

0200 _ Charts and Tables

Standard Atmospheric Data Versus Altitude Chart (SI)

Z Altitude m	t Temperature °C	p Atmospheric Pressure kPa	ρ Air Density kg/m ³	μ Dynamic Viscosity Pa•s	ν Kinematic Viscosity m ² /s	c Speed of Sound m/s
0	15.00	101.32	1.230	1.793×10 ⁻⁵	1.456×10 ⁻⁵	340.43
100	14.35	100.13	1.215	1.790×10 ⁻⁵	1.473×10 ⁻⁵	340.05
200	13.70	98.94	1.201	1.786×10 ⁻⁵	1.487×10 ⁻⁵	339.66
300	13.05	97.77	1.189	1.784×10 ⁻⁵	1.500×10 ⁻⁵	339.28
400	12.40	96.61	1.177	1.780×10 ⁻⁵	1.512×10 ⁻⁵	338.89
500	11.76	95.46	1.166	1.777×10 ⁻⁵	1.524×10 ⁻⁵	338.51
600	11.11	94.32	1.155	1.774×10 ⁻⁵	1.536×10 ⁻⁵	338.19
700	10.46	93.20	1.145	1.771×10 ⁻⁵	1.546×10 ⁻⁵	337.73
800	9.81	92.08	1.134	1.768×10 ⁻⁵	1.559×10 ⁻⁵	337.34
900	9.16	90.98	1.123	1.765×10 ⁻⁵	1.571×10 ⁻⁵	336.95
1000	8.51	89.88	1.112	1.761×10 ⁻⁵	1.584×10 ⁻⁵	336.57
1100	7.86	88.80	1.102	1.758×10 ⁻⁵	1.595×10 ⁻⁵	336.18
1200	7.21	87.72	1.091	1.755×10 ⁻⁵	1.609×10 ⁻⁵	335.79
1300	6.56	86.66	1.080	1.751×10 ⁻⁵	1.621×10 ⁻⁵	335.40
1400	5.90	85.61	1.069	1.748×10 ⁻⁵	1.635×10 ⁻⁵	335.01
1500	5.25	84.56	1.058	1.745×10 ⁻⁵	1.649×10 ⁻⁵	334.62
1600	4.60	83.53	1.047	1.741×10 ⁻⁵	1.663×10 ⁻⁵	334.22
1700	3.95	82.50	1.037	1.738×10 ⁻⁵	1.676×10 ⁻⁵	333.83
1800	3.30	81.49	1.026	1.735×10 ⁻⁵	1.691×10 ⁻⁵	333.44
1900	2.65	80.49	1.016	1.732×10 ⁻⁵	1.705×10 ⁻⁵	333.05
2000	2.00	79.49	1.006	1.728×10 ⁻⁵	1.718×10 ⁻⁵	332.66
2100	1.35	78.51	0.996	1.725×10 ⁻⁵	1.732×10 ⁻⁵	332.26
2200	0.70	77.54	0.986	1.722×10 ⁻⁵	1.746×10 ⁻⁵	331.87
2300	0.53	76.57	0.976	1.718×10 ⁻⁵	1.760×10 ⁻⁵	331.48
2400	-0.60	75.62	0.967	1.715×10 ⁻⁵	1.774×10 ⁻⁵	331.08
2500	-1.25	74.68	0.957	1.712×10 ⁻⁵	1.789×10 ⁻⁵	330.69
2600	-1.90	73.74	0.948	1.708×10 ⁻⁵	1.802×10 ⁻⁵	330.29
2700	-2.55	72.82	0.938	1.705×10 ⁻⁵	1.818×10 ⁻⁵	329.90
2800	-3.20	71.91	0.929	1.702×10 ⁻⁵	1.832×10 ⁻⁵	329.50
2900	-3.85	71.00	0.919	1.699×10 ⁻⁵	1.845×10 ⁻⁵	329.10
3000	-4.50	70.11	0.909	1.695×10 ⁻⁵	1.865×10 ⁻⁵	328.71
3100	-5.15	69.23	0.900	1.692×10 ⁻⁵	1.880×10 ⁻⁵	328.31
3200	-5.80	68.35	0.890	1.689×10 ⁻⁵	1.898×10 ⁻⁵	327.51
3300	-6.46	67.48	0.880	1.685×10 ⁻⁵	1.914×10 ⁻⁵	327.11
3400	-7.11	66.62	0.871	1.682×10 ⁻⁵	1.931×10 ⁻⁵	326.70
3500	-7.76	65.77	0.862	1.679×10 ⁻⁵	1.948×10 ⁻⁵	326.30

Standard Atmospheric Data Versus Altitude Chart (I-P)

