

Cummingtonite (020) 132 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[1 0 0]	(0 2 0)	(0 0 1)	9.095	5.215	1.74	90.0	78.1
[1 0 1]	(0 2 0)	(1 1 -1)	9.095	4.832	1.88	74.6	70.1
[1 0 0]	(0 2 0)	(0 -2 -1)	9.095	4.524	2.01	60.2	78.1
[1 0 -1]	(0 2 0)	(1 1 1)	9.095	4.088	2.22	77.0	51.9
[1 0 2]	(0 2 0)	(-2 0 1)	9.095	3.894	2.34	90.0	46.9
[1 0 1]	(0 2 0)	(1 3 -1)	9.095	3.863	2.35	50.4	70.1
[1 0 2]	(0 2 0)	(2 2 -1)	9.095	3.579	2.54	66.8	46.9
[1 0 -1]	(0 2 0)	(-1 -3 -1)	9.095	3.450	2.64	55.3	51.9
[1 0 0]	(0 2 0)	(0 4 -1)	9.095	3.428	2.65	41.1	78.1
[1 0 2]	(0 2 0)	(-2 4 1)	9.095	2.958	3.08	49.4	46.9
[1 0 1]	(0 2 0)	(1 5 -1)	9.095	2.944	3.09	36.0	70.1
[1 0 -1]	(0 2 0)	(-1 -5 -1)	9.095	2.749	3.31	40.9	51.9
[2 0 1]	(0 2 0)	(1 1 -2)	9.095	2.629	3.46	81.7	85.7
[1 0 0]	(0 2 0)	(0 2 2)	9.095	2.507	3.63	74.0	78.1
[2 0 1]	(0 2 0)	(1 -3 -2)	9.095	2.434	3.74	66.3	85.7
[2 0 -1]	(0 2 0)	(-1 -1 -2)	9.095	2.366	3.84	82.5	63.6
[1 0 1]	(0 2 0)	(1 7 -1)	9.095	2.307	3.94	27.4	70.1
[2 0 -1]	(0 2 0)	(1 3 2)	9.095	2.221	4.10	68.5	63.6
[2 0 3]	(0 2 0)	(3 1 -2)	9.095	2.219	4.10	83.0	57.0
[1 0 -1]	(0 2 0)	(-1 -7 -1)	9.095	2.209	4.12	31.8	51.9
[1 0 1]	(0 2 0)	(2 4 -2)	9.095	2.195	4.14	61.1	70.1
[2 0 1]	(0 2 0)	(-1 -5 2)	9.095	2.146	4.24	53.9	85.7
[2 0 3]	(0 2 0)	(3 3 -2)	9.095	2.098	4.34	69.8	57.0
[1 0 0]	(0 2 0)	(0 6 2)	9.095	1.977	4.60	49.3	78.1
[1 0 2]	(0 2 0)	(-2 -8 1)	9.095	1.963	4.63	30.3	46.9
[1 0 -1]	(0 2 0)	(2 4 2)	9.095	1.905	4.77	65.2	51.9
[1 0 2]	(0 2 0)	(-4 -2 2)	9.095	1.904	4.78	77.9	46.9
[1 0 1]	(0 2 0)	(1 9 -1)	9.095	1.874	4.85	22.0	70.1
[2 0 1]	(0 2 0)	(-1 -7 2)	9.095	1.858	4.90	44.4	85.7
[1 0 -1]	(0 2 0)	(1 9 1)	9.095	1.821	4.99	25.7	51.9
[3 0 1]	(0 2 0)	(1 1 -3)	9.095	1.768	5.14	84.4	88.9
[2 0 -1]	(0 2 0)	(1 7 2)	9.095	1.758	5.17	47.4	63.6
[3 0 2]	(0 2 0)	(-2 -2 3)	9.095	1.720	5.29	79.1	80.3
[3 0 1]	(0 2 0)	(1 3 -3)	9.095	1.705	5.34	73.7	88.9
[2 0 3]	(0 2 0)	(3 7 -2)	9.095	1.695	5.37	49.3	57.0
[1 0 1]	(0 2 0)	(-2 -8 2)	9.095	1.684	5.40	42.2	70.1
[1 0 1]	(0 2 0)	(3 1 -3)	9.095	1.664	5.47	84.8	70.1
[3 0 -1]	(0 2 0)	(-1 -1 -3)	9.095	1.642	5.54	84.8	68.1
[1 0 2]	(0 2 0)	(4 6 -2)	9.095	1.638	5.55	57.3	46.9
[3 0 2]	(0 2 0)	(-2 -4 3)	9.095	1.634	5.57	68.9	80.3
[1 0 0]	(0 2 0)	(0 4 3)	9.095	1.624	5.60	69.1	78.1
[2 0 1]	(0 2 0)	(1 9 -2)	9.095	1.609	5.65	37.3	85.7
[3 0 1]	(0 2 0)	(-1 -5 3)	9.095	1.596	5.70	64.0	88.9
[3 0 -1]	(0 2 0)	(1 3 3)	9.095	1.591	5.72	74.8	68.1
[2 0 -1]	(0 2 0)	(1 -9 2)	9.095	1.542	5.90	40.3	63.6
[1 0 -1]	(0 2 0)	(-2 8 -2)	9.095	1.542	5.90	47.3	51.9
[3 0 4]	(0 2 0)	(4 2 -3)	9.095	1.533	5.93	80.3	61.1
[1 0 1]	(0 2 0)	(3 -5 -3)	9.095	1.518	5.99	65.3	70.1

Cummingtonite (020) 132 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[3 0 2]	(0 2 0)	(-2 6 3)	9.095	1.516	6.00	60.0	80.3
[3 0 -2]	(0 2 0)	(-2 -2 -3)	9.095	1.507	6.03	80.5	59.3
[3 0 -1]	(0 2 0)	(1 5 3)	9.095	1.502	6.06	65.6	68.1
[2 0 3]	(0 2 0)	(-3 -9 2)	9.095	1.499	6.07	42.1	57.0
[3 0 4]	(0 2 0)	(-4 -4 3)	9.095	1.471	6.18	71.1	61.1
[3 0 1]	(0 2 0)	(1 7 -3)	9.095	1.466	6.20	55.6	88.9
[3 0 -2]	(0 2 0)	(2 4 3)	9.095	1.449	6.28	71.4	59.3
[3 0 5]	(0 2 0)	(-5 -1 3)	9.095	1.421	6.40	85.5	53.4
[1 0 1]	(0 2 0)	(3 7 -3)	9.095	1.405	6.47	57.3	70.1
[1 0 -1]	(0 2 0)	(-3 -1 -3)	9.095	1.394	6.52	85.6	51.9
[3 0 -1]	(0 2 0)	(1 7 3)	9.095	1.392	6.53	57.6	68.1
[3 0 5]	(0 2 0)	(-5 -3 3)	9.095	1.388	6.55	76.8	53.4
[3 0 2]	(0 2 0)	(2 8 -3)	9.095	1.387	6.56	52.4	80.3
[3 0 4]	(0 2 0)	(-4 -6 3)	9.095	1.383	6.57	62.8	61.1
[1 0 0]	(0 2 0)	(0 8 3)	9.095	1.381	6.59	52.6	78.1
[3 0 -2]	(0 2 0)	(-2 -6 -3)	9.095	1.365	6.66	63.2	59.3
[3 0 1]	(0 2 0)	(-1 -9 3)	9.095	1.334	6.82	48.7	88.9
[2 0 1]	(0 2 0)	(2 0 -4)	9.095	1.329	6.85	90.0	85.7
[3 0 5]	(0 2 0)	(5 -5 -3)	9.095	1.327	6.85	68.6	53.4
[4 0 1]	(0 2 0)	(-1 1 4)	9.095	1.326	6.86	85.8	86.1
[1 0 -1]	(0 2 0)	(-3 -5 -3)	9.095	1.305	6.97	69.0	51.9
[4 0 1]	(0 2 0)	(1 -3 -4)	9.095	1.299	7.00	77.6	86.1
[4 0 3]	(0 2 0)	(-3 1 4)	9.095	1.298	7.00	85.9	77.7
[1 0 2]	(0 2 0)	(6 2 -3)	9.095	1.285	7.08	81.9	46.9
[3 0 4]	(0 2 0)	(4 8 -3)	9.095	1.283	7.09	55.6	61.1
[3 0 -1]	(0 2 0)	(1 9 3)	9.095	1.278	7.12	50.8	68.1
[2 0 1]	(0 2 0)	(-2 -4 4)	9.095	1.275	7.13	73.7	85.7
[4 0 3]	(0 2 0)	(3 3 -4)	9.095	1.273	7.15	77.9	77.7
[3 0 -4]	(0 2 0)	(4 0 3)	9.095	1.272	7.15	90.0	45.7
[3 0 -2]	(0 2 0)	(2 -8 3)	9.095	1.268	7.17	56.1	59.3
[3 0 -4]	(0 2 0)	(-4 2 -3)	9.095	1.260	7.22	82.0	45.7
[4 0 1]	(0 2 0)	(-1 5 4)	9.095	1.249	7.28	69.9	86.1
[1 0 2]	(0 2 0)	(6 4 -3)	9.095	1.248	7.29	74.1	46.9
[1 0 1]	(0 2 0)	(-4 -2 4)	9.095	1.241	7.33	82.2	70.1
[1 0 -1]	(0 2 0)	(3 7 3)	9.095	1.232	7.39	61.7	51.9
[4 0 -1]	(0 2 0)	(-1 -3 -4)	9.095	1.230	7.39	78.3	70.5
[4 0 3]	(0 2 0)	(3 5 -4)	9.095	1.226	7.42	70.3	77.7
[3 0 -4]	(0 2 0)	(4 4 3)	9.095	1.225	7.42	74.4	45.7
[2 0 -1]	(0 2 0)	(2 0 4)	9.095	1.193	7.62	90.0	63.6
[4 0 5]	(0 2 0)	(5 1 -4)	9.095	1.187	7.66	86.3	63.2
[4 0 1]	(0 2 0)	(-1 -7 4)	9.095	1.184	7.68	62.9	86.1
[3 0 -4]	(0 2 0)	(-4 -6 -3)	9.095	1.173	7.75	67.2	45.7
[4 0 5]	(0 2 0)	(5 3 -4)	9.095	1.167	7.79	78.9	63.2
[3 0 5]	(0 2 0)	(-5 -9 3)	9.095	1.165	7.81	54.8	53.4
[4 0 3]	(0 2 0)	(3 7 -4)	9.095	1.164	7.81	63.4	77.7
[1 0 1]	(0 2 0)	(4 6 -4)	9.095	1.158	7.85	67.5	70.1
[2 0 -1]	(0 2 0)	(-2 -4 -4)	9.095	1.154	7.88	75.3	63.6
[2 0 1]	(0 2 0)	(-2 -8 4)	9.095	1.147	7.93	59.7	85.7

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[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[4 0 5]	(0 2 0)	(5 5 -4)	9.095	1.130	8.05	71.9	63.2
[1 0 2]	(0 2 0)	(6 8 -3)	9.095	1.127	8.07	60.3	46.9
[4 0 -3]	(0 2 0)	(-3 -1 -4)	9.095	1.120	8.12	86.5	57.4
[2 0 3]	(0 2 0)	(6 0 -4)	9.095	1.118	8.13	90.0	57.0
[4 0 1]	(0 2 0)	(1 -9 -4)	9.095	1.111	8.19	56.7	86.1
[3 0 -4]	(0 2 0)	(-4 8 -3)	9.095	1.110	8.19	60.8	45.7
[4 0 3]	(0 2 0)	(-3 -9 4)	9.095	1.094	8.31	57.2	77.7
[2 0 3]	(0 2 0)	(6 4 -4)	9.095	1.086	8.38	76.2	57.0
[4 0 5]	(0 2 0)	(5 7 -4)	9.095	1.081	8.41	65.4	63.2
[4 0 -3]	(0 2 0)	(-3 -5 -4)	9.095	1.072	8.48	72.9	57.4
[4 0 -1]	(0 2 0)	(1 9 4)	9.095	1.067	8.52	58.1	70.5
[5 0 2]	(0 2 0)	(2 0 -5)	9.095	1.066	8.53	90.0	88.9
[5 0 1]	(0 2 0)	(1 -1 -5)	9.095	1.059	8.59	86.7	84.5
[5 0 2]	(0 2 0)	(-2 2 5)	9.095	1.059	8.59	83.3	88.9
[2 0 -1]	(0 2 0)	(2 8 4)	9.095	1.057	8.61	62.3	63.6
[5 0 3]	(0 2 0)	(-3 -1 5)	9.095	1.055	8.62	86.7	82.4
[5 0 1]	(0 2 0)	(1 -3 -5)	9.095	1.045	8.70	80.1	84.5
[4 0 7]	(0 2 0)	(-7 1 4)	9.095	1.043	8.72	86.7	51.6
[1 0 -1]	(0 2 0)	(4 2 4)	9.095	1.042	8.73	83.4	51.9
[5 0 3]	(0 2 0)	(-3 -3 5)	9.095	1.041	8.74	80.1	82.4
[5 0 2]	(0 2 0)	(2 4 -5)	9.095	1.038	8.76	76.8	88.9
[1 0 0]	(0 2 0)	(0 -2 -5)	9.095	1.036	8.78	83.5	78.1
[5 0 4]	(0 2 0)	(4 0 -5)	9.095	1.035	8.79	90.0	76.1
[4 0 -3]	(0 2 0)	(3 -7 4)	9.095	1.030	8.83	66.6	57.4
[4 0 7]	(0 2 0)	(-7 3 4)	9.095	1.030	8.83	80.2	51.6
[5 0 4]	(0 2 0)	(4 2 -5)	9.095	1.028	8.85	83.5	76.1
[4 0 5]	(0 2 0)	(-5 -9 4)	9.095	1.025	8.87	59.5	63.2
[5 0 1]	(0 2 0)	(-1 -5 5)	9.095	1.019	8.93	73.7	84.5
[1 0 0]	(0 2 0)	(0 4 5)	9.095	1.017	8.95	77.1	78.1
[5 0 3]	(0 2 0)	(-3 -5 5)	9.095	1.015	8.96	73.8	82.4
[5 0 -1]	(0 2 0)	(1 1 5)	9.095	1.012	8.99	86.8	72.0
[5 0 4]	(0 2 0)	(-4 -4 5)	9.095	1.009	9.01	77.2	76.1
[5 0 2]	(0 2 0)	(2 6 -5)	9.095	1.005	9.05	70.6	88.9
[4 0 7]	(0 2 0)	(-7 -5 4)	9.095	1.004	9.06	74.0	51.6
[2 0 3]	(0 2 0)	(6 8 -4)	9.095	1.003	9.07	63.8	57.0
[1 0 1]	(0 2 0)	(-5 -1 5)	9.095	1.001	9.09	86.8	70.1

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[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[1 -1 0]	(1 1 0)	(0 0 1)	8.284	5.215	1.59	79.4	84.5
[1 -1 2]	(1 1 0)	(-1 1 1)	8.284	4.832	1.71	80.1	66.9
[1 -1 0]	(1 1 0)	(1 1 -1)	8.284	4.832	1.71	65.6	84.5
[1 -1 -2]	(1 1 0)	(0 2 -1)	8.284	4.524	1.83	86.1	58.3
[1 -1 2]	(1 1 0)	(0 2 1)	8.284	4.524	1.83	67.3	66.9
[1 -1 -2]	(1 1 0)	(1 -1 1)	8.284	4.088	2.03	64.4	58.3
[1 -1 0]	(1 1 0)	(1 1 1)	8.284	4.088	2.03	50.4	84.5
[1 -1 2]	(1 1 0)	(2 0 -1)	8.284	3.894	2.13	52.6	66.9
[1 -1 4]	(1 1 0)	(1 -3 -1)	8.284	3.863	2.14	86.8	46.5
[1 -1 -2]	(1 1 0)	(1 3 -1)	8.284	3.863	2.14	58.4	58.3
[1 -1 4]	(1 1 0)	(2 -2 -1)	8.284	3.579	2.31	67.7	46.5
[1 -1 2]	(1 1 0)	(1 3 1)	8.284	3.450	2.40	44.7	66.9
[1 -1 4]	(1 1 0)	(0 -4 -1)	8.284	3.428	2.42	62.4	46.5
[1 -1 -2]	(1 1 0)	(2 0 1)	8.284	3.163	2.62	44.2	58.3
[1 -1 -2]	(1 1 0)	(2 4 -1)	8.284	2.958	2.80	40.7	58.3
[1 -1 4]	(1 1 0)	(-3 1 1)	8.284	2.908	2.85	48.7	46.5
[1 -1 2]	(1 1 0)	(3 1 -1)	8.284	2.908	2.85	36.4	66.9
[1 -1 4]	(1 1 0)	(1 5 1)	8.284	2.749	3.01	45.3	46.5
[1 -1 1]	(1 1 0)	(1 -1 -2)	8.284	2.629	3.15	90.0	80.6
[1 -1 0]	(1 1 0)	(-1 -1 2)	8.284	2.629	3.15	82.4	84.5
[1 -1 2]	(1 1 0)	(-2 -4 -1)	8.284	2.597	3.19	32.0	66.9
[1 -1 -1]	(1 1 0)	(0 -2 2)	8.284	2.507	3.30	87.1	70.4
[1 -1 1]	(1 1 0)	(0 -2 -2)	8.284	2.507	3.30	72.4	80.6
[1 -1 1]	(1 1 0)	(2 0 -2)	8.284	2.506	3.31	72.4	80.6
[1 -1 2]	(1 1 0)	(-1 3 2)	8.284	2.434	3.40	83.0	66.9
[1 -1 -1]	(1 1 0)	(-1 -3 2)	8.284	2.434	3.40	75.9	70.4
[1 -1 -2]	(1 1 0)	(3 1 1)	8.284	2.431	3.41	32.4	58.3
[1 -1 4]	(1 1 0)	(4 0 -1)	8.284	2.309	3.59	36.6	46.5
[1 -1 -2]	(1 1 0)	(-3 -5 1)	8.284	2.290	3.62	30.3	58.3
[1 -1 0]	(1 1 0)	(-3 -3 -1)	8.284	2.274	3.64	25.4	84.5
[1 -1 2]	(1 1 0)	(-4 -2 1)	8.284	2.238	3.70	27.2	66.9
[1 -1 -2]	(1 1 0)	(1 -3 2)	8.284	2.221	3.73	78.3	58.3
[1 -1 1]	(1 1 0)	(-1 -3 -2)	8.284	2.221	3.73	57.6	80.6
[1 -1 2]	(1 1 0)	(3 -1 -2)	8.284	2.219	3.73	64.8	66.9
[1 -1 1]	(1 1 0)	(3 1 -2)	8.284	2.219	3.73	57.6	80.6
[1 -1 3]	(1 1 0)	(-2 4 2)	8.284	2.195	3.77	87.4	55.5
[1 -1 -1]	(1 1 0)	(2 4 -2)	8.284	2.195	3.77	61.0	70.4
[1 -1 4]	(1 1 0)	(-2 -6 -1)	8.284	2.189	3.79	34.4	46.5
[1 -1 3]	(1 1 0)	(-1 5 2)	8.284	2.146	3.86	77.6	55.5
[1 -1 -2]	(1 1 0)	(-1 -5 2)	8.284	2.146	3.86	71.2	58.3
[1 -1 3]	(1 1 0)	(3 -3 -2)	8.284	2.098	3.95	72.7	55.5
[1 -1 0]	(1 1 0)	(-3 -3 2)	8.284	2.098	3.95	52.3	84.5
[1 -1 -1]	(1 1 0)	(2 0 2)	8.284	2.098	3.95	56.7	70.4
[1 -1 2]	(1 1 0)	(1 5 2)	8.284	1.995	4.15	54.5	66.9
[1 -1 -3]	(1 1 0)	(0 -6 2)	8.284	1.977	4.19	80.9	48.7
[1 -1 3]	(1 1 0)	(0 6 2)	8.284	1.977	4.19	64.1	55.5
[1 -1 4]	(1 1 0)	(3 -5 -2)	8.284	1.905	4.35	80.0	46.5
[1 -1 -1]	(1 1 0)	(-3 -5 2)	8.284	1.905	4.35	49.4	70.4

Cummingtonite (110) 340 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[1 -1 -3]	(1 1 0)	(2 -4 2)	8.284	1.905	4.35	72.1	48.7
[1 -1 1]	(1 1 0)	(-2 -4 -2)	8.284	1.905	4.35	46.4	80.6
[1 -1 3]	(1 1 0)	(4 -2 -2)	8.284	1.904	4.35	60.1	55.5
[1 -1 1]	(1 1 0)	(4 2 -2)	8.284	1.904	4.35	46.4	80.6
[1 -1 4]	(1 1 0)	(-5 -1 1)	8.284	1.870	4.43	28.9	46.5
[1 -1 4]	(1 1 0)	(-1 7 2)	8.284	1.858	4.46	73.8	46.5
[1 -1 -3]	(1 1 0)	(-1 -7 2)	8.284	1.858	4.46	68.1	48.7
[1 -1 -2]	(1 1 0)	(4 6 -1)	8.284	1.837	4.51	23.9	58.3
[1 -1 -2]	(1 1 0)	(3 -1 2)	8.284	1.811	4.58	53.0	58.3
[1 -1 -1]	(1 1 0)	(-3 -1 -2)	8.284	1.811	4.58	46.2	70.4
[1 -1 2]	(1 1 0)	(5 3 -1)	8.284	1.796	4.61	21.5	66.9
[1 -1 4]	(1 1 0)	(-3 -7 -1)	8.284	1.784	4.64	27.5	46.5
[1 -1 0]	(1 1 0)	(1 1 -3)	8.284	1.768	4.69	88.5	84.5
[3 -3 2]	(1 1 0)	(1 -1 -3)	8.284	1.768	4.69	86.5	85.5
[1 -1 3]	(1 1 0)	(1 7 2)	8.284	1.758	4.71	53.1	55.5
[3 -3 2]	(1 1 0)	(-2 0 3)	8.284	1.751	4.73	81.4	85.5
[1 -1 -3]	(1 1 0)	(3 -3 2)	8.284	1.743	4.75	60.5	48.7
[1 -1 0]	(1 1 0)	(-3 -3 -2)	8.284	1.743	4.75	41.1	84.5
[3 -3 4]	(1 1 0)	(2 -2 -3)	8.284	1.720	4.82	86.5	75.9
[1 -1 0]	(1 1 0)	(2 2 -3)	8.284	1.720	4.82	76.5	84.5
[3 -3 2]	(1 1 0)	(0 -2 -3)	8.284	1.708	4.85	74.6	85.5
[3 -3 -2]	(1 1 0)	(1 3 -3)	8.284	1.705	4.86	83.6	74.9
[3 -3 4]	(1 1 0)	(1 -3 -3)	8.284	1.705	4.86	81.7	75.9
[1 -1 -2]	(1 1 0)	(3 7 -2)	8.284	1.695	4.89	48.4	58.3
[1 -1 -3]	(1 1 0)	(2 8 -2)	8.284	1.684	4.92	57.3	48.7
[1 -1 3]	(1 1 0)	(5 -1 -2)	8.284	1.681	4.93	49.9	55.5
[1 -1 2]	(1 1 0)	(-5 -1 2)	8.284	1.681	4.93	43.3	66.9
[1 -1 0]	(1 1 0)	(5 5 -1)	8.284	1.670	4.96	18.3	84.5
[3 -3 4]	(1 1 0)	(3 -1 -3)	8.284	1.664	4.98	74.9	75.9
[3 -3 2]	(1 1 0)	(-3 -1 3)	8.284	1.664	4.98	69.9	85.5
[1 -1 2]	(1 1 0)	(4 6 1)	8.284	1.657	5.00	19.7	66.9
[3 -3 -2]	(1 1 0)	(-1 1 -3)	8.284	1.642	5.05	73.2	74.9
[1 -1 0]	(1 1 0)	(1 1 3)	8.284	1.642	5.05	68.2	84.5
[1 -1 -1]	(1 1 0)	(-4 -6 2)	8.284	1.638	5.06	40.7	70.4
[1 -1 2]	(1 1 0)	(-2 4 3)	8.284	1.634	5.07	88.7	66.9
[3 -3 -2]	(1 1 0)	(-2 -4 3)	8.284	1.634	5.07	72.3	74.9
[1 -1 1]	(1 1 0)	(3 5 2)	8.284	1.628	5.09	38.2	80.6
[1 -1 4]	(1 1 0)	(-5 3 2)	8.284	1.627	5.09	57.2	46.5
[1 -1 1]	(1 1 0)	(5 3 -2)	8.284	1.627	5.09	38.2	80.6
[3 -3 -4]	(1 1 0)	(0 4 -3)	8.284	1.624	5.10	89.5	66.1
[3 -3 4]	(1 1 0)	(0 4 3)	8.284	1.624	5.10	70.5	75.9
[3 -3 -4]	(1 1 0)	(-1 -5 3)	8.284	1.596	5.19	79.4	66.1
[1 -1 2]	(1 1 0)	(-1 5 3)	8.284	1.596	5.19	77.5	66.9
[3 -3 -4]	(1 1 0)	(-1 3 -3)	8.284	1.591	5.21	78.4	66.1
[3 -3 2]	(1 1 0)	(1 3 3)	8.284	1.591	5.21	63.9	85.5
[1 -1 -2]	(1 1 0)	(-5 -3 -1)	8.284	1.591	5.21	20.5	58.3
[1 -1 -1]	(1 1 0)	(4 2 2)	8.284	1.558	5.32	38.4	70.4
[1 -1 4]	(1 1 0)	(-6 -2 1)	8.284	1.555	5.33	23.7	46.5

Cummingtonite (110) 340 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[3 -3 4]	(1 1 0)	(4 0 -3)	8.284	1.555	5.33	64.5	75.9
[1 -1 4]	(1 1 0)	(-1 -9 -2)	8.284	1.542	5.37	52.9	46.5
[1 -1 3]	(1 1 0)	(2 8 2)	8.284	1.542	5.37	44.6	55.5
[1 -1 2]	(1 1 0)	(-4 2 3)	8.284	1.533	5.41	69.6	66.9
[3 -3 2]	(1 1 0)	(4 2 -3)	8.284	1.533	5.41	59.9	85.5
[1 -1 0]	(1 1 0)	(-5 -5 2)	8.284	1.532	5.41	35.3	84.5
[3 -3 -2]	(1 1 0)	(2 0 3)	8.284	1.528	5.42	63.0	74.9
[1 -1 -2]	(1 1 0)	(-5 -7 1)	8.284	1.523	5.44	19.6	58.3
[3 -3 8]	(1 1 0)	(3 -5 -3)	8.284	1.518	5.46	85.1	59.1
[3 -3 -2]	(1 1 0)	(3 5 -3)	8.284	1.518	5.46	62.3	74.9
[3 -3 8]	(1 1 0)	(2 -6 -3)	8.284	1.516	5.46	84.4	59.1
[3 -3 -4]	(1 1 0)	(2 6 -3)	8.284	1.516	5.46	69.0	66.1
[3 -3 -4]	(1 1 0)	(-2 2 -3)	8.284	1.507	5.50	68.2	66.1
[1 -1 0]	(1 1 0)	(2 2 3)	8.284	1.507	5.50	58.5	84.5
[1 -1 -2]	(1 1 0)	(-1 5 -3)	8.284	1.502	5.52	83.4	58.3
[3 -3 4]	(1 1 0)	(1 5 3)	8.284	1.502	5.52	60.6	75.9
[1 -1 -3]	(1 1 0)	(3 9 -2)	8.284	1.499	5.53	48.5	48.7
[1 -1 4]	(1 1 0)	(4 8 1)	8.284	1.492	5.55	22.7	46.5
[1 -1 2]	(1 1 0)	(-6 -4 1)	8.284	1.491	5.56	17.7	66.9
[1 -1 2]	(1 1 0)	(3 7 2)	8.284	1.491	5.56	37.4	66.9
[1 -1 3]	(1 1 0)	(-6 0 2)	8.284	1.473	5.62	42.1	55.5
[3 -3 8]	(1 1 0)	(4 -4 -3)	8.284	1.471	5.63	74.9	59.1
[1 -1 0]	(1 1 0)	(-4 -4 3)	8.284	1.471	5.63	56.3	84.5
[1 -1 -2]	(1 1 0)	(1 7 -3)	8.284	1.466	5.65	76.0	58.3
[3 -3 8]	(1 1 0)	(1 -7 -3)	8.284	1.466	5.65	74.2	59.1
[1 -1 -2]	(1 1 0)	(2 -4 3)	8.284	1.449	5.72	73.4	58.3
[3 -3 2]	(1 1 0)	(-2 -4 -3)	8.284	1.449	5.72	54.9	85.5
[1 -1 2]	(1 1 0)	(5 -1 -3)	8.284	1.421	5.83	60.4	66.9
[3 -3 4]	(1 1 0)	(-5 -1 3)	8.284	1.421	5.83	55.6	75.9
[1 -1 -1]	(1 1 0)	(5 7 -2)	8.284	1.416	5.85	34.3	70.4
[3 -3 10]	(1 1 0)	(-3 7 3)	8.284	1.405	5.90	89.5	52.3
[3 -3 -4]	(1 1 0)	(3 7 -3)	8.284	1.405	5.90	59.9	66.1
[1 -1 1]	(1 1 0)	(-4 -6 -2)	8.284	1.402	5.91	32.2	80.6
[1 -1 1]	(1 1 0)	(6 4 -2)	8.284	1.401	5.91	32.2	80.6
[3 -3 -4]	(1 1 0)	(3 -1 3)	8.284	1.394	5.94	59.2	66.1
[3 -3 -2]	(1 1 0)	(-3 -1 -3)	8.284	1.394	5.94	54.4	74.9
[3 -3 -8]	(1 1 0)	(1 -7 3)	8.284	1.392	5.95	87.9	51.6
[1 -1 2]	(1 1 0)	(-1 -7 -3)	8.284	1.392	5.95	58.4	66.9
[1 -1 2]	(1 1 0)	(5 7 1)	8.284	1.392	5.95	16.5	66.9
[3 -3 8]	(1 1 0)	(-5 3 3)	8.284	1.388	5.97	65.6	59.1
[3 -3 2]	(1 1 0)	(5 3 -3)	8.284	1.388	5.97	51.6	85.5
[3 -3 10]	(1 1 0)	(2 -8 -3)	8.284	1.387	5.97	80.9	52.3
[1 -1 -2]	(1 1 0)	(2 8 -3)	8.284	1.387	5.97	66.6	58.3
[3 -3 10]	(1 1 0)	(-4 6 3)	8.284	1.383	5.99	79.9	52.3
[3 -3 -2]	(1 1 0)	(4 6 -3)	8.284	1.383	5.99	53.8	74.9
[1 -1 -3]	(1 1 0)	(-5 1 -2)	8.284	1.382	6.00	43.6	48.7
[1 -1 -2]	(1 1 0)	(5 1 2)	8.284	1.382	6.00	37.5	58.3
[3 -3 -8]	(1 1 0)	(0 -8 3)	8.284	1.381	6.00	82.5	51.6

Cummingtonite (110) 340 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[3 -3 8]	(1 1 0)	(0 8 3)	8.284	1.381	6.00	65.0	59.1
[3 -3 -8]	(1 1 0)	(-2 6 -3)	8.284	1.365	6.07	78.4	51.6
[3 -3 4]	(1 1 0)	(2 6 3)	8.284	1.365	6.07	52.4	75.9
[1 -1 3]	(1 1 0)	(-3 -9 -2)	8.284	1.352	6.13	38.0	55.5
[1 -1 -1]	(1 1 0)	(5 3 2)	8.284	1.351	6.13	32.6	70.4
[1 -1 -2]	(1 1 0)	(-6 -4 -1)	8.284	1.346	6.15	17.3	58.3
[3 -3 -8]	(1 1 0)	(1 9 -3)	8.284	1.334	6.21	73.3	51.6
[3 -3 10]	(1 1 0)	(-1 9 3)	8.284	1.334	6.21	71.7	52.3
[2 -2 1]	(1 1 0)	(-2 0 4)	8.284	1.329	6.24	86.1	88.0
[3 -3 10]	(1 1 0)	(5 -5 -3)	8.284	1.327	6.24	70.8	52.3
[1 -1 0]	(1 1 0)	(5 5 -3)	8.284	1.327	6.24	48.6	84.5
[1 -1 0]	(1 1 0)	(1 1 -4)	8.284	1.326	6.25	88.5	84.5
[2 -2 1]	(1 1 0)	(-1 1 4)	8.284	1.326	6.25	84.7	88.0
[3 -3 -8]	(1 1 0)	(-3 5 -3)	8.284	1.305	6.35	69.6	51.6
[3 -3 2]	(1 1 0)	(3 5 3)	8.284	1.305	6.35	47.5	85.5
[2 -2 -1]	(1 1 0)	(1 3 -4)	8.284	1.299	6.38	87.8	77.2
[1 -1 1]	(1 1 0)	(1 -3 -4)	8.284	1.299	6.38	81.0	80.6
[1 -1 1]	(1 1 0)	(3 -1 -4)	8.284	1.298	6.38	80.9	80.6
[2 -2 1]	(1 1 0)	(-3 -1 4)	8.284	1.298	6.38	77.2	88.0
[1 -1 -2]	(1 1 0)	(5 9 -2)	8.284	1.296	6.39	34.9	58.3
[1 -1 0]	(1 1 0)	(-5 -5 -2)	8.284	1.295	6.40	29.2	84.5
[1 -1 4]	(1 1 0)	(7 -1 -2)	8.284	1.294	6.40	42.0	46.5
[1 -1 3]	(1 1 0)	(-7 -1 2)	8.284	1.294	6.40	36.1	55.5
[2 -2 -1]	(1 1 0)	(0 -2 4)	8.284	1.291	6.42	83.3	77.2
[2 -2 1]	(1 1 0)	(0 -2 -4)	8.284	1.291	6.42	75.7	88.0
[3 -3 8]	(1 1 0)	(6 -2 -3)	8.284	1.285	6.45	57.5	59.1
[3 -3 4]	(1 1 0)	(-6 -2 3)	8.284	1.285	6.45	48.2	75.9
[1 -1 4]	(1 1 0)	(4 -8 -3)	8.284	1.283	6.45	84.3	46.5
[3 -3 -4]	(1 1 0)	(-4 -8 3)	8.284	1.283	6.45	52.2	66.1
[1 -1 0]	(1 1 0)	(-6 -6 -1)	8.284	1.278	6.48	13.9	84.5
[3 -3 -10]	(1 1 0)	(-1 9 -3)	8.284	1.278	6.48	88.2	46.0
[3 -3 8]	(1 1 0)	(-1 -9 -3)	8.284	1.278	6.48	57.0	59.1
[1 -1 4]	(1 1 0)	(5 9 1)	8.284	1.277	6.48	19.3	46.5
[2 -2 3]	(1 1 0)	(2 -4 -4)	8.284	1.275	6.50	86.4	73.5
[2 -2 -1]	(1 1 0)	(2 4 -4)	8.284	1.275	6.50	78.9	77.2
[2 -2 3]	(1 1 0)	(-3 3 4)	8.284	1.273	6.51	84.8	73.5
[1 -1 0]	(1 1 0)	(3 3 -4)	8.284	1.273	6.51	73.6	84.5
[3 -3 -4]	(1 1 0)	(-4 0 -3)	8.284	1.272	6.51	51.6	66.1
[1 -1 2]	(1 1 0)	(7 5 -1)	8.284	1.271	6.52	15.0	66.9
[1 -1 2]	(1 1 0)	(-7 -3 2)	8.284	1.269	6.53	31.2	66.9
[3 -3 -10]	(1 1 0)	(2 -8 3)	8.284	1.268	6.53	83.0	46.0
[1 -1 2]	(1 1 0)	(-2 -8 -3)	8.284	1.268	6.53	50.9	66.9
[1 -1 -2]	(1 1 0)	(4 -2 3)	8.284	1.260	6.57	56.5	58.3
[3 -3 -2]	(1 1 0)	(-4 -2 -3)	8.284	1.260	6.57	47.3	74.9
[3 -3 -2]	(1 1 0)	(-5 -7 3)	8.284	1.250	6.63	46.8	74.9
[1 -1 -1]	(1 1 0)	(1 5 -4)	8.284	1.249	6.63	84.3	70.4
[2 -2 3]	(1 1 0)	(1 -5 -4)	8.284	1.249	6.63	77.7	73.5
[3 -3 10]	(1 1 0)	(6 -4 -3)	8.284	1.248	6.64	62.6	52.3

Cummingtonite (110) 340 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[3 -3 2]	(1 1 0)	(6 4 -3)	8.284	1.248	6.64	44.8	85.5
[2 -2 3]	(1 1 0)	(-4 2 4)	8.284	1.241	6.67	76.2	73.5
[2 -2 1]	(1 1 0)	(4 2 -4)	8.284	1.241	6.67	68.8	88.0
[1 -1 -1]	(1 1 0)	(6 8 -2)	8.284	1.236	6.70	29.5	70.4
[3 -3 -10]	(1 1 0)	(-3 7 -3)	8.284	1.232	6.73	74.5	46.0
[3 -3 4]	(1 1 0)	(3 7 3)	8.284	1.232	6.73	45.6	75.9
[1 -1 -1]	(1 1 0)	(1 -3 4)	8.284	1.230	6.74	78.6	70.4
[2 -2 1]	(1 1 0)	(-1 -3 -4)	8.284	1.230	6.74	67.5	88.0
[1 -1 -3]	(1 1 0)	(6 0 2)	8.284	1.227	6.75	37.8	48.7
[1 -1 2]	(1 1 0)	(-3 5 4)	8.284	1.226	6.76	88.5	66.9
[2 -2 -1]	(1 1 0)	(3 5 -4)	8.284	1.226	6.76	70.6	77.2
[3 -3 -8]	(1 1 0)	(-4 4 -3)	8.284	1.225	6.76	61.6	51.6
[1 -1 0]	(1 1 0)	(4 4 3)	8.284	1.225	6.76	43.9	84.5
[1 -1 1]	(1 1 0)	(-5 -7 -2)	8.284	1.223	6.78	27.7	80.6
[1 -1 1]	(1 1 0)	(7 5 -2)	8.284	1.222	6.78	27.7	80.6
[2 -2 -3]	(1 1 0)	(0 6 -4)	8.284	1.198	6.92	89.4	64.0
[2 -2 3]	(1 1 0)	(0 6 4)	8.284	1.198	6.92	69.6	73.5
[2 -2 -1]	(1 1 0)	(-2 0 -4)	8.284	1.193	6.94	66.7	77.2
[2 -2 3]	(1 1 0)	(5 -1 -4)	8.284	1.187	6.98	68.2	73.5
[1 -1 1]	(1 1 0)	(-5 -1 4)	8.284	1.187	6.98	64.5	80.6
[1 -1 -1]	(1 1 0)	(6 4 2)	8.284	1.184	7.00	28.2	70.4
[2 -2 -3]	(1 1 0)	(-1 -7 4)	8.284	1.184	7.00	81.1	64.0
[1 -1 2]	(1 1 0)	(-1 7 4)	8.284	1.184	7.00	74.9	66.9
[3 -3 8]	(1 1 0)	(7 -1 -3)	8.284	1.177	7.04	50.6	59.1
[1 -1 2]	(1 1 0)	(-7 -1 3)	8.284	1.177	7.04	46.1	66.9
[3 -3 -10]	(1 1 0)	(4 -6 3)	8.284	1.173	7.06	66.6	46.0
[3 -3 2]	(1 1 0)	(-4 -6 -3)	8.284	1.173	7.06	41.5	85.5
[1 -1 2]	(1 1 0)	(5 -3 -4)	8.284	1.167	7.10	72.2	66.9
[2 -2 1]	(1 1 0)	(-5 -3 4)	8.284	1.167	7.10	61.2	88.0
[3 -3 -4]	(1 1 0)	(5 9 -3)	8.284	1.165	7.11	45.8	66.1
[1 -1 -2]	(1 1 0)	(-7 -5 -1)	8.284	1.164	7.12	14.9	58.3
[2 -2 5]	(1 1 0)	(-3 7 4)	8.284	1.164	7.12	88.1	60.9
[1 -1 -1]	(1 1 0)	(-3 -7 4)	8.284	1.164	7.12	68.0	70.4
[1 -1 0]	(1 1 0)	(7 7 -2)	8.284	1.161	7.14	26.0	84.5
[3 -3 10]	(1 1 0)	(-7 3 3)	8.284	1.158	7.15	55.5	52.3
[3 -3 4]	(1 1 0)	(7 3 -3)	8.284	1.158	7.15	42.2	75.9
[2 -2 5]	(1 1 0)	(-4 6 4)	8.284	1.158	7.15	83.9	60.9
[2 -2 -1]	(1 1 0)	(4 6 -4)	8.284	1.158	7.15	63.0	77.2
[1 -1 -2]	(1 1 0)	(-5 1 -3)	8.284	1.155	7.17	49.8	58.3
[3 -3 -4]	(1 1 0)	(5 1 3)	8.284	1.155	7.17	45.3	66.1
[2 -2 -3]	(1 1 0)	(-2 4 -4)	8.284	1.154	7.18	74.5	64.0
[2 -2 1]	(1 1 0)	(2 4 4)	8.284	1.154	7.18	60.1	88.0
[1 -1 4]	(1 1 0)	(8 4 -1)	8.284	1.150	7.20	17.3	46.5
[2 -2 5]	(1 1 0)	(2 -8 -4)	8.284	1.147	7.22	80.1	60.9
[2 -2 -3]	(1 1 0)	(2 8 -4)	8.284	1.147	7.22	73.3	64.0
[1 -1 3]	(1 1 0)	(-8 -2 2)	8.284	1.145	7.23	31.4	55.5
[1 -1 2]	(1 1 0)	(5 9 2)	8.284	1.143	7.25	27.8	66.9
[3 -3 -2]	(1 1 0)	(5 3 3)	8.284	1.136	7.29	41.5	74.9

