



ASME Units for Compressed Natural Gas Storage

Please note that CPI does not warrant the accuracy, completeness or the most up-to-date information available. ALL INFORMATION ON THIS WEBSITE IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND. CPI EXPRESSLY DISCLAIMS ALL WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR INFRINGEMENT. CPI shall not be liable for any loss or damages caused, in whole or in part, by a user's reliance on any information contained on our website. Decisions based upon information contained on our website are the sole responsibility of the user of the website. Information contained on our website is not intended to be a substitute for advice from a professional engineer.

For more information regarding the Terms and Conditions of Usage, please [click here](#). If you do not agree to be bound by these Terms and Conditions of Usage, please exit our site.

Gauge Pressure		Standard Cubic Feet (scf) of gas or Cubic Meter (M3) of gas compressed into one cubic foot or one cubic meter of liquid volume at the given pressure and a temperature of 70°F (21°C)															
		Theoretical Ideal Gas		Actual for Real Gases													
psig	bar	scf	m ³	Air		Argon		Helium		Hydrogen		Nitrogen		Oxygen		Natural Gas	
				scf	m ³	scf	m ³	scf	m ³	scf	m ³	scf	m ³	scf	m ³	scf	m ³
1000	69.00	69.03	1.95	70.29	1.99	71.79	2.03	66.37	1.88	66.26	1.88	69.30	1.96	71.83	2.03	80.01	2.27
1100	75.90	75.83	2.15	77.21	2.19	79.10	2.24	72.64	2.06	72.50	2.05	76.08	2.15	79.15	2.24	89.24	2.53
1200	82.80	82.63	2.34	84.14	2.38	86.44	2.45	78.86	2.23	78.66	2.23	82.82	2.35	86.52	2.45	98.40	2.79
1300	89.70	85.30	2.53	91.07	2.58	93.79	2.66	85.03	3.05	84.73	2.40	89.49	2.53	93.89	2.66	107.78	3.05
1400	96.60	96.24	2.73	98.00	2.78	101.20	2.87	91.16	2.58	90.83	2.57	96.14	2.72	101.27	2.87	117.89	3.34
1500	103.40	103.04	2.92	104.77	2.97	108.50	3.07	98.12	2.78	96.84	2.74	102.74	2.91	108.66	3.08	127.24	3.60
1600	110.30	109.84	3.11	111.37	3.15	115.90	3.28	104.28	2.95	102.83	2.91	109.29	3.10	116.09	3.29	137.34	3.89
1700	117.20	116.65	3.30	117.97	3.34	123.30	3.49	110.40	3.13	108.75	3.08	115.78	3.28	123.50	3.50	147.13	4.17
1800	124.10	123.45	3.50	124.57	3.53	130.70	3.70	116.49	3.30	114.66	3.25	122.25	3.46	130.88	3.71	156.31	4.43
1900	131.00	130.25	3.69	131.17	3.71	138.00	3.91	122.54	3.47	120.49	3.41	128.66	3.64	138.27	3.92	166.61	4.72
2000	137.90	137.05	3.88	137.77	3.90	145.30	4.11	128.55	3.64	126.28	3.58	134.90	3.82	145.68	4.13	175.76	4.98
2100	144.80	143.86	4.07	144.36	4.09	152.60	4.32	134.53	3.81	132.05	3.74	140.91	3.90	153.04	4.33	185.67	5.26
2200	151.70	150.66	4.27	150.91	4.27	159.90	4.53	140.47	3.98	137.71	3.90	147.33	4.10	160.34	4.54	194.45	5.51
2300	158.60	157.46	4.46	156.97	4.45	167.10	4.73	146.37	4.15	143.37	4.06	153.46	4.30	167.64	4.75	203.23	5.76
2400	165.50	164.27	4.65	163.04	4.62	174.30	4.94	152.25	4.31	148.97	4.22	159.48	4.52	174.92	4.95	213.39	6.04
2500	172.40	171.07	4.84	169.11	4.79	181.50	5.14	158.08	4.48	154.48	4.37	165.39	4.68	182.04	5.16	221.36	6.27
2600	179.30	177.87	5.04	175.17	4.96	188.60	5.34	163.89	4.64	159.96	4.53	171.24	4.80	189.18	5.36	229.57	6.50
2700	186.20	184.67	5.23	181.24	5.13	195.60	5.54	169.66	4.80	165.43	4.69	177.04	5.00	196.27	5.56	236.82	6.71
2800	193.10	191.48	5.42	187.30	5.30	202.50	5.73	179.40	5.08	170.84	4.84	182.69	5.17	203.26	5.76	244.92	6.94
2900	200.00	198.28	5.62	193.37	5.48	209.40	5.93	181.10	5.13	176.20	4.99	188.32	5.33	210.24	5.95	252.33	7.15
