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DEPARTMENT OF COMMERCE
BUREAU OF STANDARDS
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Letter
Circular
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ABRIDGED U. S. PETROLEUM OIL TABLE

Prepared by

The U. S. Bureau of Standards

VOLUME AT 60°F. OCCUPIED BY UNIT VOLUME AT INDICATED TEMPERATURE

This table shows the volume occupied at 60°F. by a quantity of oil of any degrees A.P.I. occupying unit volume at the indicated temperature. For example, if a volume of oil of 43 degrees A.P.I. is measured at 105°F. one gallon at 105°F. will occupy a volume of 0.9779 gallons at 60°F. That is, the volume at 60°F. of any oil in the gravity range 35.0 to 50.9 A.P.I. will be found in the column headed by that range and opposite the temperature at which the volume is measured. Similarly the volume of any other oil at 60°F. will be found in the column headed by the gravity range in which that particular oil falls, and opposite the temperature at which the volume is measured.

The values given in the body of the table are in the form of "Multipliers", that is, the volume of oil of a certain commercial grade at the indicated temperature multiplied by the corresponding factor in the table gives the volume at 60°F. For example, if a volume of 5600 gallons of oil of 43 degrees A.P.I. at 60°F. is measured at 105°F., the volume at 60°F. is 5600 × .9779 or 5476.24 gallons.

This table is an abridgement of Table 2, Circular No. 154, Bureau of Standards, and is intended to cover the bulk of present commercial grades of oils. For any oils not adequately covered by the abridged table the complete table should be used.

This table has not been officially approved by the Bureau of Standards, but is offered as a suggestion to indicate what the Bureau believes to be a satisfactory method of procedure in case an abridged volume correction table is regarded as necessary.

