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Volume correction factors—liquefied petroleum gas or propane at 510 kg/m³

Revision 3 – 01 Aug 2019

Density at 15 °C = 510 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 510 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	1.1398	--	--	--	--	--	--	--	--	--
-39	1.1375	1.1377	1.1379	1.1381	1.1384	1.1386	1.1388	1.1391	1.1393	1.1395
-38	1.1351	1.1354	1.1356	1.1358	1.1361	1.1363	1.1365	1.1368	1.1370	1.1372
-37	1.1328	1.1331	1.1333	1.1335	1.1337	1.1340	1.1342	1.1344	1.1347	1.1349
-36	1.1305	1.1307	1.1310	1.1312	1.1314	1.1317	1.1319	1.1321	1.1324	1.1326
-35	1.1282	1.1284	1.1286	1.1289	1.1291	1.1293	1.1296	1.1298	1.1300	1.1303
-34	1.1258	1.1261	1.1263	1.1265	1.1268	1.1270	1.1272	1.1275	1.1277	1.1279
-33	1.1235	1.1237	1.1239	1.1242	1.1244	1.1246	1.1249	1.1251	1.1254	1.1256
-32	1.1211	1.1214	1.1216	1.1218	1.1221	1.1223	1.1225	1.1228	1.1230	1.1232
-31	1.1188	1.1190	1.1192	1.1195	1.1197	1.1199	1.1202	1.1204	1.1206	1.1209
-30	1.1164	1.1166	1.1169	1.1171	1.1173	1.1176	1.1178	1.1180	1.1183	1.1185
-29	1.1140	1.1143	1.1145	1.1147	1.1150	1.1152	1.1154	1.1157	1.1159	1.1162
-28	1.1116	1.1119	1.1121	1.1123	1.1126	1.1128	1.1131	1.1133	1.1135	1.1138
-27	1.1092	1.1095	1.1097	1.1100	1.1102	1.1104	1.1107	1.1109	1.1112	1.1114
-26	1.1068	1.1071	1.1073	1.1076	1.1078	1.1080	1.1083	1.1085	1.1088	1.1090

Volume correction factors to 15 °C for use with liquefied petroleum gas or propane at 510 kg/m³

Temperature °C	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
-25	1.1044	1.1047	1.1049	1.1052	1.1054	1.1056	1.1059	1.1061	1.1064	1.1066
-24	1.1020	1.1023	1.1025	1.1027	1.1030	1.1032	1.1035	1.1037	1.1039	1.1042
-23	1.0996	1.0998	1.1001	1.1003	1.1006	1.1008	1.1010	1.1013	1.1015	1.1018
-22	1.0972	1.0974	1.0976	1.0979	1.0981	1.0984	1.0986	1.0989	1.0991	1.0993
-21	1.0947	1.0950	1.0952	1.0955	1.0957	1.0959	1.0962	1.0964	1.0967	1.0969
-20	1.0923	1.0925	1.0928	1.0930	1.0933	1.0935	1.0937	1.0940	1.0942	1.0945
-19	1.0898	1.0901	1.0903	1.0906	1.0908	1.0910	1.0913	1.0915	1.0918	1.0920
-18	1.0874	1.0876	1.0878	1.0881	1.0883	1.0886	1.0888	1.0891	1.0893	1.0896
-17	1.0849	1.0851	1.0854	1.0856	1.0859	1.0861	1.0864	1.0866	1.0869	1.0871
-16	1.0824	1.0826	1.0829	1.0831	1.0834	1.0836	1.0839	1.0841	1.0844	1.0846
-15	1.0799	1.0801	1.0804	1.0806	1.0809	1.0811	1.0814	1.0816	1.0819	1.0821
-14	1.0774	1.0776	1.0779	1.0781	1.0784	1.0787	1.0789	1.0792	1.0794	1.0797
-13	1.0749	1.0751	1.0754	1.0756	1.0759	1.0761	1.0764	1.0766	1.0769	1.0771
-12	1.0724	1.0726	1.0729	1.0731	1.0734	1.0736	1.0739	1.0741	1.0744	1.0746
-11	1.0698	1.0701	1.0703	1.0706	1.0708	1.0711	1.0714	1.0716	1.0719	1.0721
-10	1.0673	1.0675	1.0678	1.0681	1.0683	1.0686	1.0688	1.0691	1.0693	1.0696
-9	1.0647	1.0650	1.0653	1.0655	1.0658	1.0660	1.0663	1.0665	1.0668	1.0670
-8	1.0622	1.0624	1.0627	1.0630	1.0632	1.0635	1.0637	1.0640	1.0642	1.0645
-7	1.0596	1.0599	1.0601	1.0604	1.0606	1.0609	1.0612	1.0614	1.0617	1.0619
-6	1.0570	1.0573	1.0575	1.0578	1.0581	1.0583	1.0586	1.0588	1.0591	1.0594
-5	1.0544	1.0547	1.0550	1.0552	1.0555	1.0557	1.0560	1.0563	1.0565	1.0568
-4	1.0518	1.0521	1.0524	1.0526	1.0529	1.0531	1.0534	1.0537	1.0539	1.0542

