Standard Thermodynamic Values

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$(NH_4)_2O$	(l)	-430.70096	267.52496	-267.10656
$(NH_4)_2SiF_6$	(s hexagonal)	-2681.69296	280.24432	-2365.54992
$(NH_4)_2SO_4$	(s)	-1180.85032	220.0784	-901.90304
Ag	(s)	0	42.55128	0
Ag	(g)	284.55384	172.887064	245.68448
Ag^{+1}	(aq)	105.579056	72.67608	77.123672
Ag_2	(g)	409.99016	257.02312	358.778
$Ag_2C_2O_4$	(s)	-673.2056	209.2	-584.0864
Ag_2CO_3	(s)	-505.8456	167.36	-436.8096
Ag_2CrO_4	(s)	-731.73976	217.568	-641.8256
Ag_2MoO_4	(s)	-840.5656	213.384	-748.0992
Ag_2O	(s)	-31.04528	121.336	-11.21312
Ag_2O_2	(s)	-24.2672	117.152	27.6144
Ag_2O_3	(s)	33.8904	100.416	121.336
Ag_2S	(s beta)	-29.41352	150.624	-39.45512
Ag_2S	(s alpha orthorhombic)	-32.59336	144.01328	-40.66848
Ag_2Se	(s)	-37.656	150.70768	-44.3504
Ag_2SeO_3	(s)	-365.2632	230.12	-304.1768
Ag_2SeO_4	(s)	-420.492	248.5296	-334.3016
Ag_2SO_3	(s)	-490.7832	158.1552	-411.2872
Ag_2SO_4	(s)	-715.8824	200.4136	-618.47888
Ag_2Te	(s)	-37.2376	154.808	43.0952
AgBr	(s)	-100.37416	107.1104	-96.90144
$AgBrO_3$	(s)	-27.196	152.716	54.392
AgCl	(s)	-127.06808	96.232	-109.804896
$AgClO_2$	(s)	8.7864	134.55744	75.7304
AgCN	(s)	146.0216	107.19408	156.9
$AgF•2H_2O$	(s)	-800.8176	174.8912	-671.1136
AgI	(s)	-61.83952	115.4784	-66.19088
$AgIO_3$	(s)	-171.1256	149.3688	-93.7216
AgN_3	(s)	308.7792	104.1816	376.1416
$AgNO_2$	(s)	-45.06168	128.19776	19.07904
$AgNO_3$	(s)	-124.39032	140.91712	-33.472
AgO	(s)	-11.42232	57.78104	14.2256
AgOCN	(s)	-95.3952	121.336	-58.1576
$AgReO_4$	(s)	-736.384	153.1344	-635.5496
AgSCN	(s)	87.864	130.9592	101.37832
Al	(s)	0	28.32568	0
Al	(l)	8.66088	35.22928	6.61072
Al	(g)	326.352	164.4312	285.7672
$Al(BH_4)_3$	(l)	-16.3176	289.1144	144.7664
$Al(BH_4)_3$	(g)	12.552	379.0704	146.44
$Al(CH_3)_3$	(l)	-136.3984	209.4092	-10.0416

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$Al(NO_3)_3•6H_2O$	(s)	-2850.47552	467.7712	-2203.88016
$Al(NO_3)_3•9H_2O$	(s)	-3757.06464	569.024	-2929.6368
$Al(OH)_3$	(s)	-1284.488	71.128	-1305.8264
Al^{+3}	(aq)	-531.368	-321.7496	-485.344
$Al_2(CH_3)_6$	(g)	-230.91496	524.6736	-9.79056
$Al_2(SO_4)_3$	(s)	-3435.064	239.3248	-3506.6104
Al_2Br_6	(g)	-1020.896	547.2672	-947.2576
Al_2Cl_6	(g)	-1295.3664	475.5116	-1220.8912
Al_2F_6	(g)	-2631.736	387.02	-2539.688
Al_2I_6	(g)	-506.264	584.0864	-560.656
Al_2O	(g)	-131.3776	259.408	-161.084
Al_2O_3	(l)	-1581.1336	89.57944	-1499.25272
Al_2O_3	(s gamma-corundum)	-1656.864	59.8312	-1562.724
Al_2O_3	(s alpha-corundum)	-1675.2736	50.91928	-1581.9704
$Al_2O_3•3H_2O$	(s gibbsite)	-2562.7	140.20584	-2287.3928
$Al_2O_3•H_2O$	(s boehmite)	-1974.848	96.8596	-1825.4792
$Al_2O_3•H_2O$	(s diaspore)	-1999.952	70.54224	-1840.96
$Al_2Si_2O_7•2H_2O$	(s halloysite)	-4079.8184	203.3424	-3759.324
$Al_2Si_2O_7•2H_2O$	(s kaolinite)	-4098.6464	202.924	-3778.152
Al_2SiO_5	(s andalusite)	-2591.988	93.3032	-2444.7112
Al_2SiO_5	(s kyanite)	-2596.172	83.80552	-2443.8744
Al_2SiO_5	(s sillimanite)	-2593.2432	96.19016	-2442.6192
Al_4C_3	(s)	-207.27536	104.6	-238.44616
Al_4C_3	(g)	-215.8944	89.1192	-203.3424
Al_6BeO_{10}	(l)	-5299.4544	314.88784	-5034.1888
Al_6BeO_{10}	(s)	-5624.1328	175.56064	-5317.4456
$Al_6Si_2O_{13}$	(s mullite)	-6819.92	274.8888	-6443.36
$AlBO_2$	(g)	-541.4096	269.4496	-550.6144
$AlBr_3$	(s)	-511.11744	180.24672	-488.31464
$AlBr_3$	(l)	-501.20136	206.4804	-486.26448
$AlBr_3$	(g)	-410.8688	349.07112	-438.4832
AlC	(g)	689.5232	223.34192	633.0392
AlCl	(g)	-51.4632	227.86064	-77.8224
$AlCl_2$	(g)	-288.696	288.2776	-299.5744
$AlCl_3$	(g)	-584.5048	314.30208	-570.07
$AlCl_3$	(s)	-705.6316	109.28608	-630.06856
$AlCl_3$	(l)	-674.79552	172.92472	-618.186
$AlCl_3•6H_2O$	(s)	-2691.5672	376.56	-2269.4016
AlF	(g)	-265.2656	215.0576	-290.788
AlF_2	(g)	-732.2	263.1736	-740.568
AlF_3	(s)	-1510.424	66.48376	-1430.928
AlF_3	(g)	-1209.176	276.7716	-1192.8584
$AlF_3•3H_2O$	(s)	-2297.4344	209.2	-2051.8336
AlH	(g)	259.24064	187.77792	231.166
AlI_3	(l)	-297.064	219.66	-301.248
AlI_3	(g)	-205.016	363.1712	-251.04

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
AlI_3	(s)	-309.616	189.5352	-305.432
AlN	(s)	-317.984	20.16688	-287.0224
AlN	(g)	435.136	211.7104	410.032
AlO	(g)	83.68	218.27928	57.7392
AlOCl	(s)	-793.2864	54.392	-737.26264
AlOCl	(g)	-348.1088	248.82248	-350.2008
AlOF	(g)	-586.5968	234.26216	-587.0152
AlOH	(g)	-179.912	216.3128	-184.096
$AlPO_4$	(s berlinite)	-1692.0096	90.7928	-1601.2168
AlS	(g)	200.832	230.49656	150.2056
Ar	(g)	0	154.732688	0
Au	(g)	366.1	180.39316	326.352
Au	(s)	0	47.40472	0
$Au(CN)_2^{-1}$	(aq)	242.2536	171.544	285.7672
$AuBr_4^{-1}$	(aq)	-191.6272	335.9752	-167.36
$AuCl_4^{-1}$	(aq)	-322.168	266.9392	-237.31648
AuH	(g)	294.972	211.045144	265.684
B	(g)	562.748	153.3436	518.816
B	(s)	0	5.8576	0
$B(CH_3)_3$	(l)	-143.0928	238.9064	-32.2168
$B(CH_3)_3$	(g)	-124.2648	314.6368	-35.9824
$B(OH)_4^{-1}$	(aq)	-1344.02632	102.508	-1153.3196
B_2	(g)	830.524	201.79432	774.04
B_2Cl_4	(l)	-523	262.3368	-464.8424
$B2H_6$	(g)	35.564	232.0028	86.6088
B_2O_2	(g)	-454.8008	242.37912	-462.332
B_2O_3	(g)	-843.78728	279.7004	-831.9884
B_2O_3	(s amorphous)	-1254.53056	77.8224	-1182.3984
B_2O_3	(s)	-1272.7728	53.9736	-1193.6952
B_3N3H_6	(l)	-540.9912	199.5768	-392.79392
B_4C	(s)	-71.128	27.11232	-71.128
$B5H_9$	(l)	42.6768	184.22152	171.66952
Ba	(s)	0	62.3416	0
Ba	(g)	179.0752	169.99592	146.8584
Ba	(l)	4.97896	66.7348	3.84928
$Ba(BrO_3)_2$	(s)	-752.65976	242.672	-577.392
$Ba(BrO_3)_2•H_2O$	(s)	-1054.7864	292.4616	-824.62456
$Ba(ClO_3)_2$	(s)	-680.3184	196.648	-531.368
$Ba(ClO_4)_2•3H_2O$	(s)	-1691.5912	393.296	-1270.6808
$Ba(IO_3)_2$	(s)	-1027.172	249.3664	-864.8328
$Ba(IO_3)_2•H_2O$	(s)	-1322.144	297.064	-1104.1576
$Ba(N_3)_2•H_2O$	(s)	-308.3608	188.28	-105.0184
$Ba(NO_3)_2$	(s)	-992.06824	213.8024	-796.71728
$Ba(OH)_2•8H_2O$	(s)	-3342.1792	426.768	-2793.2384
$Ba(ReO_4)_2•4H_2O$	(s)	-3368.12	376.56	-2918.34
Ba^{+2}	(aq)	-537.644	9.6232	-560.73968

