

Conversions de Température

Commencer à lire degrés Celsius ou Fahrenheit dans la colonne ombragée, puis regardez pour l'équivalent Celsius dans la colonne de gauche, ou l'équivalent de Fahrenheit dans la colonne de droite.

C	C or F	F	C	C or F	F	C	C or F	F
-73	-100	-148	5.0	41	105.8	33.3	92	197.6
-68	-90	-130	5.6	42	107.6	33.9	93	199.4
-62	-80	-112	6.1	43	109.4	34.4	94	201.2
-57	-70	-94	6.7	44	111.2	35.0	95	203.0
-51	-60	-76	0.72	45	113.0	35.6	96	204.8
-46	-50	-58	7.8	46	114.8	36.1	97	206.6
-40	-40	-40	8.3	47	116.6	36.7	98	208.4
-34	-30	-22	8.9	48	118.4	37.2	99	210.2
-29	-20	-4	9.4	49	120.2	37.8	100	212.0
-23	-10	14	10.0	50	122.0			
-17.8	0	32	10.6	51	123.8	43	110	230
-17.2	1	33.8	11.1	52	125.6	49	120	248
-16.7	2	35.6	11.7	53	127.4	54	130	266
-16.1	3	37.4	12.2	54	129.2	60	140	284
-15.6	4	39.2	12.8	55	131.0	66	150	302
-15.0	5	41.0	13.3	56	132.8	71	160	320
-14.4	6	42.8	13.9	57	134.6	77	170	338
-13.9	7	44.6	14.4	58	136.4	82	180	356
-13.3	8	46.4	15.0	59	138.2	88	190	374
-12.8	9	48.2	15.6	60	140.0	93	200	392
-12.2	10	50.0	16.1	61	141.8	99	210	410
-11.7	11	51.8	16.7	62	143.6	100	212	413.6
-11.1	12	53.6	17.2	63	145.4	104	220	428
-10.6	13	55.4	17.8	64	147.2	110	230	446
-10.0	14	57.2	18.3	65	149.0	116	240	464
-9.4	15	59.0	18.9	66	150.8	121	250	482
-8.9	16	60.8	19.4	67	152.6	127	260	500
-8.3	17	62.6	20.0	68	154.4	132	270	518
-7.8	18	64.4	20.6	69	156.2	138	280	536
-7.2	19	66.2	21.1	70	158.0	143	290	554
-6.7	20	68.0	21.7	71	159.8	149	300	572
-6.1	21	69.8	22.2	72	161.6	154	310	590
-5.6	22	71.6	22.8	73	163.4	160	320	608
-5.0	23	73.4	23.3	74	165.2	166	320	626
-4.4	24	75.2	23.9	75	167.0	170	338	640
-3.9	25	77.0	24.4	76	168.8	171	340	644
-3.3	26	78.8	25.0	77	170.6	177	350	662
-2.8	27	80.6	25.6	78	172.4	182	360	680
-2.2	28	82.4	26.1	79	174.2	186	366	691
-1.7	29	84.2	26.7	80	176.0	188	370	698
-1.1	30	86.0	27.2	81	177.8	193	380	716
-0.6	31	87.8	27.8	82	179.6	198	388	730
0	32	89.6	28.3	83	181.4	199	390	734
0.6	33	91.4	28.9	84	183.2	204	400	752
1.1	34	93.2	29.4	85	185.0	208	406	763
1.7	35	95.0	30.0	86	186.8	210	410	770
2.2	36	96.8	30.6	87	188.6	216	420	788
2.8	37	98.6	31.1	88	190.4	221	430	806
3.3	38	100.4	31.7	89	192.2	227	440	824
3.9	39	102.2	32.2	90	194.0	232	450	842
4.4	40	104.0	32.8	91	195.8			

Water Flow Pressure Loss

(PSI Per 100 Feet Of Hose)

