

Appendix Four (continued)

Substance and State	ΔH_f° (kJ/mol)	ΔG_f° (kJ/mol)	S° (J/K · mol)
Barium, <i>continued</i>			
BaSO ₄ (s)	-1465	-1353	132
Beryllium			
Be(s)	0	0	10
BeO(s)	-599	-569	14
Be(OH) ₂ (s)	-904	-815	47
Bromine			
Br ₂ (l)	0	0	152
Br ₂ (g)	31	3	245
Br ₂ (aq)	-3	4	130
Br ⁻ (aq)	-121	-104	82
HBr(g)	-36	-53	199
Cadmium			
Cd(s)	0	0	52
CdO(s)	-258	-228	55
Cd(OH) ₂ (s)	-561	-474	96
CdS(s)	-162	-156	65
CdSO ₄ (s)	-935	-823	123
Calcium			
Ca(s)	0	0	41
CaC ₂ (s)	-63	-68	70
CaCO ₃ (s)	-1207	-1129	93
CaO(s)	-635	-604	40
Ca(OH) ₂ (s)	-987	-899	83
Ca ₃ (PO ₄) ₂ (s)	-4126	-3890	241
CaSO ₄ (s)	-1433	-1320	107
CaSiO ₃ (s)	-1630	-1550	84
Carbon			
C(s) (graphite)	0	0	6
C(s) (diamond)	2	3	2
CO(g)	-110.5	-137	198
CO ₂ (g)	-393.5	-394	214
CH ₄ (g)	-75	-51	186
CH ₃ OH(g)	-201	-163	240
CH ₃ OH(l)	-239	-166	127
H ₂ CO(g)	-116	-110	219
HCOOH(g)	-363	-351	249
HCN(g)	135.1	125	202
C ₂ H ₂ (g)	227	209	201
C ₂ H ₄ (g)	52	68	219
CH ₃ CHO(g)	-166	-129	250
C ₂ H ₅ OH(l)	-278	-175	161
C ₂ H ₆ (g)	-84.7	-32.9	229.5
C ₃ H ₆ (g)	20.9	62.7	266.9
C ₃ H ₈ (g)	-104	-24	270
C ₂ H ₄ O(g) (ethylene oxide)	-53	-13	242
CH ₂ =CHCN(g)	185.0	195.4	274
CH ₃ COOH(l)	-484	-389	160
C ₆ H ₁₂ O ₆ (s)	-1275	-911	212
CCl ₄	-135	-65	216
Chlorine			
Cl ₂ (g)	0	0	223
Cl ₂ (aq)	-23	7	121

Substance and State	ΔH_f° (kJ/mol)	ΔG_f° (kJ/mol)	S° (J/K · mol)
Chlorine, <i>continued</i>			
Cl ⁻ (aq)	-167	-131	57
HCl(g)	-92	-95	187
Chromium			
Cr(s)	0	0	24
Cr ₂ O ₃ (s)	-1128	-1047	81
CrO ₃ (s)	-579	-502	72
Copper			
Cu(s)	0	0	33
CuCO ₃ (s)	-595	-518	88
Cu ₂ O(s)	-170	-148	93
CuO(s)	-156	-128	43
Cu(OH) ₂ (s)	-450	-372	108
CuS(s)	-49	-49	67
Fluorine			
F ₂ (g)	0	0	203
F ⁻ (aq)	-333	-279	-14
HF(g)	-271	-273	174
Hydrogen			
H ₂ (g)	0	0	131
H(g)	217	203	115
H ⁺ (aq)	0	0	0
OH ⁻ (aq)	-230	-157	-11
H ₂ O(l)	-286	-237	70
H ₂ O(g)	-242	-229	189
Iodine			
I ₂ (s)	0	0	116
I ₂ (g)	62	19	261
I ₂ (aq)	23	16	137
I ⁻ (aq)	-55	-52	106
Iron			
Fe(s)	0	0	27
Fe ₃ C(s)	21	15	108
Fe _{0.95} O(s) (wustite)	-264	-240	59
FeO	-272	-255	61
Fe ₃ O ₄ (s) (magnetite)	-1117	-1013	146
Fe ₂ O ₃ (s) (hematite)	-826	-740	90
FeS(s)	-95	-97	67
FeS ₂ (s)	-178	-166	53
FeSO ₄ (s)	-929	-825	121
Lead			
Pb(s)	0	0	65
PbO ₂ (s)	-277	-217	69
PbS(s)	-100	-99	91
PbSO ₄ (s)	-920	-813	149
Magnesium			
Mg(s)	0	0	33
MgCO ₃ (s)	-1113	-1029	66
MgO(s)	-602	-569	27
Mg(OH) ₂ (s)	-925	-834	64
Manganese			
Mn(s)	0	0	32