

Thermodynamic properties of helium 4—Continued

Temperature K	Density kg/m ³	Isotherm derivative 10 ⁵ m ³ · Pa/kg	Isochore derivative: 10 ⁵ Pa/K	Internal energy kJ/kg	Enthalpy kJ/kg	Entropy kJ/kg · K	C _v	C _p	Velocity of sound m/s
							kJ/kg · K		
0.8 × 10 ⁻⁵ pascal isobar									
2.171	147.8								
2.5	146.4	0.471	2.67	-10.82	-10.27	2.067	1.885	2.063	226.9
3.0	142.7	0.388	3.48	-9.770	-9.209	2.460	1.913	2.372	219.4
3.5	137.3	0.287	3.80	-8.451	-7.868	2.873	2.103	3.036	203.7
3.982	129.3	0.182	3.77	-6.782	-6.163	3.328	2.275	4.142	181.9
3.982	13.32	0.0386	0.301	9.370	15.38	8.739	3.331	8.580	99.8
4.0	13.18	0.0395	0.297	9.460	15.53	8.778	3.324	8.468	100.3
4.5	10.52	0.0594	0.231	11.68	19.28	9.663	3.210	6.862	112.7
5.0	8.948	0.0756	0.194	13.60	22.54	10.35	3.159	6.270	122.4
5.1	8.700	0.0785	0.188	13.97	23.17	10.47	3.153	6.194	124.2
5.2	8.468	0.0815	0.183	14.34	23.78	10.59	3.147	6.127	125.9
5.3	8.250	0.0844	0.178	14.70	24.39	10.71	3.143	6.067	127.6
5.4	8.045	0.0872	0.173	15.05	25.00	10.82	3.138	6.014	129.3
5.5	7.852	0.0900	0.169	15.41	25.60	10.93	3.135	5.966	130.9
5.6	7.669	0.0928	0.165	15.76	26.19	11.04	3.132	5.922	132.4
5.7	7.496	0.0955	0.161	16.11	26.78	11.14	3.129	5.883	134.0
5.8	7.332	0.0982	0.157	16.46	27.37	11.25	3.126	5.847	135.5
5.9	7.176	0.101	0.154	16.80	27.95	11.35	3.124	5.814	137.0
6.0	7.027	0.103	0.151	17.14	28.53	11.44	3.122	5.784	138.4
6.5	6.374	0.116	0.136	18.84	31.39	11.90	3.116	5.665	145.4
7.0	5.843	0.129	0.124	20.51	34.20	12.32	3.113	5.582	151.9
7.5	5.399	0.141	0.115	22.16	36.97	12.70	3.112	5.521	158.0
8.0	5.022	0.153	0.107	23.79	39.72	13.06	3.112	5.475	163.9
8.5	4.696	0.164	0.100	25.42	42.45	13.39	3.112	5.438	169.4
9.0	4.412	0.176	0.0935	27.03	45.16	13.70	3.112	5.409	174.8
9.5	4.162	0.187	0.0881	28.64	47.86	13.99	3.113	5.386	179.9
10.0	3.940	0.198	0.0833	30.24	50.55	14.26	3.113	5.366	184.9
11.0	3.562	0.221	0.0752	33.44	55.89	14.77	3.114	5.336	194.4
12.0	3.252	0.243	0.0686	36.62	61.22	15.24	3.115	5.313	203.5
13.0	2.993	0.265	0.0630	39.79	66.52	15.66	3.116	5.296	212.0
14.0	2.773	0.286	0.0583	42.95	71.80	16.05	3.117	5.282	220.3
15.0	2.583	0.308	0.0543	46.11	77.08	16.42	3.117	5.271	228.2
16.0	2.418	0.329	0.0508	49.26	82.35	16.76	3.117	5.262	235.8
17.0	2.273	0.351	0.0477	52.41	87.60	17.08	3.118	5.254	243.1
18.0	2.145	0.372	0.0450	55.56	92.85	17.38	3.118	5.247	250.2
19.0	2.030	0.393	0.0426	58.70	98.10	17.66	3.118	5.242	257.1
20.0	1.928	0.415	0.0404	61.84	103.3	17.93	3.118	5.237	263.9
21.0	1.835	0.436	0.0384	64.98	108.6	18.18	3.118	5.233	270.4
22.0	1.751	0.457	0.0367	68.11	113.8	18.43	3.118	5.229	276.8
23.0	1.674	0.478	0.0350	71.25	119.0	18.66	3.118	5.226	283.0
24.0	1.604	0.499	0.0336	74.38	124.3	18.88	3.118	5.224	289.1
25.0	1.539	0.520	0.0322	77.51	129.5	19.10	3.118	5.221	295.1
26.0	1.480	0.541	0.0309	80.64	134.7	19.30	3.118	5.219	300.9
28.0	1.374	0.583	0.0287	86.90	145.1	19.69	3.118	5.215	312.3
30.0	1.282	0.625	0.0268	93.15	155.6	20.05	3.118	5.212	323.2
32.0	1.202	0.667	0.0251	99.40	166.0	20.38	3.118	5.210	333.8
34.0	1.131	0.709	0.0236	105.7	176.4	20.70	3.118	5.208	344.0
36.0	1.068	0.750	0.0223	111.9	186.8	21.00	3.118	5.206	354.0
38.0	1.012	0.792	0.0211	118.1	197.2	21.28	3.117	5.205	363.7
40.0	0.9611	0.834	0.0200	124.4	207.6	21.54	3.117	5.204	373.1
45.0	0.8543	0.938	0.0178	140.0	233.6	22.16	3.117	5.201	395.6
50.0	0.7689	1.04	0.0160	155.6	259.6	22.70	3.117	5.200	416.9
55.0	0.6990	1.15	0.0146	171.2	285.6	23.20	3.117	5.198	437.2
60.0	0.6408	1.25	0.0133	186.8	311.6	23.65	3.117	5.197	456.6
65.0	0.5916	1.35	0.0123	202.4	337.6	24.07	3.117	5.197	475.2
70.0	0.5494	1.46	0.0114	218.0	363.6	24.45	3.117	5.196	493.1
75.0	0.5128	1.56	0.0107	233.6	389.6	24.81	3.117	5.196	510.3

