

# Appendix A

## Tables with Physical Properties

### Appendix A.1

#### Physical Properties of Gases at Atmospheric Pressure

$T$ (K)	$\rho$ (kg/m <sup>3</sup> )	$c_p$ [kJ/(kg °C)]	$\mu \times 10^6$ [kg/(m s)]	$\nu \times 10^6$ (m <sup>2</sup> /s)	$\lambda$ [W/(m °C)]	$a \times 10^6$ (m <sup>2</sup> /s)	$Pr$
Air [1]							
100	3.5562	1.032	7.11	1.999	0.00934	2.54	0.786
150	2.3364	1.012	10.34	4.426	0.0138	5.84	0.758
200	1.7458	1.007	13.25	7.59	0.0181	10.3	0.737
250	1.3947	1.006	15.96	11.443	0.0223	15.9	0.720
300	1.1614	1.007	18.46	15.895	0.0263	22.5	0.707
350	0.9950	1.009	20.82	20.925	0.0300	29.9	0.7
400	0.8711	1.014	23.01	26.415	0.0338	38.3	0.69
450	0.7740	1.021	25.07	32.39	0.0373	47.2	0.686
500	0.6964	1.030	27.01	38.785	0.0407	56.7	0.684
550	0.6329	1.040	28.84	45.568	0.0439	66.7	0.683
600	0.5804	1.051	30.58	52.688	0.0469	76.9	0.685
650	0.5356	1.063	32.25	60.213	0.0497	87.3	0.69
700	0.4975	1.075	33.88	68.101	0.05240	98	0.695
750	0.4643	1.087	35.46	76.373	0.0549	109	0.702
800	0.4354	1.099	36.98	84.933	0.0573	120	0.709
850	0.4097	1.11	38.43	93.8	0.0596	131	0.716
900	0.3868	1.121	39.81	102.921	0.0620	143	0.720
950	0.3666	1.131	41.13	112.193	0.0643	155	0.723
1000	0.3482	1.141	42.44	121.884	0.0667	168	0.726
1100	0.3166	1.159	44.9	141.819	0.0715	195	0.728
1200	0.2920	1.175	47.3	161.986	0.0763	224	0.728

(continued)

$T$ (K)	$\rho$ (kg/m <sup>3</sup> )	$c_p$ [kJ/(kg °C)]	$\mu \times 10^6$ [kg/(m s)]	$\nu \times 10^6$ (m <sup>2</sup> /s)	$\lambda$ [W/(m °C)]	$a \times 10^6$ (m <sup>2</sup> /s)	$Pr$
Monoxide, CO [1]							
200	1.6888	1.045	12.7	7.5201	0.017	9.63	0.781
220	1.5341	1.044	13.7	8.9303	0.0190	11.9	0.753
240	1.4055	1.043	14.7	10.4589	0.0206	14.1	0.744
260	1.2967	1.043	15.7	12.1077	0.0221	16.3	0.741
280	1.2038	1.042	16.6	13.7897	0.0236	18.8	0.733
300	1.1233	1.043	17.5	15.5791	0.025	21.3	0.730
320	1.0529	1.043	18.4	17.4755	0.0263	23.9	0.730
340	0.9909	1.044	19.3	19.4772	0.0278	26.9	0.725
360	0.9357	1.045	20.2	21.5881	0.0291	29.8	0.729
380	0.8864	1.047	21	23.6913	0.0305	32.9	0.719
400	0.8421	1.049	21.8	25.8877	0.0318	36.0	0.719
450	0.7483	1.055	23.7	31.6718	0.0350	44.3	0.714
500	0.67352	1.065	25.4	37.7123	0.0381	53.1	0.710
550	0.61226	1.076	27.1	44.2622	0.0411	62.4	0.710
600	0.56126	1.088	28.6	50.9568	0.0440	72.1	0.707
650	0.51806	1.101	30.1	58.1014	0.0470	82.4	0.705
700	0.48102	1.114	31.5	65.4858	0.0500	93.3	0.702
750	0.44899	1.127	32.9	73.2756	0.0528	104	0.702
800	0.42095	1.140	34.3	81.4824	0.0555	116	0.705
Helium, He [1]							
100	0.4871	5.193	9.63	19.77	0.073	28.9	0.686
120	0.406	5.193	10.7	26.36	0.0819	38.8	0.679
140	0.3481	5.193	11.8	33.90	0.0907	50.2	0.676
160	0.30945	5.193	12.9	41.69	0.0992	63.2	0.6745
180	0.2708	5.193	13.9	51.33	0.1072	76.2	0.673
200	0.2462	5.193	15	60.93	0.1151	91.6	0.674
220	0.2216	5.193	16	72.20	0.1231	107	0.675
240	0.20455	5.193	17	83.11	0.13	124	0.6785
260	0.1875	5.193	18	96	0.137	141	0.682
280	0.175	5.193	19	108.57	0.145	160.5	0.681
300	0.1625	5.193	19.9	122.46	0.152	180	0.68
350	0.1422	5.193	22.1	155.42	0.17	237.5	0.6775
400	0.1219	5.193	24.3	199.34	0.187	295	0.675
450	0.10972	5.193	26.3	239.70	0.204	364.5	0.6715
500	0.09754	5.193	28.3	290.14	0.22	434	0.668
600	0.083615	5.193	32	382.71	0.252	601	0.661
700	0.06969	5.193	35	502.22	0.278	768	0.654
800		5.193	38.2		0.304		
900		5.193	41.4		0.33		
1000	0.04879	5.193	44.6	914.12	0.354	1400	0.654