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
Ba_2TiO_4	(s)	-2243.0424	196.648	-2133.0032
$BaBr_2$	(s)	-757.304	146.44	-736.8024
$BaBr_2$	(g)	-439.32	330.536	-472.792
$BaBr_2•2H_2O$	(s)	-1366.076	225.936	-1230.5144
$BaCl_2$	(s)	-858.1384	123.67904	-810.4408
$BaCl_2$	(l)	-832.44864	143.5112	-790.1484
$BaCl_2$	(g)	-498.7328	325.64072	-510.69904
$BaCl_2•2H_2O$	(s)	-1460.13232	202.924	-1296.45424
$BaCO_3$	(s witherite)	-1216.2888	112.1312	-1137.6296
$BaCrO_4$	(s)	-1445.9904	158.5736	-1345.28152
BaF_2	(s)	-1208.7576	96.39936	-1158.5496
BaF_2	(l)	-1171.3108	121.25232	-1128.38296
BaF_2	(g)	-803.7464	301.16432	-814.49928
BaI_2	(g)	-302.9216	348.1088	-353.42248
BaI_2	(l)	-585.88552	183.6776	-587.39176
BaI_2	(s)	-605.4248	165.14248	-601.40816
$BaMoO_4$	(s)	-1548.08	138.072	-1439.7144
BaO	(s)	-548.104	72.09032	-520.40592
BaO	(l)	-491.62	96.56672	-471.24392
BaO	(g)	-123.8464	235.35	-144.80824
BaS	(s)	-460.24	78.2408	-456.056
$BaSeO_3$	(s)	-1040.5608	167.36	-968.1776
$BaSeO_4$	(s)	-1146.416	175.728	-1044.7448
$BaSiF_6$	(s)	-2952.2304	163.176	-2794.0752
$BaSiO_3$	(s)	-1623.6012	109.6208	-1540.25592
$BaSO_4$	(s)	-1473.1864	132.2144	-1362.3104
$BaTiO_3$	(s)	-1659.7928	107.9472	-1572.3472
$BaZrO_3$	(s)	-1779.4552	124.6832	-1694.52
BBr	(g)	238.0696	224.89	195.3928
BBr_3	(g)	-205.6436	324.13448	-232.46304
BBr_3	(l)	-239.7432	229.7016	-238.488
BCl	(g)	149.49432	213.13296	120.9176
BCl_2F	(g)	-645.1728	284.512	-631.3656
BCl_3	(g)	-403.756	289.99304	-388.73544
BCl_3	(l)	-427.1864	206.2712	-387.4384
$BClF_2$	(g)	-890.3552	271.96	-876.1296
Be	(g)	324.26	136.1892	286.604
Be	(l)	12.04992	16.5268	9.95792
Be	(s)	0	9.53952	0
$Be(OH)_2$	(s beta)	-905.836	46.024	-816.7168
Be^{+2}	(aq)	-382.836	-129.704	-379.698
Be_2C	(s)	-117.152	16.3176	-87.864
Be_2SiO_4	(s)	-2149.3208	64.30808	-2032.5872
Be_3N_2	(s cubic)	-588.2704	34.14144	-533.0416
$BeAl_2O_4$	(s)	-2300.7816	66.27456	-2178.6088
$BeBr_2$	(s)	-369.8656	106.2736	-353.1296

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
BeC_2	(g)	564.84	218.4048	506.264
$BeCl_2$	(s beta)	-496.2224	75.81408	-449.52896
BeF_2	(a alpha)	-1026.7536	53.346	-979.4744
BeH	(g)	326.7704	170.87456	298.3192
BeI_2	(s)	-192.464	120.4992	-209.2
BeO	(s alpha)	-608.3536	13.76536	-579.0656
BeO	(g)	129.704	197.52664	104.1816
BeO_2^{-2}	(aq)	-790.776	158.992	-640.152
$BeSO_4$	(s alpha)	-1205.2012	77.98976	-1093.86496
$BeSO_4•4H_2O$	(s)	-2423.74936	232.96512	-2080.66136
$BeWO_4$	(s)	-1514.608	88.36608	-1405.824
BF	(g)	-122.1728	200.37176	-149.7872
BF_3	(g)	-1137.002	254.01064	-1120.34968
BF_4^{-1}	(aq)	-1574.8576	179.912	-1486.9936
BH	(g)	449.61264	171.7532	419.61336
BH_4^{-1}	(aq)	48.15784	110.4576	114.26504
BN	(g)	647.474	212.17064	614.50408
BN	(s)	-254.3872	14.81136	-228.4464
BO	(g)	25.104	203.42608	-4.184
BO_2	(g)	-300.4112	229.45056	-305.8504
BO_2^{-1}	(aq)	-772.3664	-37.2376	-678.93768
Br	(g)	111.884344	174.91212	82.428984
Br^{-1}	(aq)	-121.5452	82.4248	-103.9724
Br_2	(l)	0	152.230656	0
Br_2	(g)	30.907208	245.353944	3.142184
Br_2Cl^{-1}	(aq)	-170.2888	188.6984	-128.4488
Br_3^{-1}	(aq)	-130.41528	215.476	-107.06856
BrCl	(g)	14.644	239.99424	-0.96232
BrF	(g)	-93.84712	228.8648	-109.16056
BrF_3	(l)	-300.8296	178.2384	-240.58
BrF_3	(g)	-255.60056	292.41976	-229.45056
BrF_5	(l)	-458.5664	225.0992	-351.8744
BrO	(g)	125.77104	237.442	108.24008
BrO^{-1}	(aq)	-94.14	41.84	-33.472
BrO_3^{-1}	(aq)	-83.68	163.176	1.6736
C	(g)	716.681544	157.9865848	671.289328
C	(s diamond)	1.8966072	2.376512	2.899512
C	(s graphite)	0	5.694424	0
C^{-1}	(g)	587.852	151.29344	550.6144
$C_{12}H_{22}O_{11}$	(s)	-2225.4696	360.2424	-1544.64912
C_2	(g)	837.6368	199.28392	781.5712
C_2^{-1}	(g)	443.504	196.48064	393.296
C_3	(g)	820.064	237.2328	754.3752
C_3H_6	(g cyclopropane)	53.30416	237.442	104.3908
C_3O_2	(l)	-117.27752	181.08352	-105.0184
C_3O_2	(g)	-93.7216	276.3532	-109.83

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$C_4H_{10}CH_3(CH_2)_2CH_3$	(g n-butane)	-126.1476	310.11808	-17.1544
C_4H_8	(g cyclobutane)	26.65208	265.39112	110.0392
C_4N_2	(g)	533.46	289.99304	510.8664
C_5H_{10}	(g cyclopentane)	-77.23664	292.88	38.61832
C_5H_{10}	(l cyclopentane)	-105.77152	204.26288	36.4008
C_6H_{12}	(g cyclohexane)	-123.13512	298.23552	31.75656
C_6H_{12}	(l cyclohexane)	-156.23056	204.34656	26.65208
$C_6H_5CH_3$	(l toluene)	12.00808	220.95704	113.76296
$C_6H_5CH_3$	(g toluene)	49.9988	320.66176	122.00544
C_6H_5COOH	(s benzoic acid)	-385.05352	167.5692	-245.26608
C_6H_5OH	(g phenol)	-96.35752	315.59912	-32.88624
C_6H_5OH	(s phenol)	-165.01696	144.01328	-50.4172
C_6H_6	(l benzene)	48.99464	173.25944	124.34848
C_6H_6	(g benzene)	82.92688	269.19856	129.66216
C_7H_{14}	(l cycloheptane)	-156.77448	242.54648	54.05728
C_8H_{16}	(l cyclooctane)	-169.78672	262.00208	77.8224
Ca	(s)	0	41.4216	0
Ca	(l)	10.92024	50.66824	8.20064
Ca	(g)	179.2844	154.76616	145.51952
$Ca(ClO_4)_2•4H_2O$	(s)	-1948.9072	433.4624	-1476.82648
$Ca(H_2PO_4)_2•H_2O$	(s)	-3409.66712	259.8264	-3058.42032
$Ca(IO_3)_2$	(s)	-1002.4864	230.12	-839.3104
$Ca(IO_3)_2•6H_2O$	(s)	-2780.6864	451.872	-2267.728
$Ca(NO_3)_2$	(s)	-938.38752	193.3008	-743.20392
$Ca(NO_3)_2•2H_2O$	(s)	-1540.758	269.4496	-1229.34288
$Ca(NO_3)_2•3H_2O$	(s)	-1838.0312	319.2392	-1471.9312
$Ca(NO_3)_2•4H_2O$	(s)	-2132.33376	375.3048	-1713.47352
$Ca(OH)_2$	(s)	-986.1688	83.38712	-898.514
$Ca[Mg(CO_3)_2]$	(s dolomite)	-2326.304	155.18456	-2163.5464
Ca^{+1}	(g)	775.2952	160.535896	733.4552
Ca^{+2}	(aq)	-542.83216	-53.1368	-553.5432
$Ca_{10}(PO_4)_6(OH)_2$	(s hydroxyapatite)	-13476.664	780.7344	-12677.52
$Ca_{10}(PO_4)_6F_2$	(s fluorapatite)	-13744.44	775.7136	-12982.952
$Ca_2P_2O_7$	(s beta)	-3338.832	189.24232	-3132.1424
Ca_2SiO_4	(s beta)	-2307.476	127.73752	-2192.8344
Ca_2SiO_4	(s gamma)	-2317.936	120.79208	-2201.2024
$Ca_3(AsO_4)_2$	(s)	-3298.6656	225.936	-3063.1064
$Ca_3(PO_4)_2$	(s beta)	-4120.8216	235.9776	-3884.844
$Ca_3(PO_4)_2$	(s alpha)	-4109.9432	240.91472	-3875.6392
$CaBr_2$	(g)	-384.928	314.6368	-420.95224
$CaBr_2$	(s)	-683.2472	129.704	-664.12632
$CaBr_2$	(l)	-662.99664	147.86256	-649.31496
$CaBr_2•6H_2O$	(s)	-2506.216	410.032	-2153.0864
CaC_2	(s)	-59.8312	69.95648	-64.852
$CaC_2O_4•H_2O$	(s)	-1674.8552	156.4816	-1513.9804
$CaCl_2$	(s)	-795.7968	104.6	-748.0992