Volume correction factors to 15 °C for use with liquefied petroleum gas or propane at 510 kg/m³

Temperature °C	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
-3	1.0492	1.0495	1.0497	1.0500	1.0503	1.0505	1.0508	1.0510	1.0513	1.0516
-2	1.0466	1.0469	1.0471	1.0474	1.0476	1.0479	1.0482	1.0484	1.0487	1.0490
-1	1.0440	1.0442	1.0445	1.0447	1.0450	1.0453	1.0455	1.0458	1.0461	1.0463
-0	1.0413	1.0416	1.0418	1.0421	1.0424	1.0426	1.0429	1.0432	1.0434	1.0437
0	1.0413	1.0410	1.0408	1.0405	1.0402	1.0400	1.0397	1.0394	1.0392	1.0389
1	1.0386	1.0384	1.0381	1.0378	1.0376	1.0373	1.0370	1.0368	1.0365	1.0362
2	1.0360	1.0357	1.0354	1.0352	1.0349	1.0346	1.0344	1.0341	1.0338	1.0336
3	1.0333	1.0330	1.0327	1.0325	1.0322	1.0319	1.0317	1.0314	1.0311	1.0309
4	1.0306	1.0303	1.0300	1.0298	1.0295	1.0292	1.0290	1.0287	1.0284	1.0281
5	1.0279	1.0276	1.0273	1.0271	1.0268	1.0265	1.0262	1.0260	1.0257	1.0254
6	1.0252	1.0249	1.0246	1.0243	1.0241	1.0238	1.0235	1.0232	1.0230	1.0227
7	1.0224	1.0221	1.0219	1.0216	1.0213	1.0210	1.0208	1.0205	1.0202	1.0199
8	1.0197	1.0194	1.0191	1.0188	1.0186	1.0183	1.0180	1.0177	1.0175	1.0172
9	1.0169	1.0166	1.0163	1.0161	1.0158	1.0155	1.0152	1.0150	1.0147	1.0144
10	1.0141	1.0138	1.0136	1.0133	1.0130	1.0127	1.0124	1.0122	1.0119	1.0116
11	1.0113	1.0110	1.0108	1.0105	1.0102	1.0099	1.0096	1.0094	1.0091	1.0088
12	1.0085	1.0082	1.0080	1.0077	1.0074	1.0071	1.0068	1.0065	1.0063	1.0060
13	1.0057	1.0054	1.0051	1.0048	1.0046	1.0043	1.0040	1.0037	1.0034	1.0031
14	1.0029	1.0026	1.0023	1.0020	1.0017	1.0014	1.0011	1.0009	1.0006	1.0003
15	1.0000	0.9997	0.9994	0.9991	0.9989	0.9986	0.9983	0.9980	0.9977	0.9974
16	0.9971	0.9968	0.9966	0.9963	0.9960	0.9957	0.9954	0.9951	0.9948	0.9945
17	0.9942	0.9940	0.9937	0.9934	0.9931	0.9928	0.9925	0.9922	0.9919	0.9916

Volume correction factors to 15 °C for use with liquefied petroleum gas or propane at 510 kg/m³