(continued)

$T$ (K)	$\rho$ (kg/m <sup>3</sup> )	$c_p$ [kJ/(kg °C)]	$\mu \times 10^6$ [kg/(m s)]	$\nu \times 10^6$ (m <sup>2</sup> /s)	$\lambda$ [W/(m °C)]	$a \times 10^6$ (m <sup>2</sup> /s)	$Pr$
<b>Hydrogen, H<sub>2</sub> [1]</b>							
100	0.24255	11.23	4.21	19.77	0.067	24.6	0.707
200	0.12115	13.54	6.81	26.35	0.131	79.9	0.704
300	0.08078	14.31	8.96	33.90	0.183	158	0.701
400	0.06059	14.48	10.82	41.69	0.226	258	0.695
500	0.04848	14.52	12.64	51.33	0.266	378	0.691
600	0.0404	14.55	14.24	60.93	0.305	519	0.678
700	0.03463	14.61	15.78	72.20	0.342	676	0.675
800	0.0303	14.7	17.24	83.11	0.378	849	0.67
900	0.02694	14.83	18.65	96	0.412	1030	0.671
1000	0.02424	14.99	20.13	108.57	0.448	1230	0.673
1100	0.02204	15.17	21.3	122.46	0.488	1460	0.662
200	0.0202	15.37	22.62	155.41	0.528	1700	0.659
1300	0.01865	15.59	23.85	199.34	0.569	1955	0.655
1400	0.01732	15.81	25.07	239.70	0.61	2230	0.65
1500	0.01616	16.02	26.27	290.14	0.655	2530	0.643
1600	0.0152	16.28	27.37	382.70	0.697	2815	0.639
<b>Nitrogen, N<sub>2</sub> [1]</b>							
100	3.4388	1.07	6.88	2.000	0.0958	2.6	0.768
150	2.2594	1.05	10.06	4.45	0.0139	5.86	0.759
200	1.6883	1.043	12.02	7.126	0.0183	10.4	0.736
250	1.3488	1.042	15.49	11.48	0.0222	15.8	0.727
300	1.1233	1.041	17.82	15.86	0.0259	22.1	0.716
350	0.9625	1.042	20	20.78	0.0293	29.2	0.711
400	0.8425	1.045	22.04	26.16	0.0327	37.1	0.704
450	0.7485	1.05	23.96	32.01	0.0358	45.6	0.703
500	0.6739	1.056	25.77	38.24	0.0389	54.7	0.7
550	0.6124	1.065	27.47	44.86	0.0417	63.9	0.702
600	0.5615	1.075	29.08	51.79	0.0416	73.9	0.701
700	0.4812	1.098	32.1	66.71	0.0499	94.4	0.706
800	0.4211	1.122	34.91	82.91	0.0548	116	0.715
900	0.3743	1.146	37.53	100.27	0.0597	139	0.721
1000	0.3368	1.167	39.99	118.74	0.0647	165	0.721
1100	0.3062	1.187	42.32	138.21	0.07	193	0.718
1200	0.2807	1.204	44.53	158.64	0.0758	224	0.707
1300	0.2591	1.219	46.62	179.93	0.081	256	0.701
<b>Oxygen, O<sub>2</sub> [1]</b>							
100	3.945	0.962	7.64	1.936629	0.00925	2.44	0.796
150	2.585	0.921	11.48	4.441006	0.0138	5.8	0.766
200	1.93	0.915	14.75	7.642487	0.0183	10.4	0.737