Thermodynamic properties of helium 4—Continued

Temper- ature K	Density kg/m³	Isotherm derivative 10⁵ m³ · Pa/kg	Isochore derivative 10⁵ Pa/K	Internal energy kJ/kg	Enthalpy kJ/kg	Entropy kJ/kg · K	C _p		Velocity of sound m/s
							kJ/kg · K		
80.0	0.4807	1.67	0.0100	249.1	415.6	25.15	3.117	5.195	527.0
90.0	0.4274	1.87	0.00889	280.3	467.5	25.76	3.116	5.195	558.9
100.0	0.3847	2.08	0.00800	311.5	519.4	26.31	3.116	5.194	589.0
125.0	0.3078	2.60	0.00640	389.4	649.3	27.47	3.116	5.194	658.4
150.0	0.2565	3.12	0.00533	467.3	779.1	28.41	3.116	5.194	721.1
175.0	0.2199	3.64	0.00457	545.2	909.0	29.21	3.116	5.193	778.8
200.0	0.1925	4.16	0.00400	623.1	1039.0	29.91	3.116	5.193	832.5
225.0	0.1711	4.68	0.00356	701.0	1169.0	30.52	3.116	5.193	883.0
250.0	0.1540	5.20	0.00320	778.9	1298.0	31.07	3.116	5.193	930.7
275.0	0.1400	5.72	0.00291	856.8	1428.0	31.56	3.116	5.193	976.1
300.0	0.1283	6.24	0.00267	934.7	1558.0	32.01	3.116	5.193	1019.0
350.0	0.1100	7.27	0.00229	1091.0	1818.0	32.81	3.116	5.193	1101.0
400.0	0.09626	8.31	0.00200	1246.0	2077.0	33.51	3.116	5.193	1177.0
450.0	0.08556	9.35	0.00178	1402.0	2337.0	34.12	3.116	5.193	1248.0
500.0	0.07701	10.4	0.00160	1558.0	2597.0	34.67	3.116	5.193	1316.0
600.0	0.06418	12.5	0.00133	1869.0	3116.0	35.61	3.116	5.193	1441.0
700.0	0.05501	14.5	0.00114	2181.0	3635.0	36.41	3.116	5.193	1557.0
800.0	0.04814	16.6	0.00100	2493.0	4155.0	37.11	3.116	5.193	1664.0
900.0	0.04279	18.7	0.000889	2804.0	4674.0	37.72	3.116	5.193	1765.0
1000.0	0.03851	20.8	0.000800	3116.0	5193.0	38.26	3.116	5.193	1861.0
1100.0	0.03501	22.9	0.000727	3427.0	5713.0	38.76	3.116	5.193	1951.0
1200.0	0.03209	24.9	0.000667	3739.0	6232.0	39.21	3.116	5.193	2038.0
1300.0	0.02962	27.0	0.000615	4051.0	6751.0	39.63	3.116	5.193	2121.0
1400.0	0.02751	29.1	0.000571	4362.0	7270.0	40.01	3.116	5.193	2202.0
1500.0	0.02567	31.2	0.000533	4674.0	7790.0	40.37	3.116	5.193	2279.0

