



The copy of this document located on Measurement Canada's website is considered to be the controlled copy.

Disclaimer: These tables are intended for inspection purposes only and may not be suitable in determining corrections for trade transactions of bulk commodities. Please consult the API/ASTM or other suitable sources for other uses.

Density reduction factors—liquefied petroleum gas or propane

Original version – August 1, 2019

Density at 15 °C (table derived from ASTM-IP 53, 1986)

Observed density from 455–500 kg/m³ corrected to actual density kg/m³

Note: If the corrected density table value is empty, the observed density and temperature combination is invalid. If the corrected density table value is three digits long and in a shaded cell, the observed density and temperature combination is suspect. Double-check your data and ensure that necessary corrections have been made to the standard's readings.

Table 1:
Density reduction factors to 15 °C for use with all grades of liquefied petroleum gas or propane
[<<Go to Table 2>>](#)

Observed temperature °C (corrected)	Observed density kg/m ³ (corrected)									
	455 kg/m ³	460 kg/m ³	465 kg/m ³	470 kg/m ³	475 kg/m ³	480 kg/m ³	485 kg/m ³	490 kg/m ³	495 kg/m ³	500 kg/m ³
0.0	--	--	--	--	--	--	--	--	--	--
0.5	--	--	--	--	--	--	--	--	--	--
1.0	--	--	--	--	--	--	--	--	--	--
1.5	--	--	--	--	--	--	--	--	--	--
2.0	--	--	--	--	--	--	--	--	--	--
2.5	--	--	--	--	--	--	--	--	--	--
3.0	--	--	--	--	--	--	--	--	--	--
3.5	--	--	--	--	--	--	--	--	--	--
4.0	--	--	--	--	--	--	--	--	--	--
4.5	--	--	--	--	--	--	--	--	--	--
5.0	--	--	--	--	--	--	--	--	--	485

Table 1:
Density reduction factors to 15 °C for use with all grades of liquefied petroleum gas or propane
<<Go to Table 2>>

Observed temperature °C (corrected)	Observed density kg/m³ (corrected)									
	455 kg/m³	460 kg/m³	465 kg/m³	470 kg/m³	475 kg/m³	480 kg/m³	485 kg/m³	490 kg/m³	495 kg/m³	500 kg/m³
5.5	--	--	--	--	--	--	--	--	--	486
6.0	--	--	--	--	--	--	--	--	--	486
6.5	--	--	--	--	--	--	--	--	--	487
7.0	--	--	--	--	--	--	--	--	--	488
7.5	--	--	--	--	--	--	--	--	--	489
8.0	--	--	--	--	--	--	--	--	--	489
8.5	--	--	--	--	--	--	--	--	--	490
9.0	--	--	--	--	--	--	--	--	--	491
9.5	--	--	--	--	--	--	--	--	--	491
10.0	--	--	--	--	--	--	--	481	486	492
10.5	--	--	--	--	--	--	--	482	487	493
11.0	--	--	--	--	--	--	--	483	488	494
11.5	--	--	--	--	--	--	--	484	489	494
12.0	--	--	--	--	--	--	--	485	490	495
12.5	--	--	--	--	--	--	--	486	491	496
13.0	--	--	--	--	--	--	--	486	491	497
13.5	--	--	--	--	--	--	--	487	492	498
14.0	--	--	--	--	--	--	--	488	493	498
14.5	--	--	--	--	--	--	--	489	494	499

Table 1:
Density reduction factors to 15 °C for use with all grades of liquefied petroleum gas or propane
<<Go to Table 2>>