(continued)

$T$ (K)	$\rho$ (kg/m <sup>3</sup> )	$c_p$ [kJ/(kg °C)]	$\mu \times 10^6$ [kg/(m s)]	$\nu \times 10^6$ (m <sup>2</sup> /s)	$\lambda$ [W/(m °C)]	$a \times 10^6$ (m <sup>2</sup> /s)	$Pr$
250	1.542	0.915	17.86	11.58236	0.0226	16	0.723
300	1.284	0.92	20.72	16.13707	0.0268	22.7	0.711
350	1.1	0.929	23.35	21.22727	0.0296	29	0.733
400	0.962	0.942	25.82	26.83992	0.033	36.4	0.737
450	0.8554	0.956	28.14	32.89689	0.0363	44.4	0.741
500	0.7698	0.972	30.33	39.39984	0.0412	55.1	0.716
550	0.6998	0.988	32.4	46.29894	0.0441	63.8	0.726
600	0.6414	1.003	34.37	53.58591	0.0473	73.5	0.729
700	0.5498	1.031	38.08	69.26155	0.0523	93.1	0.744
800	0.481	1.054	41.52	86.32017	0.0589	116	0.743
900	0.4275	1.074	44.72	104.6082	0.0649	141	0.74
1000	0.3848	1.09	47.7	123.9605	0.071	169	0.733
1100	0.3498	1.103	50.55	144.5111	0.0758	196	0.736
1200	0.3206	1.115	53.25	166.0948	0.0819	229	0.725
1300	0.206	1.125	58.84	285.6311	0.0871	262	0.721
Carbon dioxide, CO <sub>2</sub> [1]							
220	2.4733	0.783	11.105	4.490	0.010805	5.92	0.818
250	2.1675	0.804	12.59	5.809	0.012884	7.401	0.793
300	1.7973	0.871	14.958	8.322	0.016572	10.588	0.77
350	1.5362	0.9	17.205	11.200	0.02047	14.808	0.755
400	1.3424	0.942	19.32	14.392	0.02461	19.463	0.738
450	1.1918	0.98	21.34	17.906	0.02897	24.813	0.721
500	1.0732	1.013	23.26	21.67	0.03352	30.84	0.702
550	0.9739	1.047	25.08	25.752	0.03821	37.5	0.695
600	0.8938	1.076	26.83	30.018	0.04311	44.83	0.668
Ammonia, NH <sub>3</sub> [2]							
220	0.3828	2.198	7.255	18.952	0.0171	20.54	0.93
273	0.7929	2.177	9.353	11.796	0.022	13.08	0.9
323	0.6487	2.177	11.035	17.011	0.027	19.2	0.88
373	0.559	2.236	12.886	23.052	0.0327	26.19	0.87
423	0.4934	2.315	14.672	29.736	0.0391	34.32	0.87
473	0.4405	2.395	16.49	37.435	0.0476	44.21	0.84
Water vapor [2]							
380	0.5863	2.06	1.271	2.168	0.0246	20.36	1.06
400	0.5542	2.014	1.344	2.425	0.0261	23.38	1.04
450	0.4902	1.98	1.525	3.111	0.0299	30.7	1.01
500	0.4405	1.985	1.704	3.868	0.0339	38.7	0.996
550	0.4005	1.997	1.884	4.704	0.0379	47.5	0.991
600	0.3652	2.026	2.067	5.660	0.0422	57.3	0.986
650	0.338	2.056	2.247	6.648	0.0464	66.6	0.995
700	0.314	2.085	2.426	7.726	0.0505	77.2	1