Flow of water in U.S. gal. per min.	Flow of water in cu. feet per sec.	Actual Internal Diameter, Inches								
		1/2"	5/8"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
0.5	0.001	0.4								
1.5	0.003	3.02	1.01	0.42						
2.5	0.005	7.75	2.58	1.08						
5	0.011	27.8	9.27	3.86	0.95	0.32	0.13			
10	0.022	99.5	33.2	13.8	3.38	1.14	0.47	0.12		
15	0.033		71.0	29.6	7.25	2.45	1.01	0.25	0.08	
20	0.044		121.0	50.3	12.4	4.15	1.71	0.42	0.14	
25	0.055			76.5	18.7	6.34	2.60	0.64	0.22	
30	0.066			108.0	26.5	8.96	3.68	0.90	0.30	0.13
35	0.077			142.0	34.8	11.8	4.83	1.18	0.40	0.17
40	0.088				44.7	15.1	6.20	1.52	0.51	0.21
45	0.099				55.0	18.6	7.65	1.87	0.63	0.26
50	0.110				67.5	22.8	9.35	2.28	0.78	0.32
60	0.132				94.3	31.8	13.1	3.19	1.08	0.45
70	0.154				126.0	42.5	17.5	4.25	1.44	0.60
80	0.176					54.6	22.5	5.48	1.86	0.77
90	0.198					67.5	27.8	6.80	2.30	0.95
100	0.223					81.5	33.5	8.19	2.78	1.15
125	0.278					124.0	50.6	12.4	4.20	1.73
150	0.334						72.1	17.6	6.97	2.46
175	0.390						94.5	23.1	7.83	3.23
200	0.446						122.0	29.6	10.1	4.15
225	0.501							36.8	12.5	5.15
250	0.557							44.6	15.2	6.28
275	0.613							53.3	18.1	7.45
300	0.688							62.5	21.2	8.75
325	0.724							72.5	24.6	10.2
350	0.780							83.2	28.2	11.7
375	0.836							94.5	32.1	13.3
400	0.891							107.0	36.2	14.9
450	1.00								44.9	18.6
500	1.11								54.5	22.5
600	1.34								76.5	31.6
700	1.56								102.0	42.1
800	1.78								131.0	53.9
900	2.00									66.8
1000	2.23									81.4
1100	2.45									97.0
1200	2.67									114.0
1300	2.90									132.0
1400	3.12									
1500	3.34									
1600	3.56									
1800	4.01									
2000	4.45									

The pressure loss of liquid flowing through a hose depends on the rate of flow, the hose I.D, the smoothness of the tube, the viscosity of the liquid, and the hose length. This chart shows the relationship between rate of flow, I.D and pressure loss for water at 68F with a viscosity of one centipoise. The pressure is directly proportional to the length of the hose, therefore, the data shown, can be extended by use of proportions.

Steam Temperature - Pressure Conversion Guide

Temperature - Pressure equivalents of saturated steam gauge pressure at sea level

