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Volume correction factors—liquefied petroleum gas or propane at 500 kg/m³

Original – 01 Aug 2019

Density at 15 °C = 500 kg/m³ (derived from table ASTM-IP 54, 1986)

Refer to bulletin V-18 for more information on product classes.

This table shows the correction for the effects of temperature on the liquid. This correction is normally referred to as Ctl.

Volume correction factors to 15 °C for use with liquefied petroleum gas or propane at 500 kg/m ³										
Temperature °C	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
-40	1.1459	--	--	--	--	--	--	--	--	--
-39	1.1435	1.1437	1.1440	1.1442	1.1445	1.1447	1.1449	1.1452	1.1454	1.1457
-38	1.1411	1.1413	1.1416	1.1418	1.1420	1.1423	1.1425	1.1428	1.1430	1.1432
-37	1.1387	1.1389	1.1391	1.1394	1.1396	1.1399	1.1401	1.1404	1.1406	1.1408
-36	1.1362	1.1365	1.1367	1.1370	1.1372	1.1374	1.1377	1.1379	1.1382	1.1384
-35	1.1338	1.1340	1.1343	1.1345	1.1348	1.1350	1.1353	1.1355	1.1357	1.1360
-34	1.1314	1.1316	1.1319	1.1321	1.1323	1.1326	1.1328	1.1331	1.1333	1.1336
-33	1.1289	1.1292	1.1294	1.1297	1.1299	1.1301	1.1304	1.1306	1.1309	1.1311
-32	1.1265	1.1267	1.1270	1.1272	1.1274	1.1277	1.1279	1.1282	1.1284	1.1287
-31	1.1240	1.1242	1.1245	1.1247	1.1250	1.1252	1.1255	1.1257	1.1260	1.1262
-30	1.1215	1.1218	1.1220	1.1223	1.1225	1.1228	1.1230	1.1233	1.1235	1.1238
-29	1.1191	1.1193	1.1196	1.1198	1.1200	1.1203	1.1205	1.1208	1.1210	1.1213
-28	1.1166	1.1168	1.1171	1.1173	1.1176	1.1178	1.1181	1.1183	1.1186	1.1188
-27	1.1141	1.1143	1.1146	1.1148	1.1151	1.1153	1.1156	1.1158	1.1161	1.1163
-26	1.1116	1.1118	1.1121	1.1123	1.1126	1.1128	1.1131	1.1133	1.1136	1.1138
-25	1.1091	1.1093	1.1096	1.1098	1.1101	1.1103	1.1106	1.1108	1.1111	1.1113

Volume correction factors to 15 °C for use with liquefied petroleum gas or propane at 500 kg/m³

Temperature °C	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
-24	1.1065	1.1068	1.1071	1.1073	1.1076	1.1078	1.1081	1.1083	1.1086	1.1088
-23	1.1040	1.1043	1.1045	1.1048	1.1050	1.1053	1.1055	1.1058	1.1060	1.1063
-22	1.1015	1.1017	1.1020	1.1022	1.1025	1.1028	1.1030	1.1033	1.1035	1.1038
-21	1.0989	1.0992	1.0995	1.0997	1.1000	1.1002	1.1005	1.1007	1.1010	1.1012
-20	1.0964	1.0966	1.0969	1.0972	1.0974	1.0977	1.0979	1.0982	1.0984	1.0987
-19	1.0938	1.0941	1.0943	1.0946	1.0949	1.0951	1.0954	1.0956	1.0959	1.0961
-18	1.0913	1.0915	1.0918	1.0920	1.0923	1.0925	1.0928	1.0931	1.0933	1.0936
-17	1.0887	1.0889	1.0892	1.0895	1.0897	1.0900	1.0902	1.0905	1.0907	1.0910
-16	1.0861	1.0863	1.0866	1.0869	1.0871	1.0874	1.0876	1.0879	1.0882	1.0884
-15	1.0835	1.0837	1.0840	1.0843	1.0845	1.0848	1.0850	1.0853	1.0856	1.0858
-14	1.0809	1.0811	1.0814	1.0817	1.0819	1.0822	1.0824	1.0827	1.0830	1.0832
-13	1.0783	1.0785	1.0788	1.0790	1.0793	1.0796	1.0798	1.0801	1.0804	1.0806
-12	1.0756	1.0759	1.0762	1.0764	1.0767	1.0769	1.0772	1.0775	1.0777	1.0780
-11	1.0730	1.0732	1.0735	1.0738	1.0740	1.0743	1.0746	1.0748	1.0751	1.0754
-10	1.0703	1.0706	1.0709	1.0711	1.0714	1.0717	1.0719	1.0722	1.0725	1.0727
-9	1.0677	1.0679	1.0682	1.0685	1.0687	1.0690	1.0693	1.0695	1.0698	1.0701
-8	1.0650	1.0653	1.0655	1.0658	1.0661	1.0663	1.0666	1.0669	1.0671	1.0674
-7	1.0623	1.0626	1.0629	1.0631	1.0634	1.0637	1.0639	1.0642	1.0645	1.0647
-6	1.0596	1.0599	1.0602	1.0604	1.0607	1.0610	1.0612	1.0615	1.0618	1.0620
-5	1.0569	1.0572	1.0575	1.0577	1.0580	1.0583	1.0585	1.0588	1.0591	1.0593
-4	1.0542	1.0545	1.0547	1.0550	1.0553	1.0556	1.0558	1.0561	1.0564	1.0566
-3	1.0515	1.0517	1.0520	1.0523	1.0526	1.0528	1.0531	1.0534	1.0536	1.0539
-2	1.0487	1.0490	1.0493	1.0495	1.0498	1.0501	1.0504	1.0506	1.0509	1.0512
-1	1.0460	1.0462	1.0465	1.0468	1.0471	1.0473	1.0476	1.0479	1.0482	1.0484