(continued)

$T$ (K)	$\rho$ (kg/m <sup>3</sup> )	$c_p$ [kJ/(kg °C)]	$\mu \times 10^6$ [kg/(m s)]	$\nu \times 10^6$ (m <sup>2</sup> /s)	$\lambda$ [W/(m °C)]	$a \times 10^6$ (m <sup>2</sup> /s)	$Pr$
750	0.2931	2.119	2.604	8.884	0.0549	88.3	1.05
800	0.2739	2.152	2.786	10.172	0.0592	100.1	1.01
850	0.2579	2.186	2.969	11.51221	0.0637	113	1.019
Gas mixture [3]							
0	1.295	1.042	15.8	12.2	0.0228	12.2	0.72
100	0.95	1.068	20.4	21.47	0.0313	21.54	0.69
200	0.748	1.097	24.5	32.75	0.0401	32.8	0.67
300	0.617	1.122	28.2	45.71	0.0484	45.81	0.65
400	0.525	1.151	31.7	60.38	0.057	60.38	0.64
500	0.457	1.185	34.8	76.15	0.0656	76.3	0.63
600	0.405	1.214	37.9	93.58	0.0742	93.61	0.62
700	0.363	1.239	40.7	112.12	0.0827	112.1	0.61
800	0.33	1.264	43.4	131.52	0.0915	131.8	0.6
900	0.301	1.29	45.9	152.49	0.1	152.5	0.59
1000	0.275	1.306	48.4	176	0.109	174.3	0.58
1100	0.257	1.323	50.7	197.28	0.1175	197.1	0.57
1200	0.24	1.34	53	220.83	0.1262	221	0.56
Water vapor [2]							
380	0.5863	2.06	12.71	21.68	0.0246	20.36	1.06
400	0.5542	2.014	13.44	24.25	0.0261	23.38	1.04
450	0.4902	1.98	15.25	31.11	0.0299	30.7	1.01
500	0.4405	1.985	17.04	38.68	0.0339	38.7	0.996
550	0.4005	1.997	18.84	47.04	0.0379	47.5	0.991
600	0.3652	2.026	20.67	56.6	0.0422	57.3	0.986
650	0.338	2.056	22.47	66.48	0.0464	66.6	0.995
700	0.314	2.085	24.26	77.26	0.0505	77.2	1
750	0.2931	2.119	26.04	88.84	0.0549	88.3	1.05
800	0.2739	2.152	27.86	101.72	0.0592	100.1	1.01
850	0.2579	2.186	29.69	115.12	0.0637	113	1.019
380	0.5863	2.06	12.71	21.68	0.0246	20.36	1.06
400	0.5542	2.014	13.44	24.25	0.0261	23.38	1.04
450	0.4902	1.98	15.25	31.11	0.0299	30.7	1.01
500	0.4405	1.985	17.04	38.68	0.0339	38.7	0.996
550	0.4005	1.997	18.84	47.04	0.0379	47.5	0.991
600	0.3652	2.026	20.67	56.6	0.0422	57.3	0.986
650	0.338	2.056	22.47	66.48	0.0464	66.6	0.995
700	0.314	2.085	24.26	77.26	0.0505	77.2	1
750	0.2931	2.119	26.04	88.84	0.0549	88.3	1.05
800	0.2739	2.152	27.86	101.72	0.0592	100.1	1.01
850	0.2579	2.186	29.69	115.12	0.0637	113	1.019