Cummingtonite (110) 340 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[2 -2 5]	(1 1 0)	(-5 5 4)	8.284	1.130	7.33	76.1	60.9
[1 -1 0]	(1 1 0)	(5 5 -4)	8.284	1.130	7.33	58.5	84.5
[3 -3 -2]	(1 1 0)	(-6 -8 3)	8.284	1.127	7.35	41.1	74.9
[1 -1 -2]	(1 1 0)	(7 9 -1)	8.284	1.127	7.35	14.4	58.3
[1 -1 4]	(1 1 0)	(-7 5 3)	8.284	1.122	7.38	60.5	46.5
[3 -3 2]	(1 1 0)	(7 5 -3)	8.284	1.122	7.38	39.3	85.5
[1 -1 -1]	(1 1 0)	(-3 1 -4)	8.284	1.120	7.40	63.2	70.4
[2 -2 -1]	(1 1 0)	(3 1 4)	8.284	1.120	7.40	59.5	77.2
[1 -1 2]	(1 1 0)	(8 4 -2)	8.284	1.119	7.40	27.2	66.9
[2 -2 3]	(1 1 0)	(-6 0 4)	8.284	1.118	7.41	61.0	73.5
[1 -1 0]	(1 1 0)	(7 7 1)	8.284	1.111	7.46	12.1	84.5
[1 -1 -2]	(1 1 0)	(-1 -9 4)	8.284	1.111	7.46	78.5	58.3
[2 -2 5]	(1 1 0)	(-1 9 4)	8.284	1.111	7.46	72.5	60.9
[3 -3 4]	(1 1 0)	(-4 -8 -3)	8.284	1.110	7.46	40.1	75.9
[1 -1 0]	(1 1 0)	(-3 -3 -4)	8.284	1.103	7.51	56.3	84.5
[3 -3 -10]	(1 1 0)	(5 -5 3)	8.284	1.103	7.51	59.6	46.0
[1 -1 0]	(1 1 0)	(-5 -5 -3)	8.284	1.103	7.51	38.6	84.5
[1 -1 -3]	(1 1 0)	(7 1 2)	8.284	1.094	7.57	33.1	48.7
[1 -1 3]	(1 1 0)	(3 -9 -4)	8.284	1.094	7.57	85.0	55.5
[2 -2 -3]	(1 1 0)	(3 9 -4)	8.284	1.094	7.57	66.0	64.0
[1 -1 -1]	(1 1 0)	(-7 -9 2)	8.284	1.092	7.59	25.8	70.4
[2 -2 5]	(1 1 0)	(6 -4 -4)	8.284	1.086	7.63	68.8	60.9
[2 -2 1]	(1 1 0)	(6 4 -4)	8.284	1.086	7.63	54.6	88.0
[1 -1 3]	(1 1 0)	(-5 7 4)	8.284	1.081	7.66	79.9	55.5
[2 -2 -1]	(1 1 0)	(5 7 -4)	8.284	1.081	7.66	56.3	77.2
[1 -1 1]	(1 1 0)	(-6 -8 -2)	8.284	1.079	7.67	24.2	80.6
[1 -1 1]	(1 1 0)	(8 6 -2)	8.284	1.079	7.68	24.2	80.6
[1 -1 -2]	(1 1 0)	(-7 -3 -2)	8.284	1.079	7.68	28.4	58.3
[3 -3 8]	(1 1 0)	(8 0 -3)	8.284	1.075	7.71	44.8	59.1
[1 -1 0]	(1 1 0)	(-7 -7 3)	8.284	1.074	7.71	37.4	84.5
[1 -1 -2]	(1 1 0)	(3 -5 4)	8.284	1.072	7.73	71.1	58.3
[2 -2 1]	(1 1 0)	(-3 -5 -4)	8.284	1.072	7.73	53.6	88.0
[3 -3 10]	(1 1 0)	(8 -2 -3)	8.284	1.067	7.76	49.4	52.3
[1 -1 2]	(1 1 0)	(-8 -2 3)	8.284	1.067	7.76	40.8	66.9
[2 -2 -5]	(1 1 0)	(1 -9 4)	8.284	1.067	7.77	89.3	53.2
[1 -1 2]	(1 1 0)	(-1 -9 -4)	8.284	1.067	7.77	60.5	66.9
[5 -5 2]	(1 1 0)	(2 0 -5)	8.284	1.066	7.77	89.1	89.5
[1 -1 0]	(1 1 0)	(1 1 -5)	8.284	1.059	7.82	86.6	84.5
[5 -5 2]	(1 1 0)	(-1 1 5)	8.284	1.059	7.82	83.6	89.5
[5 -5 4]	(1 1 0)	(2 -2 -5)	8.284	1.059	7.83	87.9	83.6
[1 -1 0]	(1 1 0)	(2 2 -5)	8.284	1.059	7.83	86.0	84.5
[3 -3 2]	(1 1 0)	(-5 -7 -3)	8.284	1.057	7.84	36.6	85.5
[2 -2 -5]	(1 1 0)	(2 -8 4)	8.284	1.057	7.84	82.0	53.2
[2 -2 3]	(1 1 0)	(2 8 4)	8.284	1.057	7.84	55.8	73.5
[5 -5 4]	(1 1 0)	(-3 1 5)	8.284	1.055	7.85	84.8	83.6
[5 -5 2]	(1 1 0)	(3 1 -5)	8.284	1.055	7.85	81.7	89.5
[1 -1 2]	(1 1 0)	(7 9 1)	8.284	1.050	7.89	12.4	66.9
[1 -1 -1]	(1 1 0)	(-7 -5 -2)	8.284	1.050	7.89	24.7	70.4

Cummingtonite (110) 340 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[3 -3 -4]	(1 1 0)	(6 2 3)	8.284	1.047	7.91	40.2	66.1
[1 -1 4]	(1 1 0)	(-8 4 3)	8.284	1.046	7.92	54.2	46.5
[3 -3 4]	(1 1 0)	(8 4 -3)	8.284	1.046	7.92	37.4	75.9
[5 -5 -2]	(1 1 0)	(1 3 -5)	8.284	1.045	7.93	89.7	78.7
[5 -5 4]	(1 1 0)	(-1 3 5)	8.284	1.045	7.93	80.7	83.6
[1 -1 2]	(1 1 0)	(-7 1 4)	8.284	1.043	7.94	58.3	66.9
[2 -2 3]	(1 1 0)	(7 1 -4)	8.284	1.043	7.94	54.7	73.5
[2 -2 -3]	(1 1 0)	(-4 2 -4)	8.284	1.042	7.95	60.4	64.0
[2 -2 -1]	(1 1 0)	(4 2 4)	8.284	1.042	7.95	53.3	77.2
[5 -5 6]	(1 1 0)	(3 -3 -5)	8.284	1.041	7.96	87.9	77.8
[1 -1 0]	(1 1 0)	(-3 -3 5)	8.284	1.041	7.96	78.8	84.5
[5 -5 6]	(1 1 0)	(-2 4 5)	8.284	1.038	7.98	85.0	77.8
[5 -5 -2]	(1 1 0)	(-2 -4 5)	8.284	1.038	7.98	83.1	78.7
[5 -5 -2]	(1 1 0)	(0 -2 5)	8.284	1.036	7.99	82.5	78.7
[5 -5 2]	(1 1 0)	(0 -2 -5)	8.284	1.036	7.99	76.5	89.5
[1 -1 4]	(1 1 0)	(9 1 -2)	8.284	1.036	8.00	32.4	46.5
[5 -5 4]	(1 1 0)	(-4 0 5)	8.284	1.035	8.01	77.7	83.6
[2 -2 -5]	(1 1 0)	(3 -7 4)	8.284	1.030	8.04	74.9	53.2
[1 -1 1]	(1 1 0)	(-3 -7 -4)	8.284	1.030	8.04	51.6	80.6
[2 -2 5]	(1 1 0)	(7 -3 -4)	8.284	1.030	8.05	62.1	60.9
[1 -1 1]	(1 1 0)	(-7 -3 4)	8.284	1.030	8.05	51.5	80.6
[5 -5 6]	(1 1 0)	(-4 2 5)	8.284	1.028	8.06	80.7	77.8
[5 -5 2]	(1 1 0)	(4 2 -5)	8.284	1.028	8.06	74.7	89.5
[3 -3 -10]	(1 1 0)	(-6 4 -3)	8.284	1.027	8.07	53.5	46.0
[3 -3 -2]	(1 1 0)	(6 4 3)	8.284	1.027	8.07	36.8	74.9
[2 -2 7]	(1 1 0)	(5 -9 -4)	8.284	1.025	8.08	83.4	50.7
[1 -1 -1]	(1 1 0)	(-5 -9 4)	8.284	1.025	8.08	54.8	70.4
[1 -1 -2]	(1 1 0)	(8 6 1)	8.284	1.025	8.09	13.1	58.3
[1 -1 3]	(1 1 0)	(-9 -3 2)	8.284	1.022	8.10	27.7	55.5
[3 -3 -2]	(1 1 0)	(-7 -9 3)	8.284	1.019	8.13	36.4	74.9
[5 -5 -4]	(1 1 0)	(1 5 -5)	8.284	1.019	8.13	87.4	73.1
[5 -5 6]	(1 1 0)	(-1 5 5)	8.284	1.019	8.13	77.9	77.8
[5 -5 -4]	(1 1 0)	(0 4 -5)	8.284	1.017	8.15	85.6	73.1
[5 -5 4]	(1 1 0)	(0 4 5)	8.284	1.017	8.15	73.7	83.6
[5 -5 8]	(1 1 0)	(3 -5 -5)	8.284	1.015	8.16	89.2	72.2
[5 -5 -2]	(1 1 0)	(3 5 -5)	8.284	1.015	8.16	76.1	78.7
[1 -1 4]	(1 1 0)	(9 5 -1)	8.284	1.015	8.16	15.2	46.5
[3 -3 2]	(1 1 0)	(-8 -6 3)	8.284	1.013	8.18	34.9	85.5
[5 -5 -2]	(1 1 0)	(1 -1 5)	8.284	1.012	8.19	75.5	78.7
[1 -1 0]	(1 1 0)	(-1 -1 -5)	8.284	1.012	8.19	72.5	84.5
[1 -1 0]	(1 1 0)	(7 7 2)	8.284	1.010	8.20	22.4	84.5
[5 -5 8]	(1 1 0)	(-4 4 5)	8.284	1.009	8.21	83.8	72.2
[1 -1 0]	(1 1 0)	(4 4 -5)	8.284	1.009	8.21	72.0	84.5
[5 -5 8]	(1 1 0)	(2 -6 -5)	8.284	1.005	8.24	82.2	72.2
[5 -5 -4]	(1 1 0)	(2 6 -5)	8.284	1.005	8.24	80.4	73.1
[1 -1 3]	(1 1 0)	(7 -5 -4)	8.284	1.004	8.25	66.1	55.5
[2 -2 1]	(1 1 0)	(-7 -5 4)	8.284	1.004	8.25	48.9	88.0
[3 -3 4]	(1 1 0)	(5 9 3)	8.284	1.004	8.25	35.6	75.9

Cummingtonite (110) 340 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[2 -2 7]	(1 1 0)	(-6 8 4)	8.284	1.003	8.26	76.5	50.7
[2 -2 -1]	(1 1 0)	(6 8 -4)	8.284	1.003	8.26	50.5	77.2
[5 -5 6]	(1 1 0)	(-5 1 5)	8.284	1.001	8.28	73.9	77.8
[5 -5 4]	(1 1 0)	(5 1 -5)	8.284	1.001	8.28	70.9	83.6

Cummingtonite (130) 288 Zone Axes***a* 9.510Å *b* 18.190Å *c* 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	<i>d</i> (hk0)	<i>d</i> (hkl)	<i>d</i> Ratio	θ°	ZA $^\circ$
[3 -1 0]	(1 3 0)	(0 0 1)	5.080	5.215	0.97	83.5	80.0
[3 -1 4]	(1 3 0)	(-1 1 1)	5.080	4.832	1.05	87.5	65.1
[3 -1 2]	(1 3 0)	(1 1 -1)	5.080	4.832	1.05	66.3	81.8
[3 -1 2]	(1 3 0)	(0 2 1)	5.080	4.524	1.12	59.0	81.8
[3 -1 -4]	(1 3 0)	(1 -1 1)	5.080	4.088	1.24	82.0	50.8
[3 -1 -2]	(1 3 0)	(1 1 1)	5.080	4.088	1.24	58.9	63.6
[3 -1 6]	(1 3 0)	(1 -3 -1)	5.080	3.863	1.32	67.0	51.9
[3 -1 0]	(1 3 0)	(1 3 -1)	5.080	3.863	1.32	47.4	80.0
[3 -1 4]	(1 3 0)	(2 2 -1)	5.080	3.579	1.42	47.7	65.1
[3 -1 -4]	(1 3 0)	(0 4 -1)	5.080	3.428	1.48	56.1	50.8
[3 -1 4]	(1 3 0)	(0 -4 -1)	5.080	3.428	1.48	45.1	65.1
[3 -1 -4]	(1 3 0)	(2 2 1)	5.080	2.988	1.70	46.4	50.8
[3 -1 2]	(1 3 0)	(-2 -4 1)	5.080	2.958	1.72	34.1	81.8
[3 -1 -2]	(1 3 0)	(1 5 -1)	5.080	2.944	1.73	38.1	63.6
[3 -1 2]	(1 3 0)	(-1 -5 -1)	5.080	2.749	1.85	31.4	81.8
[3 -1 6]	(1 3 0)	(3 3 -1)	5.080	2.650	1.92	39.2	51.9
[3 -1 2]	(1 3 0)	(1 -1 -2)	5.080	2.629	1.93	85.4	81.8
[3 -1 1]	(1 3 0)	(1 1 -2)	5.080	2.629	1.93	80.7	89.0
[3 -1 6]	(1 3 0)	(0 -6 -1)	5.080	2.621	1.94	38.7	51.9
[3 -1 -2]	(1 3 0)	(2 4 1)	5.080	2.597	1.96	33.0	63.6
[3 -1 -1]	(1 3 0)	(0 -2 2)	5.080	2.507	2.03	83.0	71.4
[3 -1 1]	(1 3 0)	(0 2 2)	5.080	2.507	2.03	70.2	89.0
[3 -1 3]	(1 3 0)	(-2 0 2)	5.080	2.506	2.03	79.3	73.1
[3 -1 3]	(1 3 0)	(-1 3 2)	5.080	2.434	2.09	72.6	73.1
[3 -1 0]	(1 3 0)	(-1 -3 2)	5.080	2.434	2.09	68.0	80.0
[3 -1 -4]	(1 3 0)	(1 7 -1)	5.080	2.307	2.20	34.0	50.8
[3 -1 4]	(1 3 0)	(-3 -5 1)	5.080	2.290	2.22	28.3	65.1
[3 -1 -3]	(1 3 0)	(1 -3 2)	5.080	2.221	2.29	85.4	56.7
[3 -1 0]	(1 3 0)	(1 3 2)	5.080	2.221	2.29	57.8	80.0
[3 -1 5]	(1 3 0)	(-3 1 2)	5.080	2.219	2.29	78.9	58.1
[3 -1 4]	(1 3 0)	(3 1 -2)	5.080	2.219	2.29	66.6	65.1
[3 -1 4]	(1 3 0)	(-1 -7 -1)	5.080	2.209	2.30	27.2	65.1
[3 -1 5]	(1 3 0)	(-2 4 2)	5.080	2.195	2.31	76.0	58.1
[3 -1 1]	(1 3 0)	(-2 -4 2)	5.080	2.195	2.31	55.5	89.0
[3 -1 0]	(1 3 0)	(-2 -6 -1)	5.080	2.189	2.32	24.6	80.0
[3 -1 4]	(1 3 0)	(-1 5 2)	5.080	2.146	2.37	62.6	65.1
[3 -1 -1]	(1 3 0)	(-1 -5 2)	5.080	2.146	2.37	58.2	71.4
[3 -1 6]	(1 3 0)	(-3 3 2)	5.080	2.098	2.42	89.4	51.9
[3 -1 3]	(1 3 0)	(3 3 -2)	5.080	2.098	2.42	55.4	73.1
[3 -1 -3]	(1 3 0)	(-2 0 -2)	5.080	2.098	2.42	70.3	56.7
[3 -1 1]	(1 3 0)	(1 5 2)	5.080	1.995	2.55	48.5	89.0
[3 -1 -3]	(1 3 0)	(0 6 -2)	5.080	1.977	2.57	62.5	56.7
[3 -1 3]	(1 3 0)	(0 -6 -2)	5.080	1.977	2.57	50.8	73.1
[3 -1 -2]	(1 3 0)	(2 8 -1)	5.080	1.963	2.59	24.3	63.6
[3 -1 2]	(1 3 0)	(-3 -7 1)	5.080	1.949	2.61	21.7	81.8
[3 -1 2]	(1 3 0)	(3 5 -2)	5.080	1.905	2.67	46.2	81.8
[3 -1 -5]	(1 3 0)	(2 -4 2)	5.080	1.905	2.67	87.4	45.7
[3 -1 -1]	(1 3 0)	(2 4 2)	5.080	1.905	2.67	49.0	71.4

Cummingtonite (130) 288 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[3 -1 7]	(1 3 0)	(-4 2 2)	5.080	1.904	2.67	79.1	46.7
[3 -1 5]	(1 3 0)	(4 2 -2)	5.080	1.904	2.67	57.3	58.1
[3 -1 5]	(1 3 0)	(1 -7 -2)	5.080	1.858	2.73	55.2	58.1
[3 -1 -2]	(1 3 0)	(1 7 -2)	5.080	1.858	2.73	51.1	63.6
[3 -1 2]	(1 3 0)	(-2 -8 -1)	5.080	1.846	2.75	20.5	81.8
[3 -1 6]	(1 3 0)	(4 6 -1)	5.080	1.837	2.77	26.0	51.9
[3 -1 6]	(1 3 0)	(-1 -9 -1)	5.080	1.821	2.79	25.7	51.9
[3 -1 -5]	(1 3 0)	(3 -1 2)	5.080	1.811	2.81	71.7	45.7
[3 -1 -4]	(1 3 0)	(-3 -1 -2)	5.080	1.811	2.81	61.3	50.8
[3 -1 -2]	(1 3 0)	(-3 -7 -1)	5.080	1.784	2.85	21.9	63.6
[9 -3 2]	(1 3 0)	(1 1 -3)	5.080	1.768	2.87	85.9	86.0
[9 -3 4]	(1 3 0)	(-1 1 3)	5.080	1.768	2.87	84.7	87.9
[3 -1 -5]	(1 3 0)	(1 -7 2)	5.080	1.758	2.89	67.2	45.7
[3 -1 2]	(1 3 0)	(1 7 2)	5.080	1.758	2.89	41.8	81.8
[3 -1 2]	(1 3 0)	(-2 0 3)	5.080	1.751	2.90	84.7	81.8
[3 -1 -3]	(1 3 0)	(3 3 2)	5.080	1.743	2.91	51.5	56.7
[9 -3 8]	(1 3 0)	(-2 2 3)	5.080	1.720	2.95	86.1	76.0
[9 -3 4]	(1 3 0)	(-2 -2 3)	5.080	1.720	2.95	75.6	87.9
[3 -1 0]	(1 3 0)	(1 3 -3)	5.080	1.705	2.98	77.0	80.0
[3 -1 2]	(1 3 0)	(1 -3 -3)	5.080	1.705	2.98	75.8	81.8
[3 -1 1]	(1 3 0)	(3 7 -2)	5.080	1.695	3.00	39.5	89.0
[3 -1 7]	(1 3 0)	(-2 8 2)	5.080	1.684	3.02	60.3	46.7
[3 -1 -1]	(1 3 0)	(-2 -8 2)	5.080	1.684	3.02	41.8	71.4
[3 -1 7]	(1 3 0)	(5 1 -2)	5.080	1.681	3.02	60.1	46.7
[3 -1 0]	(1 3 0)	(-3 -9 1)	5.080	1.667	3.05	18.5	80.0
[9 -3 10]	(1 3 0)	(3 -1 -3)	5.080	1.664	3.05	83.8	70.4
[9 -3 8]	(1 3 0)	(-3 -1 3)	5.080	1.664	3.05	74.8	76.0
[9 -3 -4]	(1 3 0)	(1 -1 3)	5.080	1.642	3.09	82.7	68.7
[9 -3 -2]	(1 3 0)	(-1 -1 -3)	5.080	1.642	3.09	73.8	74.2
[3 -1 3]	(1 3 0)	(4 6 -2)	5.080	1.638	3.10	40.0	73.1
[9 -3 10]	(1 3 0)	(2 -4 -3)	5.080	1.634	3.11	77.6	70.4
[9 -3 2]	(1 3 0)	(2 4 -3)	5.080	1.634	3.11	67.2	86.0
[3 -1 -2]	(1 3 0)	(-3 -5 -2)	5.080	1.628	3.12	43.0	63.6
[3 -1 6]	(1 3 0)	(5 3 -2)	5.080	1.627	3.12	50.8	51.9
[9 -3 -4]	(1 3 0)	(0 -4 3)	5.080	1.624	3.13	78.8	68.7
[9 -3 4]	(1 3 0)	(0 4 3)	5.080	1.624	3.13	66.2	87.9
[3 -1 4]	(1 3 0)	(-4 -8 1)	5.080	1.620	3.14	19.6	65.1
[3 -1 6]	(1 3 0)	(1 -9 -2)	5.080	1.609	3.16	50.1	51.9
[3 -1 -3]	(1 3 0)	(1 9 -2)	5.080	1.609	3.16	46.2	56.7
[9 -3 -2]	(1 3 0)	(-1 -5 3)	5.080	1.596	3.18	69.0	74.2
[9 -3 8]	(1 3 0)	(-1 5 3)	5.080	1.596	3.18	67.8	76.0
[3 -1 -2]	(1 3 0)	(1 -3 3)	5.080	1.591	3.19	88.7	63.6
[3 -1 0]	(1 3 0)	(1 3 3)	5.080	1.591	3.19	65.4	80.0
[3 -1 0]	(1 3 0)	(-3 -9 -1)	5.080	1.560	3.26	17.3	80.0
[3 -1 -5]	(1 3 0)	(4 2 2)	5.080	1.558	3.26	54.8	45.7
[3 -1 4]	(1 3 0)	(-4 0 3)	5.080	1.555	3.27	74.7	65.1
[3 -1 3]	(1 3 0)	(1 9 2)	5.080	1.542	3.29	37.2	73.1
[3 -1 1]	(1 3 0)	(-2 -8 -2)	5.080	1.542	3.29	35.4	89.0

Cummingtonite (130) 288 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[9 -3 14]	(1 3 0)	(4 -2 -3)	5.080	1.533	3.31	83.2	60.3
[9 -3 10]	(1 3 0)	(-4 -2 3)	5.080	1.533	3.31	66.3	70.4
[3 -1 5]	(1 3 0)	(5 5 -2)	5.080	1.532	3.32	42.6	58.1
[3 -1 -2]	(1 3 0)	(-2 0 -3)	5.080	1.528	3.32	73.8	63.6
[9 -3 14]	(1 3 0)	(-3 5 3)	5.080	1.518	3.35	79.6	60.3
[9 -3 4]	(1 3 0)	(-3 -5 3)	5.080	1.518	3.35	58.8	87.9
[3 -1 4]	(1 3 0)	(-2 6 3)	5.080	1.516	3.35	70.2	65.1
[3 -1 0]	(1 3 0)	(-2 -6 3)	5.080	1.516	3.35	60.1	80.0
[9 -3 -8]	(1 3 0)	(-2 2 -3)	5.080	1.507	3.37	82.2	58.9
[9 -3 -4]	(1 3 0)	(2 2 3)	5.080	1.507	3.37	65.6	68.7
[9 -3 -8]	(1 3 0)	(1 -5 3)	5.080	1.502	3.38	80.8	58.9
[9 -3 2]	(1 3 0)	(1 5 3)	5.080	1.502	3.38	57.9	86.0
[3 -1 0]	(1 3 0)	(-3 -9 2)	5.080	1.499	3.39	34.8	80.0
[3 -1 -4]	(1 3 0)	(-4 -8 -1)	5.080	1.492	3.40	21.2	50.8
[3 -1 -1]	(1 3 0)	(3 7 2)	5.080	1.491	3.41	36.2	71.4
[9 -3 16]	(1 3 0)	(-4 4 3)	5.080	1.471	3.45	88.8	55.9
[9 -3 8]	(1 3 0)	(-4 -4 3)	5.080	1.471	3.45	58.6	76.0
[9 -3 -4]	(1 3 0)	(1 7 -3)	5.080	1.466	3.46	62.4	68.7
[9 -3 10]	(1 3 0)	(1 -7 -3)	5.080	1.466	3.46	61.2	70.4
[9 -3 -10]	(1 3 0)	(-2 4 -3)	5.080	1.449	3.51	89.8	54.6
[9 -3 -2]	(1 3 0)	(-2 -4 -3)	5.080	1.449	3.51	57.9	74.2
[9 -3 16]	(1 3 0)	(5 -1 -3)	5.080	1.421	3.57	75.0	55.9
[9 -3 14]	(1 3 0)	(-5 -1 3)	5.080	1.421	3.57	67.0	60.3
[3 -1 4]	(1 3 0)	(5 7 -2)	5.080	1.416	3.59	35.8	65.1
[9 -3 16]	(1 3 0)	(3 -7 -3)	5.080	1.405	3.62	72.7	55.9
[9 -3 2]	(1 3 0)	(3 7 -3)	5.080	1.405	3.62	52.5	86.0
[3 -1 -3]	(1 3 0)	(-4 -6 -2)	5.080	1.402	3.62	39.0	56.7
[3 -1 7]	(1 3 0)	(6 4 -2)	5.080	1.401	3.62	46.3	46.7
[9 -3 -10]	(1 3 0)	(-3 1 -3)	5.080	1.394	3.64	74.2	54.6
[9 -3 -8]	(1 3 0)	(3 1 3)	5.080	1.394	3.64	66.4	58.9
[9 -3 -10]	(1 3 0)	(1 -7 3)	5.080	1.392	3.65	73.9	54.6
[9 -3 4]	(1 3 0)	(1 7 3)	5.080	1.392	3.65	51.6	87.9
[3 -1 6]	(1 3 0)	(-5 3 3)	5.080	1.388	3.66	82.8	51.9
[3 -1 4]	(1 3 0)	(5 3 -3)	5.080	1.388	3.66	59.4	65.1
[9 -3 14]	(1 3 0)	(2 -8 -3)	5.080	1.387	3.66	64.0	60.3
[9 -3 -2]	(1 3 0)	(2 8 -3)	5.080	1.387	3.66	54.3	74.2
[3 -1 6]	(1 3 0)	(4 -6 -3)	5.080	1.383	3.67	81.5	51.9
[3 -1 2]	(1 3 0)	(4 6 -3)	5.080	1.383	3.67	51.9	81.8
[9 -3 -8]	(1 3 0)	(0 -8 3)	5.080	1.381	3.68	65.2	58.9
[9 -3 8]	(1 3 0)	(0 8 3)	5.080	1.381	3.68	53.3	76.0
[3 -1 6]	(1 3 0)	(-5 -9 1)	5.080	1.376	3.69	19.1	51.9
[3 -1 -4]	(1 3 0)	(-2 6 -3)	5.080	1.365	3.72	82.6	50.8
[3 -1 0]	(1 3 0)	(-2 -6 -3)	5.080	1.365	3.72	51.3	80.0
[3 -1 0]	(1 3 0)	(3 9 2)	5.080	1.352	3.76	31.0	80.0
[3 -1 -2]	(1 3 0)	(-1 -9 3)	5.080	1.334	3.81	57.0	63.6
[3 -1 4]	(1 3 0)	(-1 9 3)	5.080	1.334	3.81	55.9	65.1
[6 -2 3]	(1 3 0)	(2 0 -4)	5.080	1.329	3.82	87.6	86.4
[9 -3 20]	(1 3 0)	(5 -5 -3)	5.080	1.327	3.83	89.9	48.3

Cummingtonite (130) 288 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[9 -3 10]	(1 3 0)	(5 5 -3)	5.080	1.327	3.83	52.5	70.4
[6 -2 1]	(1 3 0)	(1 1 -4)	5.080	1.326	3.83	88.6	84.5
[3 -1 1]	(1 3 0)	(1 -1 -4)	5.080	1.326	3.83	84.4	89.0
[9 -3 -4]	(1 3 0)	(3 5 3)	5.080	1.305	3.89	52.1	68.7
[3 -1 0]	(1 3 0)	(1 3 -4)	5.080	1.299	3.91	81.7	80.0
[6 -2 3]	(1 3 0)	(1 -3 -4)	5.080	1.299	3.91	77.6	86.4
[6 -2 5]	(1 3 0)	(3 -1 -4)	5.080	1.298	3.91	86.8	77.4
[3 -1 2]	(1 3 0)	(-3 -1 4)	5.080	1.298	3.91	79.9	81.8
[3 -1 -5]	(1 3 0)	(-5 -5 -2)	5.080	1.295	3.92	42.8	45.7
[6 -2 -1]	(1 3 0)	(0 2 -4)	5.080	1.291	3.94	89.6	75.6
[6 -2 1]	(1 3 0)	(0 -2 -4)	5.080	1.291	3.94	76.7	84.5
[9 -3 20]	(1 3 0)	(6 -2 -3)	5.080	1.285	3.95	75.5	48.3
[9 -3 16]	(1 3 0)	(-6 -2 3)	5.080	1.285	3.95	60.8	55.9
[9 -3 20]	(1 3 0)	(-4 8 3)	5.080	1.283	3.96	75.2	48.3
[9 -3 4]	(1 3 0)	(-4 -8 3)	5.080	1.283	3.96	46.3	87.9
[3 -1 -4]	(1 3 0)	(-1 9 -3)	5.080	1.278	3.98	68.2	50.8
[3 -1 2]	(1 3 0)	(-1 -9 -3)	5.080	1.278	3.98	46.6	81.8
[6 -2 5]	(1 3 0)	(-2 4 4)	5.080	1.275	3.98	78.7	77.4
[6 -2 1]	(1 3 0)	(-2 -4 4)	5.080	1.275	3.98	74.1	84.5
[3 -1 3]	(1 3 0)	(-3 3 4)	5.080	1.273	3.99	86.5	73.1
[6 -2 3]	(1 3 0)	(3 3 -4)	5.080	1.273	3.99	73.1	86.4
[3 -1 -4]	(1 3 0)	(-4 0 -3)	5.080	1.272	3.99	67.6	50.8
[9 -3 -14]	(1 3 0)	(-2 8 -3)	5.080	1.268	4.00	76.3	47.3
[9 -3 2]	(1 3 0)	(-2 -8 -3)	5.080	1.268	4.00	45.7	86.0
[9 -3 -14]	(1 3 0)	(4 -2 3)	5.080	1.260	4.03	74.9	47.3
[9 -3 -10]	(1 3 0)	(-4 -2 -3)	5.080	1.260	4.03	60.4	54.6
[9 -3 8]	(1 3 0)	(5 7 -3)	5.080	1.250	4.06	46.5	76.0
[6 -2 -1]	(1 3 0)	(1 5 -4)	5.080	1.249	4.07	75.3	75.6
[3 -1 2]	(1 3 0)	(1 -5 -4)	5.080	1.249	4.07	71.2	81.8
[9 -3 22]	(1 3 0)	(6 -4 -3)	5.080	1.248	4.07	82.6	45.1
[9 -3 14]	(1 3 0)	(-6 -4 3)	5.080	1.248	4.07	54.0	60.3
[6 -2 7]	(1 3 0)	(4 -2 -4)	5.080	1.241	4.09	86.0	69.0
[6 -2 5]	(1 3 0)	(-4 -2 4)	5.080	1.241	4.09	72.6	77.4
[3 -1 5]	(1 3 0)	(6 8 -2)	5.080	1.236	4.11	33.1	58.1
[9 -3 -2]	(1 3 0)	(-3 -7 -3)	5.080	1.232	4.13	46.1	74.2
[6 -2 -3]	(1 3 0)	(1 -3 4)	5.080	1.230	4.13	89.5	67.4
[3 -1 0]	(1 3 0)	(-1 -3 -4)	5.080	1.230	4.13	69.6	80.0
[6 -2 7]	(1 3 0)	(-3 5 4)	5.080	1.226	4.14	80.1	69.0
[3 -1 1]	(1 3 0)	(-3 -5 4)	5.080	1.226	4.14	66.9	89.0
[9 -3 -8]	(1 3 0)	(4 4 3)	5.080	1.225	4.15	53.7	58.9
[3 -1 -4]	(1 3 0)	(-5 -7 -2)	5.080	1.223	4.15	36.3	50.8
[6 -2 -3]	(1 3 0)	(-2 0 -4)	5.080	1.193	4.26	75.9	67.4
[6 -2 1]	(1 3 0)	(1 5 4)	5.080	1.187	4.28	63.5	84.5
[3 -1 4]	(1 3 0)	(-5 1 4)	5.080	1.187	4.28	79.0	65.1
[6 -2 7]	(1 3 0)	(5 1 -4)	5.080	1.187	4.28	72.5	69.0
[3 -1 -1]	(1 3 0)	(-1 -7 4)	5.080	1.184	4.29	69.6	71.4
[6 -2 5]	(1 3 0)	(-1 7 4)	5.080	1.184	4.29	65.5	77.4
[9 -3 22]	(1 3 0)	(-7 1 3)	5.080	1.177	4.31	69.3	45.1

Cummingtonite (130) 288 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[9 -3 20]	(1 3 0)	(7 1 -3)	5.080	1.177	4.31	62.5	48.3
[3 -1 -2]	(1 3 0)	(-4 -6 -3)	5.080	1.173	4.33	47.5	63.6
[6 -2 9]	(1 3 0)	(5 -3 -4)	5.080	1.167	4.35	85.4	61.5
[3 -1 3]	(1 3 0)	(-5 -3 4)	5.080	1.167	4.35	66.2	73.1
[3 -1 2]	(1 3 0)	(5 9 -3)	5.080	1.165	4.36	41.5	81.8
[3 -1 4]	(1 3 0)	(3 -7 -4)	5.080	1.164	4.36	74.3	65.1
[6 -2 1]	(1 3 0)	(3 7 -4)	5.080	1.164	4.36	61.3	84.5
[3 -1 7]	(1 3 0)	(-7 -7 2)	5.080	1.161	4.38	36.8	46.7
[3 -1 6]	(1 3 0)	(7 3 -3)	5.080	1.158	4.39	55.9	51.9
[6 -2 9]	(1 3 0)	(4 -6 -4)	5.080	1.158	4.39	81.5	61.5
[6 -2 3]	(1 3 0)	(4 6 -4)	5.080	1.158	4.39	60.5	86.4
[9 -3 -14]	(1 3 0)	(-5 -1 -3)	5.080	1.155	4.40	62.2	47.3
[6 -2 -5]	(1 3 0)	(2 -4 4)	5.080	1.154	4.40	88.7	60.0
[6 -2 -1]	(1 3 0)	(-2 -4 -4)	5.080	1.154	4.40	63.4	75.6
[6 -2 7]	(1 3 0)	(-2 8 4)	5.080	1.147	4.43	67.2	69.0
[6 -2 -1]	(1 3 0)	(-2 -8 4)	5.080	1.147	4.43	62.7	75.6
[3 -1 -3]	(1 3 0)	(5 9 2)	5.080	1.143	4.44	30.9	56.7
[3 -1 -4]	(1 3 0)	(-5 -3 -3)	5.080	1.136	4.47	55.7	50.8
[3 -1 5]	(1 3 0)	(5 -5 -4)	5.080	1.130	4.49	88.5	58.1
[6 -2 5]	(1 3 0)	(5 5 -4)	5.080	1.130	4.49	60.4	77.4
[9 -3 10]	(1 3 0)	(-6 -8 3)	5.080	1.127	4.51	42.3	70.4
[9 -3 16]	(1 3 0)	(7 5 -3)	5.080	1.122	4.53	49.7	55.9
[6 -2 -5]	(1 3 0)	(3 -1 4)	5.080	1.120	4.54	76.0	60.0
[3 -1 -2]	(1 3 0)	(-3 -1 -4)	5.080	1.120	4.54	69.8	63.6
[6 -2 9]	(1 3 0)	(6 0 -4)	5.080	1.118	4.54	72.7	61.5
[6 -2 -3]	(1 3 0)	(-1 -9 4)	5.080	1.111	4.57	64.6	67.4
[3 -1 3]	(1 3 0)	(-1 9 4)	5.080	1.111	4.57	60.6	73.1
[9 -3 -4]	(1 3 0)	(-4 -8 -3)	5.080	1.110	4.58	42.1	68.7
[9 -3 -10]	(1 3 0)	(5 5 3)	5.080	1.103	4.61	49.6	54.6
[6 -2 9]	(1 3 0)	(-3 9 4)	5.080	1.094	4.64	69.2	61.5
[3 -1 0]	(1 3 0)	(-3 -9 4)	5.080	1.094	4.64	56.5	80.0
[3 -1 6]	(1 3 0)	(7 9 -2)	5.080	1.092	4.65	31.4	51.9
[6 -2 11]	(1 3 0)	(-6 4 4)	5.080	1.086	4.68	84.9	54.9
[6 -2 7]	(1 3 0)	(6 4 -4)	5.080	1.086	4.68	60.8	69.0
[6 -2 11]	(1 3 0)	(5 -7 -4)	5.080	1.081	4.70	82.8	54.9
[3 -1 2]	(1 3 0)	(5 7 -4)	5.080	1.081	4.70	55.1	81.8
[3 -1 -5]	(1 3 0)	(-6 -8 -2)	5.080	1.079	4.71	34.5	45.7
[9 -3 14]	(1 3 0)	(7 7 -3)	5.080	1.074	4.73	44.1	60.3
[6 -2 -7]	(1 3 0)	(3 -5 4)	5.080	1.072	4.74	88.0	53.6
[3 -1 -1]	(1 3 0)	(-3 -5 -4)	5.080	1.072	4.74	58.1	71.4
[9 -3 22]	(1 3 0)	(8 2 -3)	5.080	1.067	4.76	58.0	45.1
[3 -1 -3]	(1 3 0)	(1 -9 4)	5.080	1.067	4.76	73.3	56.7
[6 -2 3]	(1 3 0)	(1 9 4)	5.080	1.067	4.76	53.3	86.4
[15 -5 6]	(1 3 0)	(-2 0 5)	5.080	1.066	4.77	89.4	89.1
[15 -5 2]	(1 3 0)	(-1 -1 5)	5.080	1.059	4.80	89.8	83.6
[15 -5 4]	(1 3 0)	(1 -1 -5)	5.080	1.059	4.80	84.2	87.2
[15 -5 8]	(1 3 0)	(-2 2 5)	5.080	1.059	4.80	85.0	85.5
[15 -5 4]	(1 3 0)	(-2 -2 5)	5.080	1.059	4.80	83.8	87.2

Cummingtonite (130) 288 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[9 -3 -8]	(1 3 0)	(5 7 3)	5.080	1.057	4.81	44.0	58.9
[6 -2 -7]	(1 3 0)	(2 -8 4)	5.080	1.057	4.81	80.0	53.6
[6 -2 1]	(1 3 0)	(2 8 4)	5.080	1.057	4.81	52.8	84.5
[3 -1 2]	(1 3 0)	(-3 1 5)	5.080	1.055	4.82	88.7	81.8
[15 -5 8]	(1 3 0)	(3 1 -5)	5.080	1.055	4.82	83.1	85.5
[3 -1 0]	(1 3 0)	(-1 -3 5)	5.080	1.045	4.86	84.7	80.0
[15 -5 6]	(1 3 0)	(-1 3 5)	5.080	1.045	4.86	78.7	89.1
[6 -2 11]	(1 3 0)	(-7 1 4)	5.080	1.043	4.87	73.1	54.9
[3 -1 5]	(1 3 0)	(7 1 -4)	5.080	1.043	4.87	67.3	58.1
[6 -2 -7]	(1 3 0)	(-4 2 -4)	5.080	1.042	4.88	76.2	53.6
[6 -2 -5]	(1 3 0)	(4 2 4)	5.080	1.042	4.88	64.5	60.0
[15 -5 12]	(1 3 0)	(3 -3 -5)	5.080	1.041	4.88	85.8	78.3
[15 -5 6]	(1 3 0)	(3 3 -5)	5.080	1.041	4.88	77.6	89.1
[3 -1 2]	(1 3 0)	(2 -4 -5)	5.080	1.038	4.90	79.5	81.8
[15 -5 2]	(1 3 0)	(2 4 -5)	5.080	1.038	4.90	78.4	83.6
[15 -5 -2]	(1 3 0)	(0 2 -5)	5.080	1.036	4.90	89.1	76.5
[15 -5 2]	(1 3 0)	(0 2 5)	5.080	1.036	4.90	78.0	83.6
[15 -5 12]	(1 3 0)	(-4 0 5)	5.080	1.035	4.91	82.5	78.3
[3 -1 -4]	(1 3 0)	(-3 7 -4)	5.080	1.030	4.93	86.5	50.8
[6 -2 -1]	(1 3 0)	(-3 -7 -4)	5.080	1.030	4.93	53.0	75.6
[3 -1 6]	(1 3 0)	(7 -3 -4)	5.080	1.030	4.93	79.0	51.9
[6 -2 9]	(1 3 0)	(-7 -3 4)	5.080	1.030	4.93	61.6	61.5
[15 -5 14]	(1 3 0)	(4 -2 -5)	5.080	1.028	4.94	88.0	74.8
[3 -1 2]	(1 3 0)	(-4 -2 5)	5.080	1.028	4.94	77.0	81.8
[9 -3 -14]	(1 3 0)	(6 4 3)	5.080	1.027	4.95	51.9	47.3
[3 -1 6]	(1 3 0)	(5 -9 -4)	5.080	1.025	4.96	77.7	51.9
[6 -2 3]	(1 3 0)	(5 9 -4)	5.080	1.025	4.96	50.4	86.4
[3 -1 4]	(1 3 0)	(-7 -9 3)	5.080	1.019	4.99	39.2	65.1
[15 -5 -2]	(1 3 0)	(1 5 -5)	5.080	1.019	4.99	79.4	76.5
[15 -5 8]	(1 3 0)	(1 -5 -5)	5.080	1.019	4.99	73.5	85.5
[15 -5 -4]	(1 3 0)	(0 4 -5)	5.080	1.017	5.00	85.5	73.1
[15 -5 4]	(1 3 0)	(0 -4 -5)	5.080	1.017	5.00	72.7	87.2
[15 -5 14]	(1 3 0)	(-3 5 5)	5.080	1.015	5.01	80.5	74.8
[15 -5 4]	(1 3 0)	(-3 -5 5)	5.080	1.015	5.01	72.4	87.2
[3 -1 6]	(1 3 0)	(8 6 -3)	5.080	1.013	5.02	46.4	51.9
[15 -5 -4]	(1 3 0)	(1 -1 5)	5.080	1.012	5.02	83.0	73.1
[15 -5 -2]	(1 3 0)	(-1 -1 -5)	5.080	1.012	5.02	77.6	76.5
[15 -5 16]	(1 3 0)	(-4 4 5)	5.080	1.009	5.03	86.7	71.5
[15 -5 8]	(1 3 0)	(-4 -4 5)	5.080	1.009	5.03	71.7	85.5
[15 -5 12]	(1 3 0)	(-2 6 5)	5.080	1.005	5.05	74.4	78.3
[3 -1 0]	(1 3 0)	(-2 -6 5)	5.080	1.005	5.05	73.3	80.0
[6 -2 13]	(1 3 0)	(7 -5 -4)	5.080	1.004	5.06	84.6	49.2
[3 -1 4]	(1 3 0)	(7 5 -4)	5.080	1.004	5.06	56.2	65.1
[3 -1 -2]	(1 3 0)	(5 9 3)	5.080	1.004	5.06	39.1	63.6
[6 -2 13]	(1 3 0)	(6 -8 -4)	5.080	1.003	5.06	84.1	49.2
[6 -2 5]	(1 3 0)	(6 8 -4)	5.080	1.003	5.06	50.5	77.4
[15 -5 16]	(1 3 0)	(5 -1 -5)	5.080	1.001	5.08	82.0	71.5
[15 -5 14]	(1 3 0)	(-5 -1 5)	5.080	1.001	5.08	76.6	74.8