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$CaCl_2$	(l)	-774.04	123.8464	-732.2
$CaCl_2$	(g)	-471.5368	289.9512	-479.068
$CaCO_3$	(s aragonite)	-1207.12584	88.7008	-1127.7972
$CaCO_3$	(s calcite)	-1206.91664	92.8848	-1128.8432
$CaCrO_4$	(s)	-1379.0464	133.888	-1277.3752
CaF_2	(g)	-782.408	273.6336	-794.96
CaF_2	(s)	-1219.636	68.86864	-1167.336
CaF_2	(l)	-1184.072	92.59192	-1142.232
CaH_2	(s)	-186.188	41.84	-147.2768
$CaHPO_4$	(s)	-1814.3916	111.37808	-1681.25672
$CaHPO_4•2H_2O$	(s)	-2403.58248	189.45152	-2154.76
CaI_2	(l)	-500.15536	178.94968	-506.51504
CaI_2	(s)	-536.8072	145.26848	-533.12528
CaI_2	(g)	-258.1528	327.43984	-308.7792
$CaMoO_4$	(s)	-1541.3856	122.5912	-1434.6936
CaO	(s)	-635.1312	38.19992	-603.542
CaO	(l)	-557.35064	62.29976	-532.95792
$CaO•{}_2Al_2O_3$	(s)	-3977.7288	177.82	-3770.6208
$CaO•{}_2B_2O_3$	(s)	-3360.25408	134.7248	-3167.12064
$CaO•Al_2O_3$	(s)	-2326.304	114.2232	-2208.7336
$CaO•B_2O_3$	(s)	-2030.95544	104.85104	-1924.09608
$CaO•Fe_2O_3$	(s)	-1520.34008	145.35216	-1412.81128
$CaO•MgO•{}_2SiO_2$	(s diopside)	-3206.1992	142.92544	-3032.1448
$CaO•V_2O_5$	(s)	-2329.27464	179.0752	-2169.69688
CaS	(s)	-474.884	56.484	-469.8632
CaSe	(s)	-368.192	66.944	-363.1712
$CaSeO_4•2H_2O$	(s)	-1706.6536	221.752	-1486.9936
$CaSiO_3$	(s pseudowollastonite)	-1628.4128	87.36192	-1544.7328
$CaSiO_3$	(s wollastonite)	-1634.93984	81.92272	-1549.71176
$CaSO_3•H_2O$	(s)	-1752.6776	184.096	-1555.1928
$CaSO_4$	(s anhydrite insoluble)	-1434.10784	106.692	-1321.85112
$CaSO_4$	(s alpha soluble)	-1425.23776	108.3656	-1313.48312
$CaSO_4$	(s beta soluble)	-1420.80272	108.3656	-1309.04808
$CaSO_4•{}_0.5H_2O$	(s beta micro)	-1574.6484	134.3064	-1435.86512
$CaSO_4•{}_0.5H_2O$	(s alpha macro)	-1576.7404	130.5408	-1436.82744
$CaSO_4•2H_2O$	(s)	-2022.62928	194.1376	-1797.4464
$CaTiO_3$	(s perovskite)	-1660.6296	93.63792	-1575.276
$CaTiSiO_5$	(s sphene)	-2603.2848	129.20192	-2461.8656
$CaWO_4$	(s)	-1645.1488	126.39864	-1538.49864
$CaZrO_3$	(s)	-1766.9032	100.08128	-1681.1312
CBr	(g)	510.448	233.4672	464.424
CCl	(g)	502.08	224.30424	468.608
Cd	(g)	112.00568	167.636144	77.44584
Cd	(s gamma)	0	51.75608	0
Cd	(s alpha)	-0.58576	51.75608	-0.58576
$Cd(CN)_4^{-2}$	(aq)	428.0232	322.168	507.5192

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$Cd(NH_3)_4^{+2}$	(aq)	-450.1984	336.3936	-226.3544
$CdBr_2$	(s)	-316.18488	137.2352	-296.31088
$CdBr_2•4H_2O$	(s)	-1492.55832	316.3104	-1248.032808
$CdCl_2$	(s)	-391.49688	115.2692	-343.96664
$CdCl_2•_2.5H_2O$	(s)	-1131.93936	227.1912	-944.094496
$CdCl_3^{-1}$	(aq)	-561.0744	202.924	-487.0176
$CdCO_3$	(s)	-750.6096	92.4664	-669.44
CdF_2	(s)	-700.4016	77.404	-647.6832
CdI_2	(s)	-202.924	161.084	-201.37592
CdI_4^{-2}	(aq)	-341.8328	326.352	-315.892
CdO	(s)	-258.1528	54.8104	-228.4464
CdS	(s)	-161.9208	64.852	-156.4816
CdSb	(s)	-14.39296	92.8848	-13.01224
$CdSeO_3$	(s)	-575.3	142.256	-497.896
$CdSeO_4$	(s)	-633.0392	164.4312	-531.7864
$CdSiO_3$	(s)	-1189.0928	97.4872	-1105.4128
$CdSO_4$	(s)	-933.28304	123.038888	-822.7836
$CdSO_4•_8/3H_2O$	(s)	-1729.37272	229.630472	-1465.337216
$CdSO_4•H_2O$	(s)	-1239.55184	154.029776	-1068.84464
CdTe	(s)	-92.4664	100.416	-92.048
CF	(g)	255.224	212.92376	221.752
CF^{+1}	(g)	1149.3448	201.2504	1115.036
CF_2	(g)	-182.004	240.70552	-191.6272
CF_2^{+1}	(g)	941.8184	246.6468	924.2456
$CH_3(CH_2)_2CH_2OH$	(g 2-butanol)	-274.6796	362.7528	-150.79136
$CH_3(CH_2)_2CH_2OH$	(l 1-butanol)	-327.10512	226.3544	-162.50656
$CH_3(CH_2)_2CH_3$	(l n-butane)	-147.65336	230.9568	-15.0624
$CH_3(CH_2)_3CH_3$	(g pentane)	-146.44	348.9456	-8.368
$CH_3(CH_2)_4CH_3$	(g hexane)	-167.19264	388.40072	-0.25104
$CH_3(CH_2)_4CH_3$	(l hexane)	-198.82368	296.05984	-3.80744
$CH_3(CH_2)_5CH_3$	(g heptane)	-187.77792	427.89768	7.99144
$CH_3(CH_2)_5CH_3$	(l heptane)	-224.38792	326.01728	1.75728
$CH_3(CH_2)_6CH_3$	(l octane)	-249.95216	357.732	7.40568
$CH_3(CH_2)_6CH_3$	(g octane)	-208.44688	466.7252	16.40128
$CH_3(CH_2)_7CH_3$	(l nonane)	-275.47456	393.67256	11.75704
$CH_3(CH_2)_7CH_3$	(g nonane)	-229.03216	505.67824	24.81112
$CH_3(CH_2)_8CH_3$	(l decane)	-301.0388	425.5128	-17.53096
$CH_3CH_2CH_2OH$	(l 1-propanol)	-304.00944	194.556	-170.62352
$CH_3CH_2CH_2OH$	(g 1-propnaol)	-256.39552	324.72024	-161.79528
$CH_3CH_2CH_3$	(g propane)	-103.84688	270.20272	-23.55592
$CH_3CH_2CHOHCH_3$	(g 2-butanol)	-292.62896	358.9872	-167.61104
$CH_3CH_2CHOHCH_3$	(l 2-butanol)	-342.58592	225.0992	-177.02504
$CH_3CH_2OCH_2CH_3$	(l diethyl ether)	-273.2152	253.132	-116.64992
$CH_3CH_2OCH_2CH_3$	(g diethyl ether)	-252.12784	342.6696	-122.34016
CH_3CH_2OH	(l ethanol)	-276.9808	161.04216	-174.17992
CH_3CH_2OH	(g ethanol)	-234.42952	282.58736	-167.90392

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
CH_3CH_3	(g ethane)	-84.68416	229.11584	-32.80256
$CH_3CHOHCH_3$	(g 2-propanol)	-272.42024	309.90888	-173.38496
$CH_3CHOHCH_3$	(l 2-propanol)	-317.85848	180.58144	-180.28856
CH_3COCH_3	(l acetone)	-247.60912	200.4136	-155.72848
CH_3COCH_3	(g acetone)	-216.64752	294.93016	-153.05072
CH_3COOH	(l acetic acid)	-484.13064	159.8288	-389.9488
CH_3COOH	(g acetic acid)	-434.84312	282.50368	-376.68552
CH_3OCH_3	(g dimethyl ether)	-184.05416	267.06472	-112.92616
CH_3OH	(g methanol)	-201.08304	239.70136	-162.42288
CH_3OH	(l methanol)	-239.03192	127.23544	-166.81608
CH_4	(g methane)	-74.85176	186.27168	-50.8356
Cl	(g)	121.29416	165.0588	105.31128
Cl^{-1}	(aq)	-167.1508	56.484	-131.25208
Cl_2	(g)	0	222.96536	0
Cl_2F_6	(g)	-339.3224	489.528	-237.2328
Cl_2O	(g)	80.3328	267.85968	97.4872
ClF	(g)	-54.47568	217.7772	-55.94008
ClF_3	(g)	-158.992	281.49952	-118.8256
ClF_3•HF	(g)	-450.6168	359.824	-384.0912
ClF_5	(g)	-238.488	310.62016	-146.44
ClO	(g)	101.21096	226.5636	97.4872
ClO^{-1}	(aq)	-107.1104	41.84	-36.8192
ClO_2	(g)	102.508	256.77208	120.33184
ClO_2^{-1}	(aq)	-66.5256	101.2528	17.1544
ClO_3^{-1}	(aq)	-99.1608	162.3392	-3.3472
ClO_3F	(g)	-27.15416	278.8636	44.85248
ClO_4^{-1}	(aq)	-129.32744	182.004	-8.61904
CN	(g)	435.136	202.54744	405.0112
CN^{+1}	(g)	1802.8856	213.34216	1763.1376
CN^{-1}	(aq)	150.624	94.14	172.3808
CN^{-1}	(g)	60.668	195.8112	38.74384
CN_2	(g)	581.576	231.5844	573.208
CNBr	(g)	181.3764	247.14888	160.62376
CNCl	(g)	132.2144	235.47552	125.47816
CNI	(g)	225.0992	256.60472	196.14592
CNI	(s)	160.2472	128.8672	169.36832
Co	(s hexagonal)	0	30.04112	0
CO	(g)	-110.54128	197.9032	-137.27704
Co	(s face centered cubic)	0.46024	30.71056	0.25104
$Co(IO_3)_2$•$2H_2O$	(s)	-1081.9824	267.776	-795.7968
$Co(NH_3)_6^{+3}$	(aq)	-584.9232	146.44	-157.3184
$Co(OH)_2$	(s pink)	-539.736	79.496	-454.3824
Co^{+2}	(aq)	-58.1576	-112.968	-54.392
Co^{+3}	(aq)	92.048	-305.432	133.888
CO_2	(g)	-393.5052	213.67688	-394.38384
CO_2	(aq undissoc)	-413.7976	117.5704	-386.01584