## Appendix A.2

### Physical Properties of Some Saturated Liquid

$t$ (°C)	$\rho$ (kg/m <sup>3</sup> )	$c_p$ [kJ/(kg °C)]	$\mu \times 10^6$ [kg/(m s)]	$\nu \times 10^6$ (m <sup>2</sup> /s)	$\lambda$ [W/(m °C)]	$a \times 10^7$ (m <sup>2</sup> /s)	$Pr$
Ammonia, NH <sub>3</sub> [4]							
-50	703.69	4.463	306.11	0.435	0.547	1.742	2.6
-40	691.68	4.467	280.82	0.406	0.547	1.775	2.28
-30	679.34	4.467	262.9	0.387	0.549	1.801	2.15
-20	666.69	4.509	254.01	0.381	0.547	1.819	2.09
-10	653.55	4.564	247.04	0.378	0.543	1.825	2.07
0	640.1	4.635	238.76	0.373	0.54	1.819	2.05
10	626.16	4.714	230.43	0.368	0.531	1.801	2.04
20	611.75	4.798	219.62	0.359	0.521	1.775	2.02
30	596.37	4.89	208.13	0.349	0.507	1.742	2.01
40	580.99	4.999	197.54	0.34	0.493	1.701	2
50	564.33	5.116	186.23	0.33	0.476	1.654	1.99
Carbon dioxide, CO <sub>2</sub> [4]							
-50	1156.34	1.84	137.61	0.119	0.085	0.4021	2.96
-40	1117.77	1.88	131.9	0.118	0.1011	0.481	2.45
-30	1076.76	1.97	125.98	0.117	0.1116	0.5272	2.22
-20	1032.39	2.05	118.72	0.115	0.1151	0.5445	2.12
-10	983.38	2.18	111.12	0.113	0.1099	0.5133	2.2
0	926.99	2.47	100.11	0.108	0.1045	0.4578	2.38
10	860.03	3.14	86.86	0.101	0.0971	0.3608	2.8
20	772.57	5	70.3	0.091	0.0872	0.2219	4.1
30	597.81	36.4	47.82	0.08	0.0703	0.0279	28.7
Sulphur dioxide, SO <sub>2</sub> [4]							
-50	1560.84	1.3595	755.45	0.484	0.242	1.141	4.24
-40	1536.81	1.3607	651.61	0.424	0.235	1.130	3.74
-30	1520.64	1.3616	564.16	0.371	0.230	1.117	3.31
-20	1488.60	1.3624	482.31	0.324	0.225	1.107	2.93
-10	1463.61	1.3628	421.52	0.288	0.218	1.097	2.62
0	1438.46	1.3636	369.68	0.257	0.211	1.081	2.38
10	1412.51	1.3645	327.7	0.232	0.204	1.066	2.18
20	1386.40	1.3653	291.14	0.210	0.199	1.050	2.00
30	1359.33	1.3662	258.27	0.190	0.192	1.035	1.83
40	1329.22	1.3674	229.96	0.173	0.185	1.019	1.70
50	1299.10	1.3683	210.45	0.162	0.177	0.999	1.61

(continued)