Observed temperature °C (corrected)	Observed density kg/m³ (corrected)									
	455 kg/m³	460 kg/m³	465 kg/m³	470 kg/m³	475 kg/m³	480 kg/m³	485 kg/m³	490 kg/m³	495 kg/m³	500 kg/m³
15.0	--	--	--	--	--	480	485	490	495	500.0
15.5	--	--	--	--	--	481	486	491	496	500.7
16.0	--	--	--	--	--	482	487	492	497	501.5
16.5	--	--	--	--	--	482	487	492	497	502.2
17.0	--	--	--	--	--	483	488	493	498	503.0
17.5	--	--	--	--	--	484	489	494	499	503.7
18.0	--	--	--	--	--	485	490	495	500	504.5
18.5	--	--	--	--	--	486	491	496	500.3	505.2
19.0	--	--	--	--	--	486	491	496	501.1	506.0
19.5	--	--	--	--	--	487	492	497	501.8	506.7
20.0	--	--	--	478	483	488	493	498	502.6	507.5
20.5	--	--	--	479	484	489	494	499	503.3	508.2
21.0	--	--	--	480	485	490	495	499	504.1	508.9
21.5	--	--	--	480	485	490	495	500	504.8	509.7
22.0	--	--	--	481	486	491	496	500.7	505.6	510.4
22.5	--	--	--	482	487	492	497	501.5	506.3	511.1
23.0	--	--	--	483	488	493	498	502.2	507.1	511.9
23.5	--	--	--	484	489	494	499	503.0	507.8	512.6
24.0	--	--	--	484	489	494	499	503.8	508.6	513.3

Table 1:
Density reduction factors to 15 °C for use with all grades of liquefied petroleum gas or propane
<<Go to Table 2>>

Observed temperature °C (corrected)	Observed density kg/m³ (corrected)									
	455 kg/m³	460 kg/m³	465 kg/m³	470 kg/m³	475 kg/m³	480 kg/m³	485 kg/m³	490 kg/m³	495 kg/m³	500 kg/m³
24.5	--	--	--	485	490	495	500	504.5	509.3	514.0
25.0	--	477	483	486	491	496	500.4	505.3	510.0	514.8
25.5	--	478	484	487	492	497	501.2	506.0	510.8	515.5
26.0	--	479	485	488	493	498	502.0	506.8	511.5	516.2
26.5	--	480	486	488	493	498	502.8	507.5	512.2	516.9
27.0	--	480	486	489	494	499	503.5	508.3	512.9	517.6
27.5	--	481	487	490	495	500	504.3	509.0	513.7	518.3
28.0	--	482	488	491	496	500.3	505.1	509.7	514.4	519.0
28.5	--	483	489	492	497	501.1	505.8	510.5	515.1	519.7
29.0	--	483	489	492	497	501.8	506.6	511.2	515.8	520.4
29.5	--	484	490	493	498	502.6	507.3	511.9	516.5	521.1
30.0	482	485	491	494	499	503.4	508.1	512.7	517.2	521.8
30.5	482	486	492	495	500	504.2	508.8	513.4	517.9	522.5
31.0	483	487	492	496	500.2	504.9	509.6	514.1	518.7	523.2
31.5	484	487	493	496	501.0	505.7	510.3	514.8	519.4	523.9
32.0	485	488	494	497	501.8	506.5	511.0	515.6	520.1	524.6
32.5	485	489	495	498	502.6	507.2	511.8	516.3	520.8	525.2
33.0	486	490	495	499	503.4	508.0	512.5	517.0	521.4	525.9
33.5	487	491	496	500	504.2	508.7	513.2	517.7	522.1	526.6
34.0	488	491	497	500.3	504.9	509.5	513.9	518.4	522.8	527.3
34.5	488	492	497	501.1	505.7	510.2	514.7	519.1	523.5	528.0

Table 1:
Density reduction factors to 15 °C for use with all grades of liquefied petroleum gas or propane
<<Go to Table 2>>

