TABLE A.1 Specific Heat Ratio k for Air and Combustion Gases at Low Pressures

		Products of Combustion—Fuel $(CH_2)_n$		
T (*K*)	*Air*	*100 Percent Air*[a]	*200 Percent Air*[a]	*400 Percent Air*[a]
200	1.401	1.383	1.392	1.397
300	1.400	1.372	1.384	1.392
400	1.395	1.360	1.376	1.385
500	1.387	1.348	1.366	1.376
600	1.376	1.335	1.354	1.364
700	1.364	1.324	1.342	1.353
800	1.354	1.313	1.332	1.342
900	1.344	1.303	1.322	1.332
1000	1.336	1.295	1.313	1.324
1100	1.330	1.288	1.307	1.318
1200	1.324	1.281	1.300	1.311
1300	1.319	1.276	1.295	1.306
1400	1.315	1.272	1.291	1.302
1500	1.311	1.268	1.287	1.298
1600	1.308	1.265	1.283	1.295
1700	1.305	1.261	1.281	1.292
1800	1.303	1.259	1.278	1.290
1900	1.301	1.257	1.276	1.288
2000	1.298	1.254	1.274	1.285

[a] *Percent theoretical air.*

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TABLE A.2 Enthalpy Values for Air and Combustion Gases at Low Pressures (kJ/kgmol)

		Products of Combustion[b]		
T (*K*)	*Air*	*100 Percent Air*[a]	*200 Percent Air*[a]	*400 Percent Air*[a]
200	5797.1	5921.8	5861.5	5829.9
298.15	8648.5	8899.7	8778.6	8714.8
300	8702.4	8956.5	8833.9	8769.3
400	11623.2	12061.0	11849.3	11738.2
500	14579.0	15240.6	14921.1	14753.1
600	17590.8	18505.0	18063.3	17830.9
700	20667.9	21859.5	21284.1	20981.5
800	23815.1	25305.3	24585.4	24206.9
900	27029.0	28838.7	27964.3	27504.7
1000	30304.2	32453.7	31415.2	30869.0
1100	33633.9	36142.8	34930.7	34293.4
1200	37011.5	39899.3	38504.4	37771.0
1300	40432.3	43715.8	42129.7	41295.6
1400	43890.1	47585.3	45800.1	44861.6
1500	47380.9	51502.3	49511.2	48464.3
1600	50900.0	55461.6	53258.0	52099.4
1700	54445.3	59458.8		55763.5
1800	58014.3	63489.1		59453.5
1900	61604.2	67549.4		63166.9
2000	65212.9	71636.8		
$\overline{m}$ (kg/kgmol)	28.9669	28.9072	28.9360	28.9512
R (kJ/kg·K)	0.28703	0.28762	0.28734	0.28719

[a] *Percent theoretical air.*

[b] *Products of combustion are for a hydrocarbon fuel of composition* $(CH_2)_n$.

Source: Adapted from Tables 1, 3, 5, and 7 in *Gas Tables*, by Joseph H. Keenan, Jing Chao, and Joseph Kaye. Copyright 1980 by Estate of Joseph H. Keenan and Jing Chao. Reprinted by permission of John Wiley & Sons, Inc., New York, 1980.