Temperature		Lbs. per Sq. Inch	Temperature		Lbs. per Sq. Inch	Temperature		Lbs. per Sq. Inch
F	C		F	C		F	C	
212	100.0	0.0	286	141.1	39.4	336	168.9	97.1
214	101.1	0.6	287	141.7	40.3	337	169.4	98.7
216	102.2	1.2	288	142.2	41.1	338	170.0	100.2
218	103.3	1.8	289	142.8	42.0	339	170.6	101.8
220	104.4	2.5	290	143.3	42.9	340	171.1	103.3
222	105.6	3.2	291	143.9	43.8	341	171.7	105.0
224	106.7	3.9	292	144.4	44.7	342	172.2	106.5
226	107.8	4.6	293	145.0	45.6	343	172.8	108.2
228	108.9	5.3	294	145.6	46.5	344	173.3	109.8
230	110.0	6.1	295	146.1	47.5	345	173.9	111.5
232	111.1	6.9	296	146.7	48.4	346	174.4	113.1
234	112.2	7.7	297	147.2	49.4	347	175.0	114.8
236	113.3	8.5	298	147.8	50.3	348	175.6	116.5
238	114.4	9.4	299	148.3	51.3	349	176.1	118.2
240	115.6	10.3	300	148.9	52.3	350	176.7	119.9
242	116.7	11.2	301	149.4	53.4	352	177.8	123.5
244	117.8	12.1	302	150.0	54.4	354	178.9	127.1
246	118.9	13.1	303	150.6	55.4	356	180.0	130.8
248	120.0	14.1	304	151.1	56.4	358	181.1	134.5
250	121.1	15.1	305	151.7	57.5	360	182.2	138.3
252	122.2	16.2	306	152.2	58.6	362	183.3	142.3
254	123.3	17.3	307	152.8	59.7	364	184.4	146.2
256	124.4	18.4	308	153.3	60.7	366	185.6	150.3
258	125.6	19.6	309	153.9	61.9	368	186.7	154.4
260	126.7	20.7	310	154.4	63.0	370	187.8	158.7
261	127.2	21.4	311	155.0	64.2	372	188.9	163.0
262	127.8	22.0	312	155.6	65.3	374	190.0	167.4
263	128.3	22.6	313	156.1	66.5	376	191.1	171.9
264	128.9	23.2	314	156.7	67.6	378	192.2	176.4
265	129.4	23.9	315	157.2	68.8	380	193.3	181.1
266	130.0	24.5	316	157.8	70.0	382	194.4	185.8
267	130.6	25.2	317	158.3	71.3	384	195.6	190.6
268	131.1	25.8	318	158.9	72.5	386	196.7	195.6
269	131.7	26.5	319	159.4	73.7	388	197.8	200.6
270	132.2	27.2	320	160.0	75.0	390	198.9	205.7
271	132.8	27.9	321	160.6	76.3	392	200.0	210.9
272	133.3	28.6	322	161.1	77.5	394	201.1	216.2
273	133.9	29.3	323	161.7	78.8	396	202.2	221.5
274	134.4	30.0	324	162.2	80.1	398	203.3	227.0
275	135.0	30.8	325	162.8	81.5	400	204.4	232.6
276	135.6	31.5	326	163.3	82.8	402	205.5	238
277	136.1	32.3	327	163.9	84.2	404	206.7	244
278	136.7	33.0	328	164.4	85.6	406	207.8	250
279	137.2	33.8	329	165.0	87.0	408	208.9	256
280	137.8	34.5	330	165.6	88.4	410	210	262
281	138.3	35.3	331	166.1	89.8	412	211.1	268
282	138.9	36.1	332	166.7	91.2	414	212.2	275
283	139.4	36.9	333	167.2	92.7	416	213.3	281
284	140.0	37.7	334	167.8	94.1	418	214.4	288
285	140.6	38.6	335	168.3	95.6	420	215.6	294

Degrees Celsius = 5/9 (Degrees F -32)

Open-End Flow (GPM)