Observed temperature °C (corrected)	Observed density kg/m³ (corrected)									
	455 kg/m³	460 kg/m³	465 kg/m³	470 kg/m³	475 kg/m³	480 kg/m³	485 kg/m³	490 kg/m³	495 kg/m³	500 kg/m³
35.0	489	493	498	501.9	506.5	511.0	515.4	519.8	524.2	528.6
35.5	490	494	499	502.7	507.2	511.7	516.1	520.5	524.9	529.3
36.0	491	495	499	503.5	508.0	512.4	516.8	521.2	525.6	530.0
36.5	491	496	500	504.3	508.7	513.1	517.5	521.9	526.3	530.7
37.0	492	497	500.4	505.0	509.5	513.9	518.2	522.6	526.9	531.3
37.5	493	498	501.2	505.8	510.2	514.6	518.9	523.3	527.6	532.0
38.0	494	498	502.1	506.6	511.0	515.3	519.6	523.9	528.3	532.7
38.5	495	499	502.9	507.3	511.7	516.0	520.3	524.6	529.0	533.3
39.0	495	500	503.7	508.1	512.4	516.7	521.0	525.3	529.6	534.0
39.5	496	500	504.5	508.9	513.2	517.4	521.7	526.0	530.3	534.7
40.0	497	500.7	505.2	509.6	513.9	518.2	522.4	526.7	531.0	535.3

Table 2:
Density reduction factors to 15 °C for use with all grades of liquefied petroleum gas or propane
<<Go to Table 1>>

Observed temperature (corrected) °C	Observed density (corrected) kg/m³									
	505 kg/m³	510 kg/m³	515 kg/m³	520 kg/m³	525 kg/m³	530 kg/m³	535 kg/m³	540 kg/m³	545 kg/m³	550 kg/m³
-20.0	--	--	--	--	--	479	485	490	496	502.0
-19.5	--	--	--	--	--	480	486	491	497	502.7
-19.0	--	--	--	--	--	480	486	492	497	503.4
-18.5	--	--	--	--	--	481	487	492	498	504.1

Table 2:
Density reduction factors to 15 °C for use with all grades of liquefied petroleum gas or propane
<>Go to Table 1>

Observed temperature (corrected) °C	Observed density (corrected) kg/m³									
	505 kg/m³	510 kg/m³	515 kg/m³	520 kg/m³	525 kg/m³	530 kg/m³	535 kg/m³	540 kg/m³	545 kg/m³	550 kg/m³
-18.0	--	--	--	--	--	482	488	493	499	504.8
-17.5	--	--	--	--	--	483	489	494	500.0	505.5
-17.0	--	--	--	--	--	483	489	495	500.7	506.2
-16.5	--	--	--	--	--	484	490	496	501.4	507.0
-16.0	--	--	--	--	--	485	491	496	502.1	507.7
-15.5	--	--	--	--	--	485	491	497	502.8	508.4
-15.0	--	--	--	--	481	486	492	498	503.5	509.1
-14.5	--	--	--	--	482	487	493	499	504.3	509.9
-14.0	--	--	--	--	482	487	493	499	505.0	510.6
-13.5	--	--	--	--	483	488	494	500.2	505.7	511.3
-13.0	--	--	--	--	484	489	495	500.9	506.4	512.1
-12.5	--	--	--	--	485	490	496	501.6	507.1	512.8
-12.0	--	--	--	--	485	490	496	502.3	507.9	513.5
-11.5	--	--	--	--	486	491	497	503.1	508.6	514.2
-11.0	--	--	--	--	487	492	498	503.8	509.3	515.0
-10.5	--	--	--	--	487	492	498	504.5	510.0	515.7
-10.0	--	--	477	482	488	493	499	505.2	510.8	516.4
-9.5	--	--	478	483	489	494	500.5	505.9	511.5	517.1
-9.0	--	--	479	484	490	495	501.2	506.7	512.2	517.8

Table 2:
Density reduction factors to 15 °C for use with all grades of liquefied petroleum gas or propane
<>Go to Table 1>>