Observed Temperature in °F.	10.0 to 24.9 (16)	25.0 to 34.9 (28)	35.0 to 50.9 (43)	51.0 to 59.9 (57)	60.0 to 64.9 (63)	65.0 to 74.9 (70)	75.0 to 84.9 (80)	85.0 and above (90)
	Degrees A.P.I. at 60°F.							
	Volume at 60°F. Occupied by Unit Volume at Indicated Temperature.							
0	1.0233	1.0252	1.0294	1.0356	1.0382	1.0411	1.0451	1.0496
1	1.0229	1.0248	1.0289	1.0350	1.0376	1.0404	1.0444	1.0488
2	1.0225	1.0244	1.0284	1.0344	1.0370	1.0397	1.0436	1.0480
3	1.0221	1.0239	1.0280	1.0339	1.0363	1.0391	1.0429	1.0471
4	1.0217	1.0235	1.0275	1.0333	1.0357	1.0384	1.0421	1.0463
5	1.0213	1.0231	1.0270	1.0327	1.0351	1.0377	1.0414	1.0455
6	1.0209	1.0227	1.0265	1.0321	1.0345	1.0370	1.0407	1.0447
7	1.0205	1.0223	1.0260	1.0315	1.0338	1.0363	1.0399	1.0439
8	1.0201	1.0218	1.0255	1.0309	1.0332	1.0357	1.0392	1.0430
9	1.0197	1.0214	1.0250	1.0303	1.0325	1.0350	1.0384	1.0422
10	1.0193	1.0210	1.0245	1.0297	1.0319	1.0343	1.0377	1.0414
11	1.0189	1.0206	1.0240	1.0291	1.0313	1.0336	1.0370	1.0406
12	1.0185	1.0202	1.0235	1.0285	1.0307	1.0329	1.0362	1.0398
13	1.0181	1.0197	1.0231	1.0280	1.0300	1.0323	1.0355	1.0389
14	1.0177	1.0193	1.0226	1.0274	1.0294	1.0316	1.0347	1.0381
15	1.0173	1.0189	1.0221	1.0268	1.0288	1.0309	1.0340	1.0373
16	1.0169	1.0185	1.0216	1.0262	1.0282	1.0302	1.0332	1.0365
17	1.0165	1.0181	1.0211	1.0256	1.0275	1.0295	1.0325	1.0357
18	1.0162	1.0176	1.0206	1.0250	1.0269	1.0289	1.0317	1.0348
19	1.0158	1.0172	1.0201	1.0244	1.0262	1.0282	1.0310	1.0340
20	1.0154	1.0168	1.0196	1.0238	1.0256	1.0275	1.0302	1.0332
21	1.0150	1.0164	1.0191	1.0232	1.0250	1.0268	1.0295	1.0324
22	1.0146	1.0160	1.0186	1.0226	1.0243	1.0261	1.0287	1.0316
23	1.0143	1.0155	1.0182	1.0220	1.0237	1.0255	1.0280	1.0307
24	1.0139	1.0151	1.0177	1.0214	1.0230	1.0248	1.0272	1.0299
25	1.0135	1.0147	1.0172	1.0208	1.0224	1.0241	1.0265	1.0291
26	1.0131	1.0143	1.0167	1.0202	1.0218	1.0234	1.0257	1.0283
27	1.0127	1.0139	1.0162	1.0196	1.0211	1.0227	1.0250	1.0275
28	1.0124	1.0134	1.0157	1.0191	1.0205	1.0221	1.0242	1.0266
29	1.0120	1.0130	1.0152	1.0185	1.0198	1.0214	1.0235	1.0258
30	1.0116	1.0126	1.0147	1.0179	1.0192	1.0207	1.0227	1.0250
31	1.0112	1.0122	1.0142	1.0173	1.0186	1.0200	1.0220	1.0242
32	1.0108	1.0118	1.0137	1.0167	1.0179	1.0193	1.0212	1.0234
33	1.0104	1.0113	1.0133	1.0161	1.0173	1.0186	1.0205	1.0225
34	1.0100	1.0109	1.0128	1.0155	1.0166	1.0179	1.0197	1.0217
35	1.0096	1.0105	1.0123	1.0149	1.0160	1.0172	1.0190	1.0209
36	1.0092	1.0101	1.0118	1.0143	1.0154	1.0165	1.0182	1.0201
37	1.0088	1.0097	1.0113	1.0137	1.0147	1.0158	1.0175	1.0192
38	1.0085	1.0092	1.0108	1.0131	1.0141	1.0152	1.0167	1.0184
39	1.0081	1.0088	1.0103	1.0125	1.0134	1.0145	1.0160	1.0175
40	1.0077	1.0084	1.0098	1.0119	1.0128	1.0138	1.0152	1.0167
41	1.0073	1.0080	1.0093	1.0113	1.0122	1.0131	1.0144	1.0159
42	1.0069	1.0076	1.0088	1.0107	1.0115	1.0124	1.0137	1.0150
43	1.0065	1.0071	1.0084	1.0102	1.0109	1.0118	1.0129	1.0142
44	1.0061	1.0067	1.0079	1.0096	1.0102	1.0111	1.0122	1.0133
45	1.0057	1.0063	1.0074	1.0090	1.0096	1.0104	1.0114	1.0125
46	1.0053	1.0059	1.0069	1.0084	1.0090	1.0097	1.0106	1.0117
47	1.0049	1.0055	1.0064	1.0078	1.0083	1.0090	1.0099	1.0109
48	1.0046	1.0050	1.0059	1.0071	1.0077	1.0083	1.0091	1.0100
49	1.0042	1.0046	1.0054	1.0065	1.0070	1.0076	1.0084	1.0092
50	1.0038	1.0042	1.0049	1.0059	1.0064	1.0069	1.0076	1.0084
51	1.0034	1.0038	1.0044	1.0053	1.0058	1.0062	1.0068	1.0076
52	1.0030	1.0034	1.0039	1.0047	1.0051	1.0055	1.0061	1.0067
53	1.0027	1.0029	1.0035	1.0042	1.0045	1.0049	1.0053	1.0059
54	1.0023	1.0025	1.0030	1.0036	1.0038	1.0042	1.0046	1.0050
55	1.0019	1.0021	1.0025	1.0030	1.0032	1.0035	1.0038	1.0042
56	1.0015	1.0017	1.0020	1.0024	1.0026	1.0028	1.0030	1.0034
57	1.0011	1.0013	1.0015	1.0018	1.0019	1.0021	1.0023	1.0025
58	1.0008	1.0008	1.0010	1.0012	1.0013	1.0014	1.0015	1.0017
59	1.0004	1.0004	1.0005	1.0006	1.0006	1.0007	1.0008	1.0008
60	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
61	.9996	.9996	.9995	.9994	.9994	.9993	.9992	.9992
62	.9992	.9992	.9990	.9988	.9987	.9986	.9985	.9983
63	.9989	.9987	.9985	.9983	.9981	.9979	.9977	.9975
64	.9985	.9983	.9980	.9977	.9974	.9972	.9970	.9966