Z Altitude ft	t Temperature °F	p Atmospheric Pressure in. Hg	ρ Air Density lbm/ft ³	μ Dynamic Viscosity lbm/ft-s	ν Kinematic Viscosity ft ² /s	c Speed of Sound ft/s
-1000	62.6	31.02	0.0787	1.212×10 ⁻⁵	1.538×10 ⁻⁴	1120.7
-500	60.8	30.47	0.0776	1.208×10 ⁻⁵	1.556×10 ⁻⁴	1118.8
0	59.0	29.92	0.0765	1.205×10 ⁻⁵	1.576×10 ⁻⁴	1116.9
500	57.2	29.38	0.0754	1.202×10 ⁻⁵	1.595×10 ⁻⁴	1115.0
1000	55.4	28.86	0.0743	1.198×10 ⁻⁵	1.614×10 ⁻⁴	1113.1
1500	53.7	28.33	0.0732	1.195×10 ⁻⁵	1.633×10 ⁻⁴	1111.1
2000	51.9	27.82	0.0721	1.192×10 ⁻⁵	1.653×10 ⁻⁴	1109.2
2500	50.1	27.32	0.0710	1.189×10 ⁻⁵	1.673×10 ⁻⁴	1107.3
3000	48.3	26.82	0.0700	1.185×10 ⁻⁵	1.694×10 ⁻⁴	1105.3
3500	46.5	26.33	0.0689	1.182×10 ⁻⁵	1.714×10 ⁻⁴	1103.4
4000	44.7	25.84	0.0679	1.179×10 ⁻⁵	1.735×10 ⁻⁴	1101.4
4500	43.0	25.37	0.0669	1.175×10 ⁻⁵	1.757×10 ⁻⁴	1099.5
5000	41.2	24.90	0.0659	1.172×10 ⁻⁵	1.778×10 ⁻⁴	1097.5
5500	39.4	24.43	0.0649	1.169×10 ⁻⁵	1.800×10 ⁻⁴	1095.6
6000	37.6	23.98	0.0639	1.165×10 ⁻⁵	1.823×10 ⁻⁴	1093.6
6500	35.8	23.53	0.0630	1.162×10 ⁻⁵	1.846×10 ⁻⁴	1091.7
7000	34.0	23.09	0.0620	1.158×10 ⁻⁵	1.869×10 ⁻⁴	1089.7
7500	32.3	22.65	0.0610	1.155×10 ⁻⁵	1.892×10 ⁻⁴	1087.7
8000	30.5	22.22	0.0601	1.152×10 ⁻⁵	1.916×10 ⁻⁴	1085.7
8500	28.7	21.80	0.0592	1.148×10 ⁻⁵	1.904×10 ⁻⁴	1083.8
9000	26.9	21.39	0.0583	1.145×10 ⁻⁵	1.965×10 ⁻⁴	1081.8
9500	25.1	20.98	0.0574	1.142×10 ⁻⁵	1.990×10 ⁻⁴	1079.8
10000	23.3	20.58	0.0565	1.138×10 ⁻⁵	2.015×10 ⁻⁴	1077.8

Psychrometric Density Table (SI) (1 of 2)

Dry-Bulb Temp. °C	Density of Saturated Air for Various Barometric Conditions - kg/m ³					
	Barometric Pressure kPa					
	97	98.5	100	101.5	103	104.5
-2.0	1.244981	1.263273	1.282390	1.302927	1.324194	1.340401
-1.5	1.242122	1.260977	1.280094	1.300086	1.322000	1.337965
-1.0	1.239396	1.258667	1.277753	1.297353	1.319731	1.335505
-0.5	1.236782	1.256345	1.275377	1.294710	1.317400	1.333027
0.0	1.234260	1.254012	1.272975	1.292141	1.315018	1.330532
0.5	1.231812	1.251672	1.270553	1.289629	1.312595	1.328024
1.0	1.229423	1.249325	1.268119	1.287163	1.310140	1.325506
1.5	1.227079	1.246973	1.265679	1.284731	1.307661	1.322979
2.0	1.224768	1.244618	1.263236	1.282324	1.305166	1.320447
2.5	1.222480	1.242261	1.260796	1.279934	1.302659	1.317912
3.0	1.220207	1.239902	1.258360	1.277553	1.300147	1.315376
3.5	1.217942	1.237545	1.255931	1.275177	1.297634	1.312841
4.0	1.215680	1.235188	1.253510	1.272800	1.295123	1.310307
4.5	1.213416	1.232834	1.251098	1.270421	1.292618	1.307778
5.0	1.211147	1.230483	1.248697	1.268037	1.290121	1.305254
5.5	1.208871	1.228135	1.246304	1.265645	1.287634	1.302735
6.0	1.206587	1.225792	1.243921	1.263247	1.285157	1.300224
6.5	1.204295	1.223453	1.241546	1.260842	1.282692	1.297720
7.0	1.201994	1.221119	1.239179	1.258431	1.280239	1.295225
7.5	1.199687	1.218791	1.236817	1.256015	1.277798	1.292738
8.0	1.197375	1.216468	1.234459	1.253595	1.275367	1.290260
8.5	1.195060	1.214150	1.232105	1.251173	1.272946	1.287790
9.0	1.192743	1.211838	1.229752	1.248752	1.270533	1.285328
9.5	1.190428	1.209530	1.227399	1.246334	1.268128	1.282875
10.0	1.188116	1.207227	1.225045	1.243920	1.265728	1.280428
10.5	1.185810	1.204927	1.222689	1.241512	1.263332	1.277988
11.0	1.183512	1.202631	1.220330	1.239113	1.260938	1.275553
11.5	1.181224	1.200338	1.217968	1.236723	1.258544	1.273122
12.0	1.178948	1.198047	1.215603	1.234343	1.256148	1.270693
12.5	1.176683	1.195757	1.213236	1.231974	1.253747	1.268266
13.0	1.174432	1.193466	1.210866	1.229616	1.251342	1.265837
13.5	1.172192	1.191174	1.208497	1.227266	1.248928	1.263406
14.0	1.169963	1.188879	1.206131	1.224925	1.246506	1.260970
14.5	1.167742	1.186581	1.203771	1.222588	1.244075	1.258527
15.0	1.165527	1.184277	1.201420	1.220251	1.241632	1.256073
15.5	1.163312	1.181965	1.199084	1.217911	1.239178	1.253607
16.0	1.161092	1.179644	1.196770	1.215560	1.236712	1.251125
16.5	1.158860	1.177313	1.194483	1.213191	1.234235	1.248624
17.0	1.156606	1.174968	1.192231	1.210795	1.231747	1.246101
17.5	1.154320	1.172609	1.190025	1.208361	1.229250	1.243553
18.0	1.151991	1.170232	1.187875	1.205877	1.226746	1.240975