Volume correction factors to 15 °C for use with liquefied petroleum gas or propane at 500 kg/m³

Temperature °C	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
-0	1.0432	1.0435	1.0438	1.0440	1.0443	1.0446	1.0449	1.0451	1.0454	1.0457
0	1.0432	1.0429	1.0426	1.0424	1.0421	1.0418	1.0415	1.0413	1.0410	1.0407
1	1.0404	1.0401	1.0399	1.0396	1.0393	1.0390	1.0387	1.0385	1.0382	1.0379
2	1.0376	1.0373	1.0371	1.0368	1.0365	1.0362	1.0359	1.0357	1.0354	1.0351
3	1.0348	1.0345	1.0343	1.0340	1.0337	1.0334	1.0331	1.0328	1.0326	1.0323
4	1.0320	1.0317	1.0314	1.0311	1.0309	1.0306	1.0303	1.0300	1.0297	1.0294
5	1.0292	1.0289	1.0286	1.0283	1.0280	1.0277	1.0275	1.0272	1.0269	1.0266
6	1.0263	1.0260	1.0257	1.0255	1.0252	1.0249	1.0246	1.0243	1.0240	1.0237
7	1.0235	1.0232	1.0229	1.0226	1.0223	1.0220	1.0217	1.0214	1.0212	1.0209
8	1.0206	1.0203	1.0200	1.0197	1.0194	1.0191	1.0188	1.0186	1.0183	1.0180
9	1.0177	1.0174	1.0171	1.0168	1.0165	1.0162	1.0159	1.0156	1.0154	1.0151
10	1.0148	1.0145	1.0142	1.0139	1.0136	1.0133	1.0130	1.0127	1.0124	1.0121
11	1.0119	1.0116	1.0113	1.0110	1.0107	1.0104	1.0101	1.0098	1.0095	1.0092
12	1.0089	1.0086	1.0083	1.0080	1.0077	1.0074	1.0071	1.0068	1.0066	1.0063
13	1.0060	1.0057	1.0054	1.0051	1.0048	1.0045	1.0042	1.0039	1.0036	1.0033
14	1.0030	1.0027	1.0024	1.0021	1.0018	1.0015	1.0012	1.0009	1.0006	1.0003
15	1.0000	0.9997	0.9994	0.9991	0.9988	0.9985	0.9982	0.9979	0.9976	0.9973
16	0.9970	0.9967	0.9964	0.9961	0.9958	0.9955	0.9952	0.9949	0.9946	0.9943
17	0.9940	0.9937	0.9934	0.9931	0.9928	0.9925	0.9921	0.9918	0.9915	0.9912
18	0.9909	0.9906	0.9903	0.9900	0.9897	0.9894	0.9891	0.9888	0.9885	0.9882
19	0.9879	0.9876	0.9873	0.9870	0.9866	0.9863	0.9860	0.9857	0.9854	0.9851
20	0.9848	0.9845	0.9842	0.9839	0.9836	0.9832	0.9829	0.9826	0.9823	0.9820
21	0.9817	0.9814	0.9811	0.9808	0.9805	0.9801	0.9798	0.9795	0.9792	0.9789
22	0.9786	0.9783	0.9780	0.9776	0.9773	0.9770	0.9767	0.9764	0.9761	0.9758