Observed Temperature in °F.	Degrees A.P.I. at 60°F: 10.0 to 24.9	25.0 to 34.9	35.0 to 50.9	51.0 to 59.9	60.0 to 64.9	65.0 to 74.9	75.0 to 84.9	85.0 and above
	Volume at 60°F. Occupied by Unit Volume at Indicated Temperature							
65	0.9981	0.9979	0.9975	0.9971	0.9968	0.9965	0.9962	0.9958
66	.9977	.9975	.9970	.9965	.9962	.9958	.9954	.9950
67	.9973	.9971	.9965	.9958	.9955	.9951	.9947	.9941
68	.9970	.9966	.9961	.9952	.9949	.9945	.9939	.9933
69	.9966	.9962	.9956	.9946	.9942	.9938	.9932	.9924
70	.9962	.9958	.9951	.9940	.9936	.9931	.9924	.9916
71	.9958	.9954	.9946	.9934	.9929	.9924	.9916	.9908
72	.9954	.9950	.9941	.9928	.9923	.9917	.9908	.9899
73	.9951	.9946	.9936	.9922	.9916	.9910	.9901	.9891
74	.9947	.9942	.9931	.9916	.9910	.9903	.9893	.9882
75	.9943	.9938	.9926	.9910	.9903	.9896	.9885	.9874
76	.9939	.9934	.9921	.9904	.9897	.9889	.9877	.9866
77	.9935	.9930	.9916	.9898	.9891	.9882	.9870	.9857
78	.9932	.9925	.9912	.9893	.9884	.9875	.9862	.9849
79	.9928	.9921	.9907	.9887	.9878	.9868	.9855	.9840
80	.9924	.9917	.9902	.9881	.9872	.9861	.9847	.9832
81	.9920	.9913	.9897	.9875	.9866	.9854	.9839	.9823
82	.9916	.9909	.9892	.9869	.9859	.9847	.9832	.9815
83	.9913	.9904	.9887	.9862	.9852	.9840	.9824	.9806
84	.9909	.9900	.9882	.9856	.9846	.9833	.9817	.9798
85	.9905	.9896	.9877	.9850	.9839	.9826	.9809	.9789
86	.9901	.9892	.9872	.9844	.9833	.9819	.9801	.9781
87	.9897	.9888	.9867	.9838	.9826	.9812	.9793	.9772
88	.9894	.9883	.9863	.9832	.9820	.9806	.9786	.9764
89	.9890	.9879	.9858	.9826	.9813	.9799	.9778	.9755
90	.9886	.9875	.9853	.9820	.9807	.9792	.9770	.9747
91	.9882	.9871	.9848	.9814	.9801			
92	.9878	.9867	.9843	.9808	.9794			
93	.9875	.9863	.9838	.9803	.9788			
94	.9871	.9859	.9833	.9797	.9781			
95	.9867	.9855	.9828	.9791	.9775			
96	.9863	.9851	.9823	.9785	.9768			
97	.9860	.9847	.9818	.9779	.9762			
98	.9856	.9842	.9814	.9772	.9755			
99	.9853	.9838	.9809	.9766	.9749			
100	.9849	.9834	.9804	.9760	.9742			
101	.9845	.9830	.9799	.9754	.9736			
102	.9841	.9826	.9794	.9748	.9729			
103	.9838	.9821	.9789	.9742	.9723			
104	.9834	.9817	.9784	.9736	.9716			
105	.9830	.9813	.9779	.9730	.9710			
106	.9826	.9809	.9774	.9724	.9704			
107	.9823	.9805	.9769	.9718	.9697			
108	.9819	.9801	.9765	.9712	.9691			
109	.9816	.9797	.9760	.9706	.9684			
110	.9812	.9793	.9755	.9700	.9678			
111	.9808	.9789	.9750	.9694	.9671			
112	.9804	.9785	.9745	.9688	.9665			
113	.9800	.9780	.9740	.9682	.9658			
114	.9796	.9776	.9735	.9676	.9652			
115	.9792	.9772	.9730	.9670	.9645			
116	.9788	.9768	.9725	.9664	.9639			
117	.9785	.9764	.9720	.9658	.9632			
118	.9781	.9759	.9716	.9652	.9626			
119	.9778	.9755	.9711	.9646	.9619			
120	.9774	.9751	.9706	.9640	.9613			
121	.9770	.9747	.9701	.9634	.9607			
122	.9766	.9743	.9696	.9628	.9600			
123	.9763	.9739	.9691	.9622	.9594			
124	.9759	.9735	.9686	.9616	.9587			
125	.9755	.9731	.9681	.9610	.9581			
126	.9751	.9727	.9676					
127	.9748	.9723	.9671					
128	.9744	.9718	.9667					
129	.9741	.9714	.9662					

