447

448 TABLE 1b. Molar thermodynamic functions of melanophlogite
449 from Mt. Hamilton ($46SiO_2 \cdot 1.80CH_4 \cdot 3.54N_2$, $1.02CO_2$) at selected
450 temperatures between 5 and 298.15 K (M = 2936.77 g/mol).
451 $\Phi_m \equiv \Delta^T_0 S_m - \Delta^T_0 H_m / T$.

T	$C_{p,m}$	$\Delta^T_0 S_m$	$\Delta^T_0 H_m / T$	Φ_m
[K]	J/(mol·K)	J/(mol·K)	J/(mol·K)	J/(mol·K)
5	8.06208	2.70434	2.02788	0.67646
10	49.0510	18.8733	13.8352	5.0380
15	114.7720	50.7012	36.1286	14.5727
20	188.018	93.702	64.904	28.798
25	260.033	143.466	96.793	46.672
30	327.795	196.885	129.665	67.221
35	391.711	252.296	162.609	89.687
40	450.787	308.500	194.978	113.522
45	506.605	364.845	226.529	138.317
50	559.946	421.005	257.221	163.784
55	611.375	476.795	287.092	189.703
60	661.361	532.143	316.207	215.936
65	710.298	587.019	344.645	242.374
70	758.505	641.426	372.488	268.937
75	806.233	695.387	399.816	295.571
80	853.67	748.94	426.70	322.24
85	900.95	802.11	453.21	348.90
90	948.14	854.94	479.39	375.55
95	995.31	907.47	505.31	402.16
100	1042.43	959.72	530.98	428.74
110	1136.46	1063.49	581.76	481.73
120	1229.69	1166.38	631.87	534.50
130	1321.29	1268.44	681.40	587.04
140	1410.19	1369.63	730.30	639.33
150	1495.14	1469.84	778.48	691.36
160	1589.74	1569.29	826.17	743.12
170	1673.83	1668.27	873.63	794.64
180	1746.60	1766.04	920.14	845.90
190	1812.33	1862.26	965.40	896.87
200	1873.61	1956.80	1009.29	947.51
210	1932.03	2049.63	1051.85	997.78
220	1988.56	2140.82	1093.15	1047.67
230	2043.77	2230.44	1133.28	1097.16
240	2098.00	2318.54	1172.35	1146.18
250	2151.44	2405.30	1210.45	1194.85
260	2204.17	2490.71	1247.66	1243.05
270	2256.24	2574.87	1284.05	1290.82
280	2307.66	2657.86	1319.69	1338.17
290	2358.41	2739.74	1354.64	1385.10
298.15	2399.26	2805.66	1382.63	1423.02

452

452 TABLE 1c. Molar thermodynamic functions of melanophlogite
453 from Racalmuto ($46SiO_2\cdot3.59CH_4\cdot3.10N_2\cdot1.31CO_2$) at selected
454 temperatures between 5 and 298.15 K (M = 2965.99 g/mol).
455 $\Phi_m \equiv \Delta^T_0 S_m - \Delta^T_0 H_m / T$.