Cummingtonite (200) 174 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[0 1 0]	(2 0 0)	(0 0 1)	4.653	5.215	0.89	78.1	90.0
[0 1 1]	(2 0 0)	(1 1 -1)	4.653	4.832	0.96	70.8	73.7
[0 -1 1]	(2 0 0)	(1 1 1)	4.653	4.088	1.14	53.1	73.7
[0 -1 3]	(2 0 0)	(-1 3 1)	4.653	3.863	1.20	74.8	48.7
[0 1 -2]	(2 0 0)	(2 -2 -1)	4.653	3.579	1.30	51.1	59.6
[0 -1 3]	(2 0 0)	(1 3 1)	4.653	3.450	1.35	59.5	48.7
[0 1 2]	(2 0 0)	(-2 2 -1)	4.653	2.988	1.56	40.5	59.6
[0 1 -1]	(2 0 0)	(3 -1 -1)	4.653	2.908	1.60	34.7	73.7
[0 -1 -3]	(2 0 0)	(-3 -3 1)	4.653	2.650	1.76	41.4	48.7
[0 2 1]	(2 0 0)	(1 1 -2)	4.653	2.629	1.77	85.7	81.7
[0 1 1]	(2 0 0)	(0 2 -2)	4.653	2.507	1.86	78.6	73.7
[0 1 0]	(2 0 0)	(2 0 -2)	4.653	2.506	1.86	70.1	90.0
[0 -2 3]	(2 0 0)	(-1 3 2)	4.653	2.434	1.91	86.0	66.3
[0 -1 -1]	(2 0 0)	(3 -1 1)	4.653	2.431	1.91	28.4	73.7
[0 1 3]	(2 0 0)	(-3 3 -1)	4.653	2.274	2.05	34.6	48.7
[0 1 2]	(2 0 0)	(4 2 -1)	4.653	2.238	2.08	29.1	59.6
[0 2 -3]	(2 0 0)	(-1 -3 -2)	4.653	2.221	2.10	65.5	66.3
[0 2 1]	(2 0 0)	(3 1 -2)	4.653	2.219	2.10	57.3	81.7
[0 -1 -2]	(2 0 0)	(-2 -4 2)	4.653	2.195	2.12	72.7	59.6
[0 2 5]	(2 0 0)	(1 5 -2)	4.653	2.146	2.17	86.5	53.8
[0 2 3]	(2 0 0)	(3 3 -2)	4.653	2.098	2.22	59.3	66.3
[0 1 3]	(2 0 0)	(0 6 -2)	4.653	1.977	2.35	81.0	48.7
[0 2 -5]	(2 0 0)	(3 -5 -2)	4.653	1.905	2.44	62.4	53.8
[0 -1 2]	(2 0 0)	(2 4 2)	4.653	1.905	2.44	55.9	59.6
[0 -1 1]	(2 0 0)	(-4 2 2)	4.653	1.904	2.44	48.1	73.7
[0 1 1]	(2 0 0)	(5 1 -1)	4.653	1.870	2.49	21.4	73.7
[0 2 -1]	(2 0 0)	(-3 -1 -2)	4.653	1.811	2.57	43.4	81.7
[0 1 3]	(2 0 0)	(5 3 -1)	4.653	1.796	2.59	26.6	48.7
[0 -3 1]	(2 0 0)	(-1 1 3)	4.653	1.768	2.63	88.9	84.4
[0 1 0]	(2 0 0)	(2 0 -3)	4.653	1.751	2.66	80.3	90.0
[0 2 3]	(2 0 0)	(-3 3 -2)	4.653	1.743	2.67	45.6	66.3
[0 -3 -2]	(2 0 0)	(-2 -2 3)	4.653	1.720	2.71	80.5	78.9
[0 -3 2]	(2 0 0)	(0 2 3)	4.653	1.708	2.72	78.3	78.9
[0 1 1]	(2 0 0)	(1 3 -3)	4.653	1.705	2.73	88.9	73.7
[0 2 1]	(2 0 0)	(5 1 -2)	4.653	1.681	2.77	39.6	81.7
[0 3 1]	(2 0 0)	(3 1 -3)	4.653	1.664	2.80	70.2	84.4
[0 3 1]	(2 0 0)	(-1 1 -3)	4.653	1.642	2.83	68.2	84.4
[0 -1 1]	(2 0 0)	(5 1 1)	4.653	1.642	2.83	18.7	73.7
[0 1 3]	(2 0 0)	(4 6 -2)	4.653	1.638	2.84	54.9	48.7
[0 -3 -4]	(2 0 0)	(-2 -4 3)	4.653	1.634	2.85	80.9	68.7
[0 -2 5]	(2 0 0)	(3 5 2)	4.653	1.628	2.86	49.2	53.8
[0 -2 -3]	(2 0 0)	(-5 -3 2)	4.653	1.627	2.86	41.8	66.3
[0 -3 4]	(2 0 0)	(0 4 3)	4.653	1.624	2.87	78.9	68.7
[0 -3 5]	(2 0 0)	(-1 5 3)	4.653	1.596	2.91	89.0	64.0
[0 1 1]	(2 0 0)	(-1 3 -3)	4.653	1.591	2.92	68.9	73.7
[0 -1 3]	(2 0 0)	(5 3 1)	4.653	1.591	2.92	23.4	48.7
[0 -1 1]	(2 0 0)	(4 2 2)	4.653	1.558	2.99	37.5	73.7
[0 1 2]	(2 0 0)	(6 2 -1)	4.653	1.555	2.99	19.8	59.6

Cummingtonite (200) 174 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[0 -3 2]	(2 0 0)	(-4 2 3)	4.653	1.533	3.04	61.5	78.9
[0 2 -5]	(2 0 0)	(5 -5 -2)	4.653	1.532	3.04	45.4	53.8
[0 1 0]	(2 0 0)	(2 0 3)	4.653	1.528	3.04	59.3	90.0
[0 -3 5]	(2 0 0)	(-3 5 3)	4.653	1.518	3.06	72.0	64.0
[0 1 -2]	(2 0 0)	(2 -6 -3)	4.653	1.516	3.07	81.6	59.6
[0 -3 2]	(2 0 0)	(2 2 3)	4.653	1.507	3.09	59.8	78.9
[0 3 -5]	(2 0 0)	(-1 -5 -3)	4.653	1.502	3.10	70.2	64.0
[0 -3 4]	(2 0 0)	(-4 4 3)	4.653	1.471	3.16	62.7	68.7
[0 -3 -7]	(2 0 0)	(-1 -7 3)	4.653	1.466	3.17	89.1	55.6
[0 3 -4]	(2 0 0)	(-2 -4 -3)	4.653	1.449	3.21	61.1	68.7
[0 3 1]	(2 0 0)	(5 1 -3)	4.653	1.421	3.27	53.5	84.4
[0 -3 7]	(2 0 0)	(-3 7 3)	4.653	1.405	3.31	73.4	55.6
[0 -1 -3]	(2 0 0)	(4 -6 2)	4.653	1.402	3.32	44.5	48.7
[0 1 2]	(2 0 0)	(6 4 -2)	4.653	1.401	3.32	37.6	59.6
[0 3 1]	(2 0 0)	(-3 1 -3)	4.653	1.394	3.34	52.1	84.4
[0 -1 2]	(2 0 0)	(6 2 1)	4.653	1.393	3.34	17.6	59.6
[0 3 -7]	(2 0 0)	(-1 -7 -3)	4.653	1.392	3.34	71.7	55.6
[0 1 1]	(2 0 0)	(5 3 -3)	4.653	1.388	3.35	54.5	73.7
[0 -3 8]	(2 0 0)	(-2 8 3)	4.653	1.387	3.35	82.3	52.0
[0 1 2]	(2 0 0)	(4 6 -3)	4.653	1.383	3.36	64.5	59.6
[0 2 -1]	(2 0 0)	(-5 -1 -2)	4.653	1.382	3.37	31.6	81.7
[0 -3 8]	(2 0 0)	(0 8 3)	4.653	1.381	3.37	80.6	52.0
[0 1 -2]	(2 0 0)	(-2 -6 -3)	4.653	1.365	3.41	62.9	59.6
[0 -1 1]	(2 0 0)	(-7 1 1)	4.653	1.353	3.44	15.3	73.7
[0 -2 3]	(2 0 0)	(5 3 2)	4.653	1.351	3.44	33.6	66.3
[0 1 -3]	(2 0 0)	(1 -9 -3)	4.653	1.334	3.49	89.1	48.7
[0 1 0]	(2 0 0)	(2 0 -4)	4.653	1.329	3.50	85.7	90.0
[0 -3 5]	(2 0 0)	(-5 5 3)	4.653	1.327	3.51	56.2	64.0
[0 -4 -1]	(2 0 0)	(-1 -1 4)	4.653	1.326	3.51	86.1	85.8
[0 3 -5]	(2 0 0)	(-3 -5 -3)	4.653	1.305	3.56	54.9	64.0
[0 4 3]	(2 0 0)	(1 3 -4)	4.653	1.299	3.58	86.2	77.6
[0 4 1]	(2 0 0)	(3 1 -4)	4.653	1.298	3.58	77.7	85.8
[0 2 5]	(2 0 0)	(-5 5 -2)	4.653	1.295	3.59	37.0	53.8
[0 2 1]	(2 0 0)	(7 1 -2)	4.653	1.294	3.59	29.4	81.7
[0 2 -1]	(2 0 0)	(0 -2 -4)	4.653	1.291	3.60	78.2	81.7
[0 -3 -2]	(2 0 0)	(-6 -2 3)	4.653	1.285	3.62	47.5	78.9
[0 3 8]	(2 0 0)	(4 8 -3)	4.653	1.283	3.63	66.5	52.0
[0 1 -3]	(2 0 0)	(-1 -9 -3)	4.653	1.278	3.64	73.2	48.7
[0 1 1]	(2 0 0)	(2 4 -4)	4.653	1.275	3.65	85.8	73.7
[0 -4 3]	(2 0 0)	(-3 3 4)	4.653	1.273	3.66	77.9	77.6
[0 1 0]	(2 0 0)	(4 0 3)	4.653	1.272	3.66	45.7	90.0
[0 -2 3]	(2 0 0)	(-7 3 2)	4.653	1.269	3.67	31.3	66.3
[0 -3 -8]	(2 0 0)	(2 -8 3)	4.653	1.268	3.67	65.0	52.0
[0 3 -2]	(2 0 0)	(-4 -2 -3)	4.653	1.260	3.69	46.3	78.9
[0 -4 -5]	(2 0 0)	(-1 -5 4)	4.653	1.249	3.73	86.4	69.9
[0 -3 -4]	(2 0 0)	(-6 -4 3)	4.653	1.248	3.73	49.0	68.7
[0 2 1]	(2 0 0)	(4 2 -4)	4.653	1.241	3.75	70.3	81.7
[0 3 -7]	(2 0 0)	(-3 -7 -3)	4.653	1.232	3.78	57.1	55.6

Cummingtonite (200) 174 Zone Axes***a* 9.510Å *b* 18.190Å *c* 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	<i>d</i> (hk0)	<i>d</i> (hkl)	<i>d</i> Ratio	θ°	ZA $^\circ$ C $^\circ$
[0 -4 3]	(2 0 0)	(1 3 4)	4.653	1.230	3.78	70.9	77.6
[0 1 1]	(2 0 0)	(-7 1 -1)	4.653	1.226	3.79	13.9	73.7
[0 4 5]	(2 0 0)	(3 5 -4)	4.653	1.226	3.80	78.4	69.9
[0 3 -4]	(2 0 0)	(-4 -4 -3)	4.653	1.225	3.80	47.8	68.7
[0 2 5]	(2 0 0)	(7 5 -2)	4.653	1.222	3.81	34.6	53.8
[0 2 -3]	(2 0 0)	(0 -6 -4)	4.653	1.198	3.88	79.1	66.3
[0 1 0]	(2 0 0)	(2 0 4)	4.653	1.193	3.90	63.6	90.0
[0 -4 5]	(2 0 0)	(1 5 4)	4.653	1.187	3.92	71.6	69.9
[0 4 -1]	(2 0 0)	(5 -1 -4)	4.653	1.187	3.92	63.3	85.8
[0 1 -2]	(2 0 0)	(-6 -4 -2)	4.653	1.184	3.93	31.0	59.6
[0 -4 7]	(2 0 0)	(-1 7 4)	4.653	1.184	3.93	86.6	62.9
[0 1 2]	(2 0 0)	(8 2 -1)	4.653	1.179	3.95	14.8	59.6
[0 -3 1]	(2 0 0)	(-7 1 3)	4.653	1.177	3.95	41.7	84.4
[0 -1 2]	(2 0 0)	(4 6 3)	4.653	1.173	3.97	49.9	59.6
[0 -4 3]	(2 0 0)	(-5 3 4)	4.653	1.167	3.99	63.7	77.6
[0 1 3]	(2 0 0)	(5 9 -3)	4.653	1.165	3.99	60.8	48.7
[0 4 7]	(2 0 0)	(3 7 -4)	4.653	1.164	4.00	79.0	62.9
[0 -1 1]	(2 0 0)	(-7 3 3)	4.653	1.158	4.02	42.8	73.7
[0 2 3]	(2 0 0)	(4 6 -4)	4.653	1.158	4.02	71.7	66.3
[0 3 1]	(2 0 0)	(-5 1 -3)	4.653	1.155	4.03	40.8	84.4
[0 1 1]	(2 0 0)	(-2 4 -4)	4.653	1.154	4.03	64.5	73.7
[0 -1 -2]	(2 0 0)	(-2 -8 4)	4.653	1.147	4.06	86.3	59.6
[0 1 1]	(2 0 0)	(8 2 -2)	4.653	1.145	4.06	26.6	73.7
[0 -4 5]	(2 0 0)	(-5 5 4)	4.653	1.130	4.12	64.6	69.9
[0 3 8]	(2 0 0)	(6 8 -3)	4.653	1.127	4.13	53.6	52.0
[0 -3 -5]	(2 0 0)	(-7 -5 3)	4.653	1.122	4.15	44.7	64.0
[0 -4 -1]	(2 0 0)	(3 -1 4)	4.653	1.120	4.15	57.4	85.8
[0 -1 -2]	(2 0 0)	(-8 -4 2)	4.653	1.119	4.16	29.1	59.6
[0 1 0]	(2 0 0)	(6 0 -4)	4.653	1.118	4.16	57.0	90.0
[0 4 9]	(2 0 0)	(1 9 -4)	4.653	1.111	4.19	86.8	56.6
[0 -3 8]	(2 0 0)	(4 8 3)	4.653	1.110	4.19	52.5	52.0
[0 -3 -5]	(2 0 0)	(5 -5 3)	4.653	1.103	4.22	43.7	64.0
[0 2 -1]	(2 0 0)	(-7 -1 -2)	4.653	1.094	4.25	24.5	81.7
[0 4 9]	(2 0 0)	(3 9 -4)	4.653	1.094	4.25	79.6	56.6
[0 -1 1]	(2 0 0)	(-6 4 4)	4.653	1.086	4.29	58.1	73.7
[0 4 7]	(2 0 0)	(5 7 -4)	4.653	1.081	4.30	65.8	62.9
[0 1 -2]	(2 0 0)	(-8 -2 -1)	4.653	1.081	4.30	13.6	59.6
[0 1 3]	(2 0 0)	(8 6 -2)	4.653	1.079	4.31	32.6	48.7
[0 -2 3]	(2 0 0)	(7 3 2)	4.653	1.079	4.31	26.2	66.3
[0 3 7]	(2 0 0)	(7 7 -3)	4.653	1.074	4.33	47.1	55.6
[0 -4 5]	(2 0 0)	(3 5 4)	4.653	1.072	4.34	59.0	69.9
[0 3 -2]	(2 0 0)	(8 -2 -3)	4.653	1.067	4.36	37.7	78.9
[0 -4 9]	(2 0 0)	(1 9 4)	4.653	1.067	4.36	73.5	56.6
[0 5 1]	(2 0 0)	(1 1 -5)	4.653	1.059	4.39	84.5	86.6
[0 5 -2]	(2 0 0)	(2 -2 -5)	4.653	1.059	4.40	89.0	83.3
[0 -3 -7]	(2 0 0)	(5 -7 3)	4.653	1.057	4.40	46.1	55.6
[0 -1 2]	(2 0 0)	(2 8 4)	4.653	1.057	4.40	66.8	59.6
[0 -5 -1]	(2 0 0)	(-3 -1 5)	4.653	1.055	4.41	82.4	86.6

Cummingtonite (200) 174 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[0 1 1]	(2 0 0)	(9 1 -1)	4.653	1.055	4.41	11.9	73.7
[0 3 2]	(2 0 0)	(-6 2 -3)	4.653	1.047	4.44	36.9	78.9
[0 3 4]	(2 0 0)	(8 4 -3)	4.653	1.046	4.45	39.2	68.7
[0 -5 3]	(2 0 0)	(-1 3 5)	4.653	1.045	4.45	84.6	80.0
[0 -4 -1]	(2 0 0)	(-7 -1 4)	4.653	1.043	4.46	51.7	85.8
[0 -2 1]	(2 0 0)	(4 2 4)	4.653	1.042	4.47	52.2	81.7
[0 -5 -3]	(2 0 0)	(-3 -3 5)	4.653	1.041	4.47	82.5	80.0
[0 1 3]	(2 0 0)	(9 3 -1)	4.653	1.041	4.47	15.1	48.7
[0 -5 -4]	(2 0 0)	(-2 -4 5)	4.653	1.038	4.48	89.0	76.8
[0 -5 2]	(2 0 0)	(0 2 5)	4.653	1.036	4.49	78.2	83.3
[0 -2 -1]	(2 0 0)	(-9 -1 2)	4.653	1.036	4.49	23.1	81.7
[0 1 0]	(2 0 0)	(4 0 -5)	4.653	1.035	4.50	76.1	90.0
[0 -4 7]	(2 0 0)	(3 7 4)	4.653	1.030	4.52	60.3	62.9
[0 4 3]	(2 0 0)	(7 3 -4)	4.653	1.030	4.52	52.3	77.6
[0 -5 -2]	(2 0 0)	(-4 -2 5)	4.653	1.028	4.53	76.2	83.3
[0 -3 -4]	(2 0 0)	(6 -4 3)	4.653	1.027	4.53	38.4	68.7
[0 -4 9]	(2 0 0)	(-5 9 4)	4.653	1.025	4.54	67.1	56.6
[0 2 3]	(2 0 0)	(9 3 -2)	4.653	1.022	4.55	24.8	66.3
[0 1 -3]	(2 0 0)	(7 -9 -3)	4.653	1.019	4.57	49.8	48.7
[0 1 1]	(2 0 0)	(1 5 -5)	4.653	1.019	4.57	84.7	73.7
[0 -5 4]	(2 0 0)	(0 4 5)	4.653	1.017	4.58	78.4	76.8
[0 1 1]	(2 0 0)	(3 5 -5)	4.653	1.015	4.59	82.7	73.7
[0 -1 -2]	(2 0 0)	(-8 -6 3)	4.653	1.013	4.59	41.4	59.6
[0 -5 1]	(2 0 0)	(1 1 5)	4.653	1.012	4.60	72.0	86.6
[0 -5 -4]	(2 0 0)	(-4 -4 5)	4.653	1.009	4.61	76.5	76.8
[0 5 6]	(2 0 0)	(2 6 -5)	4.653	1.005	4.63	89.0	70.6
[0 -4 5]	(2 0 0)	(-7 5 4)	4.653	1.004	4.63	53.4	69.9
[0 -1 -3]	(2 0 0)	(5 -9 3)	4.653	1.004	4.63	48.8	48.7
[0 -1 -2]	(2 0 0)	(-6 -8 4)	4.653	1.003	4.64	60.8	59.6
[0 5 1]	(2 0 0)	(5 1 -5)	4.653	1.001	4.65	70.1	86.6

Cummingtonite (150) 274 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[5 -1 0]	(1 5 0)	(0 0 1)	3.388	5.215	0.65	85.7	78.9
[5 -1 6]	(1 5 0)	(1 -1 -1)	3.388	4.832	0.70	82.7	66.1
[5 -1 4]	(1 5 0)	(1 1 -1)	3.388	4.832	0.70	68.5	77.0
[5 -1 -2]	(1 5 0)	(0 2 -1)	3.388	4.524	0.75	66.5	67.7
[5 -1 2]	(1 5 0)	(0 -2 -1)	3.388	4.524	0.75	58.1	89.0
[5 -1 -6]	(1 5 0)	(1 -1 1)	3.388	4.088	0.83	89.5	50.1
[5 -1 -4]	(1 5 0)	(-1 -1 -1)	3.388	4.088	0.83	64.7	58.1
[5 -1 10]	(1 5 0)	(2 0 -1)	3.388	3.894	0.87	75.6	49.0
[5 -1 8]	(1 5 0)	(1 -3 -1)	3.388	3.863	0.88	60.1	56.7
[5 -1 2]	(1 5 0)	(1 3 -1)	3.388	3.863	0.88	46.5	89.0
[5 -1 8]	(1 5 0)	(-2 -2 1)	3.388	3.579	0.95	53.5	56.7
[5 -1 -2]	(1 5 0)	(1 3 1)	3.388	3.450	0.98	44.4	67.7
[5 -1 -4]	(1 5 0)	(0 -4 1)	3.388	3.428	0.99	49.3	58.1
[5 -1 4]	(1 5 0)	(0 4 1)	3.388	3.428	0.99	41.3	77.0
[5 -1 6]	(1 5 0)	(2 4 -1)	3.388	2.958	1.15	37.4	66.1
[5 -1 10]	(1 5 0)	(1 -5 -1)	3.388	2.944	1.15	47.1	49.0
[5 -1 0]	(1 5 0)	(1 5 -1)	3.388	2.944	1.15	34.3	78.9
[5 -1 0]	(1 5 0)	(-1 -5 -1)	3.388	2.749	1.23	31.7	78.9
[5 -1 3]	(1 5 0)	(-1 1 2)	3.388	2.629	1.29	83.8	82.9
[5 -1 2]	(1 5 0)	(-1 -1 2)	3.388	2.629	1.29	80.7	89.0
[5 -1 -6]	(1 5 0)	(0 6 -1)	3.388	2.621	1.29	39.9	50.1
[5 -1 6]	(1 5 0)	(0 -6 -1)	3.388	2.621	1.29	32.5	66.1
[5 -1 -6]	(1 5 0)	(-2 -4 -1)	3.388	2.597	1.30	39.4	50.1
[5 -1 -1]	(1 5 0)	(0 2 -2)	3.388	2.507	1.35	79.4	73.1
[5 -1 1]	(1 5 0)	(0 -2 -2)	3.388	2.507	1.35	70.8	84.9
[5 -1 5]	(1 5 0)	(2 0 -2)	3.388	2.506	1.35	82.9	71.4
[5 -1 4]	(1 5 0)	(1 -3 -2)	3.388	2.434	1.39	69.6	77.0
[5 -1 1]	(1 5 0)	(1 3 -2)	3.388	2.434	1.39	66.5	84.9
[5 -1 -2]	(1 5 0)	(1 1 2)	3.388	2.366	1.43	73.6	67.7
[5 -1 -2]	(1 5 0)	(-1 -7 1)	3.388	2.307	1.47	27.9	67.7
[5 -1 10]	(1 5 0)	(3 5 -1)	3.388	2.290	1.48	34.7	49.0
[5 -1 -4]	(1 5 0)	(-1 3 -2)	3.388	2.221	1.53	79.0	58.1
[5 -1 -1]	(1 5 0)	(-1 -3 -2)	3.388	2.221	1.53	60.5	73.1
[5 -1 8]	(1 5 0)	(3 -1 -2)	3.388	2.219	1.53	85.2	56.7
[5 -1 7]	(1 5 0)	(-3 -1 2)	3.388	2.219	1.53	71.9	61.2
[5 -1 2]	(1 5 0)	(1 7 1)	3.388	2.209	1.53	24.5	89.0
[5 -1 7]	(1 5 0)	(2 -4 -2)	3.388	2.195	1.54	70.1	61.2
[5 -1 3]	(1 5 0)	(2 4 -2)	3.388	2.195	1.54	56.1	82.9
[5 -1 -4]	(1 5 0)	(-2 -6 -1)	3.388	2.189	1.55	28.9	58.1
[5 -1 5]	(1 5 0)	(-1 5 2)	3.388	2.146	1.58	58.2	71.4
[5 -1 0]	(1 5 0)	(-1 -5 2)	3.388	2.146	1.58	55.1	78.9
[5 -1 9]	(1 5 0)	(-3 3 2)	3.388	2.098	1.62	82.2	52.6
[5 -1 6]	(1 5 0)	(-3 -3 2)	3.388	2.098	1.62	59.5	66.1
[5 -1 -5]	(1 5 0)	(2 0 2)	3.388	2.098	1.62	77.0	53.9
[5 -1 8]	(1 5 0)	(0 -8 -1)	3.388	2.084	1.63	27.9	56.7
[5 -1 -3]	(1 5 0)	(0 -6 2)	3.388	1.977	1.71	56.6	62.7
[5 -1 3]	(1 5 0)	(0 6 2)	3.388	1.977	1.71	48.4	82.9
[5 -1 2]	(1 5 0)	(-2 -8 1)	3.388	1.963	1.73	21.6	89.0

Cummingtonite (150) 274 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[5 -1 8]	(1 5 0)	(3 7 -1)	3.388	1.949	1.74	25.9	56.7
[5 -1 5]	(1 5 0)	(-3 -5 2)	3.388	1.905	1.78	49.0	71.4
[5 -1 -7]	(1 5 0)	(-2 4 -2)	3.388	1.905	1.78	79.3	46.7
[5 -1 -3]	(1 5 0)	(-2 -4 -2)	3.388	1.905	1.78	53.6	62.7
[5 -1 11]	(1 5 0)	(4 -2 -2)	3.388	1.904	1.78	87.2	45.7
[5 -1 9]	(1 5 0)	(4 2 -2)	3.388	1.904	1.78	64.0	52.6
[5 -1 -4]	(1 5 0)	(-1 -9 1)	3.388	1.874	1.81	24.5	58.1
[5 -1 6]	(1 5 0)	(-1 7 2)	3.388	1.858	1.82	49.7	66.1
[5 -1 -1]	(1 5 0)	(-1 -7 2)	3.388	1.858	1.82	46.8	73.1
[5 -1 -2]	(1 5 0)	(2 8 1)	3.388	1.846	1.84	22.0	67.7
[5 -1 4]	(1 5 0)	(-1 -9 -1)	3.388	1.821	1.86	20.5	77.0
[5 -1 -7]	(1 5 0)	(3 1 2)	3.388	1.811	1.87	69.1	46.7
[15 -3 4]	(1 5 0)	(-1 -1 3)	3.388	1.768	1.92	85.2	86.9
[5 -1 2]	(1 5 0)	(-1 1 3)	3.388	1.768	1.92	84.4	89.0
[5 -1 -6]	(1 5 0)	(-1 7 -2)	3.388	1.758	1.93	59.3	50.1
[5 -1 1]	(1 5 0)	(-1 -7 -2)	3.388	1.758	1.93	41.5	84.9
[15 -3 10]	(1 5 0)	(2 0 -3)	3.388	1.751	1.93	86.5	80.9
[5 -1 -6]	(1 5 0)	(-3 -3 -2)	3.388	1.743	1.94	58.5	50.1
[5 -1 4]	(1 5 0)	(-2 2 3)	3.388	1.720	1.97	83.4	77.0
[15 -3 8]	(1 5 0)	(-2 -2 3)	3.388	1.720	1.97	76.3	85.0
[15 -3 2]	(1 5 0)	(1 3 -3)	3.388	1.705	1.99	75.2	82.9
[15 -3 8]	(1 5 0)	(1 -3 -3)	3.388	1.705	1.99	74.4	85.0
[5 -1 11]	(1 5 0)	(-3 7 2)	3.388	1.695	2.00	62.8	45.7
[5 -1 4]	(1 5 0)	(-3 -7 2)	3.388	1.695	2.00	40.7	77.0
[5 -1 9]	(1 5 0)	(-2 8 2)	3.388	1.684	2.01	52.7	52.6
[5 -1 1]	(1 5 0)	(-2 -8 2)	3.388	1.684	2.01	39.4	84.9
[5 -1 6]	(1 5 0)	(3 9 -1)	3.388	1.667	2.03	20.0	66.1
[15 -3 16]	(1 5 0)	(3 -1 -3)	3.388	1.664	2.04	87.8	69.6
[15 -3 14]	(1 5 0)	(-3 -1 3)	3.388	1.664	2.04	78.0	73.2
[5 -1 -2]	(1 5 0)	(1 -1 3)	3.388	1.642	2.06	87.1	67.7
[15 -3 -4]	(1 5 0)	(-1 -1 -3)	3.388	1.642	2.06	77.3	71.3
[5 -1 7]	(1 5 0)	(4 6 -2)	3.388	1.638	2.07	44.6	61.2
[15 -3 14]	(1 5 0)	(2 -4 -3)	3.388	1.634	2.07	73.9	73.2
[5 -1 2]	(1 5 0)	(2 4 -3)	3.388	1.634	2.07	66.9	89.0
[5 -1 -5]	(1 5 0)	(3 5 2)	3.388	1.628	2.08	49.1	53.9
[5 -1 11]	(1 5 0)	(-5 -3 2)	3.388	1.627	2.08	58.6	45.7
[15 -3 -4]	(1 5 0)	(0 4 -3)	3.388	1.624	2.09	74.8	71.3
[15 -3 4]	(1 5 0)	(0 -4 -3)	3.388	1.624	2.09	66.3	86.9
[5 -1 7]	(1 5 0)	(-1 9 2)	3.388	1.609	2.11	43.6	61.2
[5 -1 -2]	(1 5 0)	(1 9 -2)	3.388	1.609	2.11	40.7	67.7
[5 -1 0]	(1 5 0)	(-1 -5 3)	3.388	1.596	2.12	66.3	78.9
[15 -3 10]	(1 5 0)	(-1 5 3)	3.388	1.596	2.12	65.5	80.9
[15 -3 -8]	(1 5 0)	(1 -3 3)	3.388	1.591	2.13	83.5	64.3
[15 -3 -2]	(1 5 0)	(1 3 3)	3.388	1.591	2.13	68.0	75.0
[5 -1 -6]	(1 5 0)	(-3 -9 -1)	3.388	1.560	2.17	22.4	50.1
[15 -3 20]	(1 5 0)	(4 0 -3)	3.388	1.555	2.18	79.9	62.8
[5 -1 -7]	(1 5 0)	(1 -9 2)	3.388	1.542	2.20	52.7	46.7
[5 -1 2]	(1 5 0)	(1 9 2)	3.388	1.542	2.20	35.4	89.0

Cummingtonite (150) 274 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[5 -1 -1]	(1 5 0)	(-2 -8 -2)	3.388	1.542	2.20	37.2	73.1
[15 -3 22]	(1 5 0)	(4 -2 -3)	3.388	1.533	2.21	89.0	59.6
[5 -1 6]	(1 5 0)	(-4 -2 3)	3.388	1.533	2.21	70.7	66.1
[5 -1 10]	(1 5 0)	(5 5 -2)	3.388	1.532	2.21	49.6	49.0
[15 -3 -10]	(1 5 0)	(-2 0 -3)	3.388	1.528	2.22	79.3	61.1
[15 -3 20]	(1 5 0)	(-3 5 3)	3.388	1.518	2.23	74.0	62.8
[15 -3 10]	(1 5 0)	(-3 -5 3)	3.388	1.518	2.23	59.9	80.9
[15 -3 16]	(1 5 0)	(-2 6 3)	3.388	1.516	2.23	65.6	69.6
[15 -3 4]	(1 5 0)	(-2 -6 3)	3.388	1.516	2.23	58.7	86.9
[5 -1 -4]	(1 5 0)	(2 -2 3)	3.388	1.507	2.25	88.4	58.1
[15 -3 -8]	(1 5 0)	(-2 -2 -3)	3.388	1.507	2.25	70.3	64.3
[15 -3 -10]	(1 5 0)	(-1 5 -3)	3.388	1.502	2.26	74.9	61.1
[5 -1 0]	(1 5 0)	(-1 -5 -3)	3.388	1.502	2.26	59.5	78.9
[5 -1 3]	(1 5 0)	(3 9 -2)	3.388	1.499	2.26	34.5	82.9
[5 -1 -4]	(1 5 0)	(3 7 2)	3.388	1.491	2.27	41.2	58.1
[5 -1 8]	(1 5 0)	(-4 4 3)	3.388	1.471	2.30	82.3	56.7
[15 -3 16]	(1 5 0)	(-4 -4 3)	3.388	1.471	2.30	62.1	69.6
[15 -3 -2]	(1 5 0)	(1 7 -3)	3.388	1.466	2.31	58.7	75.0
[5 -1 4]	(1 5 0)	(1 -7 -3)	3.388	1.466	2.31	57.9	77.0
[15 -3 -14]	(1 5 0)	(-2 4 -3)	3.388	1.449	2.34	83.1	55.2
[5 -1 -2]	(1 5 0)	(-2 -4 -3)	3.388	1.449	2.34	61.8	67.7
[15 -3 26]	(1 5 0)	(5 -1 -3)	3.388	1.421	2.38	81.7	53.9
[5 -1 8]	(1 5 0)	(-5 -1 3)	3.388	1.421	2.38	73.2	56.7
[5 -1 9]	(1 5 0)	(5 7 -2)	3.388	1.416	2.39	42.0	52.6
[15 -3 22]	(1 5 0)	(3 -7 -3)	3.388	1.405	2.41	66.5	59.6
[15 -3 8]	(1 5 0)	(3 7 -3)	3.388	1.405	2.41	52.6	85.0
[5 -1 -7]	(1 5 0)	(4 6 2)	3.388	1.402	2.42	46.3	46.7
[15 -3 -16]	(1 5 0)	(-3 1 -3)	3.388	1.394	2.43	81.2	52.6
[15 -3 -14]	(1 5 0)	(3 1 3)	3.388	1.394	2.43	72.8	55.2
[5 -1 -4]	(1 5 0)	(-1 7 -3)	3.388	1.392	2.43	67.4	58.1
[15 -3 2]	(1 5 0)	(-1 -7 -3)	3.388	1.392	2.43	52.2	82.9
[15 -3 28]	(1 5 0)	(-5 3 3)	3.388	1.388	2.44	89.9	51.4
[15 -3 22]	(1 5 0)	(-5 -3 3)	3.388	1.388	2.44	64.9	59.6
[5 -1 6]	(1 5 0)	(-2 8 3)	3.388	1.387	2.44	58.7	66.1
[15 -3 2]	(1 5 0)	(-2 -8 3)	3.388	1.387	2.44	51.9	82.9
[15 -3 26]	(1 5 0)	(-4 6 3)	3.388	1.383	2.45	74.4	53.9
[15 -3 14]	(1 5 0)	(-4 -6 3)	3.388	1.383	2.45	54.4	73.2
[15 -3 -8]	(1 5 0)	(0 8 -3)	3.388	1.381	2.45	59.6	64.3
[15 -3 8]	(1 5 0)	(0 -8 -3)	3.388	1.381	2.45	51.3	85.0
[15 -3 -16]	(1 5 0)	(-2 6 -3)	3.388	1.365	2.48	75.3	52.6
[15 -3 -4]	(1 5 0)	(-2 -6 -3)	3.388	1.365	2.48	54.2	71.3
[5 -1 -3]	(1 5 0)	(3 9 2)	3.388	1.352	2.51	34.8	62.7
[15 -3 -4]	(1 5 0)	(1 9 -3)	3.388	1.334	2.54	52.5	71.3
[15 -3 14]	(1 5 0)	(1 -9 -3)	3.388	1.334	2.54	51.7	73.2
[10 -2 5]	(1 5 0)	(2 0 -4)	3.388	1.329	2.55	88.4	86.0
[5 -1 10]	(1 5 0)	(5 -5 -3)	3.388	1.327	2.55	82.1	49.0
[15 -3 20]	(1 5 0)	(5 5 -3)	3.388	1.327	2.55	57.2	62.8
[5 -1 1]	(1 5 0)	(-1 -1 4)	3.388	1.326	2.56	87.5	84.9

Cummingtonite (150) 274 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[10 -2 3]	(1 5 0)	(-1 1 4)	3.388	1.326	2.56	84.7	87.9
[15 -3 -20]	(1 5 0)	(-3 5 -3)	3.388	1.305	2.60	82.8	47.8
[15 -3 -10]	(1 5 0)	(-3 -5 -3)	3.388	1.305	2.60	57.1	61.1
[10 -2 1]	(1 5 0)	(-1 -3 4)	3.388	1.299	2.61	79.9	81.9
[5 -1 2]	(1 5 0)	(-1 3 4)	3.388	1.299	2.61	77.1	89.0
[5 -1 4]	(1 5 0)	(-3 1 4)	3.388	1.298	2.61	89.4	77.0
[10 -2 7]	(1 5 0)	(3 1 -4)	3.388	1.298	2.61	81.7	80.0
[10 -2 -1]	(1 5 0)	(0 -2 4)	3.388	1.291	2.63	86.7	76.0
[10 -2 1]	(1 5 0)	(0 2 4)	3.388	1.291	2.63	78.1	81.9
[15 -3 32]	(1 5 0)	(-6 2 3)	3.388	1.285	2.64	83.4	46.7
[15 -3 28]	(1 5 0)	(6 2 -3)	3.388	1.285	2.64	67.8	51.4
[15 -3 28]	(1 5 0)	(4 -8 -3)	3.388	1.283	2.64	67.6	51.4
[5 -1 4]	(1 5 0)	(4 8 -3)	3.388	1.283	2.64	47.8	77.0
[15 -3 -14]	(1 5 0)	(1 -9 3)	3.388	1.278	2.65	61.1	55.2
[15 -3 4]	(1 5 0)	(1 9 3)	3.388	1.278	2.65	46.1	86.9
[10 -2 7]	(1 5 0)	(2 -4 -4)	3.388	1.275	2.66	76.4	80.0
[10 -2 3]	(1 5 0)	(2 4 -4)	3.388	1.275	2.66	73.3	87.9
[10 -2 9]	(1 5 0)	(-3 3 4)	3.388	1.273	2.66	83.1	74.2
[5 -1 3]	(1 5 0)	(3 3 -4)	3.388	1.273	2.66	74.2	82.9
[15 -3 -20]	(1 5 0)	(4 0 3)	3.388	1.272	2.66	75.3	47.8
[5 -1 -6]	(1 5 0)	(2 -8 3)	3.388	1.268	2.67	68.6	50.1
[15 -3 -2]	(1 5 0)	(2 8 3)	3.388	1.268	2.67	47.7	75.0
[15 -3 -22]	(1 5 0)	(-4 2 -3)	3.388	1.260	2.69	83.0	45.6
[5 -1 -6]	(1 5 0)	(4 2 3)	3.388	1.260	2.69	67.6	50.1
[5 -1 6]	(1 5 0)	(-5 -7 3)	3.388	1.250	2.71	50.3	66.1
[5 -1 0]	(1 5 0)	(1 5 -4)	3.388	1.249	2.71	72.7	78.9
[10 -2 5]	(1 5 0)	(-1 5 4)	3.388	1.249	2.71	70.0	86.0
[15 -3 26]	(1 5 0)	(-6 -4 3)	3.388	1.248	2.71	60.3	53.9
[10 -2 11]	(1 5 0)	(-4 2 4)	3.388	1.241	2.73	89.8	68.7
[10 -2 9]	(1 5 0)	(-4 -2 4)	3.388	1.241	2.73	75.5	74.2
[5 -1 11]	(1 5 0)	(6 8 -2)	3.388	1.236	2.74	40.4	45.7
[15 -3 -22]	(1 5 0)	(3 -7 3)	3.388	1.232	2.75	75.9	45.6
[15 -3 -8]	(1 5 0)	(3 7 3)	3.388	1.232	2.75	50.3	64.3
[5 -1 -2]	(1 5 0)	(1 -3 4)	3.388	1.230	2.75	86.0	67.7
[10 -2 -1]	(1 5 0)	(1 3 4)	3.388	1.230	2.75	72.1	76.0
[5 -1 5]	(1 5 0)	(-3 5 4)	3.388	1.226	2.76	76.1	71.4
[10 -2 5]	(1 5 0)	(-3 -5 4)	3.388	1.226	2.76	67.2	86.0
[15 -3 -16]	(1 5 0)	(4 4 3)	3.388	1.225	2.77	60.3	52.6
[10 -2 -5]	(1 5 0)	(2 0 4)	3.388	1.193	2.84	80.7	65.2
[5 -1 0]	(1 5 0)	(-1 -5 -4)	3.388	1.187	2.85	65.2	78.9
[10 -2 13]	(1 5 0)	(5 -1 -4)	3.388	1.187	2.85	84.1	63.6
[5 -1 6]	(1 5 0)	(5 1 -4)	3.388	1.187	2.85	77.0	66.1
[10 -2 -1]	(1 5 0)	(-1 -7 4)	3.388	1.184	2.86	66.3	76.0
[5 -1 3]	(1 5 0)	(-1 7 4)	3.388	1.184	2.86	63.5	82.9
[15 -3 -14]	(1 5 0)	(-4 -6 -3)	3.388	1.173	2.89	53.5	55.2
[5 -1 7]	(1 5 0)	(-5 3 4)	3.388	1.167	2.90	89.0	61.2
[10 -2 11]	(1 5 0)	(-5 -3 4)	3.388	1.167	2.90	70.1	68.7
[15 -3 16]	(1 5 0)	(5 9 -3)	3.388	1.165	2.91	44.4	69.6