Observed Temperature in °F.	Degrees A.P.I. at 60°F. 10.0 to 24.9	25.0 to 34.9	35.0 to 50.9
	Volume at 60°F. Occupied by Unit Volume at Indicated Temperature.		
130	0.9737	0.9710	0.9657
131	.9733	.9706	.9652
132	.9730	.9702	.9647
133	.9726	.9698	.9642
134	.9723	.9694	.9637
135	.9719	.9690	.9632
136	.9715	.9686	.9627
137	.9712	.9682	.9622
138	.9708	.9678	.9618
139	.9705	.9674	.9613
140	.9701	.9670	.9608
141	.9697	.9666	.9603
142	.9693	.9662	.9598
143	.9690	.9657	.9593
144	.9686	.9653	.9588
145	.9682	.9649	.9583
146	.9678	.9645	.9578
147	.9674	.9641	.9573
148	.9671	.9636	.9569
149	.9667	.9632	.9564
150	.9663	.9628	.9559
151	.9659	.9624	
152	.9656	.9620	
153	.9652	.9616	
154	.9649	.9612	
155	.9645	.9608	
156	.9641	.9604	
157	.9638	.9600	
158	.9634	.9596	
159	.9631	.9592	
160	.9627	.9588	
161	.9623	.9584	
162	.9620	.9580	
163	.9616	.9576	
164	.9613	.9572	
165	.9609	.9568	
166	.9605	.9564	
167	.9602	.9560	
168	.9598	.9555	
169	.9595	.9551	
170	.9591	.9547	
171	.9587	.9543	
172	.9584	.9539	
173	.9580	.9535	
174	.9577	.9531	
175	.9573	.9527	
176	.9569	.9523	
177	.9565	.9519	
178	.9562	.9514	
179	.9558	.9510	
180	.9554	.9506	
181	.9551	.9502	
182	.9547	.9498	
183	.9544	.9494	
184	.9540	.9490	
185	.9537	.9486	
186	.9533	.9482	
187	.9530	.9478	
188	.9526	.9474	
189	.9523	.9470	
190	.9519	.9466	
191	.9515	.9462	
192	.9512	.9458	
193	.9508	.9454	
194	.9505	.9450	
195	.9501	.9446	