Observed temperature (corrected) °C	Observed density (corrected) kg/m ³									
	505 kg/m ³	510 kg/m ³	515 kg/m ³	520 kg/m ³	525 kg/m ³	530 kg/m ³	535 kg/m ³	540 kg/m ³	545 kg/m ³	550 kg/m ³
-8.5	--	--	479	484	490	495	501.9	507.4	512.9	518.6
-8.0	--	--	480	485	491	496	502.7	508.1	513.7	519.3
-7.5	--	--	481	486	492	497	503.4	508.8	514.4	520.0
-7.0	--	--	482	487	493	498	504.1	509.6	515.1	520.7
-6.5	--	--	483	488	494	499	504.8	510.3	515.8	521.4
-6.0	--	--	483	488	494	500.2	505.5	511.0	516.6	522.1
-5.5	--	--	484	489	495	500.9	506.3	511.7	517.2	522.8
-5.0	--	479	485	490	496	501.6	507.0	512.5	518.0	523.5
-4.5	--	479	486	491	497	502.3	507.7	513.2	518.7	524.2
-4.0	--	480	486	492	497	503.1	508.4	513.9	519.4	524.9
-3.5	--	481	487	492	498	503.8	509.2	514.6	520.1	525.6
-3.0	--	482	488	493	499	504.5	509.9	515.3	520.8	526.3
-2.5	--	483	489	494	500	505.2	510.6	516.1	521.5	527.0
-2.0	--	484	489	495	500.7	506.0	511.3	516.8	522.2	527.7
-1.5	--	484	490	496	501.4	506.7	512.1	517.5	522.9	528.4
-1.0	--	485	491	496	502.1	507.4	512.8	518.2	523.6	529.0
-0.5	--	486	491	497	502.8	508.1	513.5	518.9	524.3	529.7
0 °C	--	487	492	498	503.5	508.9	514.2	519.6	525.0	530.4
0.5	--	488	493	499	504.3	509.6	515.0	520.3	525.7	531.1
1.0	--	489	494	500	505.0	510.3	515.7	521.1	526.4	531.8

Table 2:
Density reduction factors to 15 °C for use with all grades of liquefied petroleum gas or propane
<<Go to Table 1>>

Observed temperature (corrected) °C	Observed density (corrected) kg/m ³									
	505 kg/m ³	510 kg/m ³	515 kg/m ³	520 kg/m ³	525 kg/m ³	530 kg/m ³	535 kg/m ³	540 kg/m ³	545 kg/m ³	550 kg/m ³
1.5	--	489	494	500.5	505.7	511.0	516.4	521.8	527.1	532.4
2.0	--	490	495	501.2	506.5	511.8	517.1	522.5	527.8	533.1
2.5	--	491	496	502.0	507.2	512.5	517.8	523.2	528.5	533.8
3.0	--	492	497	502.7	507.9	513.2	518.5	523.9	529.2	534.4
3.5	--	493	498	503.4	508.6	513.9	519.2	524.5	529.8	535.1
4.0	--	493	498	504.1	509.4	514.7	519.9	525.3	530.5	535.8
4.5	--	494	499	504.9	510.1	515.4	520.7	525.9	531.2	536.4
5.0	490	495	500.4	505.6	510.8	516.1	521.4	526.6	531.9	537.1
5.5	491	496	501.2	506.3	511.5	516.8	522.1	527.3	532.5	537.8
6.0	491	497	501.9	507.1	512.3	517.5	522.8	528.0	533.2	538.4
6.5	492	497	502.6	507.8	513.0	518.2	523.5	528.7	533.9	539.1
7.0	493	498	503.3	508.5	513.7	518.9	524.1	529.4	534.5	539.7
7.5	494	499	504.1	509.2	514.4	519.6	524.8	530.0	535.2	540.4
8.0	494	500	504.8	510.0	515.2	520.3	525.5	530.7	535.9	541.0
8.5	495	500.4	505.5	510.7	515.9	521.0	526.2	531.4	536.5	541.7
9.0	496	501.2	506.3	511.4	516.6	521.7	526.9	532.1	537.2	542.3
9.5	496	501.9	507.0	512.1	517.3	522.4	527.6	532.7	537.9	543.0
10.0	497	502.6	507.7	512.9	518.0	523.1	528.3	533.4	538.5	543.6
10.5	498	503.4	508.5	513.6	518.7	523.8	529.0	534.1	539.2	544.3
11.0	499	504.1	509.2	514.3	519.4	524.5	529.6	534.7	539.8	544.9
11.5	499	504.9	509.9	515.0	520.1	525.2	530.3	535.4	540.5	545.5