Cummingtonite (150) 274 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[10 -2 11]	(1 5 0)	(3 -7 -4)	3.388	1.164	2.91	69.7	68.7
[5 -1 2]	(1 5 0)	(3 7 -4)	3.388	1.164	2.91	60.9	89.0
[15 -3 32]	(1 5 0)	(-7 -3 3)	3.388	1.158	2.93	63.6	46.7
[10 -2 13]	(1 5 0)	(-4 6 4)	3.388	1.158	2.93	76.0	63.6
[10 -2 7]	(1 5 0)	(-4 -6 4)	3.388	1.158	2.93	61.9	80.0
[10 -2 -7]	(1 5 0)	(-2 4 -4)	3.388	1.154	2.94	85.4	60.3
[10 -2 -3]	(1 5 0)	(-2 -4 -4)	3.388	1.154	2.94	66.8	70.4
[10 -2 9]	(1 5 0)	(2 -8 -4)	3.388	1.147	2.95	63.5	74.2
[10 -2 1]	(1 5 0)	(2 8 -4)	3.388	1.147	2.95	60.4	81.9
[15 -3 -22]	(1 5 0)	(-5 -3 -3)	3.388	1.136	2.98	63.5	45.6
[10 -2 15]	(1 5 0)	(-5 5 4)	3.388	1.130	3.00	82.3	58.9
[5 -1 5]	(1 5 0)	(5 5 -4)	3.388	1.130	3.00	63.5	71.4
[15 -3 22]	(1 5 0)	(-6 -8 3)	3.388	1.127	3.01	47.3	59.6
[5 -1 10]	(1 5 0)	(7 5 -3)	3.388	1.122	3.02	56.9	49.0
[5 -1 -4]	(1 5 0)	(-3 1 -4)	3.388	1.120	3.03	82.0	58.1
[10 -2 -7]	(1 5 0)	(3 1 4)	3.388	1.120	3.03	75.3	60.3
[10 -2 15]	(1 5 0)	(-6 0 4)	3.388	1.118	3.03	78.6	58.9
[5 -1 -1]	(1 5 0)	(1 9 -4)	3.388	1.111	3.05	60.6	73.1
[10 -2 7]	(1 5 0)	(1 -9 -4)	3.388	1.111	3.05	57.8	80.0
[5 -1 -4]	(1 5 0)	(4 8 3)	3.388	1.110	3.05	47.4	58.1
[15 -3 -20]	(1 5 0)	(5 5 3)	3.388	1.103	3.07	56.9	47.8
[5 -1 6]	(1 5 0)	(3 -9 -4)	3.388	1.094	3.10	64.0	66.1
[10 -2 3]	(1 5 0)	(3 9 -4)	3.388	1.094	3.10	55.3	87.9
[10 -2 17]	(1 5 0)	(6 -4 -4)	3.388	1.086	3.12	88.3	54.6
[10 -2 13]	(1 5 0)	(6 4 -4)	3.388	1.086	3.12	65.5	63.6
[5 -1 8]	(1 5 0)	(5 -7 -4)	3.388	1.081	3.13	76.2	56.7
[10 -2 9]	(1 5 0)	(5 7 -4)	3.388	1.081	3.13	57.5	74.2
[15 -3 28]	(1 5 0)	(-7 -7 3)	3.388	1.074	3.15	50.7	51.4
[5 -1 -5]	(1 5 0)	(-3 5 -4)	3.388	1.072	3.16	85.0	53.9
[10 -2 -5]	(1 5 0)	(-3 -5 -4)	3.388	1.072	3.16	62.5	65.2
[10 -2 -7]	(1 5 0)	(-1 9 -4)	3.388	1.067	3.18	67.1	60.3
[5 -1 1]	(1 5 0)	(-1 -9 -4)	3.388	1.067	3.18	53.5	84.9
[5 -1 2]	(1 5 0)	(2 0 -5)	3.388	1.066	3.18	89.6	89.0
[25 -5 4]	(1 5 0)	(-1 -1 5)	3.388	1.059	3.20	88.9	83.7
[25 -5 6]	(1 5 0)	(-1 1 5)	3.388	1.059	3.20	84.9	86.1
[25 -5 12]	(1 5 0)	(2 -2 -5)	3.388	1.059	3.20	84.2	86.6
[25 -5 8]	(1 5 0)	(2 2 -5)	3.388	1.059	3.20	83.4	88.5
[5 -1 -6]	(1 5 0)	(-5 -7 -3)	3.388	1.057	3.21	50.9	50.1
[10 -2 -9]	(1 5 0)	(-2 8 -4)	3.388	1.057	3.21	73.2	55.9
[10 -2 -1]	(1 5 0)	(-2 -8 -4)	3.388	1.057	3.21	54.8	76.0
[25 -5 16]	(1 5 0)	(-3 1 5)	3.388	1.055	3.21	89.6	81.7
[25 -5 14]	(1 5 0)	(-3 -1 5)	3.388	1.055	3.21	84.2	84.1
[25 -5 8]	(1 5 0)	(-1 3 5)	3.388	1.045	3.24	78.8	88.5
[5 -1 9]	(1 5 0)	(-7 1 4)	3.388	1.043	3.25	80.1	52.6
[10 -2 17]	(1 5 0)	(7 1 -4)	3.388	1.043	3.25	73.8	54.6
[10 -2 -11]	(1 5 0)	(-4 2 -4)	3.388	1.042	3.25	83.3	51.9
[10 -2 -9]	(1 5 0)	(4 2 4)	3.388	1.042	3.25	70.7	55.9
[25 -5 18]	(1 5 0)	(3 -3 -5)	3.388	1.041	3.25	83.5	79.4

Cummingtonite (150) 274 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[25 -5 12]	(1 5 0)	(3 3 -5)	3.388	1.041	3.25	78.0	86.6
[25 -5 14]	(1 5 0)	(2 -4 -5)	3.388	1.038	3.27	78.1	84.1
[25 -5 6]	(1 5 0)	(2 4 -5)	3.388	1.038	3.27	77.3	86.1
[25 -5 -2]	(1 5 0)	(0 -2 5)	3.388	1.036	3.27	88.2	76.6
[25 -5 2]	(1 5 0)	(0 2 5)	3.388	1.036	3.27	79.6	81.3
[5 -1 4]	(1 5 0)	(-4 0 5)	3.388	1.035	3.27	85.0	77.0
[10 -2 -11]	(1 5 0)	(-3 7 -4)	3.388	1.030	3.29	79.1	51.9
[5 -1 -2]	(1 5 0)	(-3 -7 -4)	3.388	1.030	3.29	56.7	67.7
[10 -2 19]	(1 5 0)	(7 -3 -4)	3.388	1.030	3.29	86.3	50.7
[5 -1 8]	(1 5 0)	(-7 -3 4)	3.388	1.030	3.29	67.6	56.7
[25 -5 22]	(1 5 0)	(-4 2 5)	3.388	1.028	3.30	88.9	74.7
[25 -5 18]	(1 5 0)	(-4 -2 5)	3.388	1.028	3.30	78.9	79.4
[10 -2 17]	(1 5 0)	(-5 9 4)	3.388	1.025	3.31	70.7	54.6
[5 -1 4]	(1 5 0)	(-5 -9 4)	3.388	1.025	3.31	52.1	77.0
[15 -3 26]	(1 5 0)	(7 9 -3)	3.388	1.019	3.33	45.2	53.9
[5 -1 0]	(1 5 0)	(-1 -5 5)	3.388	1.019	3.33	76.9	78.9
[5 -1 2]	(1 5 0)	(-1 5 5)	3.388	1.019	3.33	72.9	89.0
[25 -5 -4]	(1 5 0)	(0 4 -5)	3.388	1.017	3.33	82.2	74.3
[25 -5 4]	(1 5 0)	(0 -4 -5)	3.388	1.017	3.33	73.7	83.7
[5 -1 4]	(1 5 0)	(-3 5 5)	3.388	1.015	3.34	77.7	77.0
[5 -1 2]	(1 5 0)	(-3 -5 5)	3.388	1.015	3.34	72.2	89.0
[25 -5 -6]	(1 5 0)	(1 -1 5)	3.388	1.012	3.35	86.5	72.0
[25 -5 -4]	(1 5 0)	(-1 -1 -5)	3.388	1.012	3.35	80.5	74.3
[25 -5 24]	(1 5 0)	(-4 4 5)	3.388	1.009	3.36	83.0	72.5
[25 -5 16]	(1 5 0)	(-4 -4 5)	3.388	1.009	3.36	73.0	81.7
[25 -5 16]	(1 5 0)	(-2 6 5)	3.388	1.005	3.37	72.4	81.7
[25 -5 4]	(1 5 0)	(-2 -6 5)	3.388	1.005	3.37	71.6	83.7
[5 -1 10]	(1 5 0)	(-7 5 4)	3.388	1.004	3.37	87.7	49.0
[10 -2 15]	(1 5 0)	(7 5 -4)	3.388	1.004	3.37	61.7	58.9
[15 -3 -16]	(1 5 0)	(-5 -9 -3)	3.388	1.004	3.37	45.4	52.6
[10 -2 19]	(1 5 0)	(-6 8 4)	3.388	1.003	3.38	76.5	50.7
[10 -2 11]	(1 5 0)	(-6 -8 4)	3.388	1.003	3.38	53.9	68.7
[25 -5 26]	(1 5 0)	(5 -1 -5)	3.388	1.001	3.39	85.8	70.3
[25 -5 24]	(1 5 0)	(-5 -1 5)	3.388	1.001	3.39	79.9	72.5

Cummingtonite (240) 302 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[2 -1 0]	(2 4 0)	(0 0 1)	3.252	5.215	0.62	81.7	81.4
[2 -1 3]	(2 4 0)	(-1 1 1)	3.252	4.832	0.67	87.7	65.1
[2 -1 1]	(2 4 0)	(1 1 -1)	3.252	4.832	0.67	65.2	86.9
[2 -1 2]	(2 4 0)	(0 -2 -1)	3.252	4.524	0.72	61.3	75.5
[2 -1 -3]	(2 4 0)	(1 -1 1)	3.252	4.088	0.80	75.0	52.6
[2 -1 -1]	(2 4 0)	(-1 -1 -1)	3.252	4.088	0.80	54.5	70.4
[2 -1 4]	(2 4 0)	(2 0 -1)	3.252	3.894	0.84	61.5	56.2
[2 -1 5]	(2 4 0)	(1 -3 -1)	3.252	3.863	0.84	74.2	48.9
[2 -1 -1]	(2 4 0)	(1 3 -1)	3.252	3.863	0.84	50.3	70.4
[2 -1 2]	(2 4 0)	(-2 -2 1)	3.252	3.579	0.91	43.9	75.5
[2 -1 1]	(2 4 0)	(1 3 1)	3.252	3.450	0.94	40.4	86.9
[2 -1 -4]	(2 4 0)	(0 -4 1)	3.252	3.428	0.95	63.6	45.9
[2 -1 4]	(2 4 0)	(0 4 1)	3.252	3.428	0.95	50.7	56.2
[2 -1 -4]	(2 4 0)	(-2 0 -1)	3.252	3.163	1.03	55.8	45.9
[2 -1 -2]	(2 4 0)	(2 2 1)	3.252	2.988	1.09	40.0	60.7
[2 -1 -3]	(2 4 0)	(1 5 -1)	3.252	2.944	1.10	44.1	52.6
[2 -1 5]	(2 4 0)	(-3 -1 1)	3.252	2.908	1.12	46.4	48.9
[2 -1 3]	(2 4 0)	(1 5 1)	3.252	2.749	1.18	34.6	65.1
[2 -1 3]	(2 4 0)	(-3 -3 1)	3.252	2.650	1.23	33.2	65.1
[4 -2 3]	(2 4 0)	(-1 1 2)	3.252	2.629	1.24	87.1	81.1
[4 -2 1]	(2 4 0)	(-1 -1 2)	3.252	2.629	1.24	81.1	87.2
[2 -1 -1]	(2 4 0)	(0 2 -2)	3.252	2.507	1.30	86.6	70.4
[2 -1 1]	(2 4 0)	(0 -2 -2)	3.252	2.507	1.30	70.4	86.9
[2 -1 2]	(2 4 0)	(2 0 -2)	3.252	2.506	1.30	76.2	75.5
[4 -2 5]	(2 4 0)	(1 -3 -2)	3.252	2.434	1.34	76.2	70.1
[4 -2 -1]	(2 4 0)	(1 3 -2)	3.252	2.434	1.34	70.4	75.8
[4 -2 -1]	(2 4 0)	(-1 -1 -2)	3.252	2.366	1.37	66.3	75.8
[2 -1 1]	(2 4 0)	(3 5 -1)	3.252	2.290	1.42	25.5	86.9
[2 -1 -3]	(2 4 0)	(-3 -3 -1)	3.252	2.274	1.43	32.5	52.6
[4 -2 -5]	(2 4 0)	(1 -3 2)	3.252	2.221	1.46	88.4	56.5
[4 -2 1]	(2 4 0)	(-1 -3 -2)	3.252	2.221	1.46	56.5	87.2
[4 -2 7]	(2 4 0)	(3 -1 -2)	3.252	2.219	1.47	73.1	60.5
[4 -2 5]	(2 4 0)	(-3 -1 2)	3.252	2.219	1.47	62.3	70.1
[2 -1 5]	(2 4 0)	(1 7 1)	3.252	2.209	1.47	33.4	48.9
[2 -1 4]	(2 4 0)	(2 -4 -2)	3.252	2.195	1.48	82.1	56.2
[2 -1 0]	(2 4 0)	(2 4 -2)	3.252	2.195	1.48	56.4	81.4
[2 -1 2]	(2 4 0)	(-2 -6 -1)	3.252	2.189	1.49	25.1	75.5
[4 -2 7]	(2 4 0)	(-1 5 2)	3.252	2.146	1.52	67.7	60.5
[4 -2 -3]	(2 4 0)	(-1 -5 2)	3.252	2.146	1.52	62.3	65.4
[4 -2 9]	(2 4 0)	(3 -3 -2)	3.252	2.098	1.55	83.7	52.4
[4 -2 3]	(2 4 0)	(3 3 -2)	3.252	2.098	1.55	52.8	81.1
[2 -1 -2]	(2 4 0)	(-2 0 -2)	3.252	2.098	1.55	64.5	60.7
[2 -1 4]	(2 4 0)	(4 4 -1)	3.252	2.059	1.58	27.7	56.2
[4 -2 3]	(2 4 0)	(-1 -5 -2)	3.252	1.995	1.63	49.3	81.1
[2 -1 -3]	(2 4 0)	(0 6 -2)	3.252	1.977	1.65	69.1	52.6
[2 -1 3]	(2 4 0)	(0 -6 -2)	3.252	1.977	1.65	54.9	65.1
[2 -1 -4]	(2 4 0)	(2 8 -1)	3.252	1.963	1.66	30.9	45.9
[2 -1 -1]	(2 4 0)	(-3 -7 1)	3.252	1.949	1.67	22.8	70.4

Cummingtonite (240) 302 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[4 -2 1]	(2 4 0)	(3 5 -2)	3.252	1.905	1.71	45.7	87.2
[2 -1 -4]	(2 4 0)	(-2 4 -2)	3.252	1.905	1.71	84.7	45.9
[2 -1 0]	(2 4 0)	(2 4 2)	3.252	1.905	1.71	46.3	81.4
[2 -1 5]	(2 4 0)	(-4 2 2)	3.252	1.904	1.71	71.5	48.9
[2 -1 3]	(2 4 0)	(4 2 -2)	3.252	1.904	1.71	51.9	65.1
[4 -2 9]	(2 4 0)	(-1 7 2)	3.252	1.858	1.75	61.7	52.4
[4 -2 -5]	(2 4 0)	(-1 -7 2)	3.252	1.858	1.75	56.8	56.5
[2 -1 4]	(2 4 0)	(2 8 1)	3.252	1.846	1.76	24.6	56.2
[2 -1 2]	(2 4 0)	(-4 -6 1)	3.252	1.837	1.77	20.9	75.5
[2 -1 -4]	(2 4 0)	(4 4 1)	3.252	1.814	1.79	28.3	45.9
[4 -2 -7]	(2 4 0)	(-3 1 -2)	3.252	1.811	1.80	64.1	49.1
[4 -2 -5]	(2 4 0)	(3 1 2)	3.252	1.811	1.80	54.6	56.5
[2 -1 1]	(2 4 0)	(3 7 1)	3.252	1.784	1.82	19.6	86.9
[6 -3 1]	(2 4 0)	(-1 -1 3)	3.252	1.768	1.84	86.8	85.3
[2 -1 1]	(2 4 0)	(-1 1 3)	3.252	1.768	1.84	85.2	86.9
[4 -2 5]	(2 4 0)	(-1 -7 -2)	3.252	1.758	1.85	44.5	70.1
[6 -3 4]	(2 4 0)	(2 0 -3)	3.252	1.751	1.86	83.2	83.0
[4 -2 -3]	(2 4 0)	(-3 -3 -2)	3.252	1.743	1.87	46.0	65.4
[2 -1 2]	(2 4 0)	(-2 2 3)	3.252	1.720	1.89	88.9	75.5
[6 -3 2]	(2 4 0)	(-2 -2 3)	3.252	1.720	1.89	75.5	89.2
[6 -3 -1]	(2 4 0)	(1 3 -3)	3.252	1.705	1.91	79.2	77.6
[6 -3 5]	(2 4 0)	(1 -3 -3)	3.252	1.705	1.91	77.6	79.2
[4 -2 -1]	(2 4 0)	(3 7 -2)	3.252	1.695	1.92	41.0	75.8
[2 -1 -2]	(2 4 0)	(2 8 -2)	3.252	1.684	1.93	46.4	60.7
[4 -2 11]	(2 4 0)	(5 -1 -2)	3.252	1.681	1.93	61.8	45.7
[4 -2 9]	(2 4 0)	(-5 -1 2)	3.252	1.681	1.93	52.8	52.4
[2 -1 5]	(2 4 0)	(5 5 -1)	3.252	1.670	1.95	24.6	48.9
[2 -1 -3]	(2 4 0)	(-3 -9 1)	3.252	1.667	1.95	23.2	52.6
[6 -3 7]	(2 4 0)	(3 -1 -3)	3.252	1.664	1.95	80.1	71.9
[6 -3 5]	(2 4 0)	(-3 -1 3)	3.252	1.664	1.95	72.4	79.2
[2 -1 -2]	(2 4 0)	(4 6 1)	3.252	1.657	1.96	20.9	60.7
[2 -1 -1]	(2 4 0)	(-1 1 -3)	3.252	1.642	1.98	78.8	70.4
[6 -3 -1]	(2 4 0)	(1 1 3)	3.252	1.642	1.98	71.1	77.6
[2 -1 1]	(2 4 0)	(-4 -6 2)	3.252	1.638	1.99	38.0	86.9
[6 -3 8]	(2 4 0)	(-2 4 3)	3.252	1.634	1.99	81.5	68.4
[2 -1 0]	(2 4 0)	(2 4 -3)	3.252	1.634	1.99	68.5	81.4
[4 -2 -1]	(2 4 0)	(-3 -5 -2)	3.252	1.628	2.00	39.0	75.8
[4 -2 7]	(2 4 0)	(5 3 -2)	3.252	1.627	2.00	44.5	60.5
[6 -3 -4]	(2 4 0)	(0 -4 3)	3.252	1.624	2.00	83.1	67.0
[6 -3 4]	(2 4 0)	(0 4 3)	3.252	1.624	2.00	67.0	83.0
[4 -2 11]	(2 4 0)	(-1 9 2)	3.252	1.609	2.02	57.5	45.7
[4 -2 -7]	(2 4 0)	(1 9 -2)	3.252	1.609	2.02	53.0	49.1
[2 -1 -1]	(2 4 0)	(-1 -5 3)	3.252	1.596	2.04	72.5	70.4
[6 -3 7]	(2 4 0)	(-1 5 3)	3.252	1.596	2.04	71.0	71.9
[6 -3 -5]	(2 4 0)	(1 -3 3)	3.252	1.591	2.04	86.3	63.8
[6 -3 1]	(2 4 0)	(-1 -3 -3)	3.252	1.591	2.04	64.0	85.3
[2 -1 -3]	(2 4 0)	(4 2 2)	3.252	1.558	2.09	47.4	52.6
[6 -3 8]	(2 4 0)	(-4 0 3)	3.252	1.555	2.09	70.2	68.4

Cummingtonite (240) 302 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[4 -2 7]	(2 4 0)	(1 9 2)	3.252	1.542	2.11	41.7	60.5
[2 -1 2]	(2 4 0)	(2 8 2)	3.252	1.542	2.11	36.7	75.5
[6 -3 10]	(2 4 0)	(-4 2 3)	3.252	1.533	2.12	77.7	62.0
[2 -1 2]	(2 4 0)	(4 2 -3)	3.252	1.533	2.12	63.0	75.5
[4 -2 5]	(2 4 0)	(-5 -5 2)	3.252	1.532	2.12	37.7	70.1
[6 -3 -4]	(2 4 0)	(2 0 3)	3.252	1.528	2.13	69.1	67.0
[2 -1 3]	(2 4 0)	(-5 -7 1)	3.252	1.523	2.14	18.4	65.1
[6 -3 11]	(2 4 0)	(-3 5 3)	3.252	1.518	2.14	85.3	59.0
[6 -3 1]	(2 4 0)	(-3 -5 3)	3.252	1.518	2.14	59.0	85.3
[6 -3 10]	(2 4 0)	(-2 6 3)	3.252	1.516	2.14	75.2	62.0
[6 -3 -2]	(2 4 0)	(-2 -6 3)	3.252	1.516	2.14	62.6	74.0
[2 -1 -2]	(2 4 0)	(2 -2 3)	3.252	1.507	2.16	76.5	60.7
[6 -3 -2]	(2 4 0)	(-2 -2 -3)	3.252	1.507	2.16	62.0	74.0
[6 -3 -7]	(2 4 0)	(-1 5 -3)	3.252	1.502	2.17	86.7	57.8
[2 -1 1]	(2 4 0)	(1 5 3)	3.252	1.502	2.17	57.8	86.9
[4 -2 -3]	(2 4 0)	(-3 -9 2)	3.252	1.499	2.17	38.2	65.4
[4 -2 1]	(2 4 0)	(3 7 2)	3.252	1.491	2.18	34.1	87.2
[2 -1 4]	(2 4 0)	(4 -4 -3)	3.252	1.471	2.21	84.9	56.2
[6 -3 4]	(2 4 0)	(-4 -4 3)	3.252	1.471	2.21	56.5	83.0
[6 -3 -5]	(2 4 0)	(1 7 -3)	3.252	1.466	2.22	66.9	63.8
[2 -1 3]	(2 4 0)	(-1 7 3)	3.252	1.466	2.22	65.5	65.1
[6 -3 -8]	(2 4 0)	(2 -4 3)	3.252	1.449	2.24	83.7	55.1
[2 -1 0]	(2 4 0)	(2 4 3)	3.252	1.449	2.24	55.6	81.4
[6 -3 11]	(2 4 0)	(5 -1 -3)	3.252	1.421	2.29	68.9	59.0
[2 -1 3]	(2 4 0)	(-5 -1 3)	3.252	1.421	2.29	61.8	65.1
[4 -2 3]	(2 4 0)	(5 7 -2)	3.252	1.416	2.30	32.5	81.1
[6 -3 13]	(2 4 0)	(3 -7 -3)	3.252	1.405	2.31	79.2	53.6
[6 -3 -1]	(2 4 0)	(3 7 -3)	3.252	1.405	2.31	54.1	77.6
[2 -1 -1]	(2 4 0)	(-4 -6 -2)	3.252	1.402	2.32	33.9	70.4
[2 -1 4]	(2 4 0)	(6 4 -2)	3.252	1.401	2.32	39.2	56.2
[6 -3 -7]	(2 4 0)	(3 -1 3)	3.252	1.394	2.33	68.0	57.8
[6 -3 -5]	(2 4 0)	(-3 -1 -3)	3.252	1.394	2.33	61.0	63.8
[2 -1 -3]	(2 4 0)	(-1 7 -3)	3.252	1.392	2.34	80.6	52.6
[6 -3 5]	(2 4 0)	(1 7 3)	3.252	1.392	2.34	52.9	79.2
[2 -1 -3]	(2 4 0)	(-5 -7 -1)	3.252	1.392	2.34	19.2	52.6
[6 -3 13]	(2 4 0)	(5 -3 -3)	3.252	1.388	2.34	76.0	53.6
[6 -3 7]	(2 4 0)	(5 3 -3)	3.252	1.388	2.34	55.3	71.9
[2 -1 4]	(2 4 0)	(2 -8 -3)	3.252	1.387	2.34	69.9	56.2
[6 -3 -4]	(2 4 0)	(2 8 -3)	3.252	1.387	2.34	58.0	67.0
[6 -3 14]	(2 4 0)	(4 -6 -3)	3.252	1.383	2.35	88.5	51.2
[6 -3 2]	(2 4 0)	(4 6 -3)	3.252	1.383	2.35	51.1	89.2
[6 -3 -8]	(2 4 0)	(0 8 -3)	3.252	1.381	2.35	71.3	55.1
[6 -3 8]	(2 4 0)	(0 -8 -3)	3.252	1.381	2.35	56.7	68.4
[2 -1 1]	(2 4 0)	(5 9 -1)	3.252	1.376	2.36	15.0	86.9
[6 -3 -10]	(2 4 0)	(2 -6 3)	3.252	1.365	2.38	89.8	50.2
[6 -3 2]	(2 4 0)	(2 6 3)	3.252	1.365	2.38	50.2	89.2
[4 -2 3]	(2 4 0)	(-3 -9 -2)	3.252	1.352	2.40	30.9	81.1
[4 -2 -7]	(2 4 0)	(5 3 2)	3.252	1.351	2.41	42.2	49.1

Cummingtonite (240) 302 Zone Axes***a* 9.510Å *b* 18.190Å *c* 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	<i>d</i> (hk0)	<i>d</i> (hkl)	<i>d</i> Ratio	θ°	ZA $^\circ$
[6 -3 -7]	(2 4 0)	(-1 -9 3)	3.252	1.334	2.44	62.5	57.8
[6 -3 11]	(2 4 0)	(-1 9 3)	3.252	1.334	2.44	61.2	59.0
[2 -1 1]	(2 4 0)	(2 0 -4)	3.252	1.329	2.45	87.0	86.9
[2 -1 5]	(2 4 0)	(5 -5 -3)	3.252	1.327	2.45	82.7	48.9
[6 -3 5]	(2 4 0)	(-5 -5 3)	3.252	1.327	2.45	49.5	79.2
[8 -4 1]	(2 4 0)	(1 1 -4)	3.252	1.326	2.45	89.7	84.3
[8 -4 3]	(2 4 0)	(1 -1 -4)	3.252	1.326	2.45	84.3	89.8
[6 -3 -1]	(2 4 0)	(3 5 3)	3.252	1.305	2.49	48.8	77.6
[8 -4 -1]	(2 4 0)	(1 3 -4)	3.252	1.299	2.50	83.8	78.6
[8 -4 5]	(2 4 0)	(1 -3 -4)	3.252	1.299	2.50	78.5	84.0
[8 -4 7]	(2 4 0)	(3 -1 -4)	3.252	1.298	2.50	84.4	78.3
[8 -4 5]	(2 4 0)	(-3 -1 4)	3.252	1.298	2.50	78.5	84.0
[4 -2 1]	(2 4 0)	(-5 -9 2)	3.252	1.296	2.51	29.1	87.2
[4 -2 -5]	(2 4 0)	(5 5 2)	3.252	1.295	2.51	35.7	56.5
[4 -2 -1]	(2 4 0)	(0 2 -4)	3.252	1.291	2.52	87.6	75.8
[4 -2 1]	(2 4 0)	(0 2 4)	3.252	1.291	2.52	75.9	87.2
[6 -3 14]	(2 4 0)	(-6 2 3)	3.252	1.285	2.53	68.2	51.2
[6 -3 10]	(2 4 0)	(6 2 -3)	3.252	1.285	2.53	55.0	62.0
[6 -3 16]	(2 4 0)	(4 -8 -3)	3.252	1.283	2.53	82.8	46.7
[2 -1 0]	(2 4 0)	(4 8 -3)	3.252	1.283	2.53	46.9	81.4
[6 -3 -11]	(2 4 0)	(1 -9 3)	3.252	1.278	2.55	75.5	48.0
[6 -3 7]	(2 4 0)	(1 9 3)	3.252	1.278	2.55	49.2	71.9
[2 -1 -1]	(2 4 0)	(5 9 1)	3.252	1.277	2.55	14.7	70.4
[2 -1 2]	(2 4 0)	(-2 4 4)	3.252	1.275	2.55	81.4	75.5
[2 -1 0]	(2 4 0)	(2 4 -4)	3.252	1.275	2.55	75.5	81.4
[8 -4 9]	(2 4 0)	(-3 3 4)	3.252	1.273	2.56	89.8	72.8
[8 -4 3]	(2 4 0)	(-3 -3 4)	3.252	1.273	2.56	72.8	89.8
[6 -3 -8]	(2 4 0)	(4 0 3)	3.252	1.272	2.56	60.8	55.1
[4 -2 11]	(2 4 0)	(-7 -3 2)	3.252	1.269	2.56	41.7	45.7
[2 -1 -4]	(2 4 0)	(-2 8 -3)	3.252	1.268	2.56	84.1	45.9
[6 -3 4]	(2 4 0)	(-2 -8 -3)	3.252	1.268	2.56	46.0	83.0
[6 -3 -10]	(2 4 0)	(4 -2 3)	3.252	1.260	2.58	67.4	50.2
[2 -1 -2]	(2 4 0)	(-4 -2 -3)	3.252	1.260	2.58	54.4	60.7
[8 -4 -3]	(2 4 0)	(1 5 -4)	3.252	1.249	2.60	78.4	73.1
[8 -4 7]	(2 4 0)	(1 -5 -4)	3.252	1.249	2.60	73.2	78.3
[6 -3 16]	(2 4 0)	(6 -4 -3)	3.252	1.248	2.61	74.8	46.7
[6 -3 8]	(2 4 0)	(-6 -4 3)	3.252	1.248	2.61	49.1	68.4
[4 -2 5]	(2 4 0)	(4 -2 -4)	3.252	1.241	2.62	82.1	70.1
[4 -2 3]	(2 4 0)	(-4 -2 4)	3.252	1.241	2.62	70.5	81.1
[2 -1 2]	(2 4 0)	(6 8 -2)	3.252	1.236	2.63	28.6	75.5
[6 -3 1]	(2 4 0)	(-3 -7 -3)	3.252	1.232	2.64	44.1	85.3
[8 -4 -5]	(2 4 0)	(1 -3 4)	3.252	1.230	2.64	85.2	67.9
[8 -4 1]	(2 4 0)	(-1 -3 -4)	3.252	1.230	2.64	68.1	84.3
[8 -4 11]	(2 4 0)	(-3 5 4)	3.252	1.226	2.65	84.2	67.6
[8 -4 1]	(2 4 0)	(3 5 -4)	3.252	1.226	2.65	67.6	84.3
[2 -1 -4]	(2 4 0)	(-4 4 -3)	3.252	1.225	2.65	73.9	45.9
[6 -3 -4]	(2 4 0)	(4 4 3)	3.252	1.225	2.65	48.5	67.0
[4 -2 -3]	(2 4 0)	(-5 -7 -2)	3.252	1.223	2.66	30.3	65.4

Cummingtonite (240) 302 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[4 -2 9]	(2 4 0)	(7 5 -2)	3.252	1.222	2.66	35.4	52.4
[4 -2 3]	(2 4 0)	(0 6 4)	3.252	1.198	2.72	65.5	81.1
[2 -1 -1]	(2 4 0)	(2 0 4)	3.252	1.193	2.73	71.9	70.4
[8 -4 3]	(2 4 0)	(-1 -5 -4)	3.252	1.187	2.74	63.0	89.8
[8 -4 11]	(2 4 0)	(5 -1 -4)	3.252	1.187	2.74	74.5	67.6
[8 -4 9]	(2 4 0)	(-5 -1 4)	3.252	1.187	2.74	68.8	72.8
[2 -1 -4]	(2 4 0)	(6 4 2)	3.252	1.184	2.75	38.2	45.9
[8 -4 -5]	(2 4 0)	(1 7 -4)	3.252	1.184	2.75	73.5	67.9
[8 -4 9]	(2 4 0)	(1 -7 -4)	3.252	1.184	2.75	68.4	72.8
[2 -1 5]	(2 4 0)	(7 -1 -3)	3.252	1.177	2.76	61.6	48.9
[6 -3 13]	(2 4 0)	(-7 -1 3)	3.252	1.177	2.76	55.4	53.6
[6 -3 -2]	(2 4 0)	(4 6 3)	3.252	1.173	2.77	43.4	74.0
[8 -4 13]	(2 4 0)	(-5 3 4)	3.252	1.167	2.79	80.1	62.8
[8 -4 7]	(2 4 0)	(5 3 -4)	3.252	1.167	2.79	63.5	78.3
[6 -3 1]	(2 4 0)	(-5 -9 3)	3.252	1.165	2.79	41.1	85.3
[8 -4 13]	(2 4 0)	(-3 7 4)	3.252	1.164	2.79	79.2	62.8
[8 -4 -1]	(2 4 0)	(-3 -7 4)	3.252	1.164	2.79	63.0	78.6
[4 -2 7]	(2 4 0)	(7 7 -2)	3.252	1.161	2.80	30.0	60.5
[6 -3 11]	(2 4 0)	(-7 -3 3)	3.252	1.158	2.81	49.5	59.0
[4 -2 7]	(2 4 0)	(-4 6 4)	3.252	1.158	2.81	86.9	60.5
[4 -2 1]	(2 4 0)	(-4 -6 4)	3.252	1.158	2.81	60.5	87.2
[6 -3 -11]	(2 4 0)	(5 -1 3)	3.252	1.155	2.82	61.1	48.0
[2 -1 -3]	(2 4 0)	(5 1 3)	3.252	1.155	2.82	54.9	52.6
[2 -1 -2]	(2 4 0)	(2 -4 4)	3.252	1.154	2.82	83.1	60.7
[2 -1 0]	(2 4 0)	(-2 -4 -4)	3.252	1.154	2.82	61.2	81.4
[2 -1 3]	(2 4 0)	(2 -8 -4)	3.252	1.147	2.83	71.6	65.1
[2 -1 -1]	(2 4 0)	(2 8 -4)	3.252	1.147	2.83	66.0	70.4
[4 -2 -1]	(2 4 0)	(5 9 2)	3.252	1.143	2.85	26.3	75.8
[8 -4 15]	(2 4 0)	(5 -5 -4)	3.252	1.130	2.88	85.6	58.3
[8 -4 5]	(2 4 0)	(5 5 -4)	3.252	1.130	2.88	58.5	84.0
[6 -3 4]	(2 4 0)	(-6 -8 3)	3.252	1.127	2.89	39.7	83.0
[2 -1 5]	(2 4 0)	(7 9 -1)	3.252	1.127	2.89	16.3	48.9
[2 -1 3]	(2 4 0)	(-7 -5 3)	3.252	1.122	2.90	44.1	65.1
[8 -4 -7]	(2 4 0)	(3 -1 4)	3.252	1.120	2.90	70.6	63.0
[8 -4 -5]	(2 4 0)	(-3 -1 -4)	3.252	1.120	2.90	65.2	67.9
[2 -1 3]	(2 4 0)	(6 0 -4)	3.252	1.118	2.91	67.6	65.1
[8 -4 -7]	(2 4 0)	(-1 -9 4)	3.252	1.111	2.93	69.3	63.0
[8 -4 11]	(2 4 0)	(-1 9 4)	3.252	1.111	2.93	64.4	67.6
[2 -1 0]	(2 4 0)	(-4 -8 -3)	3.252	1.110	2.93	39.2	81.4
[6 -3 -5]	(2 4 0)	(5 5 3)	3.252	1.103	2.95	43.8	63.8
[8 -4 15]	(2 4 0)	(-3 9 4)	3.252	1.094	2.97	74.8	58.3
[8 -4 -3]	(2 4 0)	(-3 -9 4)	3.252	1.094	2.97	59.1	73.1
[4 -2 5]	(2 4 0)	(7 9 -2)	3.252	1.092	2.98	25.8	70.1
[2 -1 4]	(2 4 0)	(-6 4 4)	3.252	1.086	3.00	78.5	56.2
[2 -1 2]	(2 4 0)	(6 4 -4)	3.252	1.086	3.00	57.3	75.5
[8 -4 17]	(2 4 0)	(5 -7 -4)	3.252	1.081	3.01	89.4	54.3
[8 -4 3]	(2 4 0)	(5 7 -4)	3.252	1.081	3.01	54.3	89.8
[2 -1 -2]	(2 4 0)	(6 8 2)	3.252	1.079	3.01	27.7	60.7

Cummingtonite (240) 302 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[2 -1 5]	(2 4 0)	(-8 -6 2)	3.252	1.079	3.01	32.5	48.9
[6 -3 16]	(2 4 0)	(8 0 -3)	3.252	1.075	3.03	56.2	46.7
[6 -3 7]	(2 4 0)	(-7 -7 3)	3.252	1.074	3.03	39.5	71.9
[8 -4 -11]	(2 4 0)	(3 -5 4)	3.252	1.072	3.03	81.4	54.5
[8 -4 -1]	(2 4 0)	(3 5 4)	3.252	1.072	3.03	55.2	78.6
[6 -3 14]	(2 4 0)	(-8 -2 3)	3.252	1.067	3.05	50.5	51.2
[8 -4 -11]	(2 4 0)	(-1 9 -4)	3.252	1.067	3.05	79.7	54.5
[8 -4 7]	(2 4 0)	(-1 -9 -4)	3.252	1.067	3.05	54.9	78.3
[10 -5 4]	(2 4 0)	(2 0 -5)	3.252	1.066	3.05	89.3	89.2
[10 -5 1]	(2 4 0)	(1 1 -5)	3.252	1.059	3.07	88.6	83.7
[10 -5 3]	(2 4 0)	(-1 1 5)	3.252	1.059	3.07	83.8	88.4
[10 -5 6]	(2 4 0)	(2 -2 -5)	3.252	1.059	3.07	86.0	84.6
[10 -5 2]	(2 4 0)	(2 2 -5)	3.252	1.059	3.07	84.5	86.1
[2 -1 -1]	(2 4 0)	(5 7 3)	3.252	1.057	3.08	39.2	70.4
[2 -1 -3]	(2 4 0)	(2 -8 4)	3.252	1.057	3.08	86.7	52.6
[2 -1 1]	(2 4 0)	(2 8 4)	3.252	1.057	3.08	52.6	86.9
[10 -5 7]	(2 4 0)	(3 -1 -5)	3.252	1.055	3.08	87.1	82.3
[2 -1 1]	(2 4 0)	(-3 -1 5)	3.252	1.055	3.08	82.3	86.9
[10 -5 -1]	(2 4 0)	(1 3 -5)	3.252	1.045	3.11	86.7	79.1
[2 -1 1]	(2 4 0)	(1 -3 -5)	3.252	1.045	3.11	79.1	86.9
[8 -4 15]	(2 4 0)	(7 -1 -4)	3.252	1.043	3.12	66.9	58.3
[8 -4 13]	(2 4 0)	(-7 -1 4)	3.252	1.043	3.12	61.7	62.8
[4 -2 -5]	(2 4 0)	(4 -2 4)	3.252	1.042	3.12	69.7	56.5
[4 -2 -3]	(2 4 0)	(-4 -2 -4)	3.252	1.042	3.12	59.3	65.4
[10 -5 9]	(2 4 0)	(-3 3 5)	3.252	1.041	3.12	88.2	77.7
[10 -5 3]	(2 4 0)	(3 3 -5)	3.252	1.041	3.12	77.7	88.4
[10 -5 8]	(2 4 0)	(2 -4 -5)	3.252	1.038	3.13	81.3	80.0
[2 -1 0]	(2 4 0)	(2 4 -5)	3.252	1.038	3.13	79.9	81.4
[10 -5 -2]	(2 4 0)	(0 2 -5)	3.252	1.036	3.14	86.5	76.9
[10 -5 2]	(2 4 0)	(0 2 5)	3.252	1.036	3.14	77.0	86.1
[10 -5 8]	(2 4 0)	(-4 0 5)	3.252	1.035	3.14	80.3	80.0
[8 -4 -13]	(2 4 0)	(3 -7 4)	3.252	1.030	3.16	86.4	50.8
[8 -4 1]	(2 4 0)	(-3 -7 -4)	3.252	1.030	3.16	51.0	84.3
[8 -4 17]	(2 4 0)	(7 -3 -4)	3.252	1.030	3.16	72.2	54.3
[8 -4 11]	(2 4 0)	(-7 -3 4)	3.252	1.030	3.16	56.7	67.6
[2 -1 2]	(2 4 0)	(-4 2 5)	3.252	1.028	3.16	85.1	75.5
[10 -5 6]	(2 4 0)	(4 2 -5)	3.252	1.028	3.16	75.7	84.6
[6 -3 -8]	(2 4 0)	(-6 -4 -3)	3.252	1.027	3.17	44.8	55.1
[8 -4 19]	(2 4 0)	(-5 9 4)	3.252	1.025	3.17	84.8	50.6
[8 -4 1]	(2 4 0)	(-5 -9 4)	3.252	1.025	3.17	50.6	84.3
[6 -3 5]	(2 4 0)	(7 9 -3)	3.252	1.019	3.19	35.7	79.2
[10 -5 -3]	(2 4 0)	(-1 -5 5)	3.252	1.019	3.19	82.2	74.7
[10 -5 7]	(2 4 0)	(-1 5 5)	3.252	1.019	3.19	74.7	82.3
[10 -5 -4]	(2 4 0)	(0 4 -5)	3.252	1.017	3.20	88.9	72.5
[10 -5 4]	(2 4 0)	(0 -4 -5)	3.252	1.017	3.20	72.5	89.2
[10 -5 11]	(2 4 0)	(-3 5 5)	3.252	1.015	3.20	83.6	73.3
[10 -5 1]	(2 4 0)	(-3 -5 5)	3.252	1.015	3.20	73.3	83.7
[6 -3 10]	(2 4 0)	(8 6 -3)	3.252	1.013	3.21	40.2	62.0

Cummingtonite (240) 302 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[10 -5 -3]	(2 4 0)	(-1 1 -5)	3.252	1.012	3.21	79.9	74.7
[10 -5 -1]	(2 4 0)	(1 1 5)	3.252	1.012	3.21	75.2	79.1
[4 -2 -7]	(2 4 0)	(7 7 2)	3.252	1.010	3.22	30.1	49.1
[10 -5 12]	(2 4 0)	(-4 4 5)	3.252	1.009	3.22	89.7	71.2
[10 -5 4]	(2 4 0)	(4 4 -5)	3.252	1.009	3.22	71.2	89.2
[2 -1 2]	(2 4 0)	(2 -6 -5)	3.252	1.005	3.23	77.0	75.5
[10 -5 -2]	(2 4 0)	(2 6 -5)	3.252	1.005	3.23	75.6	76.9
[8 -4 19]	(2 4 0)	(-7 5 4)	3.252	1.004	3.24	77.3	50.6
[8 -4 9]	(2 4 0)	(7 5 -4)	3.252	1.004	3.24	52.1	72.8
[6 -3 -1]	(2 4 0)	(-5 -9 -3)	3.252	1.004	3.24	35.3	77.6
[2 -1 5]	(2 4 0)	(6 -8 -4)	3.252	1.003	3.24	88.5	48.9
[2 -1 1]	(2 4 0)	(-6 -8 4)	3.252	1.003	3.24	48.9	86.9
[10 -5 11]	(2 4 0)	(5 -1 -5)	3.252	1.001	3.25	78.6	73.3
[10 -5 9]	(2 4 0)	(5 1 -5)	3.252	1.001	3.25	73.9	77.7