0.9 × 10⁺⁵ pascal isobar

* 2.170	148.0								
2.5	146.6	0.476	2.67	-10.83	-10.22	2.063	1.880	2.054	228.1
3.0	143.0	0.394	3.49	-9.786	-9.156	2.454	1.911	2.364	220.7
3.5	137.6	0.294	3.81	-8.477	-7.823	2.865	2.102	3.017	205.3
4.0	129.5	0.185	3.79	-6.758	-6.063	3.334	2.279	4.140	183.1
* 4.101	127.3	0.161	3.74	-6.334	-5.627	3.441	2.319	4.512	177.2
* 4.101	14.97	0.0367	0.340	9.399	15.41	8.573	3.339	9.102	100.0
4.5	12.28	0.0542	0.272	11.29	18.62	9.322	3.232	7.315	110.7
5.0	10.31	0.0716	0.225	13.31	22.05	10.04	3.170	6.497	121.1
5.1	10.00	0.0747	0.218	13.70	22.69	10.17	3.162	6.398	123.0
5.2	9.723	0.0778	0.211	14.07	23.33	10.29	3.155	6.312	124.8
5.3	9.461	0.0808	0.205	14.44	23.95	10.41	3.149	6.236	126.5
5.4	9.215	0.0838	0.200	14.81	24.57	10.53	3.144	6.168	128.2
5.5	8.984	0.0867	0.194	15.17	25.19	10.64	3.140	6.107	129.9
5.6	8.766	0.0896	0.189	15.53	25.80	10.75	3.136	6.053	131.5
5.7	8.561	0.0924	0.185	15.89	26.40	10.86	3.133	6.004	133.1
5.8	8.366	0.0952	0.180	16.24	27.00	10.96	3.130	5.960	134.6
5.9	8.182	0.0980	0.176	16.59	27.59	11.06	3.127	5.920	136.2
6.0	8.006	0.101	0.172	16.94	28.18	11.16	3.125	5.883	137.7
6.5	7.243	0.114	0.155	18.66	31.08	11.63	3.117	5.739	144.8
7.0	6.626	0.127	0.142	20.34	33.93	12.05	3.113	5.640	151.4
7.5	6.114	0.139	0.130	22.01	36.73	12.44	3.112	5.568	157.6
8.0	5.680	0.151	0.121	23.65	39.50	12.79	3.111	5.514	163.5
8.5	5.308	0.163	0.113	25.29	42.24	13.13	3.111	5.472	169.2
9.0	4.983	0.174	0.106	26.91	44.97	13.44	3.112	5.438	174.6
9.5	4.698	0.186	0.100	28.53	47.68	13.73	3.112	5.411	179.8
10.0	4.445	0.197	0.0942	30.14	50.38	14.01	3.113	5.388	184.8
11.0	4.016	0.220	0.0850	33.34	55.75	14.52	3.114	5.354	194.4
12.0	3.665	0.242	0.0774	36.53	61.09	14.99	3.115	5.329	203.4
13.0	3.371	0.264	0.0711	39.70	66.40	15.41	3.116	5.309	212.0
14.0	3.122	0.286	0.0658	42.87	71.70	15.80	3.117	5.294	220.3

