

Selected Heats of Atom Combination, Heats of Formation, and Entropies

substance	$\Delta H^\circ_{\text{ac}}$ (kJ/mol _{rxn})	$\Delta H^\circ_{\text{f}}$ (kJ/mol _{rxn})	S° (J/K•mol)
H(g)	0	218.2	114.6
C(g)	0	716.682	158.096
N(g)	0	470.4	153.3
O(g)	0	249.4	160.95
C(s, <i>graphite</i>)	-716.682	0	5.69
C(s, <i>diamond</i>)	-714.787	1.90	2.4
H ⁺ (aq)	-217.65	0	0
OH ⁻ (aq)	-696.81	-229.94	-10.5
H ₂ (g)	-435.30	0	131.0
N ₂ (g)	-945.408	0	191.5
O ₂ (g)	-498.340	0	205.0
CH ₄ (g)	-1662.09	-74.85	186.2
CO ₂ (g)	-1608.531	-393.5	213.6
H ₂ O(g)	-926.29	-241.8	188.7
H ₂ O(l)	-970.30	-285.5	69.9
NH ₃ (g)	-1171.76	-46.3	193.0
NO ₂ (g)	-937.86	33.85	240.6
N ₂ O ₄ (g)	-1932.93	9.66	304.3