$t$ (°C)	$\rho$ (kg/m <sup>3</sup> )	$c_p$ [kJ/(kg °C)]	$\mu \times 10^6$ [kg/(m s)]	$\nu \times 10^6$ (m <sup>2</sup> /s)	$\lambda$ [W/(m °C)]	$a \times 10^7$ (m <sup>2</sup> /s)	$Pr$
Freon 12, CCl <sub>2</sub> F <sub>2</sub> [4]							
-50	1546.75	0.8750	479.49	0.310	0.067	0.501	6.2
-40	1518.71	0.8847	423.72	0.279	0.069	0.514	5.4
-30	1489.56	0.8956	376.86	0.253	0.069	0.526	4.8
-20	1460.57	0.9073	343.23	0.235	0.071	0.539	4.4
-10	1429.49	0.9203	315.92	0.221	0.073	0.550	4.0
0	1397.45	0.9345	299.05	0.214	0.073	0.557	3.8
10	1364.30	0.9496	276.95	0.203	0.073	0.560	3.6
20	1330.18	0.9659	263.38	0.198	0.073	0.560	3.5
30	1295.10	0.9835	251.25	0.194	0.071	0.560	3.5
40	1257.13	1.019	240.11	0.191	0.069	0.555	3.5
50	1215.96	1.0216	231.03	0.190	0.067	0.545	3.5
C <sub>2</sub> H <sub>4</sub> (OH) <sub>2</sub> [4]							
0	1130.75	2.294	65052.05	57.53	0.242	0.934	615
20	1116.65	2.382	21417.35	19.18	0.249	0.939	204
40	1101.43	2.474	9571.427	8.69	0.256	0.939	93
60	1087.66	2.562	5166.385	4.75	0.260	0.932	51
80	1077.56	2.650	3211.129	2.98	0.261	0.921	32.4
100	1058.50	2.742	2148.755	2.03	0.263	0.908	22.4
Mercury, Hg [4]							
0	13628.22	0.1403	1689.9	0.124	8.2	42.99	0.0288
20	13579.04	0.1394	1548.01	0.114	8.69	46.04	0.0249
50	13505.84	0.1386	1404.61	0.104	9.40	50.22	0.0207
100	13384.58	0.1373	1242.09	0.0928	10.51	57.16	0.0162
150	13264.28	0.1365	1131.44	0.0853	11.49	63.54	0.0134
200	13144.94	0.1570	1054.22	0.0802	12.34	69.08	0.0116
250	13025.60	0.1357	996.46	0.0765	13.07	74.06	0.0103
315.5	12847.00	0.134	864.6	0.0673	14.02	81.50	0.0083

$t$ (°C)	$\rho$ (kg/m <sup>3</sup> )	$c_p$ [kJ/(kg °C)]	$\mu \times 10^6$ [kg/(m s)]	$\nu \times 10^6$ (m <sup>2</sup> /s)	$\lambda$ [W/(m °C)]	$a \times 10^6$ (m <sup>2</sup> /s)	$\beta \times 10^{-4}$ K <sup>-1</sup>	$Pr$
Water, H <sub>2</sub> O [2]								
0	999.9	4.217	1752.5	1.7527	0.552	0.13494	-0.81	13.39
10	999.7	4.193	1299.2	1.2996	0.576	0.1398	0.87	9.46
20	998.2	4.182	1001.5	1.0033	0.602	0.1442	2.09	6.96
30	995.7	4.179	797	0.8004	0.617	0.14828	3.05	5.4
40	992.2	4.179	651.3	0.6564	0.63	0.14953	3.86	4.32
50	988.1	4.181	544	0.545	0.643	0.15408	4.57	3.54
60	983.2	4.185	460	0.4679	0.653	0.1587	5.22	2.97
70	977.8	4.19	400.5	0.4014	0.662	0.15834	5.83	2.53
80	971.8	4.197	351	0.3612	0.669	0.16403	6.4	2.2
90	965.3	4.205	311.3	0.3225	0.675	0.16629	6.96	1.94
100	958.4	4.216	279	0.2911	0.68	0.16829	7.5	1.73
110	951	4.229	252.2	0.2652	0.683	0.16983	8.04	1.56
120	943.1	4.245	230	0.2439	0.685	0.1711	8.58	1.43
130	934.8	4.263	211	0.2257	0.687	0.17239	9.12	1.31
140	926.1	4.285	195	0.2106	0.687	0.17312	9.68	1.22
150	917	4.31	181	0.1974	0.686	0.17357	10.26	1.14
160	907.4	4.339	169	0.1862	0.684	0.17373	10.87	1.07
170	897.3	4.371	158.5	0.1766	0.681	0.17363	11.52	1.02
180	886.9	4.408	149.3	0.1683	0.676	0.17291	12.21	0.97
190	876	4.449	141.2	0.1612	0.671	0.17217	12.96	0.94
200	863	4.497	133.8	0.155	0.664	0.17109	13.77	0.91
210	852.3	4.551	127.3	0.1494	0.657	0.16938	14.67	0.88
220	840.3	4.614	121.5	0.1446	0.648	0.16713	15.67	87