Thermodynamic properties of helium 4—Continued

Temperature K	Density kg/m³	Isotherm derivative 10 ⁵ m³ · Pa/kg	Isochore derivative 10 ⁵ Pa/K	Internal energy kJ/kg	Enthalpy kJ/kg	Entropy kJ/kg · K	C _v C _p		Velocity of sound m/s
							kJ/kg · K		
15.0	2.908	0.307	0.0612	46.04	76.98	16.17	3.117	5.281	228.2
16.0	2.722	0.329	0.0573	49.19	82.26	16.51	3.117	5.270	235.8
17.0	2.558	0.350	0.0538	52.35	87.53	16.83	3.118	5.262	243.2
18.0	2.414	0.372	0.0507	55.50	92.78	17.13	3.118	5.254	250.3
19.0	2.285	0.393	0.0480	58.64	98.03	17.41	3.118	5.248	257.2
20.0	2.169	0.414	0.0455	61.79	103.3	17.68	3.118	5.243	263.9
21.0	2.065	0.436	0.0433	64.93	108.5	17.94	3.118	5.238	270.5
22.0	1.970	0.457	0.0413	68.07	113.8	18.18	3.118	5.234	276.9
23.0	1.883	0.478	0.0395	71.20	119.0	18.41	3.118	5.230	283.1
24.0	1.804	0.499	0.0378	74.34	124.2	18.64	3.118	5.227	289.2
25.0	1.732	0.520	0.0363	77.47	129.4	18.85	3.118	5.225	295.2
26.0	1.665	0.541	0.0348	80.60	134.7	19.05	3.118	5.222	301.0
28.0	1.545	0.583	0.0323	86.86	145.1	19.44	3.118	5.218	312.4
30.0	1.442	0.625	0.0301	93.12	155.5	19.80	3.118	5.215	323.3
32.0	1.352	0.667	0.0282	99.37	166.0	20.14	3.118	5.212	333.9
34.0	1.272	0.709	0.0266	105.6	176.4	20.45	3.118	5.210	344.2
36.0	1.201	0.751	0.0251	111.9	186.8	20.75	3.118	5.208	354.1
38.0	1.138	0.793	0.0237	118.1	197.2	21.03	3.118	5.206	363.8
40.0	1.081	0.834	0.0226	124.4	207.6	21.30	3.118	5.205	373.2
45.0	0.9608	0.939	0.0200	140.0	233.6	21.91	3.117	5.202	395.7
50.0	0.8648	1.04	0.0180	155.6	259.7	22.46	3.117	5.200	417.1
55.0	0.7862	1.15	0.0164	171.2	285.7	22.96	3.117	5.199	437.3
60.0	0.7208	1.25	0.0150	186.8	311.6	23.41	3.117	5.198	456.7
65.0	0.6654	1.36	0.0139	202.4	337.6	23.82	3.117	5.197	475.3
70.0	0.6179	1.46	0.0129	218.0	363.6	24.21	3.117	5.197	493.2
75.0	0.5768	1.56	0.0120	233.5	389.6	24.57	3.117	5.196	510.4
80.0	0.5407	1.67	0.0113	249.1	415.6	24.90	3.117	5.196	527.1
90.0	0.4807	1.87	0.0100	280.3	467.5	25.51	3.117	5.195	559.0
100.0	0.4327	2.08	0.00900	311.5	519.5	26.06	3.116	5.195	589.1
125.0	0.3462	2.60	0.00720	389.4	649.3	27.22	3.116	5.194	658.5
150.0	0.2886	3.12	0.00600	467.3	779.2	28.17	3.116	5.194	721.2
175.0	0.2474	3.64	0.00514	545.2	909.0	28.97	3.116	5.193	778.9
200.0	0.2165	4.16	0.00450	623.1	1039.0	29.66	3.116	5.193	832.6
225.0	0.1925	4.68	0.00400	701.0	1169.0	30.27	3.116	5.193	883.0
250.0	0.1732	5.20	0.00360	778.9	1298.0	30.82	3.116	5.193	930.7
275.0	0.1575	5.72	0.00327	856.8	1428.0	31.32	3.116	5.193	976.1
300.0	0.1444	6.24	0.00300	934.7	1558.0	31.77	3.116	5.193	1019.0
350.0	0.1237	7.28	0.00257	1091.0	1818.0	32.57	3.116	5.193	1101.0
400.0	0.1083	8.31	0.00225	1246.0	2077.0	33.26	3.116	5.193	1177.0
450.0	0.09626	9.35	0.00200	1402.0	2337.0	33.87	3.116	5.193	1248.0
500.0	0.08663	10.4	0.00180	1558.0	2597.0	34.42	3.116	5.193	1316.0
600.0	0.07220	12.5	0.00150	1869.0	3116.0	35.37	3.116	5.193	1441.0
700.0	0.06189	14.5	0.00129	2181.0	3635.0	36.17	3.116	5.193	1557.0
800.0	0.05415	16.6	0.00112	2493.0	4155.0	36.86	3.116	5.193	1664.0
900.0	0.04814	18.7	0.00100	2804.0	4674.0	37.47	3.116	5.193	1765.0
1000.0	0.04332	20.8	0.000900	3116.0	5193.0	38.02	3.116	5.193	1861.0
1100.0	0.03938	22.9	0.000818	3427.0	5713.0	38.51	3.116	5.193	1951.0
1200.0	0.03610	24.9	0.000750	3739.0	6232.0	38.97	3.116	5.193	2038.0
1300.0	0.03333	27.0	0.000692	4051.0	6751.0	39.38	3.116	5.193	2121.0
1400.0	0.03095	29.1	0.000643	4362.0	7270.0	39.77	3.116	5.193	2202.0
1500.0	0.02888	31.2	0.000600	4674.0	7790.0	40.13	3.116	5.193	2279.0