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
CO_3^{-2}	(aq)	-677.13856	-56.9024	-527.89528
Co_3O_4	(s)	-910.02	114.2232	-794.96
$COBr_2$	(g)	-96.232	308.9884	-110.876
$CoCl_2$	(s)	-312.5448	109.16056	-269.868
$COCl_2$	(g)	-220.9152	283.75888	-206.77328
$CoCl_2•2H_2O$	(s)	-922.9904	188.28	-764.8352
$CoCl_2•6H_2O$	(s)	-2115.4304	343.088	-1725.4816
$CoCl_3$	(g)	-163.5944	334.0924	-154.51512
CoF_2	(s)	-692.0336	81.96456	-647.2648
COF_2	(g)	-640.152	258.73856	-624.58752
CoF_3	(s)	-790.776	94.5584	-719.648
CoO	(s)	-237.94408	52.96944	-214.2208
COS	(g)	-138.40672	231.45888	-165.64456
CoSi	(s)	-100.416	43.0952	-98.7424
$CoSO_4$	(s)	-888.2632	117.9888	-782.408
$CoSO_4•6H_2O$	(s)	-2683.6176	367.60624	-2235.7204
$CoSO_4•7H_2O$	(s)	-2979.92848	406.0572	-2473.83184
Cr	(g)	397.48	174.22176	352.58568
Cr	(l)	26.103976	36.23344	22.34256
Cr	(s)	0	23.61868	0
$Cr_{23}C_6$	(s)	-364.8448	610.0272	-373.6312
Cr_2N	(s)	-125.52	64.852	-102.21512
Cr_2O_3	(s)	-1134.7008	81.1696	-1053.1128
Cr_2O_3	(l)	-1018.3856	125.60368	-950.06088
$Cr_2O_7^{-2}$	(aq)	-1490.3408	261.9184	-1301.224
Cr_3C_2	(s)	-85.3536	85.43728	-86.31592
Cr_7C_3	(s)	-161.9208	200.832	-166.9416
$CrCl_2$	(s)	-395.388	115.31104	-356.0584
$CrCl_3$	(s)	-556.472	123.0096	-486.1808
CrF_3	(s)	-1158.968	93.88896	-1087.84
CrN	(g)	505.0088	230.45472	471.91336
CrN	(s)	-117.152	37.69784	-92.80112
CrO	(g)	188.28	239.15744	154.5988
CrO_2	(g)	-75.312	269.11488	-87.36192
CrO_2Cl_2	(l)	-579.484	221.752	-510.8664
CrO_2Cl_2	(g)	-538.0624	329.6992	-501.6616
CrO_3	(g)	-292.88	266.06056	-273.46624
CrO_4^{-2}	(aq)	-881.1504	50.208	-727.84864
Cs	(g)	76.5672	175.47696	49.7896
Cs	(l)	2.087816	92.08984	0.025104
Cs	(s)	0	85.1444	0
CS	(g)	234.304	210.4552	184.096
Cs^{+1}	(aq)	458.5664	169.72396	427.1864
CS_2	(g)	117.06832	237.77672	66.90216
CS_2	(l)	89.70496	151.33528	65.2704
Cs_2O	(g)	-92.048	317.984	-104.6

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$CsAl(SO_4)_2•12H_2O$	(s)	-6064.708	686.176	-5098.204
CsBr	(s)	-405.68064	113.3864	-384.928
CsCl	(s)	-442.83456	101.181672	-414.216
CsCl	(l)	-434.2992	101.71304	-406.2664
CsCl	(g)	-240.1616	255.97712	-257.7344
CsF	(s)	-554.7984	88.2824	-525.5104
CsF	(l)	-543.83632	90.08152	-515.09224
CsF	(g)	-356.4768	243.0904	-373.2128
CsH	(g)	121.336	214.43	101.6712
CsI	(s)	-336.812	125.52	-333.71584
CsOH	(s)	-416.7264	98.7424	-362.3344
CsOH	(g)	-259.408	255.14032	-259.8264
CsOH	(l)	-406.01536	118.44904	-365.8908
Cu	(g)	338.31824	166.27216	298.61208
Cu	(s)	0	33.149832	0
$Cu(C_2O_4)_2^{-2}$	(aq)	-1592.012	146.44	-1335.9512
$Cu(IO_3)_2•H_2O$	(s)	-692.0336	247.2744	-468.608
$Cu(NH_3)^{+2}$	(aq)	-38.9112	12.1336	15.56448
$Cu(NH_3)_2^{+2}$	(aq)	-142.256	111.2944	-30.45952
$Cu(NH_3)_3^{+2}$	(aq)	-245.6008	199.5768	-73.13632
$Cu(NH_3)_4^{+2}$	(aq)	-348.5272	273.6336	-111.2944
$Cu(OH)_2$	(s)	-450.1984	108.3656	-372.7944
Cu^{+1}	(aq)	71.67192	40.5848	49.9988
Cu^{+2}	(aq)	64.76832	-99.5792	65.52144
Cu_2	(g)	484.17248	241.45864	431.95616
Cu_2O	(s)	-168.6152	93.13584	-146.0216
Cu_2S	(s alpha)	-79.496	120.9176	-86.1904
CuBr	(s)	-104.6	96.10648	-100.8344
CuCl	(s)	-137.2352	86.1904	-119.8716
$CuCl_2$	(s)	-205.8528	108.07272	-161.9208
$CuCl_2•2H_2O$	(s)	-821.3192	167.36	-656.0512
CuCN	(s)	94.9768	89.99784	108.3656
$CuCO_3•Cu(OH)_2$	(s malachite)	-1051.4392	186.188	-893.7024
CuF	(s)	-192.464	64.852	-171.544
CuF_2	(s)	-548.9408	68.6176	-499.1512
$CuFe_2O_4$	(s)	-965.20696	141.0008	-858.80784
$CuFeO_2$	(s)	-532.6232	88.7008	-479.9048
CuI	(s)	-67.7808	96.6504	-69.4544
CuN_3	(s)	279.0728	100.416	344.7616
CuO	(s)	-157.3184	42.63496	-129.704
CuS	(s)	-53.1368	66.5256	-53.5552
$CuSO_4$	(s)	-771.36224	108.784	-661.9088
$CuSO_4•3H_2O$	(s)	-1684.31104	221.3336	-1400.1756
$CuSO_4•5H_2O$	(s)	-2279.6524	300.4112	-1880.055296
$CuSO_4•H_2O$	(s)	-1085.83168	146.0216	-918.22064
F	(g)	78.99392	158.65728	61.9232

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
F^{-1}	(g)	-255.6424	145.47768	-262.3368
F_2	(g)	0	202.7148	0
Fe	(s alpha)	0	27.27968	0
Fe	(l)	13.129392	34.28788	11.049944
$Fe(CN)_6^{-3}$	(aq)	561.9112	270.2864	729.2712
$Fe(CN)_6^{-4}$	(aq)	455.6376	94.9768	694.92056
$Fe(CO)_5$	(l)	-774.04	338.0672	-705.4224
$Fe(CO)_5$	(g)	-733.8736	445.1776	-697.2636
$Fe(OH)^{+2}$	(aq)	-290.788	-142.256	-229.40872
Fe^{+2}	(aq)	-89.1192	-137.6536	-78.8684
Fe^{+3}	(aq)	-48.5344	-315.892	-4.6024
$Fe_2(SO_4)_3$	(s)	-2581.528	307.524	-2263.1256
Fe_2O_3	(s hematite)	-824.248	87.40376	-742.2416
Fe_2SiO_4	(s fayalite)	-1479.8808	145.1848	-1379.0464
Fe_3C	(s alpha-cementite)	25.104	104.6	20.0832
Fe_3O_4	(s magnetite)	-1118.3832	146.44	-1015.4568
Fe_3Si	(s)	-93.7216	103.7632	-94.5584
Fe_4N	(s)	-10.46	156.0632	3.7656
Fe_7S_8	(s pyrrhotite)	-736.384	485.7624	-748.5176
$FeAl_2O_4$	(s)	-1966.48	106.2736	-1849.328
FeAsS	(s)	-41.84	121.336	-50.208
$FeBr_2$	(s)	-249.7848	140.66608	-237.2328
$FeCl_2$	(s)	-341.79096	117.94696	-302.33584
$FeCl_3$	(s)	-399.48832	142.256	-334.05056
$FeCO_3$	(s siderite)	-740.568	92.8848	-666.7204
$FeCr_2O_4$	(s)	-1444.7352	146.0216	-1343.9008
FeF_2	(s)	-702.912	86.98536	-661.072
FeF_3	(s)	-1041.816	98.324	-970.688
FeI_2	(s)	-104.6	167.36	-112.968
$FeMoO_4$	(s)	-1075.288	129.2856	-974.872
FeO	(s)	-271.96	60.75168	-251.4584
$FeOH^{+1}$	(aq)	-324.6784	-29.288	-277.3992
$FePO_4•2H_2O$	(s strengite)	-1888.2392	171.25112	-1657.7008
FeS	(s pyrrhotite)	-99.9976	60.29144	-100.416
FeS_2	(s pyrite)	-178.2384	52.9276	-166.9416
FeSi	(s)	-73.6384	46.024	-73.6384
$FeSi_2$	(s beta-lebanite)	-81.1696	55.6472	-78.2408
$FeSO_4$	(s)	-928.4296	120.9176	-825.0848
$FeSO_4•7H_2O$	(s)	-3014.572	409.1952	-2510.27448
$FeWO_4$	(s)	-1154.784	131.796	-1054.368
FNO_3	(g)	10.46	292.88	73.6384
Fr	(s)	0	94.14	0
Fr	(g)	72.8016	181.92032	46.6516
Fr_2O	(s)	-338.904	156.9	-299.156
H^{+1}	(aq)	0	0	0
H_2	(g)	0	130.586824	0