Volume correction factors to 15 °C for use with liquefied petroleum gas or propane at 500 kg/m³

Temperature °C	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
23	0.9754	0.9751	0.9748	0.9745	0.9742	0.9739	0.9736	0.9732	0.9729	0.9726
24	0.9723	0.9720	0.9717	0.9713	0.9710	0.9707	0.9704	0.9701	0.9697	0.9694
25	0.9691	0.9688	0.9685	0.9681	0.9678	0.9675	0.9672	0.9669	0.9665	0.9662
26	0.9659	0.9656	0.9653	0.9649	0.9646	0.9643	0.9640	0.9637	0.9633	0.9630
27	0.9627	0.9624	0.9620	0.9617	0.9614	0.9611	0.9607	0.9604	0.9601	0.9598
28	0.9594	0.9591	0.9588	0.9585	0.9581	0.9578	0.9575	0.9572	0.9568	0.9565
29	0.9562	0.9558	0.9555	0.9552	0.9549	0.9545	0.9542	0.9539	0.9535	0.9532
30	0.9529	0.9525	0.9522	0.9519	0.9516	0.9512	0.9509	0.9506	0.9502	0.9499
31	0.9496	0.9492	0.9489	0.9486	0.9482	0.9479	0.9476	0.9472	0.9469	0.9466
32	0.9462	0.9459	0.9455	0.9452	0.9449	0.9445	0.9442	0.9439	0.9435	0.9432
33	0.9429	0.9425	0.9422	0.9418	0.9415	0.9412	0.9408	0.9405	0.9401	0.9398
34	0.9395	0.9391	0.9388	0.9384	0.9381	0.9377	0.9374	0.9371	0.9367	0.9364
35	0.9360	0.9357	0.9353	0.9350	0.9347	0.9343	0.9340	0.9336	0.9333	0.9329
36	0.9326	0.9322	0.9319	0.9315	0.9312	0.9309	0.9305	0.9302	0.9298	0.9295
37	0.9291	0.9288	0.9284	0.9281	0.9277	0.9274	0.9270	0.9267	0.9263	0.9260
38	0.9256	0.9252	0.9249	0.9245	0.9242	0.9238	0.9235	0.9231	0.9228	0.9224
39	0.9221	0.9217	0.9214	0.9210	0.9206	0.9203	0.9199	0.9196	0.9192	0.9189
40	0.9185	0.9181	0.9178	0.9174	0.9171	0.9167	0.9163	0.9160	0.9156	0.9153
41	0.9149	0.9145	0.9142	0.9138	0.9134	0.9131	0.9127	0.9123	0.9120	0.9116
42	0.9113	0.9109	0.9105	0.9102	0.9098	0.9094	0.9091	0.9087	0.9083	0.9080
43	0.9076	0.9072	0.9068	0.9065	0.9061	0.9057	0.9054	0.9050	0.9046	0.9043
44	0.9039	0.9035	0.9031	0.9028	0.9024	0.9020	0.9016	0.9013	0.9009	0.9005
45	0.9001	0.8998	0.8994	0.8990	0.8986	0.8983	0.8979	0.8975	0.8971	0.8967
46	0.8964	0.8960	0.8956	0.8952	0.8948	0.8945	0.8941	0.8937	0.8933	0.8929

Volume correction factors to 15 °C for use with liquefied petroleum gas or propane at 500 kg/m³

Temperature °C	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
47	0.8925	0.8922	0.8918	0.8914	0.8910	0.8906	0.8902	0.8898	0.8895	0.8891
48	0.8887	0.8883	0.8879	0.8875	0.8871	0.8867	0.8863	0.8860	0.8856	0.8852
49	0.8848	0.8844	0.8840	0.8836	0.8832	0.8828	0.8824	0.8820	0.8816	0.8812
50	0.8808	0.8804	0.8800	0.8796	0.8792	0.8788	0.8785	0.8781	0.8777	0.8773

Density at 15 °C = 500 kg/m³

Values calculated as per ASTM-IP Table 54 (1986)

To obtain the net volume of liquid at 15 °C, multiply the uncompensated meter reading by the volume correction factor (VCF) which corresponds to the average measured temperature of the liquid during the delivery.