1.0 × 10⁵ pascal Isobar

* 2.169	148.2								
2.5	146.8	0.482	2.67	-10.84	-10.16	2.059	1.874	2.046	229.3
3.0	143.3	0.400	3.49	-9.801	-9.103	2.448	1.910	2.356	222.0
3.5	138.0	0.300	3.83	-8.502	-7.777	2.857	2.100	2.998	206.9
4.0	130.0	0.191	3.82	-6.805	-6.036	3.321	2.275	4.082	185.3

Thermodynamic properties of helium 4—Continued

	Temperature K	Density kg/m ³	Isotherm derivative 10 ⁵ m ³ ·Pa/kg	Isochore derivative 10 ⁵ Pa/K	Internal energy kJ/kg	Enthalpy kJ/kg	Entropy kJ/kg·K	C _p		Velocity of sound m/s
								C _v	C _p	
*	4.210	125.2	0.143	3.69	-5.892	-5.094	3.550	2.362	4.923	172.6
*	4.210	16.66	0.0346	0.381	9.396	15.40	8.417	3.347	9.693	100.2
	4.5	14.23	0.0485	0.319	10.88	17.90	8.994	3.259	7.909	108.5
	5.0	11.75	0.0674	0.258	13.01	21.52	9.758	3.182	6.763	119.7
	5.1	11.38	0.0708	0.249	13.41	22.19	9.890	3.172	6.684	121.6
	5.2	11.04	0.0740	0.241	13.79	22.85	10.02	3.164	6.522	123.5
	5.3	10.73	0.0772	0.234	14.18	23.50	10.14	3.157	6.425	125.4
	5.4	10.43	0.0803	0.227	14.55	24.14	10.26	3.151	6.340	127.1
	5.5	10.16	0.0834	0.221	14.92	24.77	10.38	3.146	6.264	128.9
	5.6	9.903	0.0864	0.215	15.29	25.39	10.49	3.141	6.197	130.5
	5.7	9.661	0.0893	0.209	15.66	26.01	10.60	3.137	6.137	132.2
	5.8	9.433	0.0922	0.204	16.02	26.62	10.70	3.133	6.083	133.8
	5.9	9.218	0.0951	0.199	16.37	27.22	10.81	3.130	6.034	135.4
	6.0	9.014	0.0979	0.195	16.73	27.82	10.91	3.128	5.989	136.9
	6.5	8.131	0.111	0.175	18.47	30.77	11.38	3.118	5.817	144.2
	7.0	7.423	0.124	0.159	20.18	33.65	11.81	3.114	5.700	150.9
	7.5	6.839	0.137	0.146	21.86	36.48	12.20	3.112	5.617	157.2
	8.0	6.347	0.149	0.135	23.51	39.27	12.56	3.111	5.554	163.2
	8.5	5.925	0.161	0.126	25.16	42.04	12.89	3.111	5.506	168.9
	9.0	5.559	0.173	0.118	26.79	44.78	13.21	3.111	5.468	174.4
	9.5	5.238	0.185	0.111	28.41	47.50	13.50	3.112	5.437	179.6
	10.0	4.954	0.196	0.105	30.03	50.22	13.78	3.113	5.411	184.6
	11.0	4.472	0.219	0.0948	33.24	55.60	14.29	3.114	5.373	194.3
	12.0	4.079	0.241	0.0863	36.44	60.95	14.76	3.115	5.344	203.4
	13.0	3.751	0.263	0.0793	39.62	66.28	15.19	3.116	5.322	212.0
	14.0	3.473	0.285	0.0733	42.80	71.59	15.58	3.117	5.305	220.3