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$H_2AsO_4^{-1}$	(aq)	-909.55976	117.152	-753.28736
H_2CS_3	(l)	25.104	223.0072	27.8236
H_2MoO_4	(g)	-851.0256	355.64	-787.4288
H_2O	(g)	-241.818464	188.715136	-228.588656
H_2O	(l)	-285.82996	69.91464	-237.178408
H_2O_2	(g)	-136.10552	232.88144	-105.47864
H_2O_2	(l)	-187.77792	109.6208	-120.41552
$H_2PO_4^{-1}$	(aq)	-1296.28688	90.3744	-1130.39128
H_2S	(g)	-20.16688	205.76912	-33.0536
H_2Se	(g)	29.7064	218.90688	15.8992
H_2Se	(g)	29.7064	218.90688	15.8992
H_2SiO_3	(s)	-1188.6744	133.888	-1092.4424
H_2SO_4	(l)	-813.9972	156.9	-690.06712
H_2SO_4	(g)	-740.568	289.1144	-656.0512
$H_2VO_4^{-1}$	(aq)	-1174.0304	121.336	-1020.896
H_2WO_4	(s)	-1131.772	146.44	-1004.16
H_2WO_4	(g)	-905.4176	351.456	-839.7288
H_3BO_3	(s)	-1094.3252	88.82632	-969.0144
H_3PO_4	(l)	-1254.3632	150.624	-1111.6888
H_3PO_4	(s)	-1266.9152	110.54128	-1112.5256
H_4SiO_4	(s)	-1481.136	192.464	-1333.0224
$HAsO_4^{-2}$	(aq)	-906.33808	-1.6736	-714.71088
HBO_2	(s orthorhombic)	-788.76768	50.208	-721.74
HBO_2	(s monoclinic)	-794.24872	37.656	-723.4136
HBr	(g)	-36.44264	198.61448	-53.51336
HCl	(g)	-92.29904	186.77376	-95.31152
HClO	(g)	-92.048	236.6052	-79.496
HCN	(g)	135.1432	201.6688	124.6832
HCN	(l)	108.86768	112.84248	124.93424
HCO_3^{-1}	(aq)	-691.99176	91.2112	-586.84784
$HCrO_4^{-1}$	(aq)	-878.2216	184.096	-764.8352
He	(g)	0	126.038816	0
HF	(g)	-271.1232	173.67784	-273.2152
Hg	(l)	0	76.02328	0
Hg	(g)	61.31652	174.84936	31.852792
$Hg(CH_3)_2$	(l)	59.8312	209.2	140.164
$Hg(CH_3)_2$	(g)	94.39104	305.432	146.0216
$Hg_2(N_3)_2$	(s)	594.128	205.016	746.4256
Hg_2Br_2	(s)	-206.8988	218.73952	-181.075152
Hg_2Cl_2	(s)	-265.22376	192.464	-210.777368
Hg_2CO_3	(s)	-553.5432	179.912	-468.1896
Hg_2F_2	(s)	-485.344	158.992	-426.768
Hg_2I_2	(s)	-121.336	242.672	-111.00152
Hg_2SO_4	(s)	-743.12024	200.66464	-625.880376
$HgBr_2$	(s)	-170.7072	170.33064	-153.1344
HgCl	(g)	84.0984	259.78456	62.76

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$HgCl_2$	(s)	-224.2624	146.0216	-178.6568
HgF_2	(s)	-422.584	116.3152	-372.376
HgH	(g)	239.99424	219.49264	216.01992
HgI	(g)	132.38176	281.41584	88.44976
HgI_2	(g)	-17.1544	336.01704	-59.8312
HgI_2	(s red)	-105.4368	181.1672	-101.6712
HgO	(s yellow)	-90.45808	71.128	-58.425376
HgO	(s red hexagonal)	-89.5376	71.128	-58.24128
HgO	(s red orthorhombic)	-90.83464	70.2912	-58.55508
HgS	(s red)	-58.1576	82.4248	-50.6264
HgS	(s black)	-53.5552	88.2824	-47.6976
HgSe	(g)	75.7304	267.02288	31.38
HgSe	(s)	-46.024	94.14	-38.0744
HgTe	(s)	-33.8904	106.692	-28.0328
HI	(g)	26.48472	206.4804	1.71544
$HN_2O_2^{-1}$	(aq)	-39.3296	142.256	76.1488
HN_3	(g)	294.1352	238.86456	328.0256
HNCO	(g)	-116.7336	238.11144	-107.36144
HNCS	(g)	127.612	247.6928	112.968
HNO_2	(g cis)	-76.5672	249.32456	-41.84
HNO_2	(g trans)	-78.6592	249.1572	-43.932
HNO_3	(l)	-173.2176	155.60296	-79.9144
HNO_3	(g)	-135.05952	266.26976	-74.76808
HOF	(g)	-98.324	226.64728	-85.64648
HPO_4^{-2}	(aq)	-1292.14472	-33.472	-1089.26256
$HReO_4$	(s)	-762.3248	158.1552	-664.8376
HS^{-1}	(aq)	-17.5728	62.76	12.04992
HSe^{-1}	(aq)	15.8992	79.496	43.932
$HSeO_3^{-1}$	(aq)	-514.54832	135.1432	-411.53824
$HSeO_3^{-1}$	(aq)	-514.54832	135.1432	-411.53824
$HSeO_4^{-1}$	(aq)	-581.576	149.3688	-452.2904
$HSeO_4^{-1}$	(aq)	-581.576	149.3688	-452.2904
HSO_3^{-1}	(aq)	-626.21928	139.7456	-527.8116
HSO_3F	(g)	-753.12	297.064	-690.36
HVO_4^{-2}	(aq)	-1158.968	16.736	-974.872
I	(g)	106.83844	180.681856	70.282832
I^{-1}	(aq)	-55.18696	111.2944	-51.58872
I_2	(s)	0	116.135288	0
I_2	(g)	62.437832	260.57952	19.359368
IBr	(g)	40.83584	258.663248	3.72376
ICl	(l)	-23.89064	135.1432	-13.598
ICl	(g)	17.782	247.44176	-5.4392
ICl_3	(s)	-89.5376	167.36	-22.34256
IF	(g)	-95.64624	236.06128	-118.49088
IF_5	(g)	-840.1472	334.72	-771.5296
IF_7	(g)	-943.9104	346.4352	-818.3904

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
IO	(g)	175.05856	245.3916	149.7872
IO^{-1}	(aq)	-107.5288	-5.4392	-38.4928
IO_3^{-1}	(aq)	-221.3336	118.4072	-128.0304
K	(g)	89.1192	90.03968	60.668
K	(l)	2.284464	71.46272	0.263592
K	(s)	0	64.68464	0
$K_2B_4O_7$	(s)	-3334.2296	208.3632	-3136.7448
K_2CO_3	(s)	-1150.1816	155.51928	-1064.4096
K_2O	(s)	-363.1712	94.14	-322.168
K_2O_2	(s)	-495.804	112.968	-429.6968
K_2SiO_3	(s)	-1548.08	146.14712	-1455.6136
K_2SO_4	(s)	-1433.68944	175.728	-1316.37008
K_3AlCl_6	(s)	-2092	376.56	-1938.4472
$KAl(SO_4)_2$	(s)	-2465.38016	204.5976	-2235.46936
$KAl(SO_4)_2•12H_2O$	(s)	-6057.34416	687.4312	-5137.1152
$KAlCl_4$	(s)	-1196.624	196.648	-1096.208
KBF_4	(s)	-1886.984	133.888	-1784.8944
KBH_4	(s)	-226.7728	106.60832	-159.8288
KBO_2	(s)	-994.9552	79.99808	-978.6376
KBr	(s)	-392.16632	96.4412	-379.19592
$KBrO_3$	(s)	-332.2096	149.1596	-243.5088
KCl	(s)	-435.88912	82.67584	-408.31656
KCl	(g)	-215.8944	239.49216	-235.1408
$KClO_3$	(s)	-391.204	142.96728	-289.90936
$KClO_4$	(s)	-430.1152	151.0424	-300.4112
KCN	(s)	-113.47008	127.77936	-102.04776
KF	(s)	-568.6056	66.56744	-538.8992
$KF•2H_2O$	(s)	-1158.968	150.624	-1015.4568
KH	(s)	-57.82288	50.208	-34.05776
KH_2AsO_4	(s)	-1135.956	155.14272	-991.608
KHF_2	(s)	-931.3584	104.26528	-863.1592
KI	(s)	-327.64904	106.39912	-322.29352
KIO_3	(s)	-508.356	151.4608	-425.5128
$KMnO_4$	(s)	-813.3696	171.71136	-713.7904
KNO_3	(s)	-492.70784	132.92568	-393.12864
KO_2	(s)	-284.512	122.5912	-240.58
KOH	(s)	-425.84752	78.8684	-379.0704
Kr	(g)	0	163.975144	0
Li	(g)	160.6656	138.65776	128.0304
Li	(l)	2.380696	33.93224	0.933032
Li	(s)	0	160.6656	0
$Li_2B_4O_7$	(s)	-3363.936	155.6448	-3171.472
Li_2BeF_4	(s)	-2273.5856	130.5408	-2171.496
Li_2CO_3	(s)	-1216.03776	90.1652	-1132.1904
Li_2O	(s)	-598.7304	37.90704	-561.9112
Li_2O_2	(s)	-632.6208	56.484	-571.116

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$Li_2Si_2O_5$	(s)	-2561.0264	125.52	-2417.0968
Li_2SiO_3	(s)	-1649.3328	80.3328	-1558.9584
Li_2TiO_3	(s)	-1670.6712	91.75512	-1579.8784
Li_3AlF_6	(s)	-3383.6008	187.8616	-3223.772
Li_3N	(s)	-197.4848	37.656	-153.9712
$LiAlF_4$	(g)	-1853.512	326.352	-1811.672
$LiAlH_4$	(s)	-117.152	87.864	-48.5344
$LiAlO_2$	(s)	-1189.5112	53.346	-1127.1696
$LiBeF_3$	(s)	-1651.8432	89.1192	-1576.1128
$LiBH_4$	(s)	-190.45568	75.81408	-124.76688
$LiBO_2$	(s)	-1019.2224	51.71424	-963.1568
LiBr	(s)	-350.91208	74.0568	-341.6236
LiCl	(s)	-408.27472	59.28728	-384.04936
$LiCl•H_2O$	(s)	-712.57704	103.7632	-632.6208
$LiClO_4$	(s)	-380.744	125.52	-253.9688
LiF	(s)	-616.9308	35.64768	-588.6888
LiH	(s)	-90.62544	20.04136	-68.45024
LiI	(s)	-270.0772	85.772	-269.6588
LiO	(g)	83.68	210.8736	60.4588
LiOH	(s)	-484.9256	42.80232	-438.9016
$LiOH•H_2O$	(s)	-789.81368	92.048	-689.5232
Mg	(s)	0	32.693776	0
Mg	(l)	9.03744	42.50944	6.10864
Mg	(g)	147.61152	148.532	113.09352
$Mg(ClO_4)_2•6H_2O$	(s)	-2445.548	520.908	-1863.1352
$Mg(NO_3)_2$	(s)	-790.65048	164.0128	-589.5256
$Mg(NO_3)_2•6H_2O$	(s)	-2613.28456	451.872	-2080.7032
$Mg(OH)_2$	(s)	-924.664	63.1784	-833.8712
$Mg(VO_3)_2$	(s)	-2201.57896	160.6656	-2039.40712
Mg^{+1}	(g)	891.6104	154.30592	848.9336
Mg^{+2}	(aq)	-466.85072	-138.072	-454.8008
$Mg_2Al_4Si_5O_{19}$	(s cordierite)	-9108.568	407.1032	-8598.12
Mg_2Ge	(s)	-108.784	86.48328	-105.8552
Mg_2Si	(s)	-77.8224	66.944	-75.312
Mg_2SiO_4	(s forsterite)	-2174.0064	95.14416	-2055.1808
Mg_2TiO_4	(s)	-2164.3832	109.32792	-2047.6496
$Mg_2V_2O_7$	(s)	-2835.9152	200.4136	-2645.29216
$Mg_3(PO_4)_2$	(s)	-3780.6624	189.20048	-3538.8272
Mg_3N_2	(s)	-460.6584	87.864	-400.8272
$Mg_3Si_2O_5(OH)_4$	(s chrysotile)	-4365.5856	221.3336	-4037.9784
$Mg_3Si_4O_{10}(OH)_2$	(s talc)	-5922.452	260.6632	-5542.9632
$MgAl_2O_4$	(s)	-2312.9152	88.7008	-2190.324
$MgBr_2$	(s)	-524.2552	117.152	-503.7536
$MgBr_2•6H_2O$	(s)	-2409.984	397.48	-2056.0176
$MgCl_2$	(s)	-641.6164	89.62128	-592.11968
$MgCl_2•6H_2O$	(s)	-2499.01952	366.1	-2114.97016