Table 2:
Density reduction factors to 15 °C for use with all grades of liquefied petroleum gas or propane
<<Go to Table 1>>

Observed temperature (corrected) °C	Observed density (corrected) kg/m ³									
	505 kg/m ³	510 kg/m ³	515 kg/m ³	520 kg/m ³	525 kg/m ³	530 kg/m ³	535 kg/m ³	540 kg/m ³	545 kg/m ³	550 kg/m ³
12.0	500.5	505.6	510.7	515.7	520.8	525.9	531.0	536.1	541.1	546.2
12.5	501.3	506.3	511.4	516.5	521.5	526.6	531.7	536.7	541.8	546.8
13.0	502.0	507.1	512.1	517.2	522.2	527.3	532.3	537.4	542.4	547.5
13.5	502.8	507.8	512.8	517.9	522.9	528.0	533.0	538.0	543.1	548.1
14.0	503.5	508.5	513.6	518.6	523.6	528.6	533.7	538.7	543.7	548.7
14.5	504.3	509.3	514.3	519.3	524.3	529.3	534.3	539.3	544.4	549.4
15.0	505.0	510.0	515.0	520.0	525.0	530.0	535.0	540.0	545.0	550.0
15.5	505.7	510.7	515.7	520.7	525.7	530.7	535.7	540.7	545.6	550.6
16.0	506.5	511.5	516.4	521.4	526.4	531.3	536.3	541.3	546.3	551.3
16.5	507.2	512.2	517.1	522.1	527.1	532.0	537.0	542.0	546.9	551.9
17.0	508.0	512.9	517.8	522.8	527.7	532.7	537.6	542.6	547.6	552.5
17.5	508.7	513.6	518.6	523.5	528.4	533.4	538.3	543.2	548.2	553.1
18.0	509.4	514.3	519.3	524.2	529.1	534.0	539.0	543.9	548.8	553.8
18.5	510.2	515.1	520.0	524.9	529.8	534.7	539.6	544.5	549.5	554.4
19.0	510.9	515.8	520.7	525.6	530.5	535.4	540.3	545.2	550.1	555.0
19.5	511.6	516.5	521.4	526.2	531.1	536.0	540.9	545.8	550.7	555.6
20.0	512.3	517.2	522.1	526.9	531.8	536.7	541.6	546.5	551.4	556.3
20.5	513.1	517.9	522.8	527.6	532.5	537.3	542.2	547.1	552.0	556.9
21.0	513.8	518.6	523.4	528.3	533.1	538.0	542.9	547.7	552.6	557.5
21.5	514.5	519.3	524.1	529.0	533.8	538.6	543.5	548.4	553.2	558.1
22.0	515.2	520.0	524.8	529.6	534.5	539.3	544.2	549.0	553.9	558.7
22.5	515.9	520.7	525.5	530.3	535.1	540.0	544.8	549.6	554.5	559.3

Table 2:
Density reduction factors to 15 °C for use with all grades of liquefied petroleum gas or propane
<<Go to Table 1>>