	Pressure at Inlet,		Hose Length, feet								Pressure at Inlet,		Hose Length, feet									
	psi		25	50	75	100	125	150	200		300	psi		25	50	75	100	125	150	200	300	
1/2" hose	30		10.4	6.2	5.6	4.8	4.3	3.8	3.3	2.6	1" hose	30		68.0	46.2	37.5	32.0	28.5	25.8	22.0	17.8	
	40		12.1	8.5	6.2	5.6	5.0	4.5	3.8	3.2		40		79.0	54.4	44.0	37.5	33.0	30.0	25.8	20.8	
	50		13.8	9.4	7.5	6.4	5.6	5.1	4.0	3.5		50		89.0	62.0	49.0	42.0	37.5	34.0	29.0	23.3	
	60		15.2	10.4	8.5	7.1	6.2	5.6	4.9	3.8		60		100.0	68.0	54.4	46.2	41.8	37.5	32.0	25.8	
	70		16.6	11.2	9.0	7.8	6.8	6.2	5.3	4.2		70		—	74.0	59.0	51.0	45.0	40.8	37.3	28.0	
	80		18.0	12.1	9.8	8.5	7.3	6.6	5.6	4.5		80		—	79.0	63.0	54.4	48.0	43.0	37.5	30.0	
	90		19.0	13.0	10.4	8.8	7.7	7.1	6.0	4.8		90		—	84.0	68.0	58.0	51.8	46.2	40.0	32.0	
	100		20.1	13.8	11.0	9.4	8.5	7.5	6.4	4.9		100		—	89.0	71.0	62.0	54.4	49.0	42.0	34.0	
5/8" hose	125		22.8	15.5	12.5	10.5	9.4	8.5	7.2	5.8	125		—	101.0	80.0	68.0	62.0	55.8	47.8	38.0		
	30		18.1	12.5	10.3	8.7	7.7	7.0	6.0	4.9	1 1/4" hose	50		—	110.0	85.0	72.0	56.0	58.0	50.0	42.0	
	40		21.4	14.8	12.5	10.3	9.0	8.3	7.0	5.7		75		—	130.0	110.0	90.0	80.0	73.0	64.0	52.0	
	50		23.9	16.5	13.2	11.4	10.3	9.2	7.9	6.3		100		—	150.0	125.0	110.0	92.0	85.0	73.0	58.0	
	60		26.5	18.1	14.8	12.5	11.2	10.3	8.7	7.0		150		—	—	150.0	130.0	120.0	110.0	90.0	67.0	
	70		27.5	20.0	16.0	13.7	12.0	11.0	10.0	7.6		50		—	140.0	115.0	96.0	85.0	75.0	65.0	54.0	
	80		30.6	21.4	16.8	14.8	13.0	11.8	10.3	8.3		75		—	170.0	140.0	125.0	110.0	96.0	84.0	67.0	
	90		32.5	22.5	18.1	15.5	14.0	12.5	10.5	8.7		150		—	—	205.0	170.0	155.0	140.0	125.0	97.0	
100		34.5	23.9	19.0	16.6	14.8	13.2	11.4	9.2	50			—	180.0	150.0	130.0	120.0	105.0	90.0	74.0		
3/4" hose	125		39.0	27.0	21.5	18.5	16.6	15.0	12.9	10.5	75		—	230.0	180.0	160.0	145.0	130.0	120.0	90.0		
	30		31.0	21.3	17.2	14.8	13.0	11.8	10.2	8.2	1 1/2" hose	100		—	260.0	220.0	180.0	170.0	150.0	130.0	105.0	
	40		36.0	25.0	20.0	17.2	15.2	13.8	11.8	9.4		150		—	—	260.0	230.0	205.0	180.0	160.0	130.0	
	50		41.0	28.0	22.5	19.2	17.2	15.5	13.2	10.7		75		—	480.0	380.0	330.0	290.0	270.0	230.0	180.0	
	60		45.5	31.0	25.0	21.3	19.0	17.2	14.8	11.8		2" hose	100		—	550.0	450.0	380.0	350.0	310.0	260.0	215.0
	70		49.5	34.0	27.2	23.5	21.0	18.8	17.1	12.8			125		—	—	550.0	480.0	425.0	380.0	330.0	265.0
	80		53.0	36.0	29.1	25.0	22.0	20.0	17.2	13.8												
	90		56.2	39.0	31.0	27.0	23.8	21.3	18.2	14.8												
100		60.0	41.0	33.0	28.0	25.0	22.6	19.2	15.5													
125		68.0	46.0	37.5	32.0	23.0	25.8	21.8	17.5													

Force Chart

Force (In Pounds)

Hose	25	50	75	100	150	200	250	300	500	1000
I.D.	PSI	PSI	PSI	PSI	PSI	PSI	PSI	PSI	PSI	PSI
1/4"	1	2	4	5	7	10	12	15	25	49
3/8"	3	6	8	11	17	22	28	33	55	110
1/2"	5	10	15	20	29	39	49	59	98	196
3/4"	11	22	33	44	66	88	110	133	221	442
1"	20	39	59	79	118	157	196	236	393	785
1-1/4"	31	61	92	123	184	245	307	368	614	1227
1-1/2"	44	88	133	177	265	353	442	530	884	1767
2"	79	157	236	314	471	628	785	942	1571	3142
2-1/2"	123	245	368	491	736	982	1227	1473	2454	4909
3"	177	353	530	707	1060	1414	1767	2121	3534	7069
4"	314	628	942	1257	1885	2513	3142	3770	6283	12566
5"	491	982	1473	1964	2945	3927	4909	5891	9818	19635
6"	707	1414	2121	2827	4241	5655	7069	8482	14137	28274
8"	1257	2513	3770	5027	7540	10053	12566	15080	25133	50266
10"	1964	3927	5891	7854	11781	15708	19635	23562	39270	78540
12"	2827	5655	8482	11310	16965	22620	28274	33929	56549	113098

Flow Data

This table may be used to determine the pressure loss in hose connected to pneumatic tools. Hose with rough tube may have a friction loss as much as 50% greater than the represented figures. The represented figures apply to hose with smooth inner tube.