T [K]	$C_{p,m}$ J/(mol·K)	$\Delta^T_0 S_m$ J/(mol·K)	$\Delta^T_0 H_m/T$ J/(mol·K)	Φ_m J/(mol·K)
5	7.69173	2.56439	1.92311	0.641277
10	48.0518	18.3329	13.4799	4.85298
15	113.977	49.6568	35.4782	14.1787
20	191.29	92.9393	64.6859	28.2535
25	268.62	143.88	97.6914	46.1881
30	345.704	199.769	132.696	67.0735
35	415.425	258.383	168.187	90.1966
40	479.741	318.1	203.154	114.946
45	540.793	378.155	237.301	140.854
50	599.581	438.194	270.607	167.587
55	656.414	498.021	303.112	194.909
60	711.328	557.504	334.855	222.649
65	764.324	616.547	365.865	250.682
70	815.483	675.072	396.164	278.908
75	865.009	733.033	425.778	307.255
80	913.247	790.404	454.743	335.662
85	960.674	847.195	483.111	364.084
90	1007.89	903.441	510.953	392.488
95	1055.6	959.209	538.359	420.85
100	1104.6	1014.59	565.439	449.155
110	1210.07	1124.72	619.153	505.567
120	1308.58	1234.3	672.574	561.723
130	1405.31	1342.88	725.223	617.655
140	1499.63	1450.5	777.191	673.306
150	1589.59	1557.06	828.38	728.678
160	1674.16	1662.38	878.628	783.749
170	1752.9	1766.26	927.77	838.495
180	1825.88	1868.55	975.664	892.886
190	1893.52	1969.1	1022.21	946.892
200	1956.54	2067.85	1067.37	1000.48
210	2015.85	2164.76	1111.14	1053.62
220	2072.55	2259.85	1153.56	1106.29
230	2127.89	2353.2	1194.72	1158.49
240	2183.2	2444.92	1234.75	1210.17
250	2239.95	2535.2	1273.82	1261.38
260	2299.64	2624.2	1312.11	1312.09
270	2363.86	2712.18	1349.86	1362.32
280	2434.24	2799.4	1387.31	1412.09
290	2512.48	2886.15	1424.73	1461.42
298.15	2583.24	2956.75	1455.42	1501.33

456

456 TABLE 1d. Molar thermodynamic functions of the tempered
457 melanophlogite from Racalmuto ($46SiO_2$) at selected temperatures
458 between 5 and 298.15 K (M = 2763.90 g/mol).
459 $\Phi_m \equiv \Delta^T_0 S_m - \Delta^T_0 H_m/T$.

T	$C_{p,m}$	$\Delta^T_0 S_m$	$\Delta^T_0 H_m/T$	Φ_m
[K]	J/(mol·K)	J/(mol·K)	J/(mol·K)	J/(mol·K)
5	3.49425	1.16508	0.873689	0.291395
10	23.5922	8.73836	6.46045	2.27791
15	58.2606	24.5275	17.6768	6.85072
20	99.5114	46.8402	32.8946	13.9455
25	145.719	73.8726	50.7169	23.1557
30	191.459	104.526	70.4012	34.1248
35	235.445	137.355	90.848	46.5067
40	278.961	171.636	111.644	59.9924
45	322.566	207.008	132.654	74.3533
50	366.512	243.264	153.84	89.4249
55	410.898	280.275	175.188	105.087
60	455.744	317.947	196.695	121.252
65	501.028	356.211	218.361	137.85
70	546.702	395.011	240.181	154.83
75	592.701	434.297	262.147	172.149
80	638.951	474.024	284.251	189.773
85	685.372	514.152	306.481	207.671
90	731.877	554.643	328.822	225.821
95	778.378	595.461	351.259	244.201
100	824.786	636.566	373.776	262.79
110	916.948	719.507	418.974	300.533
120	1007.61	803.193	464.263	338.931
130	1094.23	887.314	509.437	377.877
140	1180.1	971.541	554.268	417.273
150	1265.6	1055.89	598.85	457.036
160	1348.36	1140.23	643.127	497.099
170	1426.92	1224.35	686.945	537.406
180	1500.42	1308.02	730.121	577.897
190	1568.53	1390.99	772.463	618.529
200	1631.29	1473.06	813.873	659.191
210	1689.01	1554.07	854.191	699.88
220	1742.28	1633.89	893.364	740.525
230	1791.84	1712.44	931.358	781.084
240	1838.6	1789.7	968.197	821.505
250	1883.61	1865.67	1003.92	861.751
260	1927.98	1940.41	1038.61	901.804
270	1972.96	2014.01	1072.37	941.638
280	2019.83	2086.6	1105.37	981.237
290	2069.96	2158.35	1137.77	1020.58
298.15	2114.19	2216.32	1163.83	1052.48

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