Cummingtonite (310) 358 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[1 -3 0]	(3 1 0)	(0 0 1)	3.058	5.215	0.59	78.3	88.0
[1 -3 4]	(3 1 0)	(-1 1 1)	3.058	4.832	0.63	73.8	70.7
[1 -3 -2]	(3 1 0)	(1 1 -1)	3.058	4.832	0.63	68.4	77.2
[1 -3 6]	(3 1 0)	(0 -2 -1)	3.058	4.524	0.68	74.9	61.5
[1 -3 -4]	(3 1 0)	(1 -1 1)	3.058	4.088	0.75	56.3	67.2
[1 -3 2]	(3 1 0)	(1 1 1)	3.058	4.088	0.75	50.9	81.1
[1 -3 10]	(3 1 0)	(-1 3 1)	3.058	3.863	0.79	81.3	47.2
[1 -3 -8]	(3 1 0)	(1 3 -1)	3.058	3.863	0.79	68.5	51.1
[1 -3 8]	(3 1 0)	(-2 2 1)	3.058	3.579	0.85	56.4	53.7
[1 -3 -4]	(3 1 0)	(2 2 -1)	3.058	3.579	0.85	46.8	67.2
[1 -3 -10]	(3 1 0)	(-1 3 -1)	3.058	3.450	0.89	66.2	45.0
[1 -3 8]	(3 1 0)	(1 3 1)	3.058	3.450	0.89	53.4	53.7
[1 -3 -2]	(3 1 0)	(2 0 1)	3.058	3.163	0.97	37.5	77.2
[1 -3 -8]	(3 1 0)	(2 -2 1)	3.058	2.988	1.02	46.0	51.1
[1 -3 4]	(3 1 0)	(-2 -2 -1)	3.058	2.988	1.02	36.4	70.7
[1 -3 -10]	(3 1 0)	(2 4 -1)	3.058	2.958	1.03	51.6	45.0
[1 -3 6]	(3 1 0)	(-3 1 1)	3.058	2.908	1.05	38.4	61.5
[1 -3 0]	(3 1 0)	(3 1 -1)	3.058	2.908	1.05	33.1	88.0
[1 -3 -6]	(3 1 0)	(3 3 -1)	3.058	2.650	1.15	35.7	58.5
[1 -3 2]	(3 1 0)	(-1 1 2)	3.058	2.629	1.16	87.2	81.1
[1 -3 -1]	(3 1 0)	(1 1 -2)	3.058	2.629	1.16	84.4	82.5
[1 -3 10]	(3 1 0)	(2 4 1)	3.058	2.597	1.18	41.6	47.2
[1 -3 -3]	(3 1 0)	(0 -2 2)	3.058	2.507	1.22	81.4	72.0
[1 -3 3]	(3 1 0)	(0 -2 -2)	3.058	2.507	1.22	76.0	75.8
[1 -3 1]	(3 1 0)	(2 0 -2)	3.058	2.506	1.22	70.4	86.5
[1 -3 5]	(3 1 0)	(-1 3 2)	3.058	2.434	1.26	90.0	66.0
[1 -3 -4]	(3 1 0)	(1 3 -2)	3.058	2.434	1.26	82.2	67.2
[1 -3 -6]	(3 1 0)	(-3 1 -1)	3.058	2.431	1.26	32.3	58.5
[1 -3 0]	(3 1 0)	(-3 -1 -1)	3.058	2.431	1.26	27.2	88.0
[1 -3 4]	(3 1 0)	(4 0 -1)	3.058	2.309	1.32	27.3	70.7
[1 -3 6]	(3 1 0)	(-3 -3 -1)	3.058	2.274	1.34	29.0	61.5
[1 -3 10]	(3 1 0)	(4 -2 -1)	3.058	2.238	1.37	34.9	47.2
[1 -3 -2]	(3 1 0)	(-4 -2 1)	3.058	2.238	1.37	25.5	77.2
[1 -3 -5]	(3 1 0)	(1 -3 2)	3.058	2.221	1.38	69.7	62.7
[1 -3 4]	(3 1 0)	(1 3 2)	3.058	2.221	1.38	62.0	70.7
[1 -3 3]	(3 1 0)	(-3 1 2)	3.058	2.219	1.38	59.2	75.8
[1 -3 0]	(3 1 0)	(3 1 -2)	3.058	2.219	1.38	56.4	88.0
[1 -3 7]	(3 1 0)	(-2 4 2)	3.058	2.195	1.39	77.7	57.4
[1 -3 -5]	(3 1 0)	(2 4 -2)	3.058	2.195	1.39	68.0	62.7
[1 -3 8]	(3 1 0)	(1 -5 -2)	3.058	2.146	1.42	87.8	53.7
[1 -3 -7]	(3 1 0)	(1 5 -2)	3.058	2.146	1.42	80.8	54.6
[1 -3 6]	(3 1 0)	(-3 3 2)	3.058	2.098	1.46	63.6	61.5
[1 -3 -3]	(3 1 0)	(3 3 -2)	3.058	2.098	1.46	55.9	72.0
[1 -3 -1]	(3 1 0)	(2 0 2)	3.058	2.098	1.46	52.6	82.5
[1 -3 -8]	(3 1 0)	(-4 -4 1)	3.058	2.059	1.49	29.7	51.1
[1 -3 -4]	(3 1 0)	(-4 0 -1)	3.058	1.978	1.55	23.7	67.2
[1 -3 -9]	(3 1 0)	(0 -6 2)	3.058	1.977	1.55	87.5	48.0
[1 -3 9]	(3 1 0)	(0 -6 -2)	3.058	1.977	1.55	74.7	50.3

Cummingtonite (310) 358 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[1 -3 2]	(3 1 0)	(4 2 1)	3.058	1.933	1.58	21.5	81.1
[1 -3 9]	(3 1 0)	(3 -5 -2)	3.058	1.905	1.61	68.4	50.3
[1 -3 -6]	(3 1 0)	(-3 -5 2)	3.058	1.905	1.61	57.0	58.5
[1 -3 -7]	(3 1 0)	(2 -4 2)	3.058	1.905	1.61	61.2	54.6
[1 -3 5]	(3 1 0)	(-2 -4 -2)	3.058	1.905	1.61	51.5	66.0
[1 -3 5]	(3 1 0)	(4 -2 -2)	3.058	1.904	1.61	51.5	66.0
[1 -3 -1]	(3 1 0)	(4 2 -2)	3.058	1.904	1.61	46.1	82.5
[1 -3 8]	(3 1 0)	(-5 1 1)	3.058	1.870	1.64	25.8	53.7
[1 -3 2]	(3 1 0)	(5 1 -1)	3.058	1.870	1.64	20.8	81.1
[1 -3 -10]	(3 1 0)	(-1 -7 2)	3.058	1.858	1.65	80.1	45.0
[1 -3 8]	(3 1 0)	(4 4 1)	3.058	1.814	1.69	25.0	53.7
[1 -3 -3]	(3 1 0)	(3 -1 2)	3.058	1.811	1.69	45.6	72.0
[1 -3 0]	(3 1 0)	(-3 -1 -2)	3.058	1.811	1.69	42.8	88.0
[1 -3 -4]	(3 1 0)	(5 3 -1)	3.058	1.796	1.70	21.4	67.2
[3 -9 -2]	(3 1 0)	(1 1 -3)	3.058	1.768	1.73	89.8	84.3
[3 -9 4]	(3 1 0)	(-1 1 3)	3.058	1.768	1.73	88.0	84.7
[1 -3 10]	(3 1 0)	(-1 -7 -2)	3.058	1.758	1.74	64.1	47.2
[3 -9 2]	(3 1 0)	(2 0 -3)	3.058	1.751	1.75	80.4	88.4
[1 -3 -6]	(3 1 0)	(-3 3 -2)	3.058	1.743	1.75	50.1	58.5
[1 -3 3]	(3 1 0)	(3 3 2)	3.058	1.743	1.75	42.4	75.8
[3 -9 8]	(3 1 0)	(2 -2 -3)	3.058	1.720	1.78	82.4	77.5
[3 -9 -4]	(3 1 0)	(-2 -2 3)	3.058	1.720	1.78	78.8	80.7
[1 -3 -2]	(3 1 0)	(0 -2 3)	3.058	1.708	1.79	80.3	77.2
[1 -3 2]	(3 1 0)	(0 -2 -3)	3.058	1.708	1.79	76.6	81.1
[3 -9 -8]	(3 1 0)	(1 3 -3)	3.058	1.705	1.79	88.4	73.7
[3 -9 10]	(3 1 0)	(-1 3 3)	3.058	1.705	1.79	86.2	74.1
[1 -3 -9]	(3 1 0)	(-3 -7 2)	3.058	1.695	1.80	58.9	48.0
[1 -3 4]	(3 1 0)	(5 -1 -2)	3.058	1.681	1.82	41.9	70.7
[1 -3 1]	(3 1 0)	(5 1 -2)	3.058	1.681	1.82	39.2	86.5
[1 -3 -10]	(3 1 0)	(-5 -5 1)	3.058	1.670	1.83	26.3	45.0
[1 -3 2]	(3 1 0)	(3 -1 -3)	3.058	1.664	1.84	71.4	81.1
[1 -3 0]	(3 1 0)	(-3 -1 3)	3.058	1.664	1.84	69.5	88.0
[3 -9 -4]	(3 1 0)	(1 -1 3)	3.058	1.642	1.86	69.5	80.7
[3 -9 2]	(3 1 0)	(1 1 3)	3.058	1.642	1.86	67.6	88.4
[1 -3 -8]	(3 1 0)	(-5 1 -1)	3.058	1.642	1.86	23.3	51.1
[1 -3 -2]	(3 1 0)	(5 1 1)	3.058	1.642	1.86	18.4	77.2
[1 -3 -7]	(3 1 0)	(4 6 -2)	3.058	1.638	1.87	48.9	54.6
[3 -9 14]	(3 1 0)	(-2 4 3)	3.058	1.634	1.87	84.6	67.5
[3 -9 -10]	(3 1 0)	(2 4 -3)	3.058	1.634	1.87	77.6	70.4
[1 -3 -9]	(3 1 0)	(-3 5 -2)	3.058	1.628	1.88	55.3	48.0
[1 -3 6]	(3 1 0)	(3 5 2)	3.058	1.628	1.88	44.0	61.5
[1 -3 7]	(3 1 0)	(-5 3 2)	3.058	1.627	1.88	46.4	57.4
[1 -3 -2]	(3 1 0)	(5 3 -2)	3.058	1.627	1.88	38.8	77.2
[1 -3 -4]	(3 1 0)	(0 4 -3)	3.058	1.624	1.88	82.5	67.2
[1 -3 4]	(3 1 0)	(0 4 3)	3.058	1.624	1.88	75.5	70.7
[3 -9 -14]	(3 1 0)	(-1 -5 3)	3.058	1.596	1.92	86.8	64.1
[3 -9 16]	(3 1 0)	(-1 5 3)	3.058	1.596	1.92	84.8	64.4
[3 -9 -10]	(3 1 0)	(-1 3 -3)	3.058	1.591	1.92	71.9	70.4

Cummingtonite (310) 358 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[3 -9 8]	(3 1 0)	(1 3 3)	3.058	1.591	1.92	66.5	77.5
[1 -3 4]	(3 1 0)	(5 3 1)	3.058	1.591	1.92	18.4	70.7
[1 -3 -5]	(3 1 0)	(-4 2 -2)	3.058	1.558	1.96	41.2	62.7
[1 -3 1]	(3 1 0)	(4 2 2)	3.058	1.558	1.96	35.9	86.5
[3 -9 4]	(3 1 0)	(4 0 -3)	3.058	1.555	1.97	61.5	84.7
[3 -9 10]	(3 1 0)	(-4 2 3)	3.058	1.533	2.00	63.8	74.1
[3 -9 -2]	(3 1 0)	(4 2 -3)	3.058	1.533	2.00	60.1	84.3
[1 -3 10]	(3 1 0)	(-5 5 2)	3.058	1.532	2.00	51.6	47.2
[1 -3 -5]	(3 1 0)	(5 5 -2)	3.058	1.532	2.00	40.3	62.7
[3 -9 -2]	(3 1 0)	(-2 0 -3)	3.058	1.528	2.00	59.8	84.3
[1 -3 6]	(3 1 0)	(3 -5 -3)	3.058	1.518	2.01	76.4	61.5
[1 -3 -4]	(3 1 0)	(-3 -5 3)	3.058	1.518	2.01	68.0	67.2
[3 -9 20]	(3 1 0)	(2 -6 -3)	3.058	1.516	2.02	86.6	58.8
[3 -9 -16]	(3 1 0)	(2 6 -3)	3.058	1.516	2.02	76.8	61.2
[3 -9 -8]	(3 1 0)	(2 -2 3)	3.058	1.507	2.03	62.1	73.7
[3 -9 4]	(3 1 0)	(-2 -2 -3)	3.058	1.507	2.03	58.4	84.7
[3 -9 -16]	(3 1 0)	(1 -5 3)	3.058	1.502	2.04	74.6	61.2
[3 -9 14]	(3 1 0)	(-1 -5 -3)	3.058	1.502	2.04	66.2	67.5
[1 -3 10]	(3 1 0)	(5 5 1)	3.058	1.502	2.04	22.6	47.2
[1 -3 -6]	(3 1 0)	(-6 -4 1)	3.058	1.491	2.05	19.2	58.5
[1 -3 9]	(3 1 0)	(3 7 2)	3.058	1.491	2.05	46.7	50.3
[1 -3 3]	(3 1 0)	(6 0 -2)	3.058	1.473	2.08	34.8	75.8
[3 -9 16]	(3 1 0)	(-4 4 3)	3.058	1.471	2.08	66.6	64.4
[3 -9 -8]	(3 1 0)	(4 4 -3)	3.058	1.471	2.08	59.6	73.7
[3 -9 -20]	(3 1 0)	(-1 -7 3)	3.058	1.466	2.09	85.5	55.9
[3 -9 22]	(3 1 0)	(-1 7 3)	3.058	1.466	2.09	83.6	56.2
[3 -9 -14]	(3 1 0)	(-2 4 -3)	3.058	1.449	2.11	65.0	64.1
[3 -9 10]	(3 1 0)	(2 4 3)	3.058	1.449	2.11	58.0	74.1
[3 -9 8]	(3 1 0)	(-5 1 3)	3.058	1.421	2.15	55.0	77.5
[3 -9 2]	(3 1 0)	(5 1 -3)	3.058	1.421	2.15	53.2	88.4
[1 -3 -8]	(3 1 0)	(-5 -7 2)	3.058	1.416	2.16	43.0	51.1
[1 -3 -6]	(3 1 0)	(6 0 1)	3.058	1.409	2.17	18.1	58.5
[1 -3 8]	(3 1 0)	(3 -7 -3)	3.058	1.405	2.18	79.0	53.7
[1 -3 -6]	(3 1 0)	(-3 -7 3)	3.058	1.405	2.18	68.1	58.5
[1 -3 7]	(3 1 0)	(4 6 2)	3.058	1.402	2.18	38.6	57.4
[1 -3 9]	(3 1 0)	(-6 4 2)	3.058	1.401	2.18	43.1	50.3
[1 -3 -3]	(3 1 0)	(6 4 -2)	3.058	1.401	2.18	33.6	72.0
[1 -3 -2]	(3 1 0)	(3 -1 3)	3.058	1.394	2.19	53.6	77.2
[1 -3 0]	(3 1 0)	(-3 -1 -3)	3.058	1.394	2.19	51.8	88.0
[1 -3 0]	(3 1 0)	(-6 -2 -1)	3.058	1.393	2.20	15.2	88.0
[3 -9 -22]	(3 1 0)	(1 -7 3)	3.058	1.392	2.20	77.3	53.4
[3 -9 20]	(3 1 0)	(-1 -7 -3)	3.058	1.392	2.20	66.4	58.8
[3 -9 14]	(3 1 0)	(5 -3 -3)	3.058	1.388	2.20	57.7	67.5
[3 -9 -4]	(3 1 0)	(-5 -3 3)	3.058	1.388	2.20	52.3	80.7
[3 -9 26]	(3 1 0)	(2 -8 -3)	3.058	1.387	2.20	88.3	51.4
[3 -9 -22]	(3 1 0)	(2 8 -3)	3.058	1.387	2.20	76.4	53.4
[3 -9 22]	(3 1 0)	(-4 6 3)	3.058	1.383	2.21	69.7	56.2
[3 -9 -14]	(3 1 0)	(4 6 -3)	3.058	1.383	2.21	59.9	64.1

Cummingtonite (310) 358 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[1 -3 -4]	(3 1 0)	(-5 1 -2)	3.058	1.382	2.21	34.2	67.2
[1 -3 -1]	(3 1 0)	(5 1 2)	3.058	1.382	2.21	31.5	82.5
[1 -3 -8]	(3 1 0)	(0 -8 3)	3.058	1.381	2.21	86.6	51.1
[1 -3 8]	(3 1 0)	(0 -8 -3)	3.058	1.381	2.21	74.7	53.7
[3 -9 -20]	(3 1 0)	(2 -6 3)	3.058	1.365	2.24	68.1	55.9
[3 -9 16]	(3 1 0)	(2 6 3)	3.058	1.365	2.24	58.4	64.4
[1 -3 10]	(3 1 0)	(-7 1 1)	3.058	1.353	2.26	20.3	47.2
[1 -3 4]	(3 1 0)	(7 1 -1)	3.058	1.353	2.26	15.6	70.7
[1 -3 -7]	(3 1 0)	(5 -3 2)	3.058	1.351	2.26	38.4	54.6
[1 -3 2]	(3 1 0)	(-5 -3 -2)	3.058	1.351	2.26	30.9	81.1
[1 -3 6]	(3 1 0)	(6 4 1)	3.058	1.346	2.27	16.7	61.5
[3 -9 -26]	(3 1 0)	(-1 -9 3)	3.058	1.334	2.29	84.5	49.0
[3 -9 28]	(3 1 0)	(-1 9 3)	3.058	1.334	2.29	82.8	49.2
[2 -6 1]	(3 1 0)	(2 0 -4)	3.058	1.329	2.30	85.7	89.3
[3 -9 20]	(3 1 0)	(-5 5 3)	3.058	1.327	2.30	60.9	58.8
[3 -9 -10]	(3 1 0)	(5 5 -3)	3.058	1.327	2.30	52.5	70.4
[2 -6 -1]	(3 1 0)	(1 1 -4)	3.058	1.326	2.31	86.9	85.2
[1 -3 1]	(3 1 0)	(-1 1 4)	3.058	1.326	2.31	85.5	86.5
[1 -3 -6]	(3 1 0)	(-3 5 -3)	3.058	1.305	2.34	59.5	58.5
[1 -3 4]	(3 1 0)	(3 5 3)	3.058	1.305	2.34	51.1	70.7
[1 -3 -2]	(3 1 0)	(-1 -3 4)	3.058	1.299	2.35	88.3	77.2
[2 -6 5]	(3 1 0)	(1 -3 -4)	3.058	1.299	2.35	84.2	78.4
[2 -6 3]	(3 1 0)	(3 -1 -4)	3.058	1.298	2.36	78.6	83.8
[1 -3 0]	(3 1 0)	(-3 -1 4)	3.058	1.298	2.36	77.2	88.0
[1 -3 5]	(3 1 0)	(5 5 2)	3.058	1.295	2.36	32.1	66.0
[1 -3 5]	(3 1 0)	(-7 1 2)	3.058	1.294	2.36	32.1	66.0
[1 -3 2]	(3 1 0)	(7 1 -2)	3.058	1.294	2.36	29.4	81.1
[2 -6 -3]	(3 1 0)	(0 2 -4)	3.058	1.291	2.37	79.8	79.8
[2 -6 3]	(3 1 0)	(0 2 4)	3.058	1.291	2.37	77.0	83.8
[1 -3 4]	(3 1 0)	(-6 2 3)	3.058	1.285	2.38	50.0	70.7
[1 -3 0]	(3 1 0)	(6 2 -3)	3.058	1.285	2.38	46.4	88.0
[3 -9 28]	(3 1 0)	(-4 8 3)	3.058	1.283	2.38	72.6	49.2
[3 -9 -20]	(3 1 0)	(4 8 -3)	3.058	1.283	2.38	60.7	55.9
[3 -9 -28]	(3 1 0)	(-1 9 -3)	3.058	1.278	2.39	79.7	47.0
[3 -9 26]	(3 1 0)	(1 9 3)	3.058	1.278	2.39	67.0	51.4
[2 -6 7]	(3 1 0)	(-2 4 4)	3.058	1.275	2.40	88.6	73.2
[2 -6 -5]	(3 1 0)	(2 4 -4)	3.058	1.275	2.40	83.2	74.6
[1 -3 3]	(3 1 0)	(-3 3 4)	3.058	1.273	2.40	80.2	75.8
[2 -6 -3]	(3 1 0)	(3 3 -4)	3.058	1.273	2.40	76.0	79.8
[3 -9 -4]	(3 1 0)	(-4 0 -3)	3.058	1.272	2.40	46.5	80.7
[1 -3 -8]	(3 1 0)	(7 5 -1)	3.058	1.271	2.41	17.8	51.1
[1 -3 8]	(3 1 0)	(-7 3 2)	3.058	1.269	2.41	36.2	53.7
[1 -3 -1]	(3 1 0)	(7 3 -2)	3.058	1.269	2.41	28.7	82.5
[3 -9 -26]	(3 1 0)	(-2 8 -3)	3.058	1.268	2.41	71.1	49.0
[3 -9 22]	(3 1 0)	(2 8 3)	3.058	1.268	2.41	59.3	56.2
[3 -9 -10]	(3 1 0)	(-4 2 -3)	3.058	1.260	2.43	48.8	70.4
[3 -9 2]	(3 1 0)	(4 2 3)	3.058	1.260	2.43	45.2	88.4
[3 -9 -16]	(3 1 0)	(5 7 -3)	3.058	1.250	2.45	53.4	61.2

Cummingtonite (310) 358 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[2 -6 -7]	(3 1 0)	(1 5 -4)	3.058	1.249	2.45	89.7	69.6
[1 -3 4]	(3 1 0)	(-1 5 4)	3.058	1.249	2.45	83.1	70.7
[1 -3 6]	(3 1 0)	(-6 4 3)	3.058	1.248	2.45	53.0	61.5
[1 -3 -2]	(3 1 0)	(6 4 -3)	3.058	1.248	2.45	46.1	77.2
[2 -6 5]	(3 1 0)	(-4 2 4)	3.058	1.241	2.46	72.0	78.4
[2 -6 -1]	(3 1 0)	(4 2 -4)	3.058	1.241	2.46	69.2	85.2
[1 -3 -9]	(3 1 0)	(-6 -8 2)	3.058	1.236	2.47	38.7	48.0
[1 -3 -8]	(3 1 0)	(3 -7 3)	3.058	1.232	2.48	62.9	51.1
[1 -3 6]	(3 1 0)	(-3 -7 -3)	3.058	1.232	2.48	52.0	61.5
[2 -6 -5]	(3 1 0)	(1 -3 4)	3.058	1.230	2.49	73.3	74.6
[1 -3 2]	(3 1 0)	(-1 -3 -4)	3.058	1.230	2.49	69.1	81.1
[1 -3 -3]	(3 1 0)	(6 0 2)	3.058	1.227	2.49	28.9	72.0
[1 -3 -10]	(3 1 0)	(-7 1 -1)	3.058	1.226	2.49	19.0	45.0
[1 -3 -4]	(3 1 0)	(7 1 1)	3.058	1.226	2.49	14.5	67.2
[2 -6 9]	(3 1 0)	(-3 5 4)	3.058	1.226	2.49	81.8	68.3
[1 -3 -3]	(3 1 0)	(3 5 -4)	3.058	1.226	2.49	75.2	72.0
[3 -9 -16]	(3 1 0)	(-4 4 -3)	3.058	1.225	2.50	51.9	61.2
[3 -9 8]	(3 1 0)	(4 4 3)	3.058	1.225	2.50	44.9	77.5
[1 -3 8]	(3 1 0)	(-5 -7 -2)	3.058	1.223	2.50	34.7	53.7
[1 -3 -4]	(3 1 0)	(7 5 -2)	3.058	1.222	2.50	29.8	67.2
[2 -6 9]	(3 1 0)	(0 6 4)	3.058	1.198	2.55	75.3	68.3
[2 -6 -1]	(3 1 0)	(-2 0 -4)	3.058	1.193	2.56	64.0	85.2
[2 -6 7]	(3 1 0)	(1 5 4)	3.058	1.187	2.58	68.5	73.2
[1 -3 2]	(3 1 0)	(-5 1 4)	3.058	1.187	2.58	64.4	81.1
[2 -6 1]	(3 1 0)	(5 1 -4)	3.058	1.187	2.58	63.0	89.3
[1 -3 -9]	(3 1 0)	(-6 4 -2)	3.058	1.184	2.58	36.8	48.0
[1 -3 3]	(3 1 0)	(6 4 2)	3.058	1.184	2.58	27.3	75.8
[1 -3 -5]	(3 1 0)	(-1 -7 4)	3.058	1.184	2.58	89.0	62.7
[2 -6 11]	(3 1 0)	(-1 7 4)	3.058	1.184	2.58	82.2	63.7
[1 -3 2]	(3 1 0)	(-8 -2 1)	3.058	1.179	2.59	12.9	81.1
[3 -9 10]	(3 1 0)	(7 -1 -3)	3.058	1.177	2.60	43.6	74.1
[3 -9 4]	(3 1 0)	(-7 -1 3)	3.058	1.177	2.60	41.7	84.7
[3 -9 -22]	(3 1 0)	(4 -6 3)	3.058	1.173	2.61	55.3	53.4
[3 -9 14]	(3 1 0)	(-4 -6 -3)	3.058	1.173	2.61	45.6	67.5
[2 -6 7]	(3 1 0)	(5 -3 -4)	3.058	1.167	2.62	66.2	73.2
[1 -3 -1]	(3 1 0)	(-5 -3 4)	3.058	1.167	2.62	62.1	82.5
[3 -9 32]	(3 1 0)	(5 -9 -3)	3.058	1.165	2.62	67.4	45.2
[3 -9 -22]	(3 1 0)	(5 9 -3)	3.058	1.165	2.62	54.7	53.4
[1 -3 8]	(3 1 0)	(-7 -5 -1)	3.058	1.164	2.63	15.7	53.7
[1 -3 6]	(3 1 0)	(3 -7 -4)	3.058	1.164	2.63	83.5	61.5
[2 -6 -9]	(3 1 0)	(-3 -7 4)	3.058	1.164	2.63	74.7	64.9
[1 -3 -7]	(3 1 0)	(7 7 -2)	3.058	1.161	2.63	32.3	54.6
[3 -9 16]	(3 1 0)	(7 -3 -3)	3.058	1.158	2.64	46.3	64.4
[3 -9 -2]	(3 1 0)	(-7 -3 3)	3.058	1.158	2.64	40.9	84.3
[2 -6 11]	(3 1 0)	(4 -6 -4)	3.058	1.158	2.64	75.8	63.7
[2 -6 -7]	(3 1 0)	(-4 -6 4)	3.058	1.158	2.64	68.0	69.6
[3 -9 -8]	(3 1 0)	(5 -1 3)	3.058	1.155	2.65	42.6	73.7
[3 -9 -2]	(3 1 0)	(-5 -1 -3)	3.058	1.155	2.65	40.8	84.3

Cummingtonite (310) 358 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[2 -6 -7]	(3 1 0)	(-2 4 -4)	3.058	1.154	2.65	67.6	69.6
[2 -6 5]	(3 1 0)	(2 4 4)	3.058	1.154	2.65	62.2	78.4
[1 -3 -4]	(3 1 0)	(8 4 -1)	3.058	1.150	2.66	13.5	67.2
[2 -6 13]	(3 1 0)	(2 -8 -4)	3.058	1.147	2.67	88.8	59.4
[2 -6 -11]	(3 1 0)	(2 8 -4)	3.058	1.147	2.67	81.4	60.5
[1 -3 7]	(3 1 0)	(-8 2 2)	3.058	1.145	2.67	30.7	57.4
[1 -3 1]	(3 1 0)	(8 2 -2)	3.058	1.145	2.67	25.5	86.5
[3 -9 4]	(3 1 0)	(-5 -3 -3)	3.058	1.136	2.69	40.0	84.7
[1 -3 5]	(3 1 0)	(5 -5 -4)	3.058	1.130	2.70	68.3	66.0
[2 -6 -5]	(3 1 0)	(5 5 -4)	3.058	1.130	2.70	61.7	74.6
[1 -3 10]	(3 1 0)	(-6 8 3)	3.058	1.127	2.71	59.9	47.2
[1 -3 -6]	(3 1 0)	(6 8 -3)	3.058	1.127	2.71	48.1	58.5
[3 -9 22]	(3 1 0)	(-7 5 3)	3.058	1.122	2.72	49.5	56.2
[3 -9 -8]	(3 1 0)	(7 5 -3)	3.058	1.122	2.72	41.2	73.7
[2 -6 -3]	(3 1 0)	(-3 1 -4)	3.058	1.120	2.73	58.7	79.8
[1 -3 0]	(3 1 0)	(3 1 4)	3.058	1.120	2.73	57.3	88.0
[1 -3 10]	(3 1 0)	(8 -4 -2)	3.058	1.119	2.73	34.9	47.2
[1 -3 -2]	(3 1 0)	(-8 -4 2)	3.058	1.119	2.73	25.5	77.2
[2 -6 3]	(3 1 0)	(6 0 -4)	3.058	1.118	2.73	57.6	83.8
[2 -6 -13]	(3 1 0)	(-1 -9 4)	3.058	1.111	2.75	87.9	56.5
[1 -3 7]	(3 1 0)	(-1 9 4)	3.058	1.111	2.75	81.5	57.4
[3 -9 -28]	(3 1 0)	(-4 8 -3)	3.058	1.110	2.75	58.8	47.0
[3 -9 20]	(3 1 0)	(4 8 3)	3.058	1.110	2.75	47.0	58.8
[2 -6 3]	(3 1 0)	(-3 -3 -4)	3.058	1.103	2.77	56.4	83.8
[3 -9 -20]	(3 1 0)	(5 -5 3)	3.058	1.103	2.77	48.6	55.9
[3 -9 10]	(3 1 0)	(-5 -5 -3)	3.058	1.103	2.77	40.2	74.1
[1 -3 -5]	(3 1 0)	(7 -1 2)	3.058	1.094	2.79	27.5	62.7
[1 -3 -2]	(3 1 0)	(-7 -1 -2)	3.058	1.094	2.79	24.9	77.2
[2 -6 15]	(3 1 0)	(3 -9 -4)	3.058	1.094	2.79	85.1	55.5
[1 -3 -6]	(3 1 0)	(3 9 -4)	3.058	1.094	2.79	74.4	58.5
[1 -3 -10]	(3 1 0)	(-7 -9 2)	3.058	1.092	2.80	35.4	45.0
[1 -3 -8]	(3 1 0)	(8 0 1)	3.058	1.089	2.81	15.2	51.1
[2 -6 9]	(3 1 0)	(-6 4 4)	3.058	1.086	2.82	61.3	68.3
[2 -6 -3]	(3 1 0)	(6 4 -4)	3.058	1.086	2.82	55.9	79.8
[2 -6 13]	(3 1 0)	(-5 7 4)	3.058	1.081	2.83	70.5	59.4
[1 -3 -4]	(3 1 0)	(5 7 -4)	3.058	1.081	2.83	61.7	67.2
[1 -3 -2]	(3 1 0)	(-8 -2 -1)	3.058	1.081	2.83	12.0	77.2
[1 -3 9]	(3 1 0)	(6 8 2)	3.058	1.079	2.83	31.8	50.3
[1 -3 -5]	(3 1 0)	(-8 -6 2)	3.058	1.079	2.83	27.1	62.7
[1 -3 -8]	(3 1 0)	(7 -3 2)	3.058	1.079	2.83	31.3	51.1
[1 -3 1]	(3 1 0)	(-7 -3 -2)	3.058	1.079	2.83	23.9	86.5
[3 -9 8]	(3 1 0)	(8 0 -3)	3.058	1.075	2.85	38.3	77.5
[3 -9 28]	(3 1 0)	(-7 7 3)	3.058	1.074	2.85	53.0	49.2
[3 -9 -14]	(3 1 0)	(7 7 -3)	3.058	1.074	2.85	42.2	64.1
[2 -6 -9]	(3 1 0)	(-3 5 -4)	3.058	1.072	2.85	62.7	64.9
[1 -3 3]	(3 1 0)	(3 5 4)	3.058	1.072	2.85	56.1	75.8
[3 -9 14]	(3 1 0)	(-8 2 3)	3.058	1.067	2.87	40.5	67.5
[3 -9 2]	(3 1 0)	(8 2 -3)	3.058	1.067	2.87	36.9	88.4

Cummingtonite (310) 358 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[1 -3 -7]	(3 1 0)	(-1 9 -4)	3.058	1.067	2.87	79.0	54.6
[2 -6 13]	(3 1 0)	(1 9 4)	3.058	1.067	2.87	68.4	59.4
[5 -15 2]	(3 1 0)	(-2 0 5)	3.058	1.066	2.87	89.0	89.8
[5 -15 -2]	(3 1 0)	(-1 -1 5)	3.058	1.059	2.89	85.2	85.8
[5 -15 4]	(3 1 0)	(1 -1 -5)	3.058	1.059	2.89	84.0	87.6
[1 -3 4]	(3 1 0)	(8 4 1)	3.058	1.059	2.89	12.1	70.7
[5 -15 8]	(3 1 0)	(2 -2 -5)	3.058	1.059	2.89	89.9	83.2
[5 -15 -4]	(3 1 0)	(2 2 -5)	3.058	1.059	2.89	87.8	83.6
[3 -9 -26]	(3 1 0)	(-5 7 -3)	3.058	1.057	2.89	52.0	49.0
[3 -9 16]	(3 1 0)	(5 7 3)	3.058	1.057	2.89	41.3	64.4
[2 -6 -13]	(3 1 0)	(-2 8 -4)	3.058	1.057	2.89	71.9	56.5
[2 -6 11]	(3 1 0)	(2 8 4)	3.058	1.057	2.89	62.2	63.7
[5 -15 6]	(3 1 0)	(-3 1 5)	3.058	1.055	2.90	83.1	85.4
[1 -3 0]	(3 1 0)	(3 1 -5)	3.058	1.055	2.90	82.0	88.0
[1 -3 6]	(3 1 0)	(-9 -1 1)	3.058	1.055	2.90	13.0	61.5
[1 -3 0]	(3 1 0)	(6 2 3)	3.058	1.047	2.92	36.1	88.0
[3 -9 20]	(3 1 0)	(8 -4 -3)	3.058	1.046	2.92	43.5	58.8
[3 -9 -4]	(3 1 0)	(-8 -4 3)	3.058	1.046	2.92	36.6	80.7
[5 -15 -8]	(3 1 0)	(-1 -3 5)	3.058	1.045	2.93	86.3	79.3
[1 -3 2]	(3 1 0)	(-1 3 5)	3.058	1.045	2.93	83.0	81.1
[2 -6 5]	(3 1 0)	(-7 1 4)	3.058	1.043	2.93	53.0	78.4
[1 -3 1]	(3 1 0)	(7 1 -4)	3.058	1.043	2.93	51.6	86.5
[2 -6 -5]	(3 1 0)	(-4 2 -4)	3.058	1.042	2.93	54.2	74.6
[2 -6 1]	(3 1 0)	(4 2 4)	3.058	1.042	2.93	51.4	89.3
[5 -15 12]	(3 1 0)	(-3 3 5)	3.058	1.041	2.94	84.3	78.9
[5 -15 -6]	(3 1 0)	(3 3 -5)	3.058	1.041	2.94	81.0	81.4
[5 -15 14]	(3 1 0)	(-2 4 5)	3.058	1.038	2.95	88.8	76.8
[1 -3 -2]	(3 1 0)	(2 4 -5)	3.058	1.038	2.95	86.8	77.2
[5 -15 -6]	(3 1 0)	(0 2 -5)	3.058	1.036	2.95	79.5	81.4
[5 -15 6]	(3 1 0)	(0 2 5)	3.058	1.036	2.95	77.2	85.4
[1 -3 6]	(3 1 0)	(-9 1 2)	3.058	1.036	2.95	26.2	61.5
[1 -3 3]	(3 1 0)	(9 1 -2)	3.058	1.036	2.95	23.6	75.8
[5 -15 4]	(3 1 0)	(-4 0 5)	3.058	1.035	2.95	76.3	87.6
[1 -3 -6]	(3 1 0)	(3 -7 4)	3.058	1.030	2.97	65.1	58.5
[2 -6 9]	(3 1 0)	(-3 -7 -4)	3.058	1.030	2.97	56.3	68.3
[1 -3 4]	(3 1 0)	(7 -3 -4)	3.058	1.030	2.97	54.9	70.7
[2 -6 -1]	(3 1 0)	(-7 -3 4)	3.058	1.030	2.97	50.8	85.2
[1 -3 2]	(3 1 0)	(-4 2 5)	3.058	1.028	2.97	77.5	81.1
[5 -15 -2]	(3 1 0)	(4 2 -5)	3.058	1.028	2.97	75.3	85.8
[1 -3 -6]	(3 1 0)	(-6 4 -3)	3.058	1.027	2.98	42.7	58.5
[1 -3 2]	(3 1 0)	(6 4 3)	3.058	1.027	2.98	35.8	81.1
[1 -3 8]	(3 1 0)	(-5 9 4)	3.058	1.025	2.98	72.7	53.7
[2 -6 -11]	(3 1 0)	(5 9 -4)	3.058	1.025	2.98	62.1	60.5
[1 -3 10]	(3 1 0)	(-8 -6 -1)	3.058	1.025	2.98	15.2	47.2
[1 -3 9]	(3 1 0)	(9 -3 -2)	3.058	1.022	2.99	29.9	50.3
[1 -3 0]	(3 1 0)	(-9 -3 2)	3.058	1.022	2.99	22.6	88.0
[3 -9 -20]	(3 1 0)	(-7 -9 3)	3.058	1.019	3.00	43.8	55.9
[5 -15 -14]	(3 1 0)	(-1 -5 5)	3.058	1.019	3.00	87.5	73.0

Cummingtonite (310) 358 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[5 -15 16]	(3 1 0)	(1 -5 -5)	3.058	1.019	3.00	82.1	74.7
[5 -15 -12]	(3 1 0)	(0 -4 5)	3.058	1.017	3.01	80.8	75.1
[5 -15 12]	(3 1 0)	(0 -4 -5)	3.058	1.017	3.01	76.4	78.9
[5 -15 18]	(3 1 0)	(3 -5 -5)	3.058	1.015	3.01	85.5	72.7
[5 -15 -12]	(3 1 0)	(-3 -5 5)	3.058	1.015	3.01	80.1	75.1
[1 -3 -6]	(3 1 0)	(9 5 -1)	3.058	1.015	3.01	12.9	58.5
[3 -9 26]	(3 1 0)	(-8 6 3)	3.058	1.013	3.02	46.9	51.4
[3 -9 -10]	(3 1 0)	(8 6 -3)	3.058	1.013	3.02	37.2	70.4
[5 -15 -4]	(3 1 0)	(-1 1 -5)	3.058	1.012	3.02	72.8	83.6
[5 -15 2]	(3 1 0)	(1 1 5)	3.058	1.012	3.02	71.7	89.8
[1 -3 7]	(3 1 0)	(-7 -7 -2)	3.058	1.010	3.03	26.7	57.4
[5 -15 16]	(3 1 0)	(4 -4 -5)	3.058	1.009	3.03	78.8	74.7
[5 -15 -8]	(3 1 0)	(-4 -4 5)	3.058	1.009	3.03	74.4	79.3
[1 -3 4]	(3 1 0)	(-2 6 5)	3.058	1.005	3.04	87.8	70.7
[5 -15 -16]	(3 1 0)	(-2 -6 5)	3.058	1.005	3.04	85.8	71.0
[2 -6 11]	(3 1 0)	(7 -5 -4)	3.058	1.004	3.05	57.2	63.7
[1 -3 -2]	(3 1 0)	(-7 -5 4)	3.058	1.004	3.05	50.6	77.2
[3 -9 22]	(3 1 0)	(5 9 3)	3.058	1.004	3.05	42.9	56.2
[2 -6 15]	(3 1 0)	(-6 8 4)	3.058	1.003	3.05	66.0	55.5
[2 -6 -9]	(3 1 0)	(6 8 -4)	3.058	1.003	3.05	56.3	64.9
[5 -15 8]	(3 1 0)	(-5 1 5)	3.058	1.001	3.06	71.0	83.2
[5 -15 2]	(3 1 0)	(5 1 -5)	3.058	1.001	3.06	69.9	89.8

Cummingtonite (170) 270 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[7 -1 0]	(1 7 0)	(0 0 1)	2.503	5.215	0.48	86.8	78.5
[7 -1 8]	(1 7 0)	(1 -1 -1)	2.503	4.832	0.52	80.4	66.9
[7 -1 6]	(1 7 0)	(1 1 -1)	2.503	4.832	0.52	69.9	74.9
[7 -1 2]	(1 7 0)	(0 -2 -1)	2.503	4.524	0.55	58.2	87.4
[7 -1 -8]	(1 7 0)	(-1 1 -1)	2.503	4.088	0.61	86.9	50.2
[7 -1 -6]	(1 7 0)	(-1 -1 -1)	2.503	4.088	0.61	67.8	55.9
[7 -1 14]	(1 7 0)	(2 0 -1)	2.503	3.894	0.64	79.4	48.0
[7 -1 10]	(1 7 0)	(1 -3 -1)	2.503	3.863	0.65	57.1	59.7
[7 -1 4]	(1 7 0)	(1 3 -1)	2.503	3.863	0.65	46.8	83.6
[7 -1 12]	(1 7 0)	(-2 -2 1)	2.503	3.579	0.70	56.8	53.4
[7 -1 -10]	(1 7 0)	(-1 3 -1)	2.503	3.450	0.73	65.7	45.3
[7 -1 -4]	(1 7 0)	(-1 -3 -1)	2.503	3.450	0.73	46.8	62.6
[7 -1 -4]	(1 7 0)	(0 4 -1)	2.503	3.428	0.73	46.4	62.6
[7 -1 4]	(1 7 0)	(0 -4 -1)	2.503	3.428	0.73	40.3	83.6
[7 -1 10]	(1 7 0)	(2 4 -1)	2.503	2.958	0.85	40.0	59.7
[7 -1 12]	(1 7 0)	(-1 5 1)	2.503	2.944	0.85	43.5	53.4
[7 -1 2]	(1 7 0)	(1 5 -1)	2.503	2.944	0.85	33.6	87.4
[7 -1 -2]	(1 7 0)	(-1 -5 -1)	2.503	2.749	0.91	33.2	70.2
[7 -1 4]	(1 7 0)	(-1 1 2)	2.503	2.629	0.95	83.2	83.6
[7 -1 3]	(1 7 0)	(-1 -1 2)	2.503	2.629	0.95	80.8	88.1
[7 -1 -6]	(1 7 0)	(0 6 -1)	2.503	2.621	0.95	36.4	55.9
[7 -1 6]	(1 7 0)	(0 -6 -1)	2.503	2.621	0.95	30.6	74.9
[7 -1 -10]	(1 7 0)	(-2 -4 -1)	2.503	2.597	0.96	43.3	45.3
[7 -1 -1]	(1 7 0)	(0 2 -2)	2.503	2.507	1.00	77.8	74.3
[7 -1 1]	(1 7 0)	(0 -2 -2)	2.503	2.507	1.00	71.4	82.9
[7 -1 7]	(1 7 0)	(2 0 -2)	2.503	2.506	1.00	84.7	70.8
[7 -1 5]	(1 7 0)	(1 -3 -2)	2.503	2.434	1.03	68.4	79.2
[7 -1 2]	(1 7 0)	(1 3 -2)	2.503	2.434	1.03	66.1	87.4
[7 -1 -3]	(1 7 0)	(-1 -1 -2)	2.503	2.366	1.06	75.9	66.3
[7 -1 14]	(1 7 0)	(-1 7 1)	2.503	2.307	1.08	35.6	48.0
[7 -1 0]	(1 7 0)	(1 7 -1)	2.503	2.307	1.08	26.2	78.5
[7 -1 -5]	(1 7 0)	(-1 3 -2)	2.503	2.221	1.13	76.0	59.2
[7 -1 -2]	(1 7 0)	(-1 -3 -2)	2.503	2.221	1.13	62.3	70.2
[7 -1 11]	(1 7 0)	(3 -1 -2)	2.503	2.219	1.13	88.4	56.4
[7 -1 10]	(1 7 0)	(3 1 -2)	2.503	2.219	1.13	74.8	59.7
[7 -1 9]	(1 7 0)	(-2 4 2)	2.503	2.195	1.14	67.4	63.1
[7 -1 5]	(1 7 0)	(2 4 -2)	2.503	2.195	1.14	57.0	79.2
[7 -1 -8]	(1 7 0)	(-2 -6 -1)	2.503	2.189	1.14	32.3	50.2
[7 -1 6]	(1 7 0)	(-1 5 2)	2.503	2.146	1.17	56.5	74.9
[7 -1 1]	(1 7 0)	(-1 -5 2)	2.503	2.146	1.17	54.2	82.9
[7 -1 12]	(1 7 0)	(-3 3 2)	2.503	2.098	1.19	78.7	53.4
[7 -1 9]	(1 7 0)	(-3 -3 2)	2.503	2.098	1.19	61.9	63.1
[7 -1 -7]	(1 7 0)	(2 0 2)	2.503	2.098	1.19	80.5	53.0
[7 -1 -8]	(1 7 0)	(0 -8 1)	2.503	2.084	1.20	30.6	50.2
[7 -1 8]	(1 7 0)	(0 8 1)	2.503	2.084	1.20	25.2	66.9
[7 -1 -3]	(1 7 0)	(0 -6 2)	2.503	1.977	1.27	54.1	66.3
[7 -1 3]	(1 7 0)	(0 6 2)	2.503	1.977	1.27	47.9	88.1
[7 -1 6]	(1 7 0)	(-2 -8 1)	2.503	1.963	1.27	22.4	74.9