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$MgCl_2•6H_2O$	(s)	-1279.71824	179.912	-1118.13216
$MgCO_3$	(s)	-1095.7896	65.6888	-1012.1096
$MgCr_2O_4$	(s)	-1783.6392	106.02256	-1668.9976
MgF_2	(s)	-1124.2408	57.23712	-1071.104
$MgFe_2O_4$	(s)	-1428.4176	123.8464	-1317.1232
MgH_2	(s)	-75.312	31.08712	-35.9824
MgI_2	(s)	-364.008	129.704	-358.1504
$MgMoO_4$	(s)	-1400.84504	118.8256	-1295.74296
MgO	(s microcrystal)	-597.97728	27.90728	-565.96968
MgO	(s periclase)	-601.6592	26.94496	-569.024
MgS	(s)	-346.0168	50.33352	-341.8328
$MgSiO_3$	(s clinoenstatite)	-1549.00048	67.7808	-1462.14064
$MgSO_4$	(s)	-1284.9064	91.6296	-1170.6832
$MgSO_4•6H_2O$	(s)	-3086.9552	348.1088	-2632.1544
$MgSO_4•7H_2O$	(s)	-3388.70528	372.376	-2871.8976
$MgSO_4•H_2O$	(s)	-1602.0536	126.3568	-1428.836
$MgTi_2O_5$	(s)	-2509.5632	127.27728	-2366.8888
$MgTiO_3$	(s)	-1572.7656	74.55888	-1484.0648
$MgWO_4$	(s)	-1532.5992	101.16912	-1420.8864
Mn	(s alpha)	0	32.0076	0
Mn	(s gamma)	1.54808	32.426	1.42256
Mn	(g)	280.7464	173.59416	238.488
$Mn(IO_3)_2$	(s)	-669.44	263.592	-520.4896
$Mn(OH)_2$	(s precipitated/amorphous)	-695.3808	99.1608	-615.048
Mn^{+2}	(aq)	-220.83152	-73.6384	-228.028
Mn_2O_3	(s)	-958.9728	110.4576	-881.1504
Mn_2SiO_4	(s)	-1730.5024	163.176	-1632.1784
Mn_3C	(s)	4.6024	98.7424	5.4392
Mn_3O_4	(s)	-1387.8328	155.6448	-1283.2328
$MnC_2O_4•2H_2O$	(s)	-1628.4128	200.832	-1415.0288
$MnCl_2$	(s)	-481.28552	118.23984	-440.53336
$MnCl_2•2H_2O$	(s)	-1092.024	218.8232	-942.2368
$MnCl_2•4H_2O$	(s)	-1687.4072	303.34	-1423.8152
$MnCl_2•H_2O$	(s)	-789.9392	174.0544	-696.2176
$MnCO_3$	(s natural)	-894.1208	85.772	-816.7168
$MnCO_3$	(s precipitated)	-882.824	112.968	-811.696
MnF_2	(s)	-790.776	-748.936	92.2572
MnO	(s)	-385.22088	59.70568	-362.92016
MnO_2	(s)	-520.02936	53.05312	-465.17712
MnO_4^{-1}	(aq)	-541.4096	191.2088	-447.2696
MnO_4^{-2}	(aq)	-652.704	58.576	-500.8248
MnS	(s green)	-214.2208	78.2408	-218.4048
MnSe	(s)	-106.692	90.7928	-111.7128
$MnSiO_3$	(s)	-1320.8888	89.1192	-1240.556
$MnSO_4$	(s)	-1065.2464	112.1312	-957.42472

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
N	(g)	472.704136	153.188792	455.579024
N_2	(g)	0	191.50168	0
N_2F_2	(g trans)	81.1696	262.546	120.4992
N_2F_2	(g cis)	66.944	259.8264	108.784
N_2H_2	(g trans)	182.4224	220.12024	212.9656
N_2H_2	(g cis diimide)	213.384	218.4048	243.0904
N_2H_4	(g)	95.3952	238.36248	159.28488
N_2H_4	(l)	50.6264	121.21048	149.24328
N_2O	(g)	82.04824	219.74368	104.1816
N_2O_2	(g)	170.37248	287.52448	202.88216
$N_2O_2^{-2}$	(aq)	-17.1544	27.6144	138.9088
N_2O_3	(g)	83.72184	312.16824	139.41088
N_2O_4	(l)	-19.58112	209.24184	97.40352
N_2O_4	(g)	9.16296	304.1768	97.82192
N_2O_4	(s)	-35.02008	150.28928	99.53736
N_2O_5	(s)	11.2968	347.18832	117.69592
N_3^{-1}	(aq)	275.13984	107.9472	348.1088
Na	(s)	0	51.4632	0
Na	(l)	2.4058	57.86472	0.497896
Na	(g)	107.738	153.59464	77.32032
$Na_2B_4O_7$	(s)	-3276.072	189.5352	-3083.608
Na_2CO_3	(s)	-1130.9352	135.98	-1047.6736
Na_2O	(s)	-415.8896	72.8016	-376.56
Na_2O_2	(s)	-513.3768	94.80944	-449.78
Na_2S	(s)	-373.2128	97.9056	-359.824
Na_2SiO_3	(s)	-1518.792	113.8048	-1426.744
Na_2SO_3	(s)	-1090.3504	146.0216	-1002.068
Na_2SO_4	(s)	-1384.4856	149.49432	-1266.83152
$Na_2SO_4•_{10}H_2O$	(s)	-4324.08032	592.8728	-3643.97112
Na_2WO_4	(s)	-1543.896	160.2472	-1430.928
Na_3AlCl_6	(s)	-1979.032	347.272	-1828.408
Na_3AlF_6	(s cryolite)	-3309.544	238.488	-3142.184
Na_3AlF_6	(l)	-3238.416	286.604	-3088.2104
$NaAlCl_4$	(s)	-1142.232	188.28	-1041.816
$NaAlO_2$	(s)	-1133.0272	70.41672	-1069.4304
$NaBH_4$	(s)	-191.8364	101.37832	-127.10992
$NaBO_2$	(s)	-975.7088	73.51288	-919.2248
NaBr	(s)	-361.41392	86.818	-349.28032
NaCl	(s)	-410.99432	72.3832	-384.04936
$NaClO_4$	(s)	-382.75232	142.256	-254.34536
NaF	(s)	-575.3	51.21216	-545.1752
NaH	(s)	-56.44216	39.99904	-33.55568
NaH	(g)	125.01792	187.98712	103.67952
$NaHCO_3$	(s)	-947.676	102.0896	-851.8624
NaI	(s)	-288.02656	98.324	-284.512
$NaNO_3$	(s)	-466.68336	116.3152	-365.8908

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
NaOH	(l)	-416.89376	75.85592	-374.13328
NaOH	(s)	-426.72616	64.4336	-379.0704
$NaOH•H_2O$	(s)	-732.91128	84.5168	-623.416
Ne	(g)	0	146.2308	0
NF_3	(g)	-131.3776	260.6632	-89.956
NH	(g imidogen)	377.22944	181.12536	371.24632
NH_2	(g amidogen)	190.372	194.59784	199.82784
NH_3	(g)	-46.10768	192.33848	-16.48496
NH_4	(s carbamate)	-645.04728	133.4696	-448.06456
NH_4^{+1}	(aq)	-132.50728	113.3864	-79.37048
$NH_4Al(SO_4)_2$	(s)	-2352.2448	216.3128	-2038.4448
NH_4Br	(s)	-270.83032	112.968	-175.3096
NH_4Cl	(s)	-314.4276	94.5584	-202.96584
NH_4ClO_4	(s)	-295.30672	184.17968	-88.91
NH_4F	(s)	-463.96376	71.9648	-348.77824
$NH_4H_2AsO_4$	(s)	-2189.4872	172.04608	-833.0344
$NH_4H_2PO_4$	(s)	-1445.06992	151.96288	-1210.55672
NH_4HCO_3	(s)	-849.352	120.9176	-666.0928
NH_4HF_2	(s)	-802.9096	115.52024	-651.0304
NH_4HS	(s)	-156.9	97.4872	-50.6264
NH_4HSe	(s)	-133.0512	96.6504	-23.4304
NH_4I	(s)	-201.41776	117.152	-112.5496
NH_4N_3	(s)	115.4784	112.5496	274.052
NH_4NO_3	(s)	-365.55608	151.08424	-184.01232
NH_4OH	(l)	-361.20472	165.56088	-254.13616
NH_4ReO_4	(s)	-945.584	232.6304	-774.8768
NH_4VO_3	(s)	-1053.1128	140.5824	-888.2632
Ni	(g)	429.6968	182.083496	384.5096
Ni	(s)	0	29.87376	0
$Ni(CN)_4^{-2}$	(aq)	367.7736	217.568	471.9552
$Ni(CO)_4$	(g)	-602.9144	410.4504	-587.26624
$Ni(CO)_4$	(l)	-633.0392	313.3816	-588.2704
$Ni(IO_3)_2$	(s)	-489.1096	213.384	-326.352
Ni^{+2}	(aq)	-53.9736	-128.8672	-45.6056
Ni_3S_2	(s)	-202.924	133.888	-197.0664
$NiCl_2$	(s)	-305.331584	97.65456	-259.064912
$NiCl_2•2H_2O$	(s)	-922.1536	175.728	-760.2328
$NiCl_2•4H_2O$	(s)	-1516.7	242.672	-1235.1168
$NiCl_2•6H_2O$	(s)	-2103.17128	344.3432	-1713.51536
NiF_2	(s)	-651.4488	73.59656	-604.1696
NiO	(s)	-239.7432	37.99072	-211.7104
NiS	(s)	-82.0064	52.96944	-79.496
$NiSO_4$	(s)	-872.90792	97.0688	-759.8144
$NiSO_4•6H_2O$	(s tetrahedral)	-2682.82264	332.171944	-2224.96752
$NiSO_4•7H_2O$	(s)	-2976.33024	378.94488	-2462.24216
NO	(g)	90.24888	210.651848	86.56696

