

**Table B.8** Specific Enthalpies of Selected Gases: SI Units

$\hat{H}$ (kJ/mol)							
Reference state: Gas, $P_{\text{ref}} = 1 \text{ atm}$ , $T_{\text{ref}} = 25^\circ\text{C}$							
$T$	Air	O <sub>2</sub>	N <sub>2</sub>	H <sub>2</sub>	CO	CO <sub>2</sub>	H <sub>2</sub> O
<b>0</b>	-0.72	-0.73	-0.73	-0.72	-0.73	-0.92	-0.84
<b>25</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>100</b>	2.19	2.24	2.19	2.16	2.19	2.90	2.54
<b>200</b>	5.15	5.31	5.13	5.06	5.16	7.08	6.01
<b>300</b>	8.17	8.47	8.12	7.96	8.17	11.58	9.57
<b>400</b>	11.24	11.72	11.15	10.89	11.25	16.35	13.23
<b>500</b>	14.37	15.03	14.24	13.83	14.38	21.34	17.01
<b>600</b>	17.55	18.41	17.39	16.81	17.57	26.53	20.91
<b>700</b>	20.80	21.86	20.59	19.81	20.82	31.88	24.92
<b>800</b>	24.10	25.35	23.86	22.85	24.13	37.36	29.05
<b>900</b>	27.46	28.89	27.19	25.93	27.49	42.94	33.32
<b>1000</b>	30.86	32.47	30.56	29.04	30.91	48.60	37.69
<b>1100</b>	34.31	36.07	33.99	32.19	34.37	54.33	42.18
<b>1200</b>	37.81	39.70	37.46	35.39	37.87	60.14	46.78
<b>1300</b>	41.34	43.38	40.97	38.62	41.40	65.98	51.47
<b>1400</b>	44.89	47.07	44.51	41.90	44.95	71.89	56.25
<b>1500</b>	48.45	50.77	48.06	45.22	48.51	77.84	61.09

**Table B.9** Specific Enthalpies of Selected Gases:  
American Engineering Units

$\hat{H}$ (Btu/lb-mole)							
Reference state: Gas, $P_{\text{ref}} = 1 \text{ atm}$ , $T_{\text{ref}} = 77^\circ\text{F}$							
$T$	Air	O <sub>2</sub>	N <sub>2</sub>	H <sub>2</sub>	CO	CO <sub>2</sub>	H <sub>2</sub> O
<b>32</b>	-312	-315	-312	-310	-312	-394	-361
<b>77</b>	0	0	0	0	0	0	0
<b>100</b>	160	162	160	159	160	206	185
<b>200</b>	858	875	857	848	859	1132	996
<b>300</b>	1563	1602	1558	1539	1564	2108	1818
<b>400</b>	2275	2342	2265	2231	2276	3129	2652
<b>500</b>	2993	3094	2976	2925	2994	4192	3499
<b>600</b>	3719	3858	3694	3621	3720	5293	4359
<b>700</b>	4451	4633	4418	4319	4454	6429	5233
<b>800</b>	5192	5418	5150	5021	5195	7599	6122
<b>900</b>	5940	6212	5889	5725	5945	8790	7025
<b>1000</b>	6695	7015	6635	6433	6702	10015	7944
<b>1100</b>	7459	7826	7399	7145	7467	11263	8880
<b>1200</b>	8230	8645	8151	7861	8239	12533	9831
<b>1300</b>	9010	9471	8922	8581	9021	13820	10799
<b>1400</b>	9797	10304	9699	9306	9809	15122	11783
<b>1500</b>	10590	11142	10485	10035	10606	16436	12783
<b>1600</b>	11392	11988	11278	10769	11409	17773	13798
<b>1700</b>	12200	12836	12080	11509	12220	19119	14831
<b>1800</b>	13016	13691	12888	12254	13036	20469	15877
<b>1900</b>	13837	14551	13702	13003	13858	21840	16941
<b>2000</b>	14663	15415	14524	13759	14688	23211	18019