	15.0	3.234	0.307	0.0682	45.96	76.89	15.94	3.117	5.291	228.2
	16.0	3.026	0.329	0.0638	49.13	82.17	16.29	3.118	5.279	235.9
	17.0	2.844	0.350	0.0599	52.29	87.45	16.61	3.118	5.269	243.2
	18.0	2.683	0.372	0.0564	55.44	92.71	16.91	3.118	5.261	250.4
	19.0	2.539	0.393	0.0534	58.59	97.97	17.19	3.118	5.254	257.3
	20.0	2.410	0.414	0.0506	61.73	103.2	17.46	3.118	5.248	264.0
	21.0	2.294	0.436	0.0482	64.88	108.5	17.72	3.118	5.243	270.6
	22.0	2.189	0.457	0.0459	68.02	113.7	17.96	3.118	5.238	277.0
	23.0	2.093	0.478	0.0439	71.16	118.9	18.19	3.119	5.235	283.2
	24.0	2.005	0.499	0.0420	74.29	124.2	18.41	3.118	5.231	289.3
	25.0	1.924	0.520	0.0403	77.43	129.4	18.63	3.118	5.228	295.3
	26.0	1.849	0.541	0.0387	80.56	134.6	18.83	3.118	5.225	301.2
	28.0	1.717	0.583	0.0359	86.83	145.1	19.22	3.118	5.221	312.5
	30.0	1.602	0.625	0.0335	93.09	155.5	19.58	3.118	5.217	323.5
	32.0	1.501	0.667	0.0314	99.34	165.9	19.92	3.118	5.214	334.0
	34.0	1.413	0.709	0.0295	105.6	176.4	20.23	3.118	5.212	344.3
	36.0	1.334	0.751	0.0279	111.8	186.8	20.53	3.118	5.210	354.2
	38.0	1.264	0.793	0.0264	118.1	197.2	20.81	3.118	5.208	363.9
	40.0	1.201	0.835	0.0251	124.3	207.6	21.08	3.118	5.206	373.3
	45.0	1.067	0.939	0.0223	140.0	233.6	21.69	3.118	5.203	395.9
	50.0	0.9607	1.04	0.0200	155.6	259.7	22.24	3.117	5.201	417.2
	55.0	0.8734	1.15	0.0182	171.2	285.7	22.74	3.117	5.200	437.5
	60.0	0.8007	1.25	0.0167	186.8	311.7	23.19	3.117	5.198	456.8
	65.0	0.7392	1.36	0.0154	202.4	337.6	23.60	3.117	5.198	475.4
	70.0	0.6864	1.46	0.0143	218.0	363.6	23.99	3.117	5.197	493.3
	75.0	0.6407	1.56	0.0133	233.5	389.6	24.35	3.117	5.196	510.5
	80.0	0.6007	1.67	0.0125	249.1	415.6	24.68	3.117	5.196	527.2
	90.0	0.5341	1.88	0.0111	280.3	467.5	25.30	3.117	5.195	559.1
	100.0	0.4807	2.08	0.0100	311.5	519.5	25.84	3.117	5.195	589.2
	125.0	0.3847	2.60	0.00800	389.4	649.4	27.00	3.116	5.194	658.6
	150.0	0.3206	3.12	0.00667	467.3	779.2	27.95	3.116	5.194	721.3
	175.0	0.2749	3.64	0.00571	545.2	909.0	28.75	3.116	5.193	779.0
	200.0	0.2405	4.16	0.00500	623.1	1039.0	29.44	3.116	5.193	832.6
	225.0	0.2138	4.68	0.00444	701.0	1169.0	30.05	3.116	5.193	883.1

