

Table A.4. Approximate Thermodynamic Data for Species

Species	Name	Δh_f^0 (298 K) (J/mol)	$C_p = a + bT$ (J/mol.K)	
			a	b
C	Carbon, monatomic	716,033	20.5994	0.00026
C(s)	Graphite (ref.)	0	14.926	0.00437
CH	Methylidine	594,983	27.6451	0.00521
CH ₂	Methylene	385,775	35.5238	0.01
CH ₃	Methyl	145,896	42.8955	0.01388
CH ₄	Methane	-74,980	44.2539	0.02273
CO	Carbon monoxide	-110,700	29.6127	0.00301
CO ₂	Carbon dioxide	-394,088	44.3191	0.00730
C ₂ H ₂	Acetylene	227,057	51.7853	0.01383
C ₂ H ₄	Ethylene	52,543	60.244	0.02637
C ₂ H ₄ O	Ethylene oxide	-52,710	70.1093	0.03319
H ₂	Hydrogen (ref.)	0	27.3198	0.00335
H ₂ O	Water vapor	-242,174	32.4766	0.00862
H ₂ O ₂	Hydrogen peroxide	-136,301	41.6720	0.01952
H ₂ S	Hydrogen sulfide	-20,447	35.5142	0.00883
H ₂ SO ₄	Sulfuric acid vapor	-741,633	101.7400	0.02143
H ₂ SO ₄	Sulfuric acid liquid	-815,160	144.0230	0.02749
NH ₃	Ammonia	-45,965	38.0331	0.01593
NO	Nitric oxide	90,421	30.5843	0.00278
NO ₂	Nitrogen dioxide	33,143	43.7014	0.00575
NO ₃	Nitrogen trioxide	71,230	61.1847	0.00932
N ₂	Nitrogen (ref.)	0	29.2313	0.00307
N ₂ O	Nitrous oxide	82,166	44.9249	0.00693
O ₂	Oxygen (ref.)	0	30.5041	0.00349
O ₃	Ozone	142,880	46.3802	0.00553
S (g)	Sulfur, gas	279,391	22.4619	-0.0004
S (l)	Sulfur, liquid	1,425	29.5005	0.00976
S (s)	Sulfur, solid (ref.)	0	13.9890	0.02191
SO ₂	Sulfur dioxide	-297,269	45.8869	0.00574
SO ₃	Sulfur trioxide	-396,333	62.1135	0.00877