Observed temperature (corrected) °C	Observed density (corrected) kg/m ³									
	505 kg/m ³	510 kg/m ³	515 kg/m ³	520 kg/m ³	525 kg/m ³	530 kg/m ³	535 kg/m ³	540 kg/m ³	545 kg/m ³	550 kg/m ³
23.0	516.6	521.4	526.2	531.0	535.8	540.6	545.4	550.3	555.1	559.9
23.5	517.4	522.1	526.9	531.7	536.5	541.3	546.1	550.9	555.7	560.6
24.0	518.1	522.8	527.6	532.3	537.1	541.9	546.7	551.5	556.4	561.2
24.5	518.8	523.5	528.2	533.0	537.8	542.6	547.4	552.2	557.0	561.8
25.0	519.5	524.2	528.9	533.7	538.4	543.2	548.0	552.8	557.6	562.4
25.5	520.2	524.9	529.6	534.3	539.1	543.8	548.6	553.4	558.2	563.0
26.0	520.9	525.6	530.3	535.0	539.7	544.5	549.3	554.0	558.8	563.6
26.5	521.6	526.2	530.9	535.7	540.4	545.1	549.9	554.7	559.4	564.2
27.0	522.3	526.9	531.6	536.3	541.0	545.8	550.5	555.3	560.0	564.8
27.5	522.9	527.6	532.3	537.0	541.7	546.4	551.2	555.9	560.6	565.4
28.0	523.6	528.3	532.9	537.6	542.3	547.1	551.8	556.5	561.3	566.0
28.5	524.3	529.0	533.6	538.3	543.0	547.7	552.4	557.1	561.9	566.6
29.0	525.0	529.6	534.3	538.9	543.6	548.3	553.0	557.8	562.5	567.2
29.5	525.7	530.3	534.9	539.6	544.3	549.0	553.7	558.4	563.1	567.7
30.0	526.4	531.0	535.6	540.3	544.9	549.6	554.3	559.0	563.7	568.3
30.5	527.1	531.6	536.3	540.9	545.6	550.2	554.9	559.6	564.3	568.9
31.0	527.7	532.3	536.9	541.6	546.2	550.9	555.5	560.2	564.9	569.5
31.5	528.4	533.0	537.6	542.2	546.8	551.5	556.2	560.8	565.5	570.1
32.0	529.1	533.7	538.2	542.9	547.5	552.1	556.8	561.4	566.0	570.6
32.5	529.8	534.3	538.9	543.5	548.1	552.8	557.4	562.0	566.6	571.2
33.0	530.4	535.0	539.5	544.1	548.8	553.4	558.0	562.6	567.2	571.8
33.5	531.1	535.6	540.2	544.8	549.4	554.0	558.6	563.2	567.8	572.4

Table 2:
Density reduction factors to 15 °C for use with all grades of liquefied petroleum gas or propane
<<Go to Table 1>>

Observed temperature (corrected) °C	Observed density (corrected) kg/m ³									
	505 kg/m ³	510 kg/m ³	515 kg/m ³	520 kg/m ³	525 kg/m ³	530 kg/m ³	535 kg/m ³	540 kg/m ³	545 kg/m ³	550 kg/m ³
34.0	531.8	536.3	540.9	545.4	550.0	554.6	559.2	563.8	568.4	572.9
34.5	532.4	537.0	541.5	546.1	550.7	555.3	559.8	564.4	569.0	573.5
35.0	533.1	537.6	542.2	546.7	551.3	555.9	560.4	565.0	569.5	574.1
35.5	533.8	538.3	542.8	547.4	551.9	556.5	561.1	565.6	570.1	574.6
36.0	534.4	538.9	543.5	548.0	552.5	557.1	561.7	566.2	570.7	575.2
36.5	535.1	539.6	544.1	548.6	553.2	557.7	562.3	566.8	571.3	575.7
37.0	535.8	540.2	544.7	549.3	553.8	558.3	562.9	567.4	571.8	576.3
37.5	536.4	540.9	545.4	549.9	554.4	558.9	563.5	567.9	572.4	576.8
38.0	537.1	541.5	546.0	550.5	555.0	559.6	564.0	568.5	573.0	577.4
38.5	537.7	542.2	546.7	551.2	555.7	560.2	564.6	569.1	573.5	577.9
39.0	538.4	542.8	547.3	551.8	556.3	560.8	565.2	569.7	574.1	578.5
39.5	539.1	543.5	548.0	552.4	556.9	561.4	565.8	570.2	574.6	579.0
40.0	539.7	544.1	548.6	553.1	557.5	562.0	566.4	570.8	575.2	579.5

Density at 15 °C

Values derived from ASTM-IP Table 53 (1986)

To obtain the corrected density at 15 °C, find the observed density and temperature. The corrected density at 15 °C appears in the cell at the intersection of the column and row in which they appear. Interpolate as necessary.