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Volume correction factors—liquefied petroleum gas or propane

Original – June 2019

Density at 15 °C = 500, 505 and 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 for use with liquefied petroleum gas or propane at various densities							
Temperature °C (corrected)	Observed density kg/m ³ (corrected)			Temperature °C (corrected)	Observed density kg/m ³ (corrected)		
	500	505	510		500	505	510
-40.0	1.1459	1.1430	1.1398	40.0	0.9185	0.9202	0.9224
-39.5	1.1447	1.1418	1.1386	39.5	0.9203	0.9220	0.9241
-39.0	1.1435	1.1407	1.1375	39.0	0.9221	0.9237	0.9258
-38.5	1.1423	1.1395	1.1363	38.5	0.9238	0.9255	0.9275
-38.0	1.1411	1.1383	1.1351	38.0	0.9256	0.9272	0.9292
-37.5	1.1399	1.1371	1.1340	37.5	0.9274	0.9289	0.9308
-37.0	1.1387	1.1359	1.1328	37.0	0.9291	0.9306	0.9325
-36.5	1.1374	1.1347	1.1317	36.5	0.9309	0.9323	0.9342
-36.0	1.1362	1.1335	1.1305	36.0	0.9326	0.9340	0.9358
-35.5	1.1350	1.1323	1.1293	35.5	0.9343	0.9357	0.9374
-35.0	1.1338	1.1312	1.1282	35.0	0.9360	0.9374	0.9391
-34.5	1.1326	1.1300	1.1270	34.5	0.9377	0.9391	0.9407
-34.0	1.1314	1.1288	1.1258	34.0	0.9395	0.9407	0.9423
-33.5	1.1301	1.1276	1.1246	33.5	0.9412	0.9424	0.9439
-33.0	1.1289	1.1264	1.1235	33.0	0.9429	0.9441	0.9455

Volume correction factors for use with liquefied petroleum gas or propane at various densities

Temperature °C (corrected)	Observed density kg/m ³ (corrected)			Temperature °C (corrected)	Observed density kg/m ³ (corrected)		
	500	505	510		500	505	510
-32.5	1.1277	1.1252	1.1223	32.5	0.9445	0.9457	0.9472
-32.0	1.1265	1.1240	1.1211	32.0	0.9462	0.9474	0.9487
-31.5	1.1252	1.1228	1.1199	31.5	0.9479	0.9490	0.9503
-31.0	1.1240	1.1215	1.1188	31.0	0.9496	0.9506	0.9519
-30.5	1.1228	1.1203	1.1176	30.5	0.9512	0.9522	0.9535
-30.0	1.1215	1.1191	1.1164	30.0	0.9529	0.9539	0.9551
-29.5	1.1203	1.1179	1.1152	29.5	0.9545	0.9555	0.9566
-29.0	1.1191	1.1167	1.1140	29.0	0.9562	0.9571	0.9582
-28.5	1.1178	1.1155	1.1128	28.5	0.9578	0.9587	0.9598
-28.0	1.1166	1.1143	1.1116	28.0	0.9594	0.9603	0.9613
-27.5	1.1153	1.1130	1.1104	27.5	0.9611	0.9619	0.9629
-27.0	1.1141	1.1118	1.1092	27.0	0.9627	0.9635	0.9644
-26.5	1.1128	1.1106	1.1080	26.5	0.9643	0.9650	0.9659
-26.0	1.1116	1.1094	1.1068	26.0	0.9659	0.9666	0.9675
-25.5	1.1103	1.1081	1.1056	25.5	0.9675	0.9682	0.9690
-25.0	1.1091	1.1069	1.1044	25.0	0.9691	0.9697	0.9705
-24.5	1.1078	1.1057	1.1032	24.5	0.9707	0.9713	0.9720
-24.0	1.1065	1.1044	1.1020	24.0	0.9723	0.9729	0.9736
-23.5	1.1053	1.1032	1.1008	23.5	0.9739	0.9744	0.9751
-23.0	1.1040	1.1020	1.0996	23.0	0.9754	0.9760	0.9766
-22.5	1.1028	1.1007	1.0984	22.5	0.9770	0.9775	0.9781
-22.0	1.1015	1.0995	1.0972	22.0	0.9786	0.9790	0.9796
-21.5	1.1002	1.0982	1.0959	21.5	0.9801	0.9805	0.9810

Volume correction factors for use with liquefied petroleum gas or propane at various densities

