

ENGINEERING INFORMATION - DENSITY AND VISCOSITY OF PURE WATER



19.19

Shaded area indicates change Rev. 4-99

Table 6: Density and Viscosity of Pure Water

<i>t</i>	<i>t</i>	μ	Δ	ρ	Δ	ν	Δ	μ	Δ	ρ	Δ	ν	Δ
°F.	°C.	Dyne Sec. Sq. Cm.		Grams Cu. Cm.		Sq. Cm. Sec.		Lb. Sec. Sq. Ft.		Slugs Cu. Ft.		Sq. Ft. Sec.	
1	2	3		4		5		6		7		8	
32.0	0.0000	0.017938	171	0.9998679	181	0.017940	171	0.000037464	357	1.940079	35	0.000019311	185
32.5	0.2778	17767	172	8860	167	17769	172	37107	359	0114	33	19126	185
33.0	0.5556	17595	172	9027	154	17597	173	36748	359	0147	30	18941	186
33.5	0.8333	17423	168	9181	139	17424	168	36389	351	0177	27	18755	181
34.0	1.1111	17255	161	9320	127	17256	161	36038	336	0204	24	18574	173
34.5	1.3889	17094	161	9447	113	17095	161	35702	337	0228	22	18401	173
35.0	1.6667	0.016933	161	0.9999560	100	0.016934	161	0.000035365	336	1.940250	20	0.000018227	173
35.5	1.9444	16772	154	9660	87	16773	155	35029	321	0270	17	18054	166
36.0	2.2222	16618	152	9747	74	16618	152	34708	318	0287	14	17888	164
36.5	2.5000	16466	152	9821	61	16466	152	34390	317	0301	12	17724	164
37.0	2.7778	16314	150	9882	48	16314	152	34073	314	0313	9	17560	161
37.5	3.0556	16164	143	9930	36	16164	143	33759	298	0322	7	17399	154
38.0	3.3333	0.016021	144	0.9999966	23	0.016021	144	0.000033461	301	1.940329	5	0.000017245	155
38.5	3.6111	0.015877	144	9989	11	15877	144	33160	301	0334	2	17090	155
39.0	3.8889	15733	138	1.0000000	3	15733	138	32859	288	0336	1	16935	149
39.5	4.1667	15595	136	0.9999997	14	15595	136	32571	284	0335	3	16786	146
40.0	4.4444	15459	136	9983	26	15459	136	32287	284	0332	5	16640	146
40.5	4.7222	15323	135	9957	38	15323	135	32003	282	0327	7	16494	146
41.0	5.0000	0.015188	128	0.9999919	51	0.015188	128	0.000031721	267	1.940320	10	0.000016348	137
41.5	5.2778	15060	129	9868	62	15060	129	31454	260	0310	12	16211	139
42.0	5.5556	14931	128	9806	75	14931	128	31184	267	0298	15	16072	138
42.5	5.8333	14803	126	9731	86	14803	125	30917	263	0283	16	15934	134
43.0	6.1111	0.014677	122	0.9999645	97	0.014678	121	0.000030654	253	1.940267	19	0.000015799	130
43.5	6.3889	14556	122	9548	108	14557	122	30401	255	0248	21	15669	132
44.0	6.6667	14434	122	9440	120	14435	122	30146	255	0227	23	15537	131
44.5	6.9444	14312	116	9320	131	14313	116	0.000029891	242	0204	26	15406	124
45.0	7.2222	14196	116	9189	143	14197	116	29649	242	0178	27	15282	125
45.5	7.5000	14080	116	9046	154	14081	115	29407	242	0151	30	15157	125
46.0	7.7778	0.013964	114	0.9998892	164	0.013966	114	0.000029165	239	1.940121	32	0.000015032	122
46.5	8.0556	13850	110	8728	176	13852	110	28926	229	0089	34	14910	118
47.0	8.3333	13740	110	8552	186	13742	110	28697	230	0055	36	14792	118
47.5	8.6111	13630	110	8366	196	13632	110	28467	230	0019	38	14674	119
48.0	8.8889	13520	107	8170	208	13522	106	28237	223	1.939981	41	14555	114
48.5	9.1667	13413	106	7962	218	13416	106	28014	222	9940	42	14441	114
49.0	9.4444	0.013307	105	0.9997744	229	0.013310	105	0.000027792	219	1.939898	45	0.000014327	113
49.5	9.7222	13202	105	7515	238	13205	104	27573	219	9853	46	14214	113

These charts have been reprinted from pp. 63-66 of John R. Freeman's book "Experiments upon the Flow of Water in Pipes and Pipe Fittings - Made at Nashua, New Hampshire June 28 to October 22, 1892" with permission of the American Society of Mechanical Engineers.