(continued)



$t$ (°C)	$\rho$ (kg/m <sup>3</sup> )	$c_p$ [kJ/(kg °C)]	$\mu \times 10^6$ [kg/(m s)]	$\nu \times 10^6$ (m <sup>2</sup> /s)	$\lambda$ [W/(m °C)]	$a \times 10^6$ (m <sup>2</sup> /s)	$\beta \times 10^{-4}$ K <sup>-1</sup>	$Pr$
230	827.3	4.686	119.7	0.145	0.639	0.16483	16.8	0.85
240	813.6	4.77	111.4	0.1369	0.629	0.16208	18.08	0.84
250	799	4.869	107	0.1339	0.617	0.1586	19.55	0.84
260	784	4.985	103	0.1314	0.604	0.15455	21.27	0.85
270	767.9	5.13	99.4	0.1294	0.589	0.14952	23.31	0.87
280	750.7	5.3	96.1	0.128	0.573	0.14402	25.79	0.89
290	732.3	5.51	93	0.127	0.558	0.143	28.84	0.92
300	712.5	5.77	90.1	0.1265	0.54	0.13136	32.73	0.96

## *Temperature Parameters of Gases*

Gas	$n_\mu$	$n_\lambda$	$n_{\mu\lambda}$	$n_{c_p}$	Temperature range (K)	Recommended $Pr$
Ar	0.72	0.73	0.7255	0.01	220–1500	0.622
He	0.66	0.725	0.69575	0.01	273–873	0.675
H <sub>2</sub>	0.68	0.8	0.746	0.042	220–700	0.68
Air	0.68	0.81	0.7515	0.078	230–1000	0.7
CO	0.71	0.83	0.776	0.068	220–600	0.72
N <sub>2</sub>	0.67	0.76	0.7195	0.07	220–1200	0.71
O <sub>2</sub>	0.694	0.86	0.7853	0.108	230–600	0.733
Water vapor	1.04	1.185	1.11975	0.003	380–800	1
Gas mixture	0.75	1.02	0.8985	0.134	273–1173	0.63
CO <sub>2</sub>	0.88	1.3	1.111	0.34	220–700	0.73
CH <sub>4</sub>	0.78	1.29	1.0605	0.534	273–1000	0.74
CCl <sub>4</sub>	0.912	1.29	1.1199	0.28	260–400	0.8
SO <sub>2</sub>	0.91	1.323	1.13715	0.257	250–900	0.81
H <sub>2</sub> S	1	1.29	1.1595	0.18	270–400	0.85
NH <sub>3</sub>	1.04	1.375	1.22425	0.34	250–900	0.87

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# Index

## A

Application of mixed convection flow, 2  
Average Prandtl number, 74  
Average skin friction coefficient, 129

## B

Boundary layer, 3  
Boundary layer theory, 36  
Boundary layer thickness, 72  
Boussinesq approximation, 55, 67  
Buoyancy force, 72  
Buoyancy force factor, 39

## C

Cartesian forms, 16  
Coefficients  $a_1$  and  $b_1$ , 178  
Complete correlation equations, 205  
Consideration of Boussinesq approximation, 57  
Continuity equation, 16  
Control volume, 15  
Convection boundary conditions, 98  
Core similarity variables, 39  
Coupled phenomenon, 1  
Curve-fitting method, 156, 158, 160, 162–164, 166, 171–175, 180

## D

Density factor, 110  
Deviations of the predicted data, 187, 194  
Dimensionless coordinate variable, 38  
Dimensionless similarity variables, 100

## E

Effect of local Prandtl number, 157, 159, 161, 162, 164, 165  
Energy equation, 21, 24, 29, 31, 32

Energy increment, 21  
Equation, 28  
Exponents  $a_2$  and  $b_2$ , 178

## F

Factor, 28  
Falkner-Skan transformation, 3, 36  
Fluid kinetic energy, 21  
Forced convection boundary layer, 45  
Formulated equations, 156, 158  
Free film boiling convection, 37  
Free/forced convection, 37  
Free/forced film condensation convection, 37