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
NO_2	(g)	33.17912	239.9524	51.29584
NO_2^{-1}	(aq)	-104.6	140.164	-37.2376
NO_2Cl	(g)	12.552	272.04368	54.392
NO_2F	(g)	-79.496	260.2448	-37.2376
NO_3	(g)	70.9188	252.54624	114.47424
NO_3^{-1}	(aq)	-207.35904	146.44	-111.33624
NOBr	(g)	82.17376	273.54992	82.4248
NOCl	(g)	51.71424	261.58368	66.06536
NOF	(g)	-65.6888	247.98568	-50.29168
NOF_3	(g)	-163.176	278.40336	-96.232
O	(g)	249.169752	160.945928	231.747576
O_2	(g)	0	205.028552	0
O_2F_2	(g)	19.79032	268.11072	61.42112
O_3	(g)	142.6744	238.82272	163.176
OCN^{-1}	(aq)	-146.0216	106.692	-97.4872
OF	(g)	124.2648	217.73536	120.12264
OF_2	(g)	24.51824	247.31624	41.75632
OH^{-1}	(aq)	-229.99448	-10.75288	-157.27656
P	(s red V)	0	22.8028	0
P	(l red V)	18.07488	42.886	12.09176
P	(g red V)	333.8832	163.09232	292.0432
P	(s alpha white)	17.44728	41.08688	12.00808
P_2	(g)	146.18896	218.02824	103.7632
$P2H_4$	(l)	-5.0208	167.36	66.944
P_2O_7-4	(aq)	-2271.0752	-117.152	-1919.2008
P_4	(g)	128.8672	128.8672	72.3832
P_4O_{10}	(s hexagonal)	-2940.0968	228.8648	-2675.2496
P_4S_3	(g)	-81.1696	319.15552	-120.4992
P_4S_3	(s)	-154.808	200.832	-158.992
P_4S_3	(l)	-151.0424	207.108	-156.9
Pb	(g)	195.602	175.26776	162.63208
Pb	(l)	4.2886	71.71376	2.221704
Pb	(s)	0	64.76832	0
$Pb(IO_3)_2$	(s)	-495.3856	312.9632	-351.456
$Pb(N_3)_2$	(s monoclinic)	478.2312	148.1136	624.6712
$Pb(N_3)_2$	(s orthorhombic)	476.1392	149.3688	622.1608
$Pb(ReO_4)_2•2H_2O$	(s)	-2234.256	309.616	-1903.72
Pb_2SiO_4	(s)	-1376.536	187.0248	-1267.752
$Pb_3(PO_4)_2$	(s)	-2595.3352	353.1296	-2432.5776
Pb_3O_4	(s)	-718.8112	212.1288	-601.6592
PbB_2O_4	(s)	-1556.448	130.5408	-1450.1744
PbB_4O_7	(s)	-2857.672	166.9416	-2667.3
PbBr	(g)	71.128	272.3784	31.7984
$PbBr_2$	(g)	-104.3908	339.28056	-140.83344
$PbBr_2$	(s)	-277.3992	161.12584	-260.74688
$PbBr_2$	(l)	-267.39944	173.88704	-254.55456

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$PbBr_4$	(g)	-456.34888	426.09856	-473.29408
PbC_2O_4	(s)	-851.444	146.0216	-750.1912
PbCl	(g)	15.0624	259.49168	-9.6232
$PbCl_2$	(s)	-359.4056	135.98	-314.17656
$PbCl_2$	(l)	-344.25952	153.17624	-304.21864
$PbCl_2$	(g)	-174.0544	317.10536	-182.79896
$PbCl_4$	(g)	-552.41352	381.53896	-513.87888
PbClF	(s)	-534.7152	121.7544	-488.2728
$PbCO_3$	(s)	-699.1464	130.9592	-625.508
PbF	(g)	-80.3328	249.82664	-105.0184
PbF_2	(s alpha)	-676.9712	112.968	-630.9472
PbF_2	(s beta)	-676.1344	114.4324	-631.1564
PbF_4	(g)	-1133.4456	333.50664	-1092.69344
PbI_2	(l)	-157.69496	198.90736	-161.87896
PbI_2	(s)	-175.39328	174.84936	-173.59416
PbI_4	(g)	-224.4716	466.13944	-274.8888
$PbMoO_4$	(s)	-1051.8576	166.1048	-951.4416
PbO	(s red)	-218.99056	66.5256	-189.24232
PbO	(s yellow)	-218.07008	68.70128	-188.65656
$PbO•PbCO_3$	(s)	-918.388	204.1792	-816.7168
PbO_2	(s)	-274.4704	71.79744	-215.476
PBr_3	(g)	-139.3272	347.98328	-162.7576
PBr_3	(l)	-184.5144	240.1616	-175.728
PbS	(s)	-98.324	91.33672	-96.73408
PbSe	(s)	-102.9264	102.508	-101.6712
$PbSeO_4$	(s)	-609.1904	167.7784	-505.0088
$PbSiO_3$	(s)	-1145.1608	110.0392	-1061.0624
$PbSiO_4$	(s)	-2023.8008	84.01472	-1909.5776
$PbSO_4$	(s)	-919.93608	148.57384	-813.20224
PbTe	(s)	-70.7096	110.0392	-69.4544
PCl_3	(l)	-319.6576	217.1496	-272.3784
PCl_3	(g)	-287.0224	311.66616	-267.776
PCl_5	(g)	-342.6696	364.46824	-278.236
PF_3	(g)	-918.8064	273.13152	-897.468
PF_5	(g)	-1576.9496	300.8296	-1508.7504
PH	(g)	255.224	196.2296	221.752
PH_3	(g)	23.012	210.20416	25.5224
PH_4Br	(s)	-127.612	110.0392	-47.6976
PH_4I	(s)	-69.8728	123.0096	0.8368
PN	(g)	32.46784	211.0828	10.33448
Po	(g)	145.6032	188.82392	107.9472
PO	(g)	-12.1336	222.676664	-41.17056
PO_4^{-3}	(aq)	-1277.3752	-221.752	-1018.804
$POBr_3$	(g)	-389.112	359.69848	-390.91112
$POCl_2F$	(g)	-748.936	320.2852	-711.28
$POCl_3$	(g)	-542.2464	325.34784	-502.4984

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$POCl_3$	(l)	-597.0568	222.46328	-520.908
$POClF_2$	(g)	-953.952	301.58272	-912.112
POF_3	(g)	-1236.7904	285.30696	-1193.6952
$PSBr_3$	(g)	-263.592	372.71072	-288.696
$PSCl_3$	(g)	-363.1712	337.2304	-347.6904
PSF_3	(g)	-991.608	298.02632	-973.6168
Ra	(g)	158.992	176.3556	129.704
Ra	(s)	0	71.128	0
$Ra(IO_3)_2$	(s)	-1026.7536	271.96	-868.5984
$Ra(NO_3)_2$	(s)	-991.608	221.752	-796.2152
$RaCl_2•2H_2O$	(s)	-1464.4	213.384	-1302.8976
$RaSO_4$	(s)	-1471.0944	138.072	-1365.6576
Rb	(g)	85.81384	169.99592	55.8564
Rb	(s)	0	69.4544	0
RbBr	(s)	-389.23752	104.93472	-378.14992
RbCl	(s)	-435.05232	94.5584	-412.04032
$RbClO_3$	(s)	-392.4592	151.8792	-292.0432
$RbClO_4$	(s)	-434.59208	160.6656	-306.22696
RbI	(s)	-328.444	118.03064	-325.5152
Rn	(g)	0	176.10456	0
S	(s rhombic)	0	31.92392	0
S	(g)	277.35736	167.73656	236.85624
S	(l)	1.42256	35.1456	0.37656
S_2	(g)	129.03456	228.06984	80.08176
S^{-2}	(aq)	33.0536	-14.644	85.772
S_2Cl_2	(g)	-19.49744	319.4484	-29.24616
$S_2O_4^{-2}$	(aq)	-753.5384	92.048	-600.404
$S_2O_8^{-2}$	(aq)	-1338.88	248.1112	-1110.4336
S_8	(g)	101.2528	430.19888	49.162
SF_2Cl	(g)	-1048.092	319.07184	-949.3496
SF_4	(g)	-728.4344	291.12272	-684.83712
SF_6	(g)	-1220.8912	291.70848	-1115.8728
Si	(g)	455.6376	167.86208	411.2872
Si	(s)	0	18.828	0
Si_2	(g)	594.128	229.78528	535.552
$Si2H_6$	(g)	80.3328	272.54576	127.1936
Si_3N_4	(s)	-743.4968	112.968	-581.576
$SiBr_4$	(l)	-457.3112	277.8176	-443.9224
$SiBr_4$	(g)	-415.4712	377.77336	-431.7888
SiC	(s beta cubic)	-73.22	16.61048	-70.7096
SiC	(s alpha hexagonal)	-71.5464	16.48496	-69.036
SiC	(g)	615.048	236.6052	552.288
$SiCl_2$	(g)	-165.64456	280.328	-177.1924
$SiCl_4$	(g)	-662.7456	330.61968	-622.5792
$SiCl_4$	(l)	-687.0128	239.7432	619.90144
SiF	(g)	7.1128	225.68496	-24.2672