3000	206.90	205.08	5.81	198.96	5.63	216.30	6.13	186.78	5.29	181.49	5.14	193.82	5.49	217.09	6.15	259.67	7.35
3100	213.80	211.88	6.00	204.40	5.79	223.00	6.32	192.42	5.45	186.85	5.29	199.14	5.64	223.86	6.34	265.59	7.52
3200	220.70	218.69	6.19	209.83	5.94	229.70	6.51	198.03	5.61	192.07	5.44	204.61	5.79	230.56	6.53	271.73	7.70
3300	227.60	225.49	6.39	215.27	6.10	236.30	6.69	203.60	5.77	197.31	5.59	209.86	5.94	237.18	6.72	278.46	7.89
3400	234.50	232.29	6.58	220.70	6.25	242.80	6.88	209.15	5.92	202.50	5.73	215.05	6.09	243.65	6.90	284.75	8.06
3500	241.40	239.10	6.77	226.14	6.40	249.20	7.06	214.66	6.08	207.64	5.88	220.26	6.24	250.10	7.08	290.24	8.22
3600	248.30	245.90	6.96	231.58	6.56	255.50	7.24	220.15	6.23	212.46	6.02	225.18	6.38	256.41	7.26	296.34	8.39
3700	255.20	252.70	7.16	236.87	6.71	261.80	7.41	225.60	6.39	217.70	6.17	230.10	6.52	262.63	7.44	300.92	8.52
3800	262.10	259.50	7.35	241.69	6.84	267.90	7.59	231.03	6.54	222.69	6.31	234.91	6.65	268.69	7.61	306.46	8.68
3900	269.00	266.31	7.54	246.51	6.98	274.00	7.76	236.42	6.70	227.71	6.45	239.70	6.79	274.74	7.78	311.92	8.83
4000	275.90	273.11	7.73	251.34	7.12	279.90	7.93	241.79	6.85	232.63	6.59	244.39	6.92	280.66	7.95	316.55	8.96
4100	282.80	279.91	7.93	256.16	7.25	285.80	8.09	247.13	7.00	237.50	6.73	249.01	7.05	286.35	8.11	321.82	9.11
4200	289.70	286.71	8.12	260.98	7.39	291.60	8.26	252.44	7.15	242.34	6.86	253.51	7.18	292.12	8.27	325.90	9.23
4300	296.60	293.52	8.31	265.81	7.53	297.30	8.42	257.52	7.29	247.13	7.00	257.92	7.30	297.68	8.43	329.88	9.34
4400	303.40	300.32	8.51	270.51	7.66	302.80	8.58	262.97	7.45	251.84	7.13	262.38	7.43	303.20	8.59	334.52	9.47
4500	310.30	307.12	8.70	274.85	7.78	308.30	8.73	268.19	7.60	256.60	7.27	266.60	7.55	308.67	8.74	338.33	9.58
4600	317.20	313.93	8.89	279.20	7.91	313.70	8.88	273.39	7.74	261.28	7.40	266.60	7.67	314.08	8.89	342.43	9.70
4700	324.10	320.73	9.08	283.54	8.03	319.10	9.04	278.55	7.89	265.94	7.53	275.07	7.79	319.36	9.04	345.00	9.79
4800	331.00	327.53	9.28	287.89	8.15	324.30	9.18	283.70	8.03	270.53	7.66	279.11	7.90	324.10	9.18	350.00	9.92
4900	337.90	334.33	9.47	292.23	8.28	329.40	9.33	288.81	8.18	275.08	7.79	282.97	8.00	328.96	9.32	353.14	10.00
5000	344.80	341.14	9.66	296.57	8.40	334.40	9.47	293.90	8.32	279.62	7.92	286.67	8.12	333.83	9.45	356.93	10.11
5100	351.70	347.94	9.85	300.92	8.52	339.40	9.61	298.96	8.47	284.17	8.05	290.43	8.23	338.69	9.59	361.78	10.25
5200	358.60	354.74	10.05	304.84	8.63	344.30	9.75	304.00	8.61	288.64	8.17	294.39	8.34	343.56	9.73	364.71	10.33
5300	365.50	361.54	10.24	308.57	8.74	349.00	9.88	309.01	8.75	293.03	8.30	298.18	8.44	348.42	9.87	367.15	10.40
5400	372.40	368.35	10.43	312.30	8.84	353.70	10.02	313.99	8.89	297.41	8.42	301.92	8.55	353.29	10.01	370.30	10.49
5500	379.30	375.15	10.62	316.03	8.95	358.40	10.15	318.95	9.03	301.83	8.55	305.80	8.66	358.15	10.14	373.38	10.57
5600	386.20	381.95	10.82	319.77	9.06	362.90	10.28	323.88	9.17	306.17	8.67	309.65	8.77	363.02	10.28	374.56	10.61
5700	393.10	388.76	11.01	323.50	9.16	367.40	10.40	328.80	9.31	309.15	8.76	313.26	8.87	367.88	10.42	377.53	10.69
5800	400.00	395.56	11.20	327.23	9.27	371.70	10.53	333.68	9.45	313.63	8.88	316.50	8.96	372.75	10.56	380.45	10.77
5900	406.90	402.36	11.40	330.80	9.37	376.00	10.65	338.54	9.59	317.95	9.00	319.76	9.06	377.22	10.68	382.58	10.83
6000	413.80	409.16	11.59	334.06	9.46	380.30	10.77	343.37	9.72	321.96	9.12	322.77	9.14	380.96	10.79	386.11	10.93

This Table is based on absolute pressure (psia) = gauge pressure (psig) + 4/17 psia.
One atmosphere = 14.7 psia.