Air Flow Pressure Loss

PULSATING FLOW

Cubic feet free air per minute passing through 50 foot lengths of hose

Size of Hose	Gauge press. at line	20	30	40	50	60	70	80	90	100	110	120	130	140	150
Loss of pressure in pounds per square inch - 50 foot hose length															
	50	1.8	5.0	10.1	18.1										
1/2 in.	60	1.3	4.0	8.4	14.8	23.4									
with	70	1.0	3.4	7.0	12.4	20.0	28.4								
couplings	80	0.9	2.8	6.0	10.8	17.4	25.2	34.6							
at each	90	0.8	2.4	5.4	9.5	14.8	22.0	30.5	41.0						
end	100	0.7	2.3	4.8	8.4	13.3	19.3	27.2	36.6						
	110	0.6	2.0	4.3	7.6	12.0	17.6	24.6	33.3	44.5					
3/4 in.	50	0.4	0.8	1.5	2.4	3.5	4.4	6.5	8.5	11.4	14.2				
with	60	0.3	0.6	1.2	1.9	2.8	3.8	5.2	6.8	8.6	11.2				
couplings	70	0.2	0.5	0.9	1.5	2.3	3.2	4.2	5.5	7.0	8.8	11.0			
at each	80	0.2	0.5	0.8	1.3	1.9	2.8	3.6	4.7	5.8	7.2	8.8	10.6		
end	90	0.2	0.4	0.7	1.1	1.6	2.3	3.1	4.0	5.0	6.2	7.5	9.0		
	100	0.2	0.4	0.6	1.0	1.4	2.0	2.7	3.5	4.4	5.4	6.6	7.9	9.4	11.1
	110	0.1	0.3	0.5	0.9	1.3	1.8	2.4	3.1	3.9	4.9	5.9	7.1	8.4	9.9
	50	0.1	0.2	0.3	0.5	0.8	1.1	1.5	2.0	2.6	3.5	4.8	7.0		
1 in.	60	0.1	0.2	0.3	0.4	0.6	0.8	1.2	1.5	2.0	2.6	3.3	4.2	5.5	7.2
with	70		0.1	0.2	0.4	0.5	0.7	1.0	1.3	1.6	2.0	2.5	3.1	3.8	4.7
couplings	80		0.1	0.2	0.3	0.5	0.7	0.8	1.1	1.4	1.7	2.0	2.4	2.7	3.5
at each	90		0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.2	1.4	1.7	2.0	2.4	2.8
end	100		0.1	0.2	0.2	0.4	0.5	0.6	0.8	1.0	1.2	1.5	1.8	2.1	2.4
	110		0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3	1.5	1.8	2.1
	50			0.1	0.2	0.2	0.3	0.4	0.5	0.7	1.1				
1 1/4 in.	60				0.1	0.2	0.3	0.3	0.5	0.6	0.8	1.0	1.2	1.5	
with	70				0.1	0.2	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.3	
couplings	80					0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.8	1.0
at each	90						0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.8
end	100							0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.7
	110								0.1	0.2	0.2	0.3	0.3	0.4	0.6
	50							0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.6
1 1/2 in.	60								0.1	0.2	0.2	0.2	0.3	0.3	0.5
with	70									0.1	0.2	0.2	0.2	0.3	0.4
couplings	80										0.1	0.2	0.2	0.2	0.4
at each															
end	90										0.1	0.2	0.2	0.2	0.3
	100											0.1	0.2	0.2	0.2
	110												0.1	0.2	0.2

For longer or shorter lengths of hose, the friction loss is proportional to the length, e.g., for 25 ft., half of the above; for 150 ft., three times the above, etc.