Temperature °C (corrected)	Observed density kg/m ³ (corrected)			Temperature °C (corrected)	Observed density kg/m ³ (corrected)		
	500	505	510		500	505	510
-21.0	1.0989	1.0970	1.0947	21.0	0.9817	0.9821	0.9825
-20.5	1.0977	1.0957	1.0935	20.5	0.9832	0.9836	0.9840
-20.0	1.0964	1.0945	1.0923	20.0	0.9848	0.9851	0.9855
-19.5	1.0951	1.0932	1.0910	19.5	0.9863	0.9866	0.9870
-19.0	1.0938	1.0920	1.0898	19.0	0.9879	0.9881	0.9884
-18.5	1.0925	1.0907	1.0886	18.5	0.9894	0.9896	0.9899
-18.0	1.0913	1.0894	1.0874	18.0	0.9909	0.9911	0.9913
-17.5	1.0900	1.0882	1.0861	17.5	0.9925	0.9926	0.9928
-17.0	1.0887	1.0869	1.0849	17.0	0.9940	0.9941	0.9942
-16.5	1.0874	1.0856	1.0836	16.5	0.9955	0.9956	0.9957
-16.0	1.0861	1.0844	1.0824	16.0	0.9970	0.9971	0.9971
-15.5	1.0848	1.0831	1.0811	15.5	0.9985	0.9985	0.9986
-15.0	1.0835	1.0818	1.0799	15.0	1.0000	1.0000	1.0000
-14.5	1.0822	1.0805	1.0787	14.5	1.0015	1.0015	1.0014
-14.0	1.0809	1.0793	1.0774	14.0	1.0030	1.0029	1.0029
-13.5	1.0796	1.0780	1.0761	13.5	1.0045	1.0044	1.0043
-13.0	1.0783	1.0767	1.0749	13.0	1.0060	1.0058	1.0057
-12.5	1.0769	1.0754	1.0736	12.5	1.0074	1.0073	1.0071
-12.0	1.0756	1.0741	1.0724	12.0	1.0089	1.0087	1.0085
-11.5	1.0743	1.0728	1.0711	11.5	1.0104	1.0102	1.0099
-11.0	1.0730	1.0715	1.0698	11.0	1.0119	1.0116	1.0113
-10.5	1.0717	1.0702	1.0686	10.5	1.0133	1.0130	1.0127
-10.0	1.0703	1.0689	1.0673	10.0	1.0148	1.0145	1.0141

Volume correction factors for use with liquefied petroleum gas or propane at various densities

Temperature °C (corrected)	Observed density kg/m ³ (corrected)			Temperature °C (corrected)	Observed density kg/m ³ (corrected)		
	500	505	510		500	505	510
-9.5	1.0690	1.0676	1.0660	9.5	1.0162	1.0159	1.0155
-9.0	1.0677	1.0663	1.0647	9.0	1.0177	1.0173	1.0169
-8.5	1.0663	1.0650	1.0635	8.5	1.0191	1.0187	1.0183
-8.0	1.0650	1.0637	1.0622	8.0	1.0206	1.0202	1.0197
-7.5	1.0637	1.0624	1.0609	7.5	1.0220	1.0216	1.0210
-7.0	1.0623	1.0611	1.0596	7.0	1.0235	1.0230	1.0224
-6.5	1.0610	1.0597	1.0583	6.5	1.0249	1.0244	1.0238
-6.0	1.0596	1.0584	1.0570	6.0	1.0263	1.0258	1.0252
-5.5	1.0583	1.0571	1.0557	5.5	1.0277	1.0272	1.0265
-5.0	1.0569	1.0558	1.0544	5.0	1.0292	1.0286	1.0279
-4.5	1.0556	1.0544	1.0531	4.5	1.0306	1.0300	1.0292
-4.0	1.0542	1.0531	1.0518	4.0	1.0320	1.0314	1.0306
-3.5	1.0528	1.0518	1.0505	3.5	1.0334	1.0327	1.0319
-3.0	1.0515	1.0504	1.0492	3.0	1.0348	1.0341	1.0333
-2.5	1.0501	1.0491	1.0479	2.5	1.0362	1.0355	1.0346
-2.0	1.0487	1.0477	1.0466	2.0	1.0376	1.0369	1.0360
-1.5	1.0473	1.0464	1.0453	1.5	1.0390	1.0382	1.0373
-1.0	1.0460	1.0450	1.0440	1.0	1.0404	1.0396	1.0386
-0.5	1.0446	1.0437	1.0426	0.5	1.0418	1.0410	1.0400
0.0	1.0432	1.0423	1.0413	0.0	1.0432	1.0423	1.0413