Thermodynamic properties of helium 4—Continued

Temper- ature K	Density kg/m³	Isotherm derivative 10 ⁵ m³ · Pa/kg	Isochore derivative 10 ⁵ Pa/K	Internal energy kJ/kg	Enthalpy kJ/kg	Entropy kJ/kg · K	C _v	C _p	Velocity of sound m/s
							kJ/kg · K		
250.0	0.1925	5.20	0.00400	778.9	1299.0	30.60	3.116	5.193	930.8
275.0	0.1750	5.72	0.00364	856.8	1428.0	31.10	3.116	5.193	976.1
300.0	0.1604	6.24	0.00333	934.7	1558.0	31.55	3.116	5.193	1020.0
350.0	0.1375	7.28	0.00286	1091.0	1818.0	32.35	3.116	5.193	1101.0
400.0	0.1203	8.31	0.00250	1246.0	2077.0	33.04	3.116	5.193	1177.0
450.0	0.1069	9.35	0.00222	1402.0	2337.0	33.65	3.116	5.193	1248.0
500.0	0.09626	10.4	0.00200	1558.0	2597.0	34.20	3.116	5.193	1316.0
600.0	0.08022	12.5	0.00167	1869.0	3116.0	35.15	3.116	5.193	1441.0
700.0	0.06876	14.5	0.00143	2181.0	3635.0	35.95	3.116	5.193	1557.0
800.0	0.06017	16.6	0.00125	2493.0	4155.0	36.64	3.116	5.193	1664.0
900.0	0.05348	18.7	0.00111	2804.0	4674.0	37.25	3.116	5.193	1765.0
1000.0	0.04814	20.8	0.00100	3116.0	5193.0	37.80	3.116	5.193	1861.0
1100.0	0.04376	22.9	0.000909	3427.0	5713.0	38.30	3.116	5.193	1951.0
1200.0	0.04011	24.9	0.000833	3739.0	6232.0	38.75	3.116	5.193	2038.0
1300.0	0.03703	27.0	0.000769	4051.0	6751.0	39.16	3.116	5.193	2121.0
1400.0	0.03438	29.1	0.000714	4362.0	7270.0	39.55	3.116	5.193	2202.0
1500.0	0.03209	31.2	0.000667	4674.0	7790.0	39.91	3.116	5.193	2279.0