## G

General real gas, 28  
Governing local-similarity ordinary differential equations, 68  
Governing partial differential equations, 44, 57, 67, 98  
Grashof number, 57  
Gravity acceleration component, 27  
Gravity accelerations, 19

## H

Heat increment, 21

## I

Inclined angle, 38  
Innovative governing similarity models, 6  
Innovative similarity analysis method, 5  
Innovative similarity transformation, 38, 45  
Innovative theoretical models, 5

## L

Laminar free convection, 25  
Laminar mixed convection, 1, 56, 67, 78

- Laminar mixed convection boundary layer, 31  
 Laminar mixed convection of water, 187, 201  
 Laminar water mixed convection, 157  
 Local Grashof number, 43  
 Local heat transfer rate, 80  
 Local mixed convection parameter, 58, 73, 108, 128, 174  
 Local Nusselt number, 150  
 Local Prandtl number, 134, 136, 155, 156, 169, 173, 174  
 Local Reynolds number, 46, 73  
 Local-similarity analysis, 58  
 Local-similarity transformation, 99  
 Local skin-friction coefficient, 129, 130
- M**  
 Mass equation, 30, 31  
 Mass flowing, 16  
 Mass force, 17  
 Mass increment, 15  
 Maximum predicted deviation, 201  
 Mixed convection boundary, 68  
 Mixed convection parameter, 2, 61, 78, 156, 171  
 Mixed free and forced convection, 29  
 Momentum equation, 28, 30, 32
- N**  
 Navier-Stokes equations, 18  
 Newtonian law, 23  
 Numerical calculation, 7  
 Numerical solutions, 6, 70, 132, 141–145  
 Numerical solutions of temperature fields, 140, 141  
 Numerical solutions of velocity, 122, 128  
 Numerical solutions of velocity fields, 116, 122
- O**  
 Optimal formalization, 149  
 Optimal formalized equations, 86, 182  
 Optimal formulated equations, 8  
 Ordinary differential equations, 45
- P**  
 Physical property factors, 109, 110  
 Positive (adding) and negative (opposing) flows, 2  
 Practical application value, 4  
 Prandtl, 36  
 Prandtl number, 80
- R**  
 Relations of local Prandtl number, 171, 174, 175
- Rewriting governing ordinary differential equations, 63  
 Reynolds number, 49  
 Richardson number, 61
- S**  
 Shear force tensor, 18  
 Shooting method, 116  
 Similarity coordinate variable, 43, 46, 50  
 Similarity coordinate variable  $\eta$ , 57  
 Similarity temperature, 44  
 Similarity temperature variable, 50, 58  
 Similarity velocity component, 39, 44, 47, 57, 70  
 Skin friction coefficient, 72, 73, 129  
 Skin velocity gradient, 130, 132, 134, 136  
 Solutions, 122  
 Surface force, 17
- T**  
 Temperature-dependent, 109  
 Temperature-dependent expressions, 109  
 Temperature fields, 141–145  
 Temperature profiles, 80  
 Theoretical and practical value, 5  
 Theoretical equation of average Nusselt number, 82, 151, 182  
 Theoretical equation of local Nusselt number, 81, 86, 150, 182  
 Theoretical equation of Nusselt number, 150  
 Thermal conductivity factor, 111  
 Two-dimensional boundary layers, 25
- V**  
 Variable fluid density, 25  
 Variable physical properties, 7, 15, 98  
 Variable thermo-physical properties, 4, 7  
 Variation of local Prandtl number, 170, 171  
 Variation of wall temperature, 141  
 Velocity component, 39  
 Verification, 187  
 Verification of the formulated equations, 186  
 Viscosity factor, 110  
 Viscous dissipation function, 23
- W**  
 Wall similarity temperature gradient, 151, 153, 157, 159–163, 165, 166, 186, 201  
 Wall velocity gradient, 74  
 Water laminar mixed convection, 141, 142, 158, 161–166