Cummingtonite (170) 270 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[7 -1 14]	(1 7 0)	(3 7 -1)	2.503	1.949	1.28	29.5	48.0
[7 -1 8]	(1 7 0)	(-3 -5 2)	2.503	1.905	1.31	51.0	66.9
[7 -1 -9]	(1 7 0)	(-2 4 -2)	2.503	1.905	1.31	75.4	47.6
[7 -1 -5]	(1 7 0)	(-2 -4 -2)	2.503	1.905	1.31	56.4	59.2
[7 -1 15]	(1 7 0)	(-4 2 2)	2.503	1.904	1.31	88.7	45.6
[7 -1 13]	(1 7 0)	(4 2 -2)	2.503	1.904	1.31	67.6	50.6
[7 -1 -2]	(1 7 0)	(-1 -9 1)	2.503	1.874	1.34	22.0	70.2
[7 -1 7]	(1 7 0)	(-1 7 2)	2.503	1.858	1.35	47.6	70.8
[7 -1 0]	(1 7 0)	(-1 -7 2)	2.503	1.858	1.35	45.3	78.5
[7 -1 -6]	(1 7 0)	(2 8 1)	2.503	1.846	1.36	24.7	55.9
[7 -1 2]	(1 7 0)	(-1 -9 -1)	2.503	1.821	1.37	20.0	87.4
[7 -1 -10]	(1 7 0)	(3 1 2)	2.503	1.811	1.38	73.1	45.3
[7 -1 2]	(1 7 0)	(1 1 -3)	2.503	1.768	1.42	84.9	87.4
[21 -3 8]	(1 7 0)	(1 -1 -3)	2.503	1.768	1.42	84.3	89.6
[7 -1 -7]	(1 7 0)	(-1 7 -2)	2.503	1.758	1.42	55.7	53.0
[7 -1 0]	(1 7 0)	(-1 -7 -2)	2.503	1.758	1.42	42.3	78.5
[21 -3 14]	(1 7 0)	(2 0 -3)	2.503	1.751	1.43	87.4	80.6
[7 -1 -9]	(1 7 0)	(-3 -3 -2)	2.503	1.743	1.44	62.3	47.6
[21 -3 16]	(1 7 0)	(2 -2 -3)	2.503	1.720	1.46	82.1	77.7
[7 -1 4]	(1 7 0)	(2 2 -3)	2.503	1.720	1.46	76.9	83.6
[21 -3 4]	(1 7 0)	(1 3 -3)	2.503	1.705	1.47	74.6	84.4
[21 -3 10]	(1 7 0)	(1 -3 -3)	2.503	1.705	1.47	74.0	86.6
[7 -1 14]	(1 7 0)	(-3 7 2)	2.503	1.695	1.48	58.8	48.0
[7 -1 7]	(1 7 0)	(-3 -7 2)	2.503	1.695	1.48	42.3	70.8
[7 -1 11]	(1 7 0)	(-2 8 2)	2.503	1.684	1.49	49.3	56.4
[7 -1 3]	(1 7 0)	(-2 -8 2)	2.503	1.684	1.49	39.2	88.1
[7 -1 12]	(1 7 0)	(3 9 -1)	2.503	1.667	1.50	22.9	53.4
[21 -3 22]	(1 7 0)	(-3 1 3)	2.503	1.664	1.50	89.8	69.4
[21 -3 20]	(1 7 0)	(3 1 -3)	2.503	1.664	1.50	79.7	72.1
[21 -3 -8]	(1 7 0)	(1 -1 3)	2.503	1.642	1.52	89.3	67.6
[7 -1 -2]	(1 7 0)	(-1 -1 -3)	2.503	1.642	1.52	79.2	70.2
[7 -1 11]	(1 7 0)	(4 6 -2)	2.503	1.638	1.53	47.5	56.4
[7 -1 6]	(1 7 0)	(2 -4 -3)	2.503	1.634	1.53	72.3	74.9
[21 -3 10]	(1 7 0)	(2 4 -3)	2.503	1.634	1.53	67.1	86.6
[7 -1 -8]	(1 7 0)	(-3 -5 -2)	2.503	1.628	1.54	52.7	50.2
[21 -3 -4]	(1 7 0)	(0 4 -3)	2.503	1.624	1.54	73.0	72.9
[21 -3 4]	(1 7 0)	(0 -4 -3)	2.503	1.624	1.54	66.7	84.4
[7 -1 8]	(1 7 0)	(-1 9 2)	2.503	1.609	1.56	41.0	66.9
[7 -1 -1]	(1 7 0)	(1 9 -2)	2.503	1.609	1.56	38.8	74.3
[21 -3 2]	(1 7 0)	(-1 -5 3)	2.503	1.596	1.57	65.3	81.4
[7 -1 4]	(1 7 0)	(-1 5 3)	2.503	1.596	1.57	64.7	83.6
[21 -3 -10]	(1 7 0)	(1 -3 3)	2.503	1.591	1.57	81.0	65.0
[21 -3 -4]	(1 7 0)	(1 3 3)	2.503	1.591	1.57	69.5	72.9
[21 -3 28]	(1 7 0)	(-4 0 3)	2.503	1.555	1.61	82.5	62.0
[7 -1 -8]	(1 7 0)	(-1 9 -2)	2.503	1.542	1.62	48.9	50.2
[7 -1 1]	(1 7 0)	(-1 -9 -2)	2.503	1.542	1.62	35.7	82.9
[7 -1 -3]	(1 7 0)	(2 8 2)	2.503	1.542	1.62	39.2	66.3
[7 -1 10]	(1 7 0)	(4 -2 -3)	2.503	1.533	1.63	88.1	59.7

Cummingtonite (170) 270 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[21 -3 26]	(1 7 0)	(4 2 -3)	2.503	1.533	1.63	73.1	64.4
[7 -1 15]	(1 7 0)	(-5 -5 2)	2.503	1.532	1.63	53.5	45.6
[21 -3 -14]	(1 7 0)	(2 0 3)	2.503	1.528	1.64	82.1	60.3
[21 -3 26]	(1 7 0)	(3 -5 -3)	2.503	1.518	1.65	71.4	64.4
[21 -3 16]	(1 7 0)	(3 5 -3)	2.503	1.518	1.65	61.0	77.7
[21 -3 20]	(1 7 0)	(2 -6 -3)	2.503	1.516	1.65	63.7	72.1
[21 -3 8]	(1 7 0)	(2 6 -3)	2.503	1.516	1.65	58.6	89.6
[21 -3 -16]	(1 7 0)	(2 -2 3)	2.503	1.507	1.66	88.6	58.1
[7 -1 -4]	(1 7 0)	(2 2 3)	2.503	1.507	1.66	72.9	62.6
[7 -1 -4]	(1 7 0)	(1 -5 3)	2.503	1.502	1.67	72.2	62.6
[21 -3 -2]	(1 7 0)	(1 5 3)	2.503	1.502	1.67	60.7	75.7
[7 -1 15]	(1 7 0)	(3 -9 -2)	2.503	1.499	1.67	51.9	45.6
[7 -1 6]	(1 7 0)	(3 9 -2)	2.503	1.499	1.67	35.6	74.9
[7 -1 -7]	(1 7 0)	(-3 -7 -2)	2.503	1.491	1.68	44.5	53.0
[21 -3 32]	(1 7 0)	(-4 4 3)	2.503	1.471	1.70	79.1	57.5
[7 -1 8]	(1 7 0)	(-4 -4 3)	2.503	1.471	1.70	64.2	66.9
[7 -1 0]	(1 7 0)	(1 7 -3)	2.503	1.466	1.71	57.4	78.5
[21 -3 14]	(1 7 0)	(1 -7 -3)	2.503	1.466	1.71	56.8	80.6
[7 -1 -6]	(1 7 0)	(-2 4 -3)	2.503	1.449	1.73	79.8	55.9
[21 -3 -10]	(1 7 0)	(2 4 3)	2.503	1.449	1.73	64.1	65.0
[7 -1 12]	(1 7 0)	(5 -1 -3)	2.503	1.421	1.76	85.1	53.4
[21 -3 34]	(1 7 0)	(-5 -1 3)	2.503	1.421	1.76	76.4	55.4
[7 -1 14]	(1 7 0)	(5 7 -2)	2.503	1.416	1.77	45.6	48.0
[21 -3 28]	(1 7 0)	(3 -7 -3)	2.503	1.405	1.78	63.7	62.0
[21 -3 14]	(1 7 0)	(3 7 -3)	2.503	1.405	1.78	53.3	80.6
[21 -3 -22]	(1 7 0)	(-3 1 -3)	2.503	1.394	1.79	84.7	52.0
[21 -3 -20]	(1 7 0)	(3 1 3)	2.503	1.394	1.79	76.2	53.9
[21 -3 -14]	(1 7 0)	(1 -7 3)	2.503	1.392	1.80	64.4	60.3
[7 -1 0]	(1 7 0)	(1 7 3)	2.503	1.392	1.80	53.1	78.5
[21 -3 38]	(1 7 0)	(5 -3 -3)	2.503	1.388	1.80	86.3	51.5
[21 -3 32]	(1 7 0)	(5 3 -3)	2.503	1.388	1.80	67.9	57.5
[21 -3 22]	(1 7 0)	(2 -8 -3)	2.503	1.387	1.80	56.5	69.4
[7 -1 2]	(1 7 0)	(2 8 -3)	2.503	1.387	1.80	51.4	87.4
[21 -3 34]	(1 7 0)	(4 -6 -3)	2.503	1.383	1.81	71.1	55.4
[21 -3 22]	(1 7 0)	(4 6 -3)	2.503	1.383	1.81	56.3	69.4
[21 -3 -8]	(1 7 0)	(0 -8 3)	2.503	1.381	1.81	57.3	67.6
[21 -3 8]	(1 7 0)	(0 8 3)	2.503	1.381	1.81	51.0	89.6
[21 -3 -20]	(1 7 0)	(-2 6 -3)	2.503	1.365	1.83	71.9	53.9
[21 -3 -8]	(1 7 0)	(2 6 3)	2.503	1.365	1.83	56.2	67.6
[7 -1 -6]	(1 7 0)	(-3 -9 -2)	2.503	1.352	1.85	37.8	55.9
[21 -3 -2]	(1 7 0)	(1 9 -3)	2.503	1.334	1.88	50.8	75.7
[21 -3 16]	(1 7 0)	(1 -9 -3)	2.503	1.334	1.88	50.2	77.7
[14 -2 7]	(1 7 0)	(2 0 -4)	2.503	1.329	1.88	88.8	85.8
[21 -3 40]	(1 7 0)	(5 -5 -3)	2.503	1.327	1.89	78.4	49.7
[7 -1 10]	(1 7 0)	(5 5 -3)	2.503	1.327	1.89	59.9	59.7
[14 -2 3]	(1 7 0)	(-1 -1 4)	2.503	1.326	1.89	87.0	85.2
[7 -1 2]	(1 7 0)	(-1 1 4)	2.503	1.326	1.89	84.9	87.4
[21 -3 -26]	(1 7 0)	(3 -5 3)	2.503	1.305	1.92	79.0	48.5

Cummingtonite (170) 270 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[21 -3 -16]	(1 7 0)	(3 5 3)	2.503	1.305	1.92	60.0	58.1
[7 -1 1]	(1 7 0)	(1 3 -4)	2.503	1.299	1.93	79.1	82.9
[14 -2 5]	(1 7 0)	(1 -3 -4)	2.503	1.299	1.93	77.1	89.7
[14 -2 11]	(1 7 0)	(-3 1 4)	2.503	1.298	1.93	89.3	77.0
[7 -1 5]	(1 7 0)	(-3 -1 4)	2.503	1.298	1.93	82.8	79.2
[14 -2 -1]	(1 7 0)	(0 -2 4)	2.503	1.291	1.94	85.3	76.4
[14 -2 1]	(1 7 0)	(0 2 4)	2.503	1.291	1.94	79.0	80.7
[21 -3 44]	(1 7 0)	(-6 2 3)	2.503	1.285	1.95	87.4	46.4
[21 -3 40]	(1 7 0)	(6 2 -3)	2.503	1.285	1.95	71.5	49.7
[7 -1 12]	(1 7 0)	(4 -8 -3)	2.503	1.283	1.95	64.1	53.4
[21 -3 20]	(1 7 0)	(4 8 -3)	2.503	1.283	1.95	49.4	72.1
[21 -3 -16]	(1 7 0)	(1 -9 3)	2.503	1.278	1.96	57.9	58.1
[21 -3 2]	(1 7 0)	(1 9 3)	2.503	1.278	1.96	46.6	81.4
[14 -2 9]	(1 7 0)	(2 -4 -4)	2.503	1.275	1.96	75.5	81.4
[14 -2 5]	(1 7 0)	(2 4 -4)	2.503	1.275	1.96	73.2	89.7
[7 -1 6]	(1 7 0)	(3 -3 -4)	2.503	1.273	1.97	81.6	74.9
[14 -2 9]	(1 7 0)	(3 3 -4)	2.503	1.273	1.97	75.0	81.4
[21 -3 -28]	(1 7 0)	(-4 0 -3)	2.503	1.272	1.97	79.2	46.8
[21 -3 -22]	(1 7 0)	(-2 8 -3)	2.503	1.268	1.97	64.9	52.0
[7 -1 -2]	(1 7 0)	(-2 -8 -3)	2.503	1.268	1.97	49.4	70.2
[7 -1 -10]	(1 7 0)	(4 -2 3)	2.503	1.260	1.99	87.0	45.3
[21 -3 -26]	(1 7 0)	(-4 -2 -3)	2.503	1.260	1.99	71.4	48.5
[21 -3 28]	(1 7 0)	(5 7 -3)	2.503	1.250	2.00	52.8	62.0
[14 -2 1]	(1 7 0)	(-1 -5 4)	2.503	1.249	2.00	71.7	80.7
[7 -1 3]	(1 7 0)	(-1 5 4)	2.503	1.249	2.00	69.7	88.1
[21 -3 38]	(1 7 0)	(6 4 -3)	2.503	1.248	2.01	63.8	51.5
[14 -2 15]	(1 7 0)	(4 -2 -4)	2.503	1.241	2.02	87.7	68.8
[14 -2 13]	(1 7 0)	(4 2 -4)	2.503	1.241	2.02	77.2	72.8
[21 -3 -28]	(1 7 0)	(3 -7 3)	2.503	1.232	2.03	71.9	46.8
[21 -3 -14]	(1 7 0)	(3 7 3)	2.503	1.232	2.03	52.9	60.3
[14 -2 -5]	(1 7 0)	(1 -3 4)	2.503	1.230	2.03	83.8	68.2
[7 -1 -1]	(1 7 0)	(1 3 4)	2.503	1.230	2.03	73.5	74.3
[14 -2 13]	(1 7 0)	(3 -5 -4)	2.503	1.226	2.04	74.3	72.8
[7 -1 4]	(1 7 0)	(3 5 -4)	2.503	1.226	2.04	67.8	83.6
[7 -1 -8]	(1 7 0)	(-4 -4 -3)	2.503	1.225	2.04	63.9	50.2
[14 -2 -7]	(1 7 0)	(-2 0 -4)	2.503	1.193	2.10	83.1	64.4
[14 -2 -1]	(1 7 0)	(-1 -5 -4)	2.503	1.187	2.11	66.5	76.4
[7 -1 9]	(1 7 0)	(5 -1 -4)	2.503	1.187	2.11	86.7	63.1
[14 -2 17]	(1 7 0)	(-5 -1 4)	2.503	1.187	2.11	79.4	65.0
[7 -1 0]	(1 7 0)	(1 7 -4)	2.503	1.184	2.11	65.0	78.5
[14 -2 7]	(1 7 0)	(1 -7 -4)	2.503	1.184	2.11	62.9	85.8
[21 -3 -22]	(1 7 0)	(4 6 3)	2.503	1.173	2.13	56.9	52.0
[14 -2 19]	(1 7 0)	(5 -3 -4)	2.503	1.167	2.14	86.2	61.4
[7 -1 8]	(1 7 0)	(5 3 -4)	2.503	1.167	2.14	72.3	66.9
[21 -3 44]	(1 7 0)	(-5 9 3)	2.503	1.165	2.15	64.9	46.4
[21 -3 26]	(1 7 0)	(-5 -9 3)	2.503	1.165	2.15	46.7	64.4
[7 -1 7]	(1 7 0)	(-3 7 4)	2.503	1.164	2.15	67.7	70.8
[14 -2 7]	(1 7 0)	(-3 -7 4)	2.503	1.164	2.15	61.1	85.8

Cummingtonite (170) 270 Zone Axes***a* 9.510Å *b* 18.190Å *c* 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	<i>d</i> (hk0)	<i>d</i> (hkl)	<i>d</i> Ratio	θ°	ZA $^\circ$
[14 -2 17]	(1 7 0)	(-4 6 4)	2.503	1.158	2.16	73.5	65.0
[14 -2 11]	(1 7 0)	(4 6 -4)	2.503	1.158	2.16	63.1	77.0
[14 -2 -9]	(1 7 0)	(2 -4 4)	2.503	1.154	2.17	82.6	60.9
[14 -2 -5]	(1 7 0)	(2 4 4)	2.503	1.154	2.17	68.9	68.2
[14 -2 11]	(1 7 0)	(-2 8 4)	2.503	1.147	2.18	62.1	77.0
[14 -2 3]	(1 7 0)	(-2 -8 4)	2.503	1.147	2.18	59.8	85.2
[7 -1 10]	(1 7 0)	(-5 5 4)	2.503	1.130	2.21	79.4	59.7
[14 -2 15]	(1 7 0)	(-5 -5 4)	2.503	1.130	2.21	65.5	68.8
[21 -3 34]	(1 7 0)	(6 8 -3)	2.503	1.127	2.22	50.4	55.4
[21 -3 44]	(1 7 0)	(-7 -5 3)	2.503	1.122	2.23	60.8	46.4
[14 -2 -11]	(1 7 0)	(3 -1 4)	2.503	1.120	2.23	85.1	57.5
[7 -1 -5]	(1 7 0)	(-3 -1 -4)	2.503	1.120	2.23	78.2	59.2
[14 -2 21]	(1 7 0)	(6 0 -4)	2.503	1.118	2.24	81.6	58.0
[14 -2 -1]	(1 7 0)	(-1 -9 4)	2.503	1.111	2.25	59.1	76.4
[7 -1 4]	(1 7 0)	(-1 9 4)	2.503	1.111	2.25	57.0	83.6
[21 -3 -20]	(1 7 0)	(-4 -8 -3)	2.503	1.110	2.25	50.6	53.9
[7 -1 -10]	(1 7 0)	(-5 -5 -3)	2.503	1.103	2.27	60.9	45.3
[14 -2 15]	(1 7 0)	(3 -9 -4)	2.503	1.094	2.29	61.8	68.8
[7 -1 3]	(1 7 0)	(3 9 -4)	2.503	1.094	2.29	55.3	88.1
[14 -2 23]	(1 7 0)	(6 -4 -4)	2.503	1.086	2.31	85.0	54.9
[14 -2 19]	(1 7 0)	(6 4 -4)	2.503	1.086	2.31	68.2	61.4
[14 -2 21]	(1 7 0)	(5 -7 -4)	2.503	1.081	2.31	73.1	58.0
[7 -1 7]	(1 7 0)	(5 7 -4)	2.503	1.081	2.31	59.3	70.8
[7 -1 14]	(1 7 0)	(-7 -7 3)	2.503	1.074	2.33	54.5	48.0
[14 -2 -13]	(1 7 0)	(-3 5 -4)	2.503	1.072	2.33	81.6	54.4
[7 -1 -4]	(1 7 0)	(-3 -5 -4)	2.503	1.072	2.33	65.0	62.6
[7 -1 -4]	(1 7 0)	(-1 9 -4)	2.503	1.067	2.35	64.4	62.6
[14 -2 1]	(1 7 0)	(-1 -9 -4)	2.503	1.067	2.35	54.2	80.7
[35 -5 14]	(1 7 0)	(2 0 -5)	2.503	1.066	2.35	89.7	89.0
[35 -5 6]	(1 7 0)	(-1 -1 5)	2.503	1.059	2.36	88.3	83.8
[35 -5 8]	(1 7 0)	(-1 1 5)	2.503	1.059	2.36	85.3	85.6
[35 -5 16]	(1 7 0)	(2 -2 -5)	2.503	1.059	2.36	83.8	87.2
[35 -5 12]	(1 7 0)	(2 2 -5)	2.503	1.059	2.36	83.3	89.2
[21 -3 -28]	(1 7 0)	(-5 -7 -3)	2.503	1.057	2.37	54.7	46.8
[14 -2 -11]	(1 7 0)	(-2 8 -4)	2.503	1.057	2.37	70.0	57.5
[14 -2 -3]	(1 7 0)	(2 8 4)	2.503	1.057	2.37	56.4	72.2
[35 -5 22]	(1 7 0)	(3 -1 -5)	2.503	1.055	2.37	88.8	81.8
[7 -1 4]	(1 7 0)	(3 1 -5)	2.503	1.055	2.37	84.8	83.6
[7 -1 2]	(1 7 0)	(-1 3 5)	2.503	1.045	2.39	79.0	87.4
[14 -2 25]	(1 7 0)	(-7 1 4)	2.503	1.043	2.40	83.6	52.0
[7 -1 12]	(1 7 0)	(7 1 -4)	2.503	1.043	2.40	77.2	53.4
[14 -2 -15]	(1 7 0)	(-4 2 -4)	2.503	1.042	2.40	86.9	51.5
[14 -2 -13]	(1 7 0)	(4 2 4)	2.503	1.042	2.40	74.0	54.4
[35 -5 24]	(1 7 0)	(3 -3 -5)	2.503	1.041	2.40	82.5	80.1
[35 -5 18]	(1 7 0)	(3 3 -5)	2.503	1.041	2.40	78.4	85.4
[35 -5 18]	(1 7 0)	(2 -4 -5)	2.503	1.038	2.41	77.6	85.4
[7 -1 2]	(1 7 0)	(2 4 -5)	2.503	1.038	2.41	77.0	87.4
[35 -5 -2]	(1 7 0)	(0 -2 5)	2.503	1.036	2.42	86.9	76.8

Cummingtonite (170) 270 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[35 -5 2]	(1 7 0)	(0 2 5)	2.503	1.036	2.42	80.5	80.3
[35 -5 28]	(1 7 0)	(-4 0 5)	2.503	1.035	2.42	86.3	76.6
[7 -1 -7]	(1 7 0)	(-3 7 -4)	2.503	1.030	2.43	75.6	53.0
[14 -2 -7]	(1 7 0)	(-3 -7 -4)	2.503	1.030	2.43	59.0	64.4
[7 -1 13]	(1 7 0)	(7 -3 -4)	2.503	1.030	2.43	89.9	50.6
[14 -2 23]	(1 7 0)	(-7 -3 4)	2.503	1.030	2.43	70.8	54.9
[7 -1 6]	(1 7 0)	(-4 2 5)	2.503	1.028	2.43	87.4	74.9
[35 -5 26]	(1 7 0)	(-4 -2 5)	2.503	1.028	2.43	80.0	78.3
[7 -1 11]	(1 7 0)	(-5 9 4)	2.503	1.025	2.44	67.4	56.4
[14 -2 13]	(1 7 0)	(-5 -9 4)	2.503	1.025	2.44	53.6	72.8
[21 -3 40]	(1 7 0)	(7 9 -3)	2.503	1.019	2.46	48.8	49.7
[35 -5 2]	(1 7 0)	(1 5 -5)	2.503	1.019	2.46	75.8	80.3
[35 -5 12]	(1 7 0)	(1 -5 -5)	2.503	1.019	2.46	72.9	89.2
[35 -5 -4]	(1 7 0)	(0 4 -5)	2.503	1.017	2.46	80.7	75.1
[35 -5 4]	(1 7 0)	(0 -4 -5)	2.503	1.017	2.46	74.4	82.0
[35 -5 26]	(1 7 0)	(-3 5 5)	2.503	1.015	2.47	76.4	78.3
[35 -5 16]	(1 7 0)	(-3 -5 5)	2.503	1.015	2.47	72.4	87.2
[35 -5 -8]	(1 7 0)	(1 -1 5)	2.503	1.012	2.47	88.3	71.8
[35 -5 -6]	(1 7 0)	(-1 -1 -5)	2.503	1.012	2.47	82.1	73.4
[35 -5 32]	(1 7 0)	(-4 4 5)	2.503	1.009	2.48	81.3	73.2
[35 -5 24]	(1 7 0)	(4 4 -5)	2.503	1.009	2.48	73.9	80.1
[7 -1 4]	(1 7 0)	(2 -6 -5)	2.503	1.005	2.49	71.7	83.6
[35 -5 8]	(1 7 0)	(2 6 -5)	2.503	1.005	2.49	71.1	85.6
[14 -2 27]	(1 7 0)	(7 -5 -4)	2.503	1.004	2.49	83.9	49.3
[7 -1 11]	(1 7 0)	(7 5 -4)	2.503	1.004	2.49	64.8	56.4
[21 -3 -26]	(1 7 0)	(-5 -9 -3)	2.503	1.004	2.49	49.0	48.5
[14 -2 25]	(1 7 0)	(-6 8 4)	2.503	1.003	2.49	72.9	52.0
[14 -2 17]	(1 7 0)	(6 8 -4)	2.503	1.003	2.49	56.2	65.0
[35 -5 36]	(1 7 0)	(-5 1 5)	2.503	1.001	2.50	87.8	70.0
[35 -5 34]	(1 7 0)	(5 1 -5)	2.503	1.001	2.50	81.7	71.6

Cummingtonite (350) 311 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[5 -3 0]	(3 5 0)	(0 0 1)	2.360	5.215	0.45	81.0	82.2
[5 -3 8]	(3 5 0)	(-1 1 1)	2.360	4.832	0.49	85.6	65.4
[5 -3 2]	(3 5 0)	(1 1 -1)	2.360	4.832	0.49	65.0	89.3
[5 -3 -6]	(3 5 0)	(0 2 -1)	2.360	4.524	0.52	79.2	59.8
[5 -3 6]	(3 5 0)	(0 2 1)	2.360	4.524	0.52	62.7	72.8
[5 -3 -8]	(3 5 0)	(1 -1 1)	2.360	4.088	0.58	71.9	53.8
[5 -3 -2]	(3 5 0)	(1 1 1)	2.360	4.088	0.58	52.9	74.1
[5 -3 14]	(3 5 0)	(1 -3 -1)	2.360	3.863	0.61	77.7	47.9
[5 -3 -4]	(3 5 0)	(1 3 -1)	2.360	3.863	0.61	52.2	66.5
[5 -3 4]	(3 5 0)	(-2 -2 1)	2.360	3.579	0.66	42.9	80.9
[5 -3 4]	(3 5 0)	(1 3 1)	2.360	3.450	0.68	41.0	80.9
[5 -3 12]	(3 5 0)	(0 -4 -1)	2.360	3.428	0.69	53.7	52.9
[5 -3 -10]	(3 5 0)	(2 0 1)	2.360	3.163	0.75	52.2	48.7
[5 -3 -4]	(3 5 0)	(-2 -2 -1)	2.360	2.988	0.79	37.7	66.5
[5 -3 -2]	(3 5 0)	(2 4 -1)	2.360	2.958	0.80	35.2	74.1
[5 -3 -10]	(3 5 0)	(-1 -5 1)	2.360	2.944	0.80	47.4	48.7
[5 -3 12]	(3 5 0)	(3 1 -1)	2.360	2.908	0.81	43.1	52.9
[5 -3 10]	(3 5 0)	(-1 -5 -1)	2.360	2.749	0.86	37.1	58.8
[5 -3 6]	(3 5 0)	(3 3 -1)	2.360	2.650	0.89	31.4	72.8
[5 -3 4]	(3 5 0)	(1 -1 -2)	2.360	2.629	0.90	87.9	80.9
[5 -3 1]	(3 5 0)	(1 1 -2)	2.360	2.629	0.90	81.3	86.4
[5 -3 2]	(3 5 0)	(2 4 1)	2.360	2.597	0.91	29.2	89.3
[5 -3 -3]	(3 5 0)	(0 -2 2)	2.360	2.507	0.94	88.4	70.2
[5 -3 3]	(3 5 0)	(0 2 2)	2.360	2.507	0.94	70.8	85.1
[5 -3 5]	(3 5 0)	(-2 0 2)	2.360	2.506	0.94	75.0	76.8
[5 -3 7]	(3 5 0)	(-1 3 2)	2.360	2.434	0.97	78.0	69.0
[5 -3 -2]	(3 5 0)	(-1 -3 2)	2.360	2.434	0.97	71.8	74.1
[5 -3 -1]	(3 5 0)	(1 1 2)	2.360	2.366	1.00	65.1	78.1
[5 -3 -6]	(3 5 0)	(3 3 1)	2.360	2.274	1.04	29.6	59.8
[5 -3 14]	(3 5 0)	(-4 -2 1)	2.360	2.238	1.05	34.5	47.9
[5 -3 -7]	(3 5 0)	(1 -3 2)	2.360	2.221	1.06	85.6	56.7
[5 -3 2]	(3 5 0)	(-1 -3 -2)	2.360	2.221	1.06	56.4	89.3
[5 -3 9]	(3 5 0)	(3 -1 -2)	2.360	2.219	1.06	70.6	62.0
[5 -3 6]	(3 5 0)	(-3 -1 2)	2.360	2.219	1.06	60.7	72.8
[5 -3 11]	(3 5 0)	(-2 4 2)	2.360	2.195	1.08	85.1	55.8
[5 -3 -1]	(3 5 0)	(-2 -4 2)	2.360	2.195	1.08	57.3	78.1
[5 -3 8]	(3 5 0)	(2 6 1)	2.360	2.189	1.08	26.8	65.4
[5 -3 10]	(3 5 0)	(1 -5 -2)	2.360	2.146	1.10	70.3	58.8
[5 -3 -5]	(3 5 0)	(1 5 -2)	2.360	2.146	1.10	64.6	63.1
[5 -3 12]	(3 5 0)	(-3 3 2)	2.360	2.098	1.13	80.6	52.9
[5 -3 3]	(3 5 0)	(3 3 -2)	2.360	2.098	1.13	52.2	85.1
[5 -3 -5]	(3 5 0)	(-2 0 -2)	2.360	2.098	1.13	62.0	63.1
[5 -3 8]	(3 5 0)	(4 4 -1)	2.360	2.059	1.15	25.1	65.4
[5 -3 -9]	(3 5 0)	(0 6 -2)	2.360	1.977	1.19	72.3	51.1
[5 -3 9]	(3 5 0)	(0 -6 -2)	2.360	1.977	1.19	57.2	62.0
[5 -3 -6]	(3 5 0)	(3 7 -1)	2.360	1.949	1.21	25.0	59.8
[5 -3 0]	(3 5 0)	(-3 -5 2)	2.360	1.905	1.24	46.2	82.2
[5 -3 -11]	(3 5 0)	(2 -4 2)	2.360	1.905	1.24	81.1	46.3

Cummingtonite (350) 311 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[5 -3 1]	(3 5 0)	(-2 -4 -2)	2.360	1.905	1.24	45.7	86.4
[5 -3 13]	(3 5 0)	(4 -2 -2)	2.360	1.904	1.24	68.1	50.3
[5 -3 7]	(3 5 0)	(-4 -2 2)	2.360	1.904	1.24	49.9	69.0
[5 -3 13]	(3 5 0)	(-1 7 2)	2.360	1.858	1.27	64.9	50.3
[5 -3 -8]	(3 5 0)	(-1 -7 2)	2.360	1.858	1.27	59.7	53.8
[5 -3 14]	(3 5 0)	(2 8 1)	2.360	1.846	1.28	27.8	47.9
[5 -3 2]	(3 5 0)	(-4 -6 1)	2.360	1.837	1.28	20.2	89.3
[5 -3 -8]	(3 5 0)	(4 4 1)	2.360	1.814	1.30	24.9	53.8
[5 -3 -9]	(3 5 0)	(-3 1 -2)	2.360	1.811	1.30	60.8	51.1
[5 -3 -6]	(3 5 0)	(3 1 2)	2.360	1.811	1.30	51.8	59.8
[5 -3 6]	(3 5 0)	(3 7 1)	2.360	1.784	1.32	20.5	72.8
[15 -9 2]	(3 5 0)	(-1 -1 3)	2.360	1.768	1.34	87.2	85.0
[15 -9 8]	(3 5 0)	(-1 1 3)	2.360	1.768	1.34	85.5	86.5
[5 -3 8]	(3 5 0)	(-1 -7 -2)	2.360	1.758	1.34	46.5	65.4
[15 -9 10]	(3 5 0)	(2 0 -3)	2.360	1.751	1.35	82.6	83.7
[5 -3 -3]	(3 5 0)	(-3 -3 -2)	2.360	1.743	1.35	44.0	70.2
[15 -9 16]	(3 5 0)	(2 -2 -3)	2.360	1.720	1.37	89.8	75.4
[15 -9 4]	(3 5 0)	(-2 -2 3)	2.360	1.720	1.37	75.6	87.8
[5 -3 2]	(3 5 0)	(0 2 3)	2.360	1.708	1.38	74.0	89.3
[15 -9 -4]	(3 5 0)	(-1 -3 3)	2.360	1.705	1.38	80.3	76.7
[15 -9 14]	(3 5 0)	(-1 3 3)	2.360	1.705	1.38	78.6	78.1
[5 -3 -3]	(3 5 0)	(-3 -7 2)	2.360	1.695	1.39	42.5	70.2
[5 -3 -7]	(3 5 0)	(2 8 -2)	2.360	1.684	1.40	49.1	56.7
[5 -3 14]	(3 5 0)	(-5 1 2)	2.360	1.681	1.40	58.2	47.9
[5 -3 11]	(3 5 0)	(5 1 -2)	2.360	1.681	1.40	49.7	55.8
[5 -3 10]	(3 5 0)	(-5 -5 1)	2.360	1.670	1.41	21.5	58.8
[5 -3 6]	(3 5 0)	(3 -1 -3)	2.360	1.664	1.42	78.5	72.8
[5 -3 4]	(3 5 0)	(-3 -1 3)	2.360	1.664	1.42	71.5	80.9
[5 -3 -2]	(3 5 0)	(4 6 1)	2.360	1.657	1.42	18.9	74.1
[15 -9 -8]	(3 5 0)	(-1 1 -3)	2.360	1.642	1.44	77.1	71.5
[15 -9 -2]	(3 5 0)	(1 1 3)	2.360	1.642	1.44	70.1	79.4
[5 -3 1]	(3 5 0)	(-4 -6 2)	2.360	1.638	1.44	38.0	86.4
[15 -9 22]	(3 5 0)	(-2 4 3)	2.360	1.634	1.44	83.5	67.8
[15 -9 -2]	(3 5 0)	(-2 -4 3)	2.360	1.634	1.44	69.3	79.4
[5 -3 0]	(3 5 0)	(3 5 2)	2.360	1.628	1.45	38.1	82.2
[5 -3 8]	(3 5 0)	(-5 -3 2)	2.360	1.627	1.45	42.2	65.4
[5 -3 -4]	(3 5 0)	(0 4 -3)	2.360	1.624	1.45	85.1	66.5
[5 -3 4]	(3 5 0)	(0 -4 -3)	2.360	1.624	1.45	67.8	80.9
[5 -3 -4]	(3 5 0)	(4 8 -1)	2.360	1.620	1.46	19.4	66.5
[5 -3 -11]	(3 5 0)	(1 9 -2)	2.360	1.609	1.47	56.6	46.3
[15 -9 -10]	(3 5 0)	(-1 -5 3)	2.360	1.596	1.48	74.3	69.0
[15 -9 20]	(3 5 0)	(-1 5 3)	2.360	1.596	1.48	72.6	70.3
[15 -9 -14]	(3 5 0)	(-1 3 -3)	2.360	1.591	1.48	84.1	64.2
[15 -9 4]	(3 5 0)	(1 3 3)	2.360	1.591	1.48	63.6	87.8
[5 -3 -7]	(3 5 0)	(-4 -2 -2)	2.360	1.558	1.51	44.4	56.7
[15 -9 20]	(3 5 0)	(4 0 -3)	2.360	1.555	1.52	68.4	70.3
[5 -3 11]	(3 5 0)	(1 9 2)	2.360	1.542	1.53	44.4	55.8
[5 -3 7]	(3 5 0)	(-2 -8 -2)	2.360	1.542	1.53	38.3	69.0

Cummingtonite (350) 311 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[15 -9 26]	(3 5 0)	(4 -2 -3)	2.360	1.533	1.54	75.3	63.1
[15 -9 14]	(3 5 0)	(-4 -2 3)	2.360	1.533	1.54	61.8	78.1
[5 -3 5]	(3 5 0)	(5 5 -2)	2.360	1.532	1.54	36.2	76.8
[15 -9 -10]	(3 5 0)	(-2 0 -3)	2.360	1.528	1.54	67.2	69.0
[5 -3 4]	(3 5 0)	(5 7 -1)	2.360	1.523	1.55	16.8	80.9
[5 -3 10]	(3 5 0)	(3 -5 -3)	2.360	1.518	1.55	88.0	58.8
[5 -3 0]	(3 5 0)	(3 5 -3)	2.360	1.518	1.55	59.6	82.2
[15 -9 28]	(3 5 0)	(2 -6 -3)	2.360	1.516	1.56	77.7	60.9
[15 -9 -8]	(3 5 0)	(2 6 -3)	2.360	1.516	1.56	64.2	71.5
[15 -9 -16]	(3 5 0)	(-2 2 -3)	2.360	1.507	1.57	74.0	61.9
[15 -9 -4]	(3 5 0)	(2 2 3)	2.360	1.507	1.57	60.7	76.7
[15 -9 -20]	(3 5 0)	(1 -5 3)	2.360	1.502	1.57	89.5	57.7
[15 -9 10]	(3 5 0)	(1 5 3)	2.360	1.502	1.57	58.3	83.7
[5 -3 -10]	(3 5 0)	(-5 -5 -1)	2.360	1.502	1.57	22.0	48.7
[5 -3 -6]	(3 5 0)	(3 9 -2)	2.360	1.499	1.57	40.6	59.8
[5 -3 4]	(3 5 0)	(4 8 1)	2.360	1.492	1.58	16.5	80.9
[5 -3 3]	(3 5 0)	(-3 -7 -2)	2.360	1.491	1.58	34.2	85.1
[5 -3 15]	(3 5 0)	(-6 0 2)	2.360	1.473	1.60	50.6	45.6
[15 -9 32]	(3 5 0)	(4 -4 -3)	2.360	1.471	1.60	82.0	56.7
[15 -9 8]	(3 5 0)	(-4 -4 3)	2.360	1.471	1.60	56.1	86.5
[15 -9 -16]	(3 5 0)	(1 7 -3)	2.360	1.466	1.61	69.3	61.9
[15 -9 26]	(3 5 0)	(1 -7 -3)	2.360	1.466	1.61	67.8	63.1
[15 -9 -22]	(3 5 0)	(-2 4 -3)	2.360	1.449	1.63	80.7	55.7
[15 -9 2]	(3 5 0)	(2 4 3)	2.360	1.449	1.63	54.9	85.0
[15 -9 28]	(3 5 0)	(-5 1 3)	2.360	1.421	1.66	66.3	60.9
[15 -9 22]	(3 5 0)	(5 1 -3)	2.360	1.421	1.66	59.8	67.8
[5 -3 2]	(3 5 0)	(5 7 -2)	2.360	1.416	1.67	32.1	89.3
[5 -3 12]	(3 5 0)	(3 -7 -3)	2.360	1.405	1.68	82.4	52.9
[5 -3 -2]	(3 5 0)	(3 7 -3)	2.360	1.405	1.68	55.3	74.1
[5 -3 -1]	(3 5 0)	(-4 -6 -2)	2.360	1.402	1.68	32.5	78.1
[5 -3 9]	(3 5 0)	(6 4 -2)	2.360	1.401	1.68	36.6	62.0
[5 -3 12]	(3 5 0)	(-6 -6 1)	2.360	1.400	1.69	19.2	52.9
[5 -3 -6]	(3 5 0)	(3 -1 3)	2.360	1.394	1.69	65.3	59.8
[5 -3 -4]	(3 5 0)	(-3 -1 -3)	2.360	1.394	1.69	58.8	66.5
[15 -9 -26]	(3 5 0)	(-1 7 -3)	2.360	1.392	1.70	83.8	52.0
[15 -9 16]	(3 5 0)	(1 7 3)	2.360	1.392	1.70	54.1	75.4
[5 -3 -4]	(3 5 0)	(-5 -7 -1)	2.360	1.392	1.70	16.5	66.5
[15 -9 34]	(3 5 0)	(5 -3 -3)	2.360	1.388	1.70	72.9	54.8
[15 -9 16]	(3 5 0)	(-5 -3 3)	2.360	1.388	1.70	53.8	75.4
[15 -9 34]	(3 5 0)	(-2 8 3)	2.360	1.387	1.70	72.9	54.8
[15 -9 -14]	(3 5 0)	(-2 -8 3)	2.360	1.387	1.70	60.2	64.2
[15 -9 38]	(3 5 0)	(4 -6 -3)	2.360	1.383	1.71	88.2	51.2
[15 -9 2]	(3 5 0)	(4 6 -3)	2.360	1.383	1.71	51.4	85.0
[5 -3 -11]	(3 5 0)	(-5 -1 -2)	2.360	1.382	1.71	45.8	46.3
[5 -3 -8]	(3 5 0)	(0 8 -3)	2.360	1.381	1.71	74.4	53.8
[5 -3 8]	(3 5 0)	(0 8 3)	2.360	1.381	1.71	58.8	65.4
[5 -3 -2]	(3 5 0)	(-5 -9 1)	2.360	1.376	1.71	15.6	74.1
[15 -9 -28]	(3 5 0)	(2 -6 3)	2.360	1.365	1.73	86.9	50.3