 1.2×10^5 pascal isobar

2.167	148.6								
2.5	147.3	0.493	2.67	-10.86	-10.04	2.052	1.863	2.030	231.7
3.0	143.8	0.411	3.50	-9.831	-8.996	2.438	1.907	2.340	224.6
3.5	138.6	0.312	3.86	-8.551	-7.685	2.842	2.096	2.964	210.1
4.0	131.0	0.205	3.88	-6.893	-5.977	3.297	2.268	3.977	189.5
4.410	121.1	0.110	3.57	-5.014	-4.023	3.761	2.447	5.922	163.3
4.410	20.24	0.0302	0.468	9.299	15.23	8.126	3.361	11.17	100.1
4.5	18.99	0.0356	0.436	9.863	16.18	8.339	3.325	9.97	103.3
5.0	14.92	0.0586	0.333	12.35	20.39	9.228	3.210	7.454	116.6
5.1	14.38	0.0624	0.320	12.78	21.12	9.373	3.196	7.231	118.8
5.2	13.90	0.0661	0.308	13.20	21.83	9.512	3.185	7.045	120.9
5.3	13.45	0.0697	0.297	13.61	22.53	9.644	3.175	6.887	122.9
5.4	13.04	0.0731	0.287	14.01	23.21	9.772	3.166	6.752	124.9
5.5	12.66	0.0765	0.278	14.41	23.88	9.895	3.159	6.636	126.7
5.6	12.31	0.0797	0.270	14.79	24.54	10.01	3.153	6.533	128.5
5.7	11.98	0.0829	0.262	15.18	25.19	10.13	3.147	6.443	130.3
5.8	11.68	0.0860	0.255	15.55	25.83	10.24	3.142	6.364	132.0
5.9	11.39	0.0891	0.249	15.93	26.46	10.35	3.138	6.292	133.7
6.0	11.12	0.0921	0.242	16.30	27.09	10.45	3.134	6.228	135.3
6.5	9.97	0.107	0.216	18.10	30.14	10.94	3.121	5.987	142.9
7.0	9.058	0.120	0.196	19.84	33.09	11.38	3.115	5.830	149.9
7.5	8.319	0.133	0.179	21.55	35.97	11.78	3.112	5.719	156.4
8.0	7.702	0.146	0.165	23.23	38.81	12.14	3.111	5.639	162.6
8.5	7.177	0.158	0.154	24.90	41.62	12.48	3.110	5.577	168.4
9.0	6.724	0.170	0.144	26.55	44.39	12.80	3.111	5.529	173.9
9.5	6.329	0.182	0.135	28.18	47.15	13.10	3.111	5.490	179.2
10.0	5.979	0.194	0.128	29.81	49.88	13.38	3.112	5.458	184.4
11.0	5.391	0.217	0.115	33.05	55.31	13.90	3.113	5.411	194.1
12.0	4.911	0.239	0.104	36.26	60.69	14.37	3.115	5.376	203.3
13.0	4.512	0.262	0.0957	39.46	66.05	14.79	3.116	5.349	212.0
14.0	4.175	0.284	0.0884	42.64	71.38	15.19	3.117	5.328	220.3
15.0	3.886	0.306	0.0822	45.82	76.70	15.56	3.118	5.311	228.3
16.0	3.635	0.328	0.0768	48.99	82.00	15.90	3.118	5.297	236.0
17.0	3.416	0.350	0.0721	52.16	87.29	16.22	3.118	5.285	243.4
18.0	3.221	0.371	0.0679	55.32	92.57	16.52	3.119	5.275	250.5
19.0	3.048	0.393	0.0642	58.48	97.84	16.81	3.119	5.266	257.5
20.0	2.893	0.414	0.0609	61.63	103.1	17.08	3.119	5.259	264.2
21.0	2.753	0.435	0.0579	64.78	108.4	17.33	3.119	5.253	270.8
22.0	2.627	0.457	0.0552	67.92	113.6	17.58	3.119	5.248	277.2