50	9. 09	. 82509	. 82529
186	93. 00	8. 52	. 82330	. 82351
187	93. 50	7. 94	. 82149	. 82170
188	94. 00	7. 36	. 81963	. 81984
189	94. 50	6. 77	. 81775	. 81796
190	95. 00	6. 18	. 81582	. 81603
191	95. 50	5. 59	. 81385	. 81407
192	96. 00	4. 99	. 81184	. 81206
193	96. 50	4. 39	. 80979	. 81001
194	97. 00	3. 78	. 80770	. 80792
195	97. 50	3. 17	. 80555	. 80577
196	98. 00	2. 55	. 80333	. 80356
197	98. 50	1. 93	. 80104	. 80127
198	99. 00	1. 29	. 79866	. 79889
199	99. 50	. 65	. 79620	. 79643
200	100. 00	. 00	. 79365	. 79389