Cummingtonite (350) 311 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[15 -9 8]	(3 5 0)	(-2 -6 -3)	2.360	1.365	1.73	50.3	86.5
[5 -3 6]	(3 5 0)	(3 9 2)	2.360	1.352	1.75	32.1	72.8
[5 -3 -8]	(3 5 0)	(-5 -3 -2)	2.360	1.351	1.75	38.9	53.8
[15 -9 -22]	(3 5 0)	(1 9 -3)	2.360	1.334	1.77	65.4	55.7
[15 -9 32]	(3 5 0)	(1 -9 -3)	2.360	1.334	1.77	63.9	56.7
[10 -6 5]	(3 5 0)	(2 0 -4)	2.360	1.329	1.78	86.7	87.2
[15 -9 40]	(3 5 0)	(-5 5 3)	2.360	1.327	1.78	79.3	49.5
[15 -9 10]	(3 5 0)	(5 5 -3)	2.360	1.327	1.78	48.7	83.7
[10 -6 1]	(3 5 0)	(1 1 -4)	2.360	1.326	1.78	89.8	84.3
[5 -3 2]	(3 5 0)	(-1 1 4)	2.360	1.326	1.78	84.4	89.3
[5 -3 0]	(3 5 0)	(-3 -5 -3)	2.360	1.305	1.81	47.9	82.2
[5 -3 -1]	(3 5 0)	(-1 -3 4)	2.360	1.299	1.82	84.9	78.1
[10 -6 7]	(3 5 0)	(-1 3 4)	2.360	1.299	1.82	79.1	83.0
[10 -6 9]	(3 5 0)	(-3 1 4)	2.360	1.298	1.82	83.3	78.8
[5 -3 3]	(3 5 0)	(3 1 -4)	2.360	1.298	1.82	78.0	85.1
[5 -3 -1]	(3 5 0)	(5 9 -2)	2.360	1.296	1.82	29.8	78.1
[5 -3 -5]	(3 5 0)	(-5 -5 -2)	2.360	1.295	1.82	33.0	63.1
[10 -6 -3]	(3 5 0)	(0 -2 4)	2.360	1.291	1.83	86.4	76.1
[10 -6 3]	(3 5 0)	(0 2 4)	2.360	1.291	1.83	75.7	88.6
[5 -3 12]	(3 5 0)	(6 -2 -3)	2.360	1.285	1.84	65.0	52.9
[5 -3 8]	(3 5 0)	(-6 -2 3)	2.360	1.285	1.84	52.7	65.4
[15 -9 44]	(3 5 0)	(-4 8 3)	2.360	1.283	1.84	86.4	46.4
[15 -9 -4]	(3 5 0)	(-4 -8 3)	2.360	1.283	1.84	47.9	76.7
[15 -9 -32]	(3 5 0)	(-1 9 -3)	2.360	1.278	1.85	79.0	47.1
[15 -9 22]	(3 5 0)	(-1 -9 -3)	2.360	1.278	1.85	51.0	67.8
[5 -3 2]	(3 5 0)	(5 9 1)	2.360	1.277	1.85	13.9	89.3
[10 -6 11]	(3 5 0)	(-2 4 4)	2.360	1.275	1.85	82.7	74.8
[10 -6 -1]	(3 5 0)	(-2 -4 4)	2.360	1.275	1.85	76.3	80.1
[5 -3 6]	(3 5 0)	(3 -3 -4)	2.360	1.273	1.85	88.7	72.8
[10 -6 3]	(3 5 0)	(3 3 -4)	2.360	1.273	1.85	72.8	88.6
[15 -9 -20]	(3 5 0)	(-4 0 -3)	2.360	1.272	1.85	57.9	57.7
[5 -3 13]	(3 5 0)	(7 3 -2)	2.360	1.269	1.86	38.2	50.3
[15 -9 -34]	(3 5 0)	(2 -8 3)	2.360	1.268	1.86	87.7	45.6
[15 -9 14]	(3 5 0)	(2 8 3)	2.360	1.268	1.86	46.9	78.1
[15 -9 -26]	(3 5 0)	(-4 2 -3)	2.360	1.260	1.87	64.1	52.0
[15 -9 -14]	(3 5 0)	(4 2 3)	2.360	1.260	1.87	52.0	64.2
[10 -6 -5]	(3 5 0)	(1 5 -4)	2.360	1.249	1.89	79.9	72.1
[5 -3 5]	(3 5 0)	(-1 5 4)	2.360	1.249	1.89	74.3	76.8
[5 -3 14]	(3 5 0)	(6 -4 -3)	2.360	1.248	1.89	71.2	47.9
[5 -3 6]	(3 5 0)	(-6 -4 3)	2.360	1.248	1.89	47.3	72.8
[10 -6 13]	(3 5 0)	(4 -2 -4)	2.360	1.241	1.90	80.3	70.9
[10 -6 7]	(3 5 0)	(-4 -2 4)	2.360	1.241	1.90	69.8	83.0
[5 -3 3]	(3 5 0)	(6 8 -2)	2.360	1.236	1.91	27.8	85.1
[5 -3 2]	(3 5 0)	(-3 -7 -3)	2.360	1.232	1.92	43.9	89.3
[10 -6 -7]	(3 5 0)	(1 -3 4)	2.360	1.230	1.92	83.3	68.4
[5 -3 1]	(3 5 0)	(-1 -3 -4)	2.360	1.230	1.92	67.7	86.4
[10 -6 15]	(3 5 0)	(-3 5 4)	2.360	1.226	1.93	86.2	67.2
[5 -3 0]	(3 5 0)	(-3 -5 4)	2.360	1.226	1.93	68.2	82.2

Cummingtonite (350) 311 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[15 -9 -32]	(3 5 0)	(4 -4 3)	2.360	1.225	1.93	70.3	47.1
[15 -9 -8]	(3 5 0)	(-4 -4 -3)	2.360	1.225	1.93	46.7	71.5
[5 -3 -2]	(3 5 0)	(5 7 2)	2.360	1.223	1.93	28.5	74.1
[5 -3 10]	(3 5 0)	(-7 -5 2)	2.360	1.222	1.93	32.4	58.8
[10 -6 -9]	(3 5 0)	(0 6 -4)	2.360	1.198	1.97	83.6	64.8
[10 -6 9]	(3 5 0)	(0 -6 -4)	2.360	1.198	1.97	66.4	78.8
[10 -6 -5]	(3 5 0)	(2 0 4)	2.360	1.193	1.98	70.2	72.1
[10 -6 5]	(3 5 0)	(1 5 4)	2.360	1.187	1.99	63.1	87.2
[5 -3 7]	(3 5 0)	(5 -1 -4)	2.360	1.187	1.99	72.5	69.0
[10 -6 11]	(3 5 0)	(-5 -1 4)	2.360	1.187	1.99	67.4	74.8
[5 -3 -9]	(3 5 0)	(6 4 2)	2.360	1.184	1.99	34.8	51.1
[5 -3 -4]	(3 5 0)	(-1 -7 4)	2.360	1.184	1.99	75.5	66.5
[10 -6 13]	(3 5 0)	(-1 7 4)	2.360	1.184	1.99	70.1	70.9
[15 -9 38]	(3 5 0)	(-7 1 3)	2.360	1.177	2.00	58.3	51.2
[15 -9 32]	(3 5 0)	(7 1 -3)	2.360	1.177	2.00	52.4	56.7
[15 -9 -2]	(3 5 0)	(4 6 3)	2.360	1.173	2.01	42.2	79.4
[10 -6 17]	(3 5 0)	(5 -3 -4)	2.360	1.167	2.02	77.8	63.7
[5 -3 4]	(3 5 0)	(5 3 -4)	2.360	1.167	2.02	62.5	80.9
[15 -9 -2]	(3 5 0)	(-5 -9 3)	2.360	1.165	2.03	41.8	79.4
[5 -3 9]	(3 5 0)	(-3 7 4)	2.360	1.164	2.03	81.7	62.0
[10 -6 -3]	(3 5 0)	(-3 -7 4)	2.360	1.164	2.03	64.1	76.1
[5 -3 7]	(3 5 0)	(7 7 -2)	2.360	1.161	2.03	27.8	69.0
[15 -9 44]	(3 5 0)	(-7 3 3)	2.360	1.158	2.04	64.2	46.4
[15 -9 26]	(3 5 0)	(7 3 -3)	2.360	1.158	2.04	47.0	63.1
[10 -6 19]	(3 5 0)	(4 -6 -4)	2.360	1.158	2.04	89.5	60.3
[10 -6 1]	(3 5 0)	(4 6 -4)	2.360	1.158	2.04	60.8	84.3
[15 -9 -28]	(3 5 0)	(-5 1 -3)	2.360	1.155	2.04	57.6	50.3
[15 -9 -22]	(3 5 0)	(5 1 3)	2.360	1.155	2.04	51.9	55.7
[10 -6 -11]	(3 5 0)	(-2 4 -4)	2.360	1.154	2.05	80.6	61.4
[10 -6 1]	(3 5 0)	(2 4 4)	2.360	1.154	2.05	60.5	84.3
[10 -6 17]	(3 5 0)	(2 -8 -4)	2.360	1.147	2.06	73.9	63.7
[10 -6 -7]	(3 5 0)	(2 8 -4)	2.360	1.147	2.06	67.9	68.4
[5 -3 1]	(3 5 0)	(5 9 2)	2.360	1.143	2.07	25.4	86.4
[15 -9 -16]	(3 5 0)	(-5 -3 -3)	2.360	1.136	2.08	46.5	61.9
[5 -3 10]	(3 5 0)	(5 -5 -4)	2.360	1.130	2.09	82.8	58.8
[10 -6 5]	(3 5 0)	(-5 -5 4)	2.360	1.130	2.09	58.1	87.2
[5 -3 2]	(3 5 0)	(6 8 -3)	2.360	1.127	2.09	39.4	89.3
[5 -3 8]	(3 5 0)	(-7 -9 1)	2.360	1.127	2.10	13.4	65.4
[15 -9 20]	(3 5 0)	(7 5 -3)	2.360	1.122	2.10	42.2	70.3
[10 -6 -9]	(3 5 0)	(-3 1 -4)	2.360	1.120	2.11	68.3	64.8
[5 -3 -3]	(3 5 0)	(3 1 4)	2.360	1.120	2.11	63.3	70.2
[5 -3 14]	(3 5 0)	(-8 -4 2)	2.360	1.119	2.11	34.5	47.9
[10 -6 15]	(3 5 0)	(6 0 -4)	2.360	1.118	2.11	65.5	67.2
[10 -6 -11]	(3 5 0)	(1 9 -4)	2.360	1.111	2.13	71.7	61.4
[5 -3 8]	(3 5 0)	(-1 9 4)	2.360	1.111	2.13	66.5	65.4
[15 -9 4]	(3 5 0)	(-4 -8 -3)	2.360	1.110	2.13	38.7	87.8
[15 -9 -10]	(3 5 0)	(5 5 3)	2.360	1.103	2.14	41.7	69.0
[10 -6 21]	(3 5 0)	(-3 9 4)	2.360	1.094	2.16	77.6	57.2

Cummingtonite (350) 311 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[5 -3 -3]	(3 5 0)	(3 9 -4)	2.360	1.094	2.16	60.8	70.2
[5 -3 4]	(3 5 0)	(-7 -9 2)	2.360	1.092	2.16	24.5	80.9
[10 -6 21]	(3 5 0)	(6 -4 -4)	2.360	1.086	2.17	75.7	57.2
[10 -6 9]	(3 5 0)	(-6 -4 4)	2.360	1.086	2.17	56.2	78.8
[10 -6 23]	(3 5 0)	(5 -7 -4)	2.360	1.081	2.18	87.6	54.3
[5 -3 1]	(3 5 0)	(5 7 -4)	2.360	1.081	2.18	54.4	86.4
[5 -3 -3]	(3 5 0)	(-6 -8 -2)	2.360	1.079	2.19	25.5	70.2
[5 -3 11]	(3 5 0)	(8 6 -2)	2.360	1.079	2.19	29.3	55.8
[15 -9 40]	(3 5 0)	(-8 0 3)	2.360	1.075	2.20	52.7	49.5
[15 -9 14]	(3 5 0)	(7 7 -3)	2.360	1.074	2.20	38.2	78.1
[10 -6 -15]	(3 5 0)	(3 -5 4)	2.360	1.072	2.20	78.4	55.2
[5 -3 0]	(3 5 0)	(-3 -5 -4)	2.360	1.072	2.20	54.3	82.2
[15 -9 34]	(3 5 0)	(8 2 -3)	2.360	1.067	2.21	47.3	54.8
[5 -3 -8]	(3 5 0)	(1 -9 4)	2.360	1.067	2.21	82.7	53.8
[10 -6 11]	(3 5 0)	(1 9 4)	2.360	1.067	2.21	56.1	74.8
[5 -3 2]	(3 5 0)	(-2 0 5)	2.360	1.066	2.21	89.2	89.3
[25 -15 2]	(3 5 0)	(-1 -1 5)	2.360	1.059	2.23	88.0	83.9
[25 -15 8]	(3 5 0)	(-1 1 5)	2.360	1.059	2.23	83.7	89.0
[25 -15 16]	(3 5 0)	(2 -2 -5)	2.360	1.059	2.23	86.5	84.2
[25 -15 4]	(3 5 0)	(2 2 -5)	2.360	1.059	2.23	84.9	85.6
[15 -9 -4]	(3 5 0)	(-5 -7 -3)	2.360	1.057	2.23	37.7	76.7
[10 -6 -17]	(3 5 0)	(-2 8 -4)	2.360	1.057	2.23	89.9	52.5
[10 -6 7]	(3 5 0)	(-2 -8 -4)	2.360	1.057	2.23	53.0	83.0
[25 -15 18]	(3 5 0)	(3 -1 -5)	2.360	1.055	2.24	86.4	82.5
[25 -15 12]	(3 5 0)	(-3 -1 5)	2.360	1.055	2.24	82.1	87.6
[5 -3 -10]	(3 5 0)	(7 5 2)	2.360	1.050	2.25	31.6	48.7
[15 -9 28]	(3 5 0)	(-8 -4 3)	2.360	1.046	2.26	42.4	60.9
[25 -15 -4]	(3 5 0)	(1 3 -5)	2.360	1.045	2.26	87.7	78.9
[25 -15 14]	(3 5 0)	(1 -3 -5)	2.360	1.045	2.26	79.4	85.9
[10 -6 19]	(3 5 0)	(7 -1 -4)	2.360	1.043	2.26	64.3	60.3
[5 -3 8]	(3 5 0)	(-7 -1 4)	2.360	1.043	2.26	59.4	65.4
[10 -6 -13]	(3 5 0)	(4 -2 4)	2.360	1.042	2.27	66.9	58.2
[10 -6 -7]	(3 5 0)	(-4 -2 -4)	2.360	1.042	2.27	57.3	68.4
[25 -15 24]	(3 5 0)	(-3 3 5)	2.360	1.041	2.27	89.3	77.6
[25 -15 6]	(3 5 0)	(-3 -3 5)	2.360	1.041	2.27	77.9	87.3
[25 -15 22]	(3 5 0)	(-2 4 5)	2.360	1.038	2.27	82.3	79.2
[25 -15 -2]	(3 5 0)	(-2 -4 5)	2.360	1.038	2.27	80.7	80.5
[25 -15 -6]	(3 5 0)	(0 -2 5)	2.360	1.036	2.28	85.3	77.3
[25 -15 6]	(3 5 0)	(0 -2 -5)	2.360	1.036	2.28	76.7	87.3
[5 -3 4]	(3 5 0)	(4 0 -5)	2.360	1.035	2.28	79.5	80.9
[5 -3 -9]	(3 5 0)	(-3 7 -4)	2.360	1.030	2.29	83.1	51.1
[10 -6 3]	(3 5 0)	(3 7 4)	2.360	1.030	2.29	50.7	88.6
[5 -3 11]	(3 5 0)	(-7 3 4)	2.360	1.030	2.29	69.2	55.8
[10 -6 13]	(3 5 0)	(7 3 -4)	2.360	1.030	2.29	54.9	70.9
[25 -15 26]	(3 5 0)	(4 -2 -5)	2.360	1.028	2.30	83.8	76.0
[25 -15 14]	(3 5 0)	(-4 -2 5)	2.360	1.028	2.30	75.2	85.9
[5 -3 -6]	(3 5 0)	(6 4 3)	2.360	1.027	2.30	42.0	59.8
[5 -3 13]	(3 5 0)	(-5 9 4)	2.360	1.025	2.30	88.1	50.3

Cummingtonite (350) 311 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[10 -6 -1]	(3 5 0)	(-5 -9 4)	2.360	1.025	2.30	51.3	80.1
[15 -9 8]	(3 5 0)	(7 9 -3)	2.360	1.019	2.32	35.1	86.5
[5 -3 -2]	(3 5 0)	(-1 -5 5)	2.360	1.019	2.32	83.6	74.1
[5 -3 4]	(3 5 0)	(-1 5 5)	2.360	1.019	2.32	75.4	80.9
[25 -15 -12]	(3 5 0)	(0 4 -5)	2.360	1.017	2.32	89.5	72.5
[25 -15 12]	(3 5 0)	(0 4 5)	2.360	1.017	2.32	72.7	87.6
[5 -3 6]	(3 5 0)	(3 -5 -5)	2.360	1.015	2.33	85.1	72.8
[5 -3 0]	(3 5 0)	(3 5 -5)	2.360	1.015	2.33	73.9	82.2
[15 -9 22]	(3 5 0)	(-8 -6 3)	2.360	1.013	2.33	38.0	67.8
[25 -15 -8]	(3 5 0)	(1 -1 5)	2.360	1.012	2.33	78.5	75.7
[25 -15 -2]	(3 5 0)	(-1 -1 -5)	2.360	1.012	2.33	74.3	80.5
[5 -3 -7]	(3 5 0)	(7 7 2)	2.360	1.010	2.34	27.0	56.7
[25 -15 32]	(3 5 0)	(-4 4 5)	2.360	1.009	2.34	88.0	71.3
[25 -15 8]	(3 5 0)	(4 4 -5)	2.360	1.009	2.34	71.2	89.0
[25 -15 28]	(3 5 0)	(-2 6 5)	2.360	1.005	2.35	78.3	74.4
[25 -15 -8]	(3 5 0)	(-2 -6 5)	2.360	1.005	2.35	76.8	75.7
[10 -6 25]	(3 5 0)	(7 -5 -4)	2.360	1.004	2.35	74.0	51.6
[5 -3 5]	(3 5 0)	(-7 -5 4)	2.360	1.004	2.35	50.7	76.8
[15 -9 2]	(3 5 0)	(5 9 3)	2.360	1.004	2.35	34.6	85.0
[10 -6 27]	(3 5 0)	(6 -8 -4)	2.360	1.003	2.35	85.1	49.1
[10 -6 3]	(3 5 0)	(-6 -8 4)	2.360	1.003	2.35	48.9	88.6
[25 -15 28]	(3 5 0)	(5 -1 -5)	2.360	1.001	2.36	77.1	74.4
[25 -15 22]	(3 5 0)	(-5 -1 5)	2.360	1.001	2.36	72.9	79.2

Cummingtonite (420) 352 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C
[1 -2 0]	(4 2 0)	(0 0 1)	2.254	5.215	0.43	78.5	87.0
[1 -2 3]	(4 2 0)	(-1 1 1)	2.254	4.832	0.47	75.4	69.5
[1 -2 -1]	(4 2 0)	(1 1 -1)	2.254	4.832	0.47	67.4	79.0
[1 -2 4]	(4 2 0)	(0 2 1)	2.254	4.524	0.50	72.7	62.7
[1 -2 -3]	(4 2 0)	(1 -1 1)	2.254	4.088	0.55	58.2	64.5
[1 -2 1]	(4 2 0)	(1 1 1)	2.254	4.088	0.55	50.4	84.9
[1 -2 7]	(4 2 0)	(-1 3 1)	2.254	3.863	0.58	84.5	46.7
[1 -2 -5]	(4 2 0)	(1 3 -1)	2.254	3.863	0.58	65.7	52.7
[1 -2 6]	(4 2 0)	(-2 2 1)	2.254	3.579	0.63	59.3	51.4
[1 -2 -2]	(4 2 0)	(2 2 -1)	2.254	3.579	0.63	45.1	71.4
[1 -2 5]	(4 2 0)	(-1 -3 -1)	2.254	3.450	0.65	50.8	56.7
[1 -2 -2]	(4 2 0)	(2 0 1)	2.254	3.163	0.71	38.8	71.4
[1 -2 -6]	(4 2 0)	(2 -2 1)	2.254	2.988	0.75	49.1	47.9
[1 -2 2]	(4 2 0)	(-2 -2 -1)	2.254	2.988	0.75	35.1	77.0
[1 -2 -6]	(4 2 0)	(2 4 -1)	2.254	2.958	0.76	48.4	47.9
[1 -2 5]	(4 2 0)	(3 -1 -1)	2.254	2.908	0.77	40.8	56.7
[1 -2 1]	(4 2 0)	(-3 -1 1)	2.254	2.908	0.77	33.2	84.9
[1 -2 -3]	(4 2 0)	(3 3 -1)	2.254	2.650	0.85	33.4	64.5
[2 -4 3]	(4 2 0)	(-1 1 2)	2.254	2.629	0.86	87.9	80.9
[2 -4 -1]	(4 2 0)	(1 1 -2)	2.254	2.629	0.86	83.8	83.0
[1 -2 6]	(4 2 0)	(2 4 1)	2.254	2.597	0.87	38.6	51.4
[1 -2 -2]	(4 2 0)	(0 2 -2)	2.254	2.507	0.90	82.9	71.4
[1 -2 2]	(4 2 0)	(0 2 2)	2.254	2.507	0.90	74.9	77.0
[1 -2 1]	(4 2 0)	(-2 0 2)	2.254	2.506	0.90	70.7	84.9
[2 -4 7]	(4 2 0)	(-1 3 2)	2.254	2.434	0.93	88.1	66.0
[2 -4 -5]	(4 2 0)	(1 3 -2)	2.254	2.434	0.93	80.4	67.9
[1 -2 -5]	(4 2 0)	(-3 1 -1)	2.254	2.431	0.93	35.0	52.7
[1 -2 -1]	(4 2 0)	(3 1 1)	2.254	2.431	0.93	27.7	79.0
[1 -2 4]	(4 2 0)	(4 0 -1)	2.254	2.309	0.98	29.2	62.7
[1 -2 3]	(4 2 0)	(-3 -3 -1)	2.254	2.274	0.99	27.1	69.5
[2 -4 -7]	(4 2 0)	(1 -3 2)	2.254	2.221	1.01	71.9	61.2
[2 -4 5]	(4 2 0)	(-1 -3 -2)	2.254	2.221	1.01	60.5	73.2
[2 -4 5]	(4 2 0)	(3 -1 -2)	2.254	2.219	1.02	60.5	73.2
[2 -4 1]	(4 2 0)	(3 1 -2)	2.254	2.219	1.02	56.4	88.9
[1 -2 5]	(4 2 0)	(-2 4 2)	2.254	2.195	1.03	80.3	56.7
[1 -2 -3]	(4 2 0)	(2 4 -2)	2.254	2.195	1.03	65.9	64.5
[2 -4 11]	(4 2 0)	(1 -5 -2)	2.254	2.146	1.05	85.0	53.9
[2 -4 -9]	(4 2 0)	(1 5 -2)	2.254	2.146	1.05	78.2	55.4
[2 -4 9]	(4 2 0)	(3 -3 -2)	2.254	2.098	1.07	65.9	59.6
[2 -4 -3]	(4 2 0)	(-3 -3 2)	2.254	2.098	1.07	54.5	75.2
[1 -2 -1]	(4 2 0)	(2 0 2)	2.254	2.098	1.07	53.3	79.0
[1 -2 -4]	(4 2 0)	(-4 -4 1)	2.254	2.059	1.09	27.0	58.2
[2 -4 9]	(4 2 0)	(1 5 2)	2.254	1.995	1.13	60.2	59.6
[1 -2 -4]	(4 2 0)	(4 0 1)	2.254	1.978	1.14	25.9	58.2
[1 -2 -6]	(4 2 0)	(0 6 -2)	2.254	1.977	1.14	89.4	47.9
[1 -2 6]	(4 2 0)	(0 6 2)	2.254	1.977	1.14	71.8	51.4
[2 -4 13]	(4 2 0)	(-3 5 2)	2.254	1.905	1.18	71.4	49.0
[2 -4 -7]	(4 2 0)	(3 5 -2)	2.254	1.905	1.18	54.6	61.2

Cummingtonite (420) 352 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[1 -2 -5]	(4 2 0)	(-2 4 -2)	2.254	1.905	1.18	64.0	52.7
[1 -2 3]	(4 2 0)	(2 4 2)	2.254	1.905	1.18	49.7	69.5
[1 -2 4]	(4 2 0)	(-4 2 2)	2.254	1.904	1.18	53.5	62.7
[1 -2 0]	(4 2 0)	(4 2 -2)	2.254	1.904	1.18	45.7	87.0
[1 -2 7]	(4 2 0)	(-5 1 1)	2.254	1.870	1.21	28.8	46.7
[1 -2 3]	(4 2 0)	(5 1 -1)	2.254	1.870	1.21	22.0	69.5
[2 -4 -13]	(4 2 0)	(-1 -7 2)	2.254	1.858	1.21	76.8	45.7
[1 -2 4]	(4 2 0)	(4 4 1)	2.254	1.814	1.24	22.5	62.7
[2 -4 -5]	(4 2 0)	(-3 1 -2)	2.254	1.811	1.24	47.2	67.9
[2 -4 -1]	(4 2 0)	(3 1 2)	2.254	1.811	1.24	43.2	83.0
[1 -2 -1]	(4 2 0)	(-5 -3 1)	2.254	1.796	1.26	20.1	79.0
[3 -6 -1]	(4 2 0)	(1 1 -3)	2.254	1.768	1.27	89.7	84.3
[1 -2 1]	(4 2 0)	(1 -1 -3)	2.254	1.768	1.27	87.5	84.9
[2 -4 13]	(4 2 0)	(1 7 2)	2.254	1.758	1.28	61.0	49.0
[3 -6 2]	(4 2 0)	(2 0 -3)	2.254	1.751	1.29	80.6	87.6
[2 -4 -9]	(4 2 0)	(3 -3 2)	2.254	1.743	1.29	52.7	55.4
[2 -4 3]	(4 2 0)	(-3 -3 -2)	2.254	1.743	1.29	41.5	80.9
[1 -2 2]	(4 2 0)	(2 -2 -3)	2.254	1.720	1.31	83.5	77.0
[3 -6 -2]	(4 2 0)	(-2 -2 3)	2.254	1.720	1.31	78.0	81.6
[3 -6 -4]	(4 2 0)	(0 -2 3)	2.254	1.708	1.32	81.4	76.4
[3 -6 4]	(4 2 0)	(0 -2 -3)	2.254	1.708	1.32	76.0	82.2
[3 -6 -5]	(4 2 0)	(1 3 -3)	2.254	1.705	1.32	87.1	73.9
[3 -6 7]	(4 2 0)	(1 -3 -3)	2.254	1.705	1.32	84.9	74.4
[2 -4 -11]	(4 2 0)	(3 7 -2)	2.254	1.695	1.33	55.9	50.2
[2 -4 7]	(4 2 0)	(-5 1 2)	2.254	1.681	1.34	43.7	66.0
[2 -4 3]	(4 2 0)	(5 1 -2)	2.254	1.681	1.34	39.7	80.9
[1 -2 -5]	(4 2 0)	(5 5 -1)	2.254	1.670	1.35	23.2	52.7
[3 -6 5]	(4 2 0)	(3 -1 -3)	2.254	1.664	1.35	72.2	79.6
[3 -6 1]	(4 2 0)	(3 1 -3)	2.254	1.664	1.35	69.4	89.7
[1 -2 -1]	(4 2 0)	(-1 1 -3)	2.254	1.642	1.37	70.3	79.0
[3 -6 1]	(4 2 0)	(1 1 3)	2.254	1.642	1.37	67.5	89.7
[1 -2 -3]	(4 2 0)	(-5 -1 -1)	2.254	1.642	1.37	20.0	64.5
[1 -2 -4]	(4 2 0)	(4 6 -2)	2.254	1.638	1.38	46.3	58.2
[3 -6 10]	(4 2 0)	(2 -4 -3)	2.254	1.634	1.38	86.4	67.2
[1 -2 -2]	(4 2 0)	(-2 -4 3)	2.254	1.634	1.38	76.0	71.4
[2 -4 -13]	(4 2 0)	(3 -5 2)	2.254	1.628	1.38	58.5	45.7
[2 -4 7]	(4 2 0)	(-3 -5 -2)	2.254	1.628	1.38	41.9	66.0
[2 -4 11]	(4 2 0)	(5 -3 -2)	2.254	1.627	1.39	49.0	53.9
[2 -4 -1]	(4 2 0)	(-5 -3 2)	2.254	1.627	1.39	37.9	83.0
[3 -6 -8]	(4 2 0)	(0 -4 3)	2.254	1.624	1.39	84.4	66.7
[3 -6 8]	(4 2 0)	(0 -4 -3)	2.254	1.624	1.39	74.0	71.9
[1 -2 -3]	(4 2 0)	(-1 -5 3)	2.254	1.596	1.41	84.8	64.5
[3 -6 11]	(4 2 0)	(-1 5 3)	2.254	1.596	1.41	82.8	64.9
[3 -6 -7]	(4 2 0)	(-1 3 -3)	2.254	1.591	1.42	73.5	69.0
[3 -6 5]	(4 2 0)	(1 3 3)	2.254	1.591	1.42	65.6	79.6
[1 -2 1]	(4 2 0)	(-5 -3 -1)	2.254	1.591	1.42	17.4	84.9
[1 -2 -4]	(4 2 0)	(-4 2 -2)	2.254	1.558	1.45	43.5	58.2
[1 -2 0]	(4 2 0)	(4 2 2)	2.254	1.558	1.45	35.8	87.0

Cummingtonite (420) 352 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[1 -2 2]	(4 2 0)	(-6 -2 1)	2.254	1.555	1.45	17.4	77.0
[3 -6 4]	(4 2 0)	(4 0 -3)	2.254	1.555	1.45	62.0	82.2
[1 -2 7]	(4 2 0)	(-2 -8 -2)	2.254	1.542	1.46	52.6	46.7
[3 -6 8]	(4 2 0)	(4 -2 -3)	2.254	1.533	1.47	65.1	71.9
[1 -2 0]	(4 2 0)	(-4 -2 3)	2.254	1.533	1.47	59.7	87.0
[2 -4 -5]	(4 2 0)	(5 5 -2)	2.254	1.532	1.47	38.4	67.9
[3 -6 -2]	(4 2 0)	(-2 0 -3)	2.254	1.528	1.47	60.4	81.6
[3 -6 13]	(4 2 0)	(3 -5 -3)	2.254	1.518	1.48	78.7	60.6
[3 -6 -7]	(4 2 0)	(3 5 -3)	2.254	1.518	1.48	66.2	69.0
[3 -6 14]	(4 2 0)	(2 -6 -3)	2.254	1.516	1.49	89.0	58.6
[3 -6 -10]	(4 2 0)	(-2 -6 3)	2.254	1.516	1.49	74.6	62.3
[1 -2 -2]	(4 2 0)	(-2 2 -3)	2.254	1.507	1.50	63.5	71.4
[3 -6 2]	(4 2 0)	(2 2 3)	2.254	1.507	1.50	58.1	87.6
[3 -6 -11]	(4 2 0)	(1 -5 3)	2.254	1.502	1.50	76.9	60.2
[1 -2 3]	(4 2 0)	(-1 -5 -3)	2.254	1.502	1.50	64.5	69.5
[1 -2 5]	(4 2 0)	(5 5 1)	2.254	1.502	1.50	19.7	56.7
[1 -2 -2]	(4 2 0)	(-6 -4 1)	2.254	1.491	1.51	17.2	71.4
[2 -4 11]	(4 2 0)	(3 7 2)	2.254	1.491	1.51	43.8	53.9
[1 -2 3]	(4 2 0)	(6 0 -2)	2.254	1.473	1.53	36.2	69.5
[1 -2 4]	(4 2 0)	(-4 4 3)	2.254	1.471	1.53	68.7	62.7
[3 -6 -4]	(4 2 0)	(4 4 -3)	2.254	1.471	1.53	58.4	76.4
[3 -6 -13]	(4 2 0)	(-1 -7 3)	2.254	1.466	1.54	82.9	56.3
[1 -2 5]	(4 2 0)	(-1 7 3)	2.254	1.466	1.54	81.0	56.7
[3 -6 -10]	(4 2 0)	(-2 4 -3)	2.254	1.449	1.56	67.1	62.3
[1 -2 2]	(4 2 0)	(2 4 3)	2.254	1.449	1.56	56.8	77.0
[3 -6 7]	(4 2 0)	(-5 1 3)	2.254	1.421	1.59	56.1	74.4
[1 -2 1]	(4 2 0)	(5 1 -3)	2.254	1.421	1.59	53.4	84.9
[2 -4 -9]	(4 2 0)	(-5 -7 2)	2.254	1.416	1.59	40.2	55.4
[1 -2 -6]	(4 2 0)	(6 0 1)	2.254	1.409	1.60	20.9	47.9
[3 -6 17]	(4 2 0)	(-3 7 3)	2.254	1.405	1.60	81.8	53.1
[3 -6 -11]	(4 2 0)	(3 7 -3)	2.254	1.405	1.60	65.7	60.2
[1 -2 4]	(4 2 0)	(-4 -6 -2)	2.254	1.402	1.61	36.3	62.7
[1 -2 7]	(4 2 0)	(6 -4 -2)	2.254	1.401	1.61	46.2	46.7
[1 -2 -1]	(4 2 0)	(6 4 -2)	2.254	1.401	1.61	32.4	79.0
[1 -2 -6]	(4 2 0)	(-6 -6 1)	2.254	1.400	1.61	20.7	47.9
[3 -6 -5]	(4 2 0)	(3 -1 3)	2.254	1.394	1.62	54.8	73.9
[3 -6 -1]	(4 2 0)	(3 1 3)	2.254	1.394	1.62	52.1	84.3
[1 -2 -2]	(4 2 0)	(6 2 1)	2.254	1.393	1.62	16.0	71.4
[1 -2 -5]	(4 2 0)	(-1 7 -3)	2.254	1.392	1.62	80.1	52.7
[3 -6 13]	(4 2 0)	(1 7 3)	2.254	1.392	1.62	64.0	60.6
[3 -6 11]	(4 2 0)	(-5 3 3)	2.254	1.388	1.62	59.6	64.9
[3 -6 -1]	(4 2 0)	(5 3 -3)	2.254	1.388	1.62	51.7	84.3
[1 -2 6]	(4 2 0)	(-2 8 3)	2.254	1.387	1.62	88.8	51.4
[3 -6 -14]	(4 2 0)	(2 8 -3)	2.254	1.387	1.62	73.7	54.5
[3 -6 16]	(4 2 0)	(-4 6 3)	2.254	1.383	1.63	72.3	54.8
[3 -6 -8]	(4 2 0)	(4 6 -3)	2.254	1.383	1.63	58.0	66.7
[2 -4 -7]	(4 2 0)	(-5 1 -2)	2.254	1.382	1.63	36.3	61.2
[2 -4 -3]	(4 2 0)	(5 1 2)	2.254	1.382	1.63	32.4	75.2

Cummingtonite (420) 352 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[3 -6 -16]	(4 2 0)	(0 8 -3)	2.254	1.381	1.63	89.5	51.0
[3 -6 16]	(4 2 0)	(0 8 3)	2.254	1.381	1.63	72.0	54.8
[3 -6 -14]	(4 2 0)	(-2 6 -3)	2.254	1.365	1.65	70.8	54.5
[3 -6 10]	(4 2 0)	(2 6 3)	2.254	1.365	1.65	56.5	67.2
[1 -2 5]	(4 2 0)	(-7 -1 1)	2.254	1.353	1.67	17.7	56.7
[2 -4 -11]	(4 2 0)	(5 -3 2)	2.254	1.351	1.67	41.3	50.2
[2 -4 1]	(4 2 0)	(-5 -3 -2)	2.254	1.351	1.67	30.5	88.9
[1 -2 2]	(4 2 0)	(6 4 1)	2.254	1.346	1.67	15.0	77.0
[3 -6 -17]	(4 2 0)	(1 9 -3)	2.254	1.334	1.69	81.4	49.4
[3 -6 19]	(4 2 0)	(-1 9 3)	2.254	1.334	1.69	79.7	49.7
[2 -4 1]	(4 2 0)	(-2 0 4)	2.254	1.329	1.70	85.8	88.9
[1 -2 5]	(4 2 0)	(5 -5 -3)	2.254	1.327	1.70	63.4	56.7
[3 -6 -5]	(4 2 0)	(-5 -5 3)	2.254	1.327	1.70	51.0	73.9
[4 -8 -1]	(4 2 0)	(-1 -1 4)	2.254	1.326	1.70	87.3	85.0
[4 -8 3]	(4 2 0)	(1 -1 -4)	2.254	1.326	1.70	85.2	86.9
[3 -6 -13]	(4 2 0)	(3 -5 3)	2.254	1.305	1.73	62.0	56.3
[3 -6 7]	(4 2 0)	(-3 -5 -3)	2.254	1.305	1.73	49.7	74.4
[4 -8 -5]	(4 2 0)	(1 3 -4)	2.254	1.299	1.74	89.4	77.1
[4 -8 7]	(4 2 0)	(-1 3 4)	2.254	1.299	1.74	83.3	78.9
[4 -8 5]	(4 2 0)	(-3 1 4)	2.254	1.298	1.74	79.1	82.9
[4 -8 1]	(4 2 0)	(3 1 -4)	2.254	1.298	1.74	77.0	89.0
[2 -4 5]	(4 2 0)	(-5 -5 -2)	2.254	1.295	1.74	30.5	73.2
[2 -4 9]	(4 2 0)	(7 -1 -2)	2.254	1.294	1.74	34.3	59.6
[2 -4 5]	(4 2 0)	(-7 -1 2)	2.254	1.294	1.74	30.5	73.2
[1 -2 -1]	(4 2 0)	(0 -2 4)	2.254	1.291	1.75	80.6	79.0
[1 -2 1]	(4 2 0)	(0 -2 -4)	2.254	1.291	1.75	76.5	84.9
[3 -6 10]	(4 2 0)	(-6 2 3)	2.254	1.285	1.75	51.7	67.2
[3 -6 2]	(4 2 0)	(6 2 -3)	2.254	1.285	1.75	46.4	87.6
[3 -6 20]	(4 2 0)	(-4 8 3)	2.254	1.283	1.76	75.7	48.2
[1 -2 -4]	(4 2 0)	(4 8 -3)	2.254	1.283	1.76	58.2	58.2
[1 -2 6]	(4 2 0)	(-6 -6 -1)	2.254	1.278	1.76	17.9	51.4
[3 -6 -19]	(4 2 0)	(1 -9 3)	2.254	1.278	1.76	82.9	46.4
[3 -6 17]	(4 2 0)	(-1 -9 -3)	2.254	1.278	1.76	64.1	53.1
[2 -4 5]	(4 2 0)	(2 -4 -4)	2.254	1.275	1.77	90.0	73.2
[2 -4 -3]	(4 2 0)	(-2 -4 4)	2.254	1.275	1.77	82.0	75.2
[4 -8 9]	(4 2 0)	(3 -3 -4)	2.254	1.273	1.77	81.3	75.0
[4 -8 -3]	(4 2 0)	(-3 -3 4)	2.254	1.273	1.77	75.3	81.0
[3 -6 -4]	(4 2 0)	(4 0 3)	2.254	1.272	1.77	47.5	76.4
[1 -2 -3]	(4 2 0)	(-7 -5 1)	2.254	1.271	1.77	15.3	64.5
[2 -4 13]	(4 2 0)	(7 -3 -2)	2.254	1.269	1.78	39.1	49.0
[2 -4 1]	(4 2 0)	(-7 -3 2)	2.254	1.269	1.78	28.4	88.9
[1 -2 -6]	(4 2 0)	(2 -8 3)	2.254	1.268	1.78	74.2	47.9
[3 -6 14]	(4 2 0)	(-2 -8 -3)	2.254	1.268	1.78	56.8	58.6
[3 -6 -8]	(4 2 0)	(4 -2 3)	2.254	1.260	1.79	50.6	66.7
[1 -2 0]	(4 2 0)	(-4 -2 -3)	2.254	1.260	1.79	45.3	87.0
[1 -2 -3]	(4 2 0)	(5 7 -3)	2.254	1.250	1.80	51.2	64.5
[4 -8 -9]	(4 2 0)	(-1 -5 4)	2.254	1.249	1.80	88.6	69.6
[4 -8 11]	(4 2 0)	(-1 5 4)	2.254	1.249	1.80	81.6	71.3

Cummingtonite (420) 352 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[3 -6 14]	(4 2 0)	(-6 4 3)	2.254	1.248	1.81	55.4	58.6
[3 -6 -2]	(4 2 0)	(6 4 -3)	2.254	1.248	1.81	45.2	81.6
[1 -2 2]	(4 2 0)	(-4 2 4)	2.254	1.241	1.82	73.0	77.0
[1 -2 0]	(4 2 0)	(4 2 -4)	2.254	1.241	1.82	68.9	87.0
[1 -2 -5]	(4 2 0)	(-6 -8 2)	2.254	1.236	1.82	35.7	52.7
[3 -6 -17]	(4 2 0)	(3 -7 3)	2.254	1.232	1.83	65.9	49.4
[3 -6 11]	(4 2 0)	(-3 -7 -3)	2.254	1.232	1.83	49.9	64.9
[4 -8 -7]	(4 2 0)	(1 -3 4)	2.254	1.230	1.83	74.6	73.3
[4 -8 5]	(4 2 0)	(-1 -3 -4)	2.254	1.230	1.83	68.5	82.9
[1 -2 -3]	(4 2 0)	(6 0 2)	2.254	1.227	1.84	30.7	64.5
[1 -2 -5]	(4 2 0)	(-7 -1 -1)	2.254	1.226	1.84	16.8	52.7
[4 -8 13]	(4 2 0)	(3 -5 -4)	2.254	1.226	1.84	83.6	67.8
[4 -8 -7]	(4 2 0)	(-3 -5 4)	2.254	1.226	1.84	73.8	73.3
[1 -2 -4]	(4 2 0)	(4 -4 3)	2.254	1.225	1.84	54.2	58.2
[3 -6 4]	(4 2 0)	(-4 -4 -3)	2.254	1.225	1.84	44.1	82.2
[2 -4 9]	(4 2 0)	(5 7 2)	2.254	1.223	1.84	32.1	59.6
[2 -4 -3]	(4 2 0)	(-7 -5 2)	2.254	1.222	1.84	28.3	75.2
[1 -2 3]	(4 2 0)	(0 -6 -4)	2.254	1.198	1.88	73.7	69.5
[2 -4 -1]	(4 2 0)	(2 0 4)	2.254	1.193	1.89	64.5	83.0
[4 -8 7]	(4 2 0)	(-5 1 4)	2.254	1.187	1.90	65.2	78.9
[4 -8 3]	(4 2 0)	(5 1 -4)	2.254	1.187	1.90	63.1	86.9
[1 -2 1]	(4 2 0)	(-6 -4 -2)	2.254	1.184	1.90	26.5	84.9
[4 -8 -13]	(4 2 0)	(1 7 -4)	2.254	1.184	1.90	86.9	62.8
[4 -8 15]	(4 2 0)	(-1 7 4)	2.254	1.184	1.90	80.2	64.4
[1 -2 4]	(4 2 0)	(8 2 -1)	2.254	1.179	1.91	14.4	62.7
[1 -2 3]	(4 2 0)	(-7 1 3)	2.254	1.177	1.91	45.0	69.5
[3 -6 5]	(4 2 0)	(7 1 -3)	2.254	1.177	1.91	42.4	79.6
[3 -6 -16]	(4 2 0)	(-4 6 -3)	2.254	1.173	1.92	58.2	51.0
[3 -6 8]	(4 2 0)	(4 6 3)	2.254	1.173	1.92	44.0	71.9
[4 -8 11]	(4 2 0)	(-5 3 4)	2.254	1.167	1.93	67.6	71.3
[4 -8 -1]	(4 2 0)	(5 3 -4)	2.254	1.167	1.93	61.5	85.0
[3 -6 -13]	(4 2 0)	(-5 -9 3)	2.254	1.165	1.93	52.0	56.3
[1 -2 3]	(4 2 0)	(7 5 1)	2.254	1.164	1.94	13.5	69.5
[4 -8 17]	(4 2 0)	(-3 7 4)	2.254	1.164	1.94	85.7	61.1
[4 -8 -11]	(4 2 0)	(3 7 -4)	2.254	1.164	1.94	72.8	66.1
[2 -4 -7]	(4 2 0)	(-7 -7 2)	2.254	1.161	1.94	29.8	61.2
[3 -6 13]	(4 2 0)	(7 -3 -3)	2.254	1.158	1.95	48.4	60.6
[3 -6 1]	(4 2 0)	(7 3 -3)	2.254	1.158	1.95	40.7	89.7
[1 -2 4]	(4 2 0)	(-4 6 4)	2.254	1.158	1.95	77.9	62.7
[1 -2 -2]	(4 2 0)	(4 6 -4)	2.254	1.158	1.95	66.5	71.4
[3 -6 -7]	(4 2 0)	(5 -1 3)	2.254	1.155	1.95	44.1	69.0
[1 -2 -1]	(4 2 0)	(5 1 3)	2.254	1.155	1.95	41.5	79.0
[2 -4 -5]	(4 2 0)	(2 -4 4)	2.254	1.154	1.95	69.3	67.9
[2 -4 3]	(4 2 0)	(2 4 4)	2.254	1.154	1.95	61.3	80.9
[1 -2 0]	(4 2 0)	(8 4 -1)	2.254	1.150	1.96	12.5	87.0
[2 -4 9]	(4 2 0)	(-2 8 4)	2.254	1.147	1.96	86.4	59.6
[2 -4 -7]	(4 2 0)	(2 8 -4)	2.254	1.147	1.96	79.2	61.2
[1 -2 6]	(4 2 0)	(-8 2 2)	2.254	1.145	1.97	33.4	51.4