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
SiF_2	(g)	-587.852	256.81392	-598.312
SiF_4	(g)	-1614.94032	282.37816	-1572.68192
SiH_3Cl	(g)	-200.832	250.53792	-179.912
SiH_3F	(g)	-439.32	238.2788	-418.4
SiH_4	(g)	30.5432	204.51392	56.9024
$SiHCl_3$	(l)	-539.3176	227.6096	-482.58256
SiN	(g)	486.51552	216.64752	456.09784
SiO_2	(s cristobalite)	-909.47608	42.6768	-855.87904
SiO_2	(s quartz)	-910.94048	41.84	-856.674
SiO_2	(c amorphous)	-903.49296	46.8608	-850.73272
SiO_2	(s tridymite)	-909.05768	43.5136	-855.29328
$SiOF_2$	(g)	-966.504	271.16504	-949.768
SiS	(g)	112.46592	223.55112	60.91904
SiS_2	(s)	-213.384	80.3328	-212.5472
Sn	(s white)	0	51.54688	0
Sn	(s gray)	-2.092	44.1412	0.12552
Sn	(g)	302.0848	168.376712	267.3576
$SnBr_4$	(g)	-314.6368	411.83112	-331.3728
$SnBr_4$	(s)	-377.3968	264.4288	-350.2008
$SnCl_4$	(l)	-511.2848	258.5712	-440.1568
SnH_4	(g)	162.7576	227.56776	188.28
SnO	(s)	-285.7672	56.484	-256.8976
SnO_2	(s)	-580.7392	52.3	-519.6528
SnS	(s)	-100.416	76.9856	-98.324
SO	(g)	4.882728	221.83568	-21.17104
SO_2	(g)	-296.829696	248.1112	-300.193632
SO_2Cl_2	(g)	-354.8032	311.83352	-310.4528
SO_2F_2	(g)	-758.5592	283.92624	-712.1168
SO_3	(g)	-395.72272	256.64656	-371.07896
SO_3	(l)	-441.03544	95.6044	-368.35936
SO_3	(s beta)	-454.50792	52.3	-368.98696
SO_3^{-2}	(aq)	-635.5496	-29.288	-486.5992
SO_4^{-2}	(aq)	-909.26688	20.0832	-744.62648
$SOCl_2$	(g)	-212.5472	309.65784	-198.3216
Sr	(g)	164.0128	164.51488	130.5408
Sr	(l)	7.61488	57.15344	6.15048
Sr	(s)	0	52.3	0
$Sr(BrO_3)_2•H_2O$	(s)	-1104.576	280.328	-791.1944
$Sr(IO_3)_2$	(s)	-1019.2224	234.304	-855.2096
$Sr(IO_3)_2•6H_2O$	(s)	-2789.8912	456.056	-2274.8408
$Sr(NO_3)_2$	(s)	-978.2192	194.556	-780.14864
$Sr(NO_3)_2•4H_2O$	(s)	-2154.76	369.0288	-1730.7116
Sr_2SiO_4	(s)	-2304.5472	153.1344	-2191.1608
Sr_2TiO_4	(s)	-2287.3928	158.992	-2178.6088
$Sr_3(AsO_4)_2$	(s)	-3317.0752	255.224	-3080.2608
$SrBr_2$	(s)	-717.9744	143.42752	-699.774

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$SrBr_2•6H_2O$	(s)	-2531.32	405.848	-2174.4248
$SrCl_2$	(s)	-828.8504	114.8508	-781.02728
$SrCl_2•2H_2O$	(s)	-1438.0408	217.568	-1281.9776
$SrCl_2•6H_2O$	(s)	-2623.7864	390.7856	-2241.24328
$SrCO_3$	(s strontianite)	-1220.0544	97.0688	-1140.14
SrF_2	(s)	-1217.1256	82.13192	-1165.57872
$SrHPO_4$	(s)	-1821.7136	121.336	-1688.6624
SrI_2	(s)	-561.4928	159.11752	-558.73136
SrO	(s)	-592.036	55.52168	-562.41328
SrS	(s)	-453.1272	68.1992	-448.5248
$SrSiO_3$	(s)	-1633.852	96.6504	-1549.7536
$SrSO_4$	(s)	-1453.1032	117.5704	-1340.972
$SrTiO_3$	(s)	-1672.38664	108.784	-1588.41376
$SrWO_4$	(s)	-1639.7096	138.072	-1531.344
$SrZrO_3$	(s)	-1767.3216	115.06	-1682.8048
Ti	(s beta)	5.995672	36.363144	4.292784
Ti	(s alpha)	0	30.66872	0
Ti_2O_3	(s)	-1520.884	78.78472	-1434.2752
Ti_3O_5	(s alpha)	-2459.3552	129.2856	-2317.5176
Ti_4O_7	(s)	-3404.5208	198.74	-3213.312
TiB	(s)	-160.2472	34.7272	-159.8288
TiB_2	(s)	-280.328	28.4512	-271.96
$TiBr_2$	(s)	-405.848	108.3656	-383.2544
$TiBr_3$	(s)	-550.196	176.43928	-525.5104
$TiBr_4$	(s)	-617.9768	243.63432	-590.7808
$TiBr_4$	(g)	-550.196	398.9444	-569.024
$TiBr_4$	(l)	-605.4248	284.17728	-589.944
TiC	(s)	-184.096	24.22536	-180.3304
$TiCl_2$	(s)	-513.7952	87.4456	-464.424
$TiCl_3$	(s)	-720.9032	139.7456	-653.5408
$TiCl_4$	(g)	-763.1616	354.8032	-726.7608
$TiCl_4$	(l)	-804.1648	252.33704	-737.2208
$TiCl_4$	(s)	-815.0432	208.7816	-735.1288
TiF_2	(g)	-686.176	255.224	-694.544
TiF_3	(s)	-1435.112	87.864	-1362.3104
TiF_4	(g)	-1551.4272	314.6368	-1515.4448
TiF_4	(s)	-1649.3328	133.97168	-1559.3768
TiH_2	(s)	-144.348	29.7064	-105.0184
TiI_2	(s)	-267.776	121.336	-259.408
TiI_3	(s)	-322.168	192.464	-317.984
TiI_4	(l)	-348.318	311.83352	-362.92016
TiI_4	(s)	-375.7232	246.0192	-370.7024
TiN	(s)	-338.0672	30.25032	-309.616
TiO	(s alpha)	-542.6648	34.76904	-513.3768
TiO_2	(s rutile)	-944.7472	50.33352	-889.5184
TiO_2	(s anatase)	-938.72224	49.91512	-883.32608

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
$TiOCl_2$	(g)	-545.5936	320.9128	-535.1336
$TiOF_2$	(g)	-924.664	284.59568	-907.928
U	(s)	0	50.33352	0
U_2N_3	(s)	-891.192	121.336	-811.696
UBr_3	(s)	-711.6984	205.016	-689.1048
UBr_4	(s)	-822.5744	234.304	-788.684
UCl_3	(s)	-891.192	158.95016	-823.8296
UCl_4	(s)	-1051.0208	198.3216	-962.32
UCl_5	(s)	-1096.6264	242.672	-993.2816
UCl_6	(s)	-1139.7216	285.7672	-1010.436
UF_3	(s)	-1493.688	117.152	-1418.376
UF_4	(s)	-1853.512	151.0424	-1761.464
UF_5	(s)	-2041.792	197.9032	-1928.824
UF_6	(s)	-2112.92	227.6096	-2029.24
UH_3	(s)	-127.1936	63.88968	-72.5924
UI_3	(s)	-479.9048	234.304	-482.4152
UI_4	(s)	-531.368	280.328	-527.6024
$UICl_3$	(s)	-920.0616	225.936	-855.2096
UN	(s)	-334.72	62.3416	-313.8
UO_2	(s)	-1129.68	77.8224	-1075.288
$UO_2(NO_3)_2$	(s)	-1377.3728	276.144	-1142.6504
$UO_2(NO_3)_2•2H_2O$	(s)	-2008.32	355.64	-1659.3744
$UO_2(NO_3)_2•3H_2O$	(s)	-2310.4048	393.296	-1902.4648
$UO_2(NO_3)_2•6H_2O$	(s)	-3197.8312	505.6364	-2615
$UO_2(NO_3)_2•H_2O$	(s)	-1693.6832	317.984	-1402.8952
$UO_2SO_4•3H_2O$	(s)	-2789.8912	263.592	-2451.824
UO_3	(s)	-1263.568	98.61688	-1184.072
W	(l)	46.94448	45.68928	40.41744
W	(s)	0	32.67704	0
W	(g)	851.0256	173.8452	808.7672
W_3O_8	(g)	-1711.256	493.712	-1581.552
WBr_5	(s)	-311.708	271.96	-269.4496
WBr_6	(s)	-343.088	313.8	-288.696
WCl_2	(s)	-257.316	130.5408	-220.0784
WCl_4	(s)	-443.504	198.3216	-359.824
WCl_5	(s)	-514.632	217.568	-401.664
WCl_6	(s)	-594.128	238.488	-456.056
WF_6	(l)	-1748.4936	249.3664	-1631.76
WF_6	(g)	-961.0648	347.6904	-835.9632
WO_2	(s)	-589.69296	50.54272	-533.8784
WO_2Cl_2	(s)	-780.316	200.832	-702.912
WO_3	(s)	-842.90864	75.89776	-764.12392
$WOCl_4$	(s)	-671.1136	172.7992	-549.3592
$WOCl_4$	(g)	-573.208	376.9784	-510.448
WOF_4	(g)	-1334.696	334.72	-1276.12
Xe	(g)	0	169.573336	0

Formula	State of Matter	Enthalpy (kJ/mol)	Entropy (J mol/K)	Gibbs Free Energy (kJ/mol)
Zn	(g)	130.72908	160.8748	95.177632
Zn	(s)	0	41.6308	0
$Zn(ClO_4)_2•6H_2O$	(s)	-2133.37976	545.5936	-1555.6112
$Zn(NO_3)_2•6H_2O$	(s)	-2306.6392	456.8928	-1773.13736
$Zn(OH)_2$	(s beta)	-641.90928	81.1696	-553.16664
$Zn(OH)_2$	(s epsilon)	-639.06416	81.588	-555.13312
Zn_2SiO_4	(s)		131.3776	-1523.22704
$ZnBr_2$	(s)	-328.6532	138.4904	-312.1264
$ZnBr_2$	(s)	-405.848	117.152	-380.744
$ZnBr_2•2H_2O$	(s)	-937.216	198.74	-799.5624
$ZnC_2O_4•2H_2O$	(s)	-1564.816	195.3928	-1345.9928
$ZnCl_2$	(s)	-415.0528	108.3656	-369.430464
$ZnCO_3$	(s)	-394.38384	82.4248	-731.5724
ZnF_2	(s)	-764.4168	73.68024	-713.372
ZnI_2	(s)	-208.02848	161.084	-208.94896
ZnO	(s)	-348.27616	43.63912	-318.31872
ZnS	(s sphalerite)	-205.97832	57.7392	-201.29224
ZnSe	(s)	163.176	83.68	163.176
$ZnSeO_3•H_2O$	(s)	-930.94	163.176	-792.868
$ZnSO_4$	(s)	-982.8216	128.0304	-874.456
$ZnSO_4•6H_2O$	(s)	-2777.46472	363.5896	-2324.79776
$ZnSO_4•7H_2O$	(s)	-3077.7504	388.6936	-2563.07656
$ZnSO_4•H_2O$	(s)	-1304.48752	138.4904	-1132.02304

Dean, John A. *Lange's Handbook of Chemistry, 12th ed.*; McGraw-Hill: New York, New York, 1979; p 9-4–9-94.