Temperature °C	0.00	0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.80	0.90
18	0.9913	0.9911	0.9908	0.9905	0.9902	0.9899	0.9896	0.9893	0.9890	0.9887
19	0.9884	0.9881	0.9878	0.9875	0.9872	0.9870	0.9867	0.9864	0.9861	0.9858
20	0.9855	0.9852	0.9849	0.9846	0.9843	0.9840	0.9837	0.9834	0.9831	0.9828
21	0.9825	0.9822	0.9819	0.9816	0.9813	0.9810	0.9808	0.9805	0.9802	0.9799
22	0.9796	0.9793	0.9790	0.9787	0.9784	0.9781	0.9778	0.9775	0.9772	0.9769
23	0.9766	0.9763	0.9760	0.9757	0.9754	0.9751	0.9748	0.9745	0.9742	0.9739
24	0.9736	0.9733	0.9730	0.9727	0.9723	0.9720	0.9717	0.9714	0.9711	0.9708
25	0.9705	0.9702	0.9699	0.9696	0.9693	0.9690	0.9687	0.9684	0.9681	0.9678
26	0.9675	0.9672	0.9669	0.9666	0.9663	0.9659	0.9656	0.9653	0.9650	0.9647
27	0.9644	0.9641	0.9638	0.9635	0.9632	0.9629	0.9626	0.9623	0.9619	0.9616
28	0.9613	0.9610	0.9607	0.9604	0.9601	0.9598	0.9595	0.9591	0.9588	0.9585
29	0.9582	0.9579	0.9576	0.9573	0.9570	0.9566	0.9563	0.9560	0.9557	0.9554
30	0.9551	0.9548	0.9545	0.9541	0.9538	0.9535	0.9532	0.9529	0.9526	0.9522
31	0.9519	0.9516	0.9513	0.9510	0.9507	0.9503	0.9500	0.9497	0.9494	0.9491
32	0.9487	0.9484	0.9481	0.9478	0.9475	0.9472	0.9468	0.9465	0.9462	0.9459
33	0.9455	0.9452	0.9449	0.9446	0.9443	0.9439	0.9436	0.9433	0.9430	0.9426
34	0.9423	0.9420	0.9417	0.9414	0.9410	0.9407	0.9404	0.9401	0.9397	0.9394
35	0.9391	0.9387	0.9384	0.9381	0.9378	0.9374	0.9371	0.9368	0.9365	0.9361
36	0.9358	0.9355	0.9351	0.9348	0.9345	0.9342	0.9338	0.9335	0.9332	0.9328
37	0.9325	0.9322	0.9318	0.9315	0.9312	0.9308	0.9305	0.9302	0.9298	0.9295
38	0.9292	0.9288	0.9285	0.9282	0.9278	0.9275	0.9272	0.9268	0.9265	0.9262
39	0.9258	0.9255	0.9251	0.9248	0.9245	0.9241	0.9238	0.9235	0.9231	0.9228

Volume correction factors to 15 °C for use with liquefied petroleum gas or propane at 510 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	0.9224	0.9221	0.9218	0.9214	0.9211	0.9207	0.9204	0.9201	0.9197	0.9194
41	0.9190	0.9187	0.9183	0.9180	0.9177	0.9173	0.9170	0.9166	0.9163	0.9159
42	0.9156	0.9152	0.9149	0.9146	0.9142	0.9139	0.9135	0.9132	0.9128	0.9125
43	0.9121	0.9118	0.9114	0.9111	0.9107	0.9104	0.9100	0.9097	0.9093	0.9090
44	0.9086	0.9083	0.9079	0.9076	0.9072	0.9069	0.9065	0.9061	0.9058	0.9054
45	0.9051	0.9047	0.9044	0.9040	0.9037	0.9033	0.9029	0.9026	0.9022	0.9019
46	0.9015	0.9012	0.9008	0.9004	0.9001	0.8997	0.8994	0.8990	0.8986	0.8983
47	0.8979	0.8976	0.8972	0.8968	0.8965	0.8961	0.8957	0.8954	0.8950	0.8946
48	0.8943	0.8939	0.8935	0.8932	0.8928	0.8924	0.8921	0.8917	0.8913	0.8910
49	0.8906	0.8902	0.8899	0.8895	0.8891	0.8888	0.8884	0.8880	0.8876	0.8873
50	0.8869	0.8865	0.8861	0.8858	0.8854	0.8850	0.8846	0.8843	0.8839	0.8835

Density at 15 °C = 510 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.