Cummingtonite (420) 352 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[1 -2 2]	(4 2 0)	(8 2 -2)	2.254	1.145	1.97	26.2	77.0
[2 -4 13]	(4 2 0)	(-5 -9 -2)	2.254	1.143	1.97	34.6	49.0
[3 -6 1]	(4 2 0)	(5 3 3)	2.254	1.136	1.98	39.8	89.7
[4 -8 15]	(4 2 0)	(-5 5 4)	2.254	1.130	1.99	70.2	64.4
[4 -8 -5]	(4 2 0)	(5 5 -4)	2.254	1.130	1.99	60.5	77.1
[3 -6 22]	(4 2 0)	(-6 8 3)	2.254	1.127	2.00	63.1	45.3
[3 -6 -10]	(4 2 0)	(6 8 -3)	2.254	1.127	2.00	45.8	62.3
[3 -6 17]	(4 2 0)	(-7 5 3)	2.254	1.122	2.01	52.2	53.1
[1 -2 -1]	(4 2 0)	(7 5 -3)	2.254	1.122	2.01	40.1	79.0
[4 -8 -5]	(4 2 0)	(-3 1 -4)	2.254	1.120	2.01	59.6	77.1
[4 -8 -1]	(4 2 0)	(3 1 4)	2.254	1.120	2.01	57.5	85.0
[1 -2 0]	(4 2 0)	(8 4 -2)	2.254	1.119	2.01	24.9	87.0
[2 -4 3]	(4 2 0)	(-6 0 4)	2.254	1.118	2.02	58.2	80.9
[1 -2 7]	(4 2 0)	(7 7 1)	2.254	1.111	2.03	16.6	46.7
[4 -8 -17]	(4 2 0)	(-1 -9 4)	2.254	1.111	2.03	85.3	56.8
[4 -8 19]	(4 2 0)	(-1 9 4)	2.254	1.111	2.03	79.0	58.1
[3 -6 -20]	(4 2 0)	(-4 8 -3)	2.254	1.110	2.03	62.0	45.0
[1 -2 4]	(4 2 0)	(4 8 3)	2.254	1.110	2.03	44.7	62.7
[4 -8 3]	(4 2 0)	(3 3 4)	2.254	1.103	2.04	56.0	86.9
[1 -2 -5]	(4 2 0)	(5 -5 3)	2.254	1.103	2.04	51.3	52.7
[3 -6 5]	(4 2 0)	(-5 -5 -3)	2.254	1.103	2.04	39.1	79.6
[2 -4 -9]	(4 2 0)	(7 -1 2)	2.254	1.094	2.06	29.9	55.4
[2 -4 -5]	(4 2 0)	(-7 -1 -2)	2.254	1.094	2.06	26.3	67.9
[4 -8 21]	(4 2 0)	(3 -9 -4)	2.254	1.094	2.06	87.7	55.3
[4 -8 -15]	(4 2 0)	(3 9 -4)	2.254	1.094	2.06	72.0	59.7
[2 -4 -11]	(4 2 0)	(7 9 -2)	2.254	1.092	2.06	32.2	50.2
[2 -4 7]	(4 2 0)	(-6 4 4)	2.254	1.086	2.08	63.1	66.0
[2 -4 -1]	(4 2 0)	(6 4 -4)	2.254	1.086	2.08	55.2	83.0
[4 -8 19]	(4 2 0)	(-5 7 4)	2.254	1.081	2.08	72.9	58.1
[4 -8 -9]	(4 2 0)	(5 7 -4)	2.254	1.081	2.08	60.0	69.6
[1 -2 -4]	(4 2 0)	(-8 -2 -1)	2.254	1.081	2.09	13.8	58.2
[1 -2 5]	(4 2 0)	(6 8 2)	2.254	1.079	2.09	29.0	56.7
[1 -2 -2]	(4 2 0)	(-8 -6 2)	2.254	1.079	2.09	25.3	71.4
[2 -4 -13]	(4 2 0)	(7 -3 2)	2.254	1.079	2.09	34.4	45.7
[2 -4 -1]	(4 2 0)	(-7 -3 -2)	2.254	1.079	2.09	24.1	83.0
[3 -6 8]	(4 2 0)	(8 0 -3)	2.254	1.075	2.10	39.5	71.9
[1 -2 7]	(4 2 0)	(-7 7 3)	2.254	1.074	2.10	56.1	46.7
[3 -6 -7]	(4 2 0)	(7 7 -3)	2.254	1.074	2.10	40.4	69.0
[4 -8 -13]	(4 2 0)	(-3 5 -4)	2.254	1.072	2.10	64.8	62.8
[4 -8 7]	(4 2 0)	(3 5 4)	2.254	1.072	2.10	55.1	78.9
[1 -2 4]	(4 2 0)	(-8 2 3)	2.254	1.067	2.11	42.5	62.7
[3 -6 4]	(4 2 0)	(8 2 -3)	2.254	1.067	2.11	37.3	82.2
[4 -8 -19]	(4 2 0)	(-1 9 -4)	2.254	1.067	2.11	81.7	54.0
[4 -8 17]	(4 2 0)	(1 9 4)	2.254	1.067	2.11	66.1	61.1
[5 -10 2]	(4 2 0)	(-2 0 5)	2.254	1.066	2.11	89.0	89.7
[5 -10 -1]	(4 2 0)	(-1 -1 5)	2.254	1.059	2.13	85.5	85.4
[5 -10 3]	(4 2 0)	(1 -1 -5)	2.254	1.059	2.13	83.9	88.1
[1 -2 0]	(4 2 0)	(-8 -4 -1)	2.254	1.059	2.13	11.5	87.0

Cummingtonite (420) 352 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[5 -10 6]	(4 2 0)	(-2 2 5)	2.254	1.059	2.13	89.4	83.3
[5 -10 -2]	(4 2 0)	(-2 -2 5)	2.254	1.059	2.13	87.3	83.8
[3 -6 -19]	(4 2 0)	(5 -7 3)	2.254	1.057	2.13	55.2	46.4
[1 -2 3]	(4 2 0)	(-5 -7 -3)	2.254	1.057	2.13	39.4	69.5
[2 -4 -9]	(4 2 0)	(2 -8 4)	2.254	1.057	2.13	74.5	55.4
[2 -4 7]	(4 2 0)	(2 8 4)	2.254	1.057	2.13	60.2	66.0
[1 -2 1]	(4 2 0)	(3 -1 -5)	2.254	1.055	2.14	83.5	84.9
[5 -10 1]	(4 2 0)	(3 1 -5)	2.254	1.055	2.14	81.8	88.6
[1 -2 7]	(4 2 0)	(-9 -1 1)	2.254	1.055	2.14	15.8	46.7
[3 -6 -2]	(4 2 0)	(-6 -2 -3)	2.254	1.047	2.15	36.6	81.6
[3 -6 16]	(4 2 0)	(8 -4 -3)	2.254	1.046	2.16	46.1	54.8
[1 -2 0]	(4 2 0)	(-8 -4 3)	2.254	1.046	2.16	36.1	87.0
[1 -2 -1]	(4 2 0)	(-1 -3 5)	2.254	1.045	2.16	87.2	79.0
[5 -10 7]	(4 2 0)	(1 -3 -5)	2.254	1.045	2.16	82.3	81.7
[4 -8 9]	(4 2 0)	(7 -1 -4)	2.254	1.043	2.16	54.1	75.0
[4 -8 5]	(4 2 0)	(-7 -1 4)	2.254	1.043	2.16	52.1	82.9
[1 -2 -2]	(4 2 0)	(4 -2 4)	2.254	1.042	2.16	55.6	71.4
[1 -2 0]	(4 2 0)	(-4 -2 -4)	2.254	1.042	2.16	51.5	87.0
[5 -10 9]	(4 2 0)	(3 -3 -5)	2.254	1.041	2.17	85.2	78.5
[5 -10 -3]	(4 2 0)	(-3 -3 5)	2.254	1.041	2.17	80.3	82.2
[1 -2 3]	(4 2 0)	(9 3 -1)	2.254	1.041	2.17	12.0	69.5
[1 -2 2]	(4 2 0)	(-2 4 5)	2.254	1.038	2.17	87.8	77.0
[5 -10 -6]	(4 2 0)	(-2 -4 5)	2.254	1.038	2.17	85.8	77.5
[5 -10 -4]	(4 2 0)	(0 -2 5)	2.254	1.036	2.17	80.2	80.6
[5 -10 4]	(4 2 0)	(0 2 5)	2.254	1.036	2.17	76.9	86.5
[2 -4 11]	(4 2 0)	(-9 1 2)	2.254	1.036	2.18	28.7	53.9
[2 -4 7]	(4 2 0)	(9 1 -2)	2.254	1.036	2.18	25.2	66.0
[5 -10 4]	(4 2 0)	(-4 0 5)	2.254	1.035	2.18	76.5	86.5
[4 -8 -17]	(4 2 0)	(3 -7 4)	2.254	1.030	2.19	67.6	56.8
[4 -8 11]	(4 2 0)	(-3 -7 -4)	2.254	1.030	2.19	54.7	71.3
[4 -8 13]	(4 2 0)	(7 -3 -4)	2.254	1.030	2.19	56.6	67.8
[4 -8 1]	(4 2 0)	(-7 -3 4)	2.254	1.030	2.19	50.6	89.0
[5 -10 8]	(4 2 0)	(-4 2 5)	2.254	1.028	2.19	78.3	80.1
[1 -2 0]	(4 2 0)	(4 2 -5)	2.254	1.028	2.19	75.0	87.0
[3 -6 -14]	(4 2 0)	(6 -4 3)	2.254	1.027	2.19	45.3	54.5
[3 -6 2]	(4 2 0)	(6 4 3)	2.254	1.027	2.19	35.4	87.6
[4 -8 23]	(4 2 0)	(-5 9 4)	2.254	1.025	2.20	75.5	52.6
[4 -8 -13]	(4 2 0)	(5 9 -4)	2.254	1.025	2.20	59.9	62.8
[1 -2 4]	(4 2 0)	(-8 -6 -1)	2.254	1.025	2.20	12.5	62.7
[2 -4 3]	(4 2 0)	(9 3 -2)	2.254	1.022	2.20	22.9	80.9
[3 -6 -11]	(4 2 0)	(7 9 -3)	2.254	1.019	2.21	41.4	60.2
[5 -10 -9]	(4 2 0)	(-1 -5 5)	2.254	1.019	2.21	88.9	72.9
[5 -10 11]	(4 2 0)	(1 -5 -5)	2.254	1.019	2.21	80.9	75.4
[5 -10 -8]	(4 2 0)	(0 -4 5)	2.254	1.017	2.22	82.0	74.4
[5 -10 8]	(4 2 0)	(0 -4 -5)	2.254	1.017	2.22	75.5	80.1
[5 -10 13]	(4 2 0)	(3 -5 -5)	2.254	1.015	2.22	86.9	72.4
[5 -10 -7]	(4 2 0)	(-3 -5 5)	2.254	1.015	2.22	78.9	75.9
[1 -2 -1]	(4 2 0)	(9 5 -1)	2.254	1.015	2.22	11.2	79.0

Cummingtonite (420) 352 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA [^] C [^]
[3 -6 20]	(4 2 0)	(-8 6 3)	2.254	1.013	2.23	49.9	48.2
[3 -6 -4]	(4 2 0)	(8 6 -3)	2.254	1.013	2.23	35.9	76.4
[5 -10 -3]	(4 2 0)	(-1 1 -5)	2.254	1.012	2.23	73.4	82.2
[5 -10 1]	(4 2 0)	(1 1 5)	2.254	1.012	2.23	71.8	88.6
[2 -4 7]	(4 2 0)	(-7 -7 -2)	2.254	1.010	2.23	24.5	66.0
[5 -10 12]	(4 2 0)	(4 -4 -5)	2.254	1.009	2.23	80.1	73.9
[5 -10 -4]	(4 2 0)	(-4 -4 5)	2.254	1.009	2.23	73.6	80.6
[5 -10 14]	(4 2 0)	(-2 6 5)	2.254	1.005	2.24	86.3	71.0
[1 -2 -2]	(4 2 0)	(-2 -6 5)	2.254	1.005	2.24	84.3	71.4
[4 -8 17]	(4 2 0)	(7 -5 -4)	2.254	1.004	2.24	59.4	61.1
[4 -8 -3]	(4 2 0)	(-7 -5 4)	2.254	1.004	2.24	49.7	81.0
[3 -6 13]	(4 2 0)	(5 9 3)	2.254	1.004	2.24	40.4	60.6
[2 -4 11]	(4 2 0)	(-6 8 4)	2.254	1.003	2.25	68.7	53.9
[2 -4 -5]	(4 2 0)	(6 8 -4)	2.254	1.003	2.25	54.4	67.9
[5 -10 7]	(4 2 0)	(-5 1 5)	2.254	1.001	2.25	71.6	81.7
[5 -10 3]	(4 2 0)	(5 1 -5)	2.254	1.001	2.25	69.9	88.1

Cummingtonite (280) 275 Zone Axes***a* 9.510Å *b* 18.190Å *c* 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	<i>d</i> (hk0)	<i>d</i> (hkl)	<i>d</i> Ratio	θ°	ZA $^\circ$
[4 -1 0]	(2 8 0)	(0 0 1)	2.043	5.215	0.39	84.8	79.3
[4 -1 5]	(2 8 0)	(-1 1 1)	2.043	4.832	0.42	84.6	65.6
[4 -1 3]	(2 8 0)	(-1 -1 1)	2.043	4.832	0.42	67.5	78.9
[4 -1 -2]	(2 8 0)	(0 2 -1)	2.043	4.524	0.45	68.4	65.9
[4 -1 2]	(2 8 0)	(0 -2 -1)	2.043	4.524	0.45	58.3	86.1
[4 -1 -5]	(2 8 0)	(1 -1 1)	2.043	4.088	0.50	86.4	50.2
[4 -1 -3]	(2 8 0)	(-1 -1 -1)	2.043	4.088	0.50	62.2	60.1
[4 -1 8]	(2 8 0)	(2 0 -1)	2.043	3.894	0.52	72.6	50.0
[4 -1 7]	(2 8 0)	(-1 3 1)	2.043	3.863	0.53	62.8	54.6
[4 -1 1]	(2 8 0)	(1 3 -1)	2.043	3.863	0.53	46.6	86.5
[4 -1 6]	(2 8 0)	(-2 -2 1)	2.043	3.579	0.57	51.0	59.8
[4 -1 -1]	(2 8 0)	(1 3 1)	2.043	3.450	0.59	42.8	72.4
[4 -1 -4]	(2 8 0)	(0 4 -1)	2.043	3.428	0.60	51.9	54.9
[4 -1 4]	(2 8 0)	(0 4 1)	2.043	3.428	0.60	42.6	72.0
[4 -1 -6]	(2 8 0)	(-2 -2 -1)	2.043	2.988	0.68	51.0	46.1
[4 -1 4]	(2 8 0)	(2 4 -1)	2.043	2.958	0.69	35.7	72.0
[4 -1 9]	(2 8 0)	(-1 5 1)	2.043	2.944	0.69	50.3	45.9
[4 -1 -1]	(2 8 0)	(1 5 -1)	2.043	2.944	0.69	35.4	72.4
[4 -1 1]	(2 8 0)	(1 5 1)	2.043	2.749	0.74	31.1	86.5
[4 -1 9]	(2 8 0)	(-3 -3 1)	2.043	2.650	0.77	43.8	45.9
[8 -2 5]	(2 8 0)	(-1 1 2)	2.043	2.629	0.78	84.4	82.5
[8 -2 3]	(2 8 0)	(1 1 -2)	2.043	2.629	0.78	80.6	89.8
[4 -1 -6]	(2 8 0)	(0 -6 1)	2.043	2.621	0.78	43.0	46.1
[4 -1 6]	(2 8 0)	(0 6 1)	2.043	2.621	0.78	34.7	59.8
[4 -1 -4]	(2 8 0)	(2 4 1)	2.043	2.597	0.79	36.6	54.9
[4 -1 -1]	(2 8 0)	(0 -2 2)	2.043	2.507	0.81	80.8	72.4
[4 -1 1]	(2 8 0)	(0 2 2)	2.043	2.507	0.81	70.4	86.5
[4 -1 4]	(2 8 0)	(-2 0 2)	2.043	2.506	0.82	81.4	72.0
[8 -2 7]	(2 8 0)	(-1 3 2)	2.043	2.434	0.84	70.7	75.4
[8 -2 1]	(2 8 0)	(-1 -3 2)	2.043	2.434	0.84	67.0	82.9
[8 -2 -3]	(2 8 0)	(1 1 2)	2.043	2.366	0.86	71.9	69.1
[4 -1 -3]	(2 8 0)	(-1 -7 1)	2.043	2.307	0.89	30.0	60.1
[4 -1 7]	(2 8 0)	(3 5 -1)	2.043	2.290	0.89	31.8	54.6
[8 -2 -7]	(2 8 0)	(1 -3 2)	2.043	2.221	0.92	81.5	57.4
[8 -2 -1]	(2 8 0)	(1 3 2)	2.043	2.221	0.92	59.3	75.8
[8 -2 13]	(2 8 0)	(-3 1 2)	2.043	2.219	0.92	82.7	57.1
[8 -2 11]	(2 8 0)	(3 1 -2)	2.043	2.219	0.92	69.7	62.6
[4 -1 3]	(2 8 0)	(-1 -7 -1)	2.043	2.209	0.92	25.0	78.9
[4 -1 6]	(2 8 0)	(-2 4 2)	2.043	2.195	0.93	72.4	59.8
[4 -1 2]	(2 8 0)	(-2 -4 2)	2.043	2.195	0.93	55.6	86.1
[4 -1 -2]	(2 8 0)	(2 6 1)	2.043	2.189	0.93	26.7	65.9
[8 -2 9]	(2 8 0)	(-1 5 2)	2.043	2.146	0.95	59.8	68.7
[8 -2 -1]	(2 8 0)	(-1 -5 2)	2.043	2.146	0.95	56.2	75.8
[8 -2 15]	(2 8 0)	(-3 3 2)	2.043	2.098	0.97	85.0	52.2
[8 -2 9]	(2 8 0)	(-3 -3 2)	2.043	2.098	0.97	57.7	68.7
[4 -1 -4]	(2 8 0)	(2 0 2)	2.043	2.098	0.97	74.3	54.9
[4 -1 8]	(2 8 0)	(0 -8 -1)	2.043	2.084	0.98	30.7	50.0
[4 -1 -3]	(2 8 0)	(0 -6 2)	2.043	1.977	1.03	58.9	60.1

Cummingtonite (280) 275 Zone Axes a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[4 -1 3]	(2 8 0)	(0 6 2)	2.043	1.977	1.03	49.1	78.9
[4 -1 5]	(2 8 0)	(3 7 -1)	2.043	1.949	1.05	23.7	65.6
[8 -2 7]	(2 8 0)	(3 5 -2)	2.043	1.905	1.07	47.6	75.4
[4 -1 -6]	(2 8 0)	(-2 4 -2)	2.043	1.905	1.07	82.5	46.1
[4 -1 -2]	(2 8 0)	(-2 -4 -2)	2.043	1.905	1.07	51.5	65.9
[4 -1 9]	(2 8 0)	(4 -2 -2)	2.043	1.904	1.07	84.0	45.9
[4 -1 7]	(2 8 0)	(-4 -2 2)	2.043	1.904	1.07	61.2	54.6
[4 -1 -5]	(2 8 0)	(1 9 -1)	2.043	1.874	1.09	27.2	50.2
[8 -2 11]	(2 8 0)	(1 -7 -2)	2.043	1.858	1.10	51.7	62.6
[8 -2 -3]	(2 8 0)	(1 7 -2)	2.043	1.858	1.10	48.3	69.1
[4 -1 5]	(2 8 0)	(1 9 1)	2.043	1.821	1.12	22.0	65.6
[8 -2 -11]	(2 8 0)	(-3 -1 -2)	2.043	1.811	1.13	65.9	48.1
[4 -1 -5]	(2 8 0)	(3 7 1)	2.043	1.784	1.15	25.8	50.2
[4 -1 1]	(2 8 0)	(-1 -1 3)	2.043	1.768	1.16	85.5	86.5
[12 -3 5]	(2 8 0)	(-1 1 3)	2.043	1.768	1.16	84.5	88.6
[8 -2 -11]	(2 8 0)	(-1 7 -2)	2.043	1.758	1.16	62.4	48.1
[8 -2 3]	(2 8 0)	(-1 -7 -2)	2.043	1.758	1.16	41.3	89.8
[12 -3 8]	(2 8 0)	(2 0 -3)	2.043	1.751	1.17	85.8	81.3
[8 -2 -9]	(2 8 0)	(-3 -3 -2)	2.043	1.743	1.17	55.6	52.5
[12 -3 10]	(2 8 0)	(-2 2 3)	2.043	1.720	1.19	84.4	76.5
[4 -1 2]	(2 8 0)	(2 2 -3)	2.043	1.720	1.19	76.0	86.1
[12 -3 1]	(2 8 0)	(-1 -3 3)	2.043	1.705	1.20	75.9	81.7
[12 -3 7]	(2 8 0)	(-1 3 3)	2.043	1.705	1.20	74.9	83.7
[8 -2 5]	(2 8 0)	(-3 -7 2)	2.043	1.695	1.21	39.9	82.5
[4 -1 8]	(2 8 0)	(-2 8 2)	2.043	1.684	1.21	55.6	50.0
[4 -1 0]	(2 8 0)	(-2 -8 2)	2.043	1.684	1.21	40.0	79.3
[4 -1 3]	(2 8 0)	(3 9 -1)	2.043	1.667	1.23	18.6	78.9
[12 -3 13]	(2 8 0)	(-3 1 3)	2.043	1.664	1.23	86.2	69.8
[12 -3 11]	(2 8 0)	(3 1 -3)	2.043	1.664	1.23	76.6	74.2
[12 -3 -5]	(2 8 0)	(-1 1 -3)	2.043	1.642	1.24	85.3	68.0
[4 -1 -1]	(2 8 0)	(1 1 3)	2.043	1.642	1.24	75.9	72.4
[4 -1 5]	(2 8 0)	(-4 -6 2)	2.043	1.638	1.25	42.5	65.6
[4 -1 4]	(2 8 0)	(-2 4 3)	2.043	1.634	1.25	75.3	72.0
[12 -3 4]	(2 8 0)	(-2 -4 3)	2.043	1.634	1.25	66.9	89.0
[8 -2 -7]	(2 8 0)	(3 5 2)	2.043	1.628	1.26	46.5	57.4
[8 -2 17]	(2 8 0)	(-5 -3 2)	2.043	1.627	1.26	55.4	47.9
[12 -3 -4]	(2 8 0)	(0 4 -3)	2.043	1.624	1.26	76.3	70.2
[12 -3 4]	(2 8 0)	(0 -4 -3)	2.043	1.624	1.26	66.1	89.0
[4 -1 8]	(2 8 0)	(4 8 -1)	2.043	1.620	1.26	23.4	50.0
[8 -2 13]	(2 8 0)	(1 -9 -2)	2.043	1.609	1.27	46.0	57.1
[8 -2 -5]	(2 8 0)	(1 9 -2)	2.043	1.609	1.27	42.7	62.9
[12 -3 -1]	(2 8 0)	(-1 -5 3)	2.043	1.596	1.28	67.3	76.9
[4 -1 3]	(2 8 0)	(-1 5 3)	2.043	1.596	1.28	66.3	78.9
[12 -3 -7]	(2 8 0)	(1 -3 3)	2.043	1.591	1.28	85.5	63.9
[12 -3 -1]	(2 8 0)	(1 3 3)	2.043	1.591	1.28	66.8	76.9
[4 -1 -3]	(2 8 0)	(-3 -9 -1)	2.043	1.560	1.31	19.7	60.1
[12 -3 16]	(2 8 0)	(4 0 -3)	2.043	1.555	1.31	77.7	63.6
[8 -2 5]	(2 8 0)	(-1 -9 -2)	2.043	1.542	1.32	35.7	82.5

Cummingtonite (280) 275 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[4 -1 0]	(2 8 0)	(2 8 2)	2.043	1.542	1.32	36.1	79.3
[4 -1 6]	(2 8 0)	(4 -2 -3)	2.043	1.533	1.33	86.7	59.8
[12 -3 14]	(2 8 0)	(-4 -2 3)	2.043	1.533	1.33	68.8	67.7
[8 -2 15]	(2 8 0)	(5 5 -2)	2.043	1.532	1.33	46.7	52.2
[12 -3 -8]	(2 8 0)	(-2 0 -3)	2.043	1.528	1.34	77.1	62.0
[12 -3 17]	(2 8 0)	(-3 5 3)	2.043	1.518	1.35	76.2	61.6
[12 -3 7]	(2 8 0)	(3 5 -3)	2.043	1.518	1.35	59.3	83.7
[12 -3 14]	(2 8 0)	(2 -6 -3)	2.043	1.516	1.35	67.3	67.7
[12 -3 2]	(2 8 0)	(2 6 -3)	2.043	1.516	1.35	59.1	84.1
[12 -3 -10]	(2 8 0)	(-2 2 -3)	2.043	1.507	1.36	85.9	58.3
[4 -1 -2]	(2 8 0)	(2 2 3)	2.043	1.507	1.36	68.3	65.9
[4 -1 -3]	(2 8 0)	(1 -5 3)	2.043	1.502	1.36	77.2	60.1
[12 -3 1]	(2 8 0)	(1 5 3)	2.043	1.502	1.36	58.7	81.7
[8 -2 3]	(2 8 0)	(-3 -9 2)	2.043	1.499	1.36	34.2	89.8
[8 -2 -5]	(2 8 0)	(3 7 2)	2.043	1.491	1.37	38.9	62.9
[12 -3 20]	(2 8 0)	(-4 4 3)	2.043	1.471	1.39	84.9	56.2
[4 -1 4]	(2 8 0)	(-4 -4 3)	2.043	1.471	1.39	60.5	72.0
[4 -1 -1]	(2 8 0)	(1 7 -3)	2.043	1.466	1.39	60.0	72.4
[12 -3 11]	(2 8 0)	(1 -7 -3)	2.043	1.466	1.39	59.1	74.2
[4 -1 -4]	(2 8 0)	(-2 4 -3)	2.043	1.449	1.41	85.8	54.9
[12 -3 -4]	(2 8 0)	(-2 -4 -3)	2.043	1.449	1.41	60.1	70.2
[4 -1 7]	(2 8 0)	(5 -1 -3)	2.043	1.421	1.44	79.0	54.6
[12 -3 19]	(2 8 0)	(-5 -1 3)	2.043	1.421	1.44	70.6	58.0
[8 -2 13]	(2 8 0)	(5 7 -2)	2.043	1.416	1.44	39.3	57.1
[12 -3 19]	(2 8 0)	(3 -7 -3)	2.043	1.405	1.45	68.9	58.0
[12 -3 5]	(2 8 0)	(3 7 -3)	2.043	1.405	1.45	52.3	88.6
[4 -1 -5]	(2 8 0)	(-4 -6 -2)	2.043	1.402	1.46	43.2	50.2
[12 -3 -13]	(2 8 0)	(3 -1 3)	2.043	1.394	1.47	78.4	53.2
[12 -3 -11]	(2 8 0)	(-3 -1 -3)	2.043	1.394	1.47	70.2	56.5
[12 -3 -11]	(2 8 0)	(-1 7 -3)	2.043	1.392	1.47	69.9	56.5
[4 -1 1]	(2 8 0)	(1 7 3)	2.043	1.392	1.47	51.7	86.5
[12 -3 23]	(2 8 0)	(-5 3 3)	2.043	1.388	1.47	87.2	51.4
[12 -3 17]	(2 8 0)	(5 3 -3)	2.043	1.388	1.47	62.6	61.6
[12 -3 16]	(2 8 0)	(2 -8 -3)	2.043	1.387	1.47	60.7	63.6
[4 -1 0]	(2 8 0)	(2 8 -3)	2.043	1.387	1.47	52.6	79.3
[12 -3 22]	(2 8 0)	(-4 6 3)	2.043	1.383	1.48	77.2	53.0
[12 -3 10]	(2 8 0)	(-4 -6 3)	2.043	1.383	1.48	53.2	76.5
[12 -3 -8]	(2 8 0)	(0 8 -3)	2.043	1.381	1.48	61.7	62.0
[12 -3 8]	(2 8 0)	(0 -8 -3)	2.043	1.381	1.48	51.9	81.3
[12 -3 -14]	(2 8 0)	(-2 6 -3)	2.043	1.365	1.50	78.2	51.7
[12 -3 -2]	(2 8 0)	(2 6 3)	2.043	1.365	1.50	52.8	74.6
[8 -2 -3]	(2 8 0)	(3 9 2)	2.043	1.352	1.51	32.9	69.1
[12 -3 -5]	(2 8 0)	(-1 -9 3)	2.043	1.334	1.53	54.1	68.0
[12 -3 13]	(2 8 0)	(-1 9 3)	2.043	1.334	1.53	53.2	69.8
[4 -1 2]	(2 8 0)	(-2 0 4)	2.043	1.329	1.54	88.1	86.1
[12 -3 25]	(2 8 0)	(-5 5 3)	2.043	1.327	1.54	85.2	48.6
[4 -1 5]	(2 8 0)	(5 5 -3)	2.043	1.327	1.54	55.1	65.6
[16 -4 3]	(2 8 0)	(-1 -1 4)	2.043	1.326	1.54	87.9	84.7

Cummingtonite (280) 275 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$
[16 -4 5]	(2 8 0)	(-1 1 4)	2.043	1.326	1.54	84.5	88.4
[12 -3 -7]	(2 8 0)	(3 5 3)	2.043	1.305	1.56	54.9	63.9
[16 -4 1]	(2 8 0)	(1 3 -4)	2.043	1.299	1.57	80.6	81.1
[16 -4 7]	(2 8 0)	(1 -3 -4)	2.043	1.299	1.57	77.2	87.9
[16 -4 13]	(2 8 0)	(3 -1 -4)	2.043	1.298	1.57	88.3	77.1
[16 -4 11]	(2 8 0)	(-3 -1 4)	2.043	1.298	1.57	80.9	80.7
[8 -2 -1]	(2 8 0)	(0 -2 4)	2.043	1.291	1.58	87.8	75.8
[8 -2 1]	(2 8 0)	(0 2 4)	2.043	1.291	1.58	77.5	82.9
[12 -3 26]	(2 8 0)	(-6 2 3)	2.043	1.285	1.59	80.2	47.2
[12 -3 22]	(2 8 0)	(6 2 -3)	2.043	1.285	1.59	64.9	53.0
[4 -1 8]	(2 8 0)	(4 -8 -3)	2.043	1.283	1.59	70.6	50.0
[12 -3 8]	(2 8 0)	(4 8 -3)	2.043	1.283	1.59	47.0	81.3
[12 -3 -13]	(2 8 0)	(1 -9 3)	2.043	1.278	1.60	63.8	53.2
[12 -3 5]	(2 8 0)	(1 9 3)	2.043	1.278	1.60	46.0	88.6
[4 -1 3]	(2 8 0)	(-2 4 4)	2.043	1.275	1.60	77.3	78.9
[4 -1 1]	(2 8 0)	(-2 -4 4)	2.043	1.275	1.60	73.5	86.5
[16 -4 15]	(2 8 0)	(-3 3 4)	2.043	1.273	1.61	84.4	73.7
[16 -4 9]	(2 8 0)	(-3 -3 4)	2.043	1.273	1.61	73.7	84.3
[12 -3 -16]	(2 8 0)	(4 0 3)	2.043	1.272	1.61	72.2	48.8
[12 -3 -16]	(2 8 0)	(2 -8 3)	2.043	1.268	1.61	71.6	48.8
[4 -1 0]	(2 8 0)	(2 8 3)	2.043	1.268	1.61	46.6	79.3
[4 -1 -6]	(2 8 0)	(-4 2 -3)	2.043	1.260	1.62	79.7	46.1
[12 -3 -14]	(2 8 0)	(4 2 3)	2.043	1.260	1.62	64.7	51.7
[12 -3 13]	(2 8 0)	(5 7 -3)	2.043	1.250	1.63	48.6	69.8
[16 -4 -1]	(2 8 0)	(-1 -5 4)	2.043	1.249	1.64	73.7	77.5
[16 -4 9]	(2 8 0)	(-1 5 4)	2.043	1.249	1.64	70.4	84.3
[12 -3 20]	(2 8 0)	(-6 -4 3)	2.043	1.248	1.64	57.7	56.2
[8 -2 9]	(2 8 0)	(4 -2 -4)	2.043	1.241	1.65	88.5	68.7
[8 -2 7]	(2 8 0)	(4 2 -4)	2.043	1.241	1.65	74.3	75.4
[4 -1 8]	(2 8 0)	(-6 -8 2)	2.043	1.236	1.65	37.3	50.0
[12 -3 -5]	(2 8 0)	(3 7 3)	2.043	1.232	1.66	48.4	68.0
[16 -4 -7]	(2 8 0)	(1 -3 4)	2.043	1.230	1.66	87.8	67.5
[16 -4 -1]	(2 8 0)	(1 3 4)	2.043	1.230	1.66	71.0	77.5
[16 -4 17]	(2 8 0)	(-3 5 4)	2.043	1.226	1.67	77.6	70.3
[16 -4 7]	(2 8 0)	(-3 -5 4)	2.043	1.226	1.67	67.0	87.9
[4 -1 -4]	(2 8 0)	(4 4 3)	2.043	1.225	1.67	57.5	54.9
[4 -1 -2]	(2 8 0)	(2 0 4)	2.043	1.193	1.71	78.7	65.9
[16 -4 1]	(2 8 0)	(-1 -5 -4)	2.043	1.187	1.72	64.4	81.1
[16 -4 21]	(2 8 0)	(5 -1 -4)	2.043	1.187	1.72	82.0	64.1
[16 -4 19]	(2 8 0)	(-5 -1 4)	2.043	1.187	1.72	75.2	67.1
[16 -4 -3]	(2 8 0)	(1 7 -4)	2.043	1.184	1.73	67.5	74.0
[16 -4 11]	(2 8 0)	(1 -7 -4)	2.043	1.184	1.73	64.2	80.7
[4 -1 9]	(2 8 0)	(7 1 -3)	2.043	1.177	1.73	67.3	45.9
[12 -3 -10]	(2 8 0)	(-4 -6 -3)	2.043	1.173	1.74	50.9	58.3
[16 -4 23]	(2 8 0)	(5 -3 -4)	2.043	1.167	1.75	88.8	61.2
[16 -4 17]	(2 8 0)	(5 3 -4)	2.043	1.167	1.75	68.5	70.3
[12 -3 11]	(2 8 0)	(-5 -9 3)	2.043	1.165	1.75	42.9	74.2
[16 -4 19]	(2 8 0)	(-3 7 4)	2.043	1.164	1.76	71.4	67.1

Cummingtonite (280) 275 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[16 -4 5]	(2 8 0)	(-3 -7 4)	2.043	1.164	1.76	60.9	88.4
[12 -3 25]	(2 8 0)	(7 3 -3)	2.043	1.158	1.76	60.4	48.6
[8 -2 11]	(2 8 0)	(-4 6 4)	2.043	1.158	1.76	78.2	62.6
[8 -2 5]	(2 8 0)	(-4 -6 4)	2.043	1.158	1.76	61.2	82.5
[4 -1 -3]	(2 8 0)	(-2 4 -4)	2.043	1.154	1.77	87.8	60.1
[4 -1 -1]	(2 8 0)	(-2 -4 -4)	2.043	1.154	1.77	65.4	72.4
[4 -1 4]	(2 8 0)	(-2 8 4)	2.043	1.147	1.78	64.9	72.0
[4 -1 0]	(2 8 0)	(-2 -8 4)	2.043	1.147	1.78	61.2	79.3
[8 -2 -11]	(2 8 0)	(5 9 2)	2.043	1.143	1.79	35.2	48.1
[12 -3 -17]	(2 8 0)	(5 3 3)	2.043	1.136	1.80	60.3	47.4
[16 -4 25]	(2 8 0)	(5 -5 -4)	2.043	1.130	1.81	84.8	58.4
[16 -4 15]	(2 8 0)	(5 5 -4)	2.043	1.130	1.81	62.1	73.7
[12 -3 16]	(2 8 0)	(-6 -8 3)	2.043	1.127	1.81	45.1	63.6
[12 -3 23]	(2 8 0)	(7 5 -3)	2.043	1.122	1.82	53.9	51.4
[16 -4 -13]	(2 8 0)	(-3 1 -4)	2.043	1.120	1.82	79.6	58.7
[16 -4 -11]	(2 8 0)	(3 1 4)	2.043	1.120	1.82	73.0	61.5
[4 -1 6]	(2 8 0)	(-6 0 4)	2.043	1.118	1.83	76.2	59.8
[16 -4 -5]	(2 8 0)	(1 9 -4)	2.043	1.111	1.84	62.0	70.7
[16 -4 13]	(2 8 0)	(1 -9 -4)	2.043	1.111	1.84	58.8	77.1
[12 -3 -8]	(2 8 0)	(4 8 3)	2.043	1.110	1.84	45.1	62.0
[4 -1 -5]	(2 8 0)	(-5 -5 -3)	2.043	1.103	1.85	53.9	50.2
[16 -4 21]	(2 8 0)	(-3 9 4)	2.043	1.094	1.87	65.9	64.1
[16 -4 3]	(2 8 0)	(-3 -9 4)	2.043	1.094	1.87	55.6	84.7
[4 -1 7]	(2 8 0)	(6 -4 -4)	2.043	1.086	1.88	89.0	54.6
[4 -1 5]	(2 8 0)	(-6 -4 4)	2.043	1.086	1.88	63.5	65.6
[16 -4 27]	(2 8 0)	(-5 7 4)	2.043	1.081	1.89	78.8	55.8
[16 -4 13]	(2 8 0)	(-5 -7 4)	2.043	1.081	1.89	56.4	77.1
[4 -1 7]	(2 8 0)	(7 7 -3)	2.043	1.074	1.90	47.9	54.6
[16 -4 -17]	(2 8 0)	(3 -5 4)	2.043	1.072	1.91	87.8	53.6
[16 -4 -7]	(2 8 0)	(3 5 4)	2.043	1.072	1.91	60.6	67.5
[16 -4 -13]	(2 8 0)	(1 -9 4)	2.043	1.067	1.91	69.5	58.7
[16 -4 5]	(2 8 0)	(1 9 4)	2.043	1.067	1.91	53.2	88.4
[20 -5 8]	(2 8 0)	(-2 0 5)	2.043	1.066	1.92	89.5	89.1
[20 -5 3]	(2 8 0)	(1 1 -5)	2.043	1.059	1.93	89.4	83.6
[4 -1 1]	(2 8 0)	(-1 1 5)	2.043	1.059	1.93	84.6	86.5
[4 -1 2]	(2 8 0)	(2 -2 -5)	2.043	1.059	1.93	84.5	86.1
[20 -5 6]	(2 8 0)	(2 2 -5)	2.043	1.059	1.93	83.5	88.0
[12 -3 -13]	(2 8 0)	(-5 -7 -3)	2.043	1.057	1.93	47.9	53.2
[4 -1 -4]	(2 8 0)	(-2 8 -4)	2.043	1.057	1.93	75.9	54.9
[4 -1 0]	(2 8 0)	(-2 -8 -4)	2.043	1.057	1.93	53.8	79.3
[20 -5 13]	(2 8 0)	(3 -1 -5)	2.043	1.055	1.94	89.7	81.7
[20 -5 11]	(2 8 0)	(-3 -1 5)	2.043	1.055	1.94	83.7	84.6
[20 -5 7]	(2 8 0)	(-1 3 5)	2.043	1.045	1.95	78.7	89.5
[16 -4 29]	(2 8 0)	(-7 1 4)	2.043	1.043	1.96	77.3	53.4
[16 -4 27]	(2 8 0)	(7 1 -4)	2.043	1.043	1.96	71.1	55.8
[8 -2 -9]	(2 8 0)	(-4 2 -4)	2.043	1.042	1.96	80.4	52.5
[8 -2 -7]	(2 8 0)	(4 2 4)	2.043	1.042	1.96	68.2	57.4
[4 -1 3]	(2 8 0)	(3 -3 -5)	2.043	1.041	1.96	84.4	78.9

Cummingtonite (280) 275 Zone Axes **a 9.510Å b 18.190Å c 5.330Å α 90° β 101.9° γ 90°**Space Group C 2/m permits only $(h+k)=2n$

[U V W]	(h k 0)	(h k l)	$d(hk0)$	$d(hkl)$	d Ratio	θ°	ZA $^\circ$ C $^\circ$
[20 -5 9]	(2 8 0)	(3 3 -5)	2.043	1.041	1.96	77.8	87.6
[20 -5 12]	(2 8 0)	(2 -4 -5)	2.043	1.038	1.97	78.6	83.2
[20 -5 4]	(2 8 0)	(2 4 -5)	2.043	1.038	1.97	77.7	85.1
[20 -5 -2]	(2 8 0)	(0 -2 5)	2.043	1.036	1.97	89.3	76.5
[20 -5 2]	(2 8 0)	(0 2 5)	2.043	1.036	1.97	78.9	82.1
[20 -5 16]	(2 8 0)	(-4 0 5)	2.043	1.035	1.97	83.9	77.5
[16 -4 -19]	(2 8 0)	(-3 7 -4)	2.043	1.030	1.98	82.0	51.3
[16 -4 -5]	(2 8 0)	(-3 -7 -4)	2.043	1.030	1.98	55.0	70.7
[16 -4 31]	(2 8 0)	(7 -3 -4)	2.043	1.030	1.98	83.3	51.1
[16 -4 25]	(2 8 0)	(-7 -3 4)	2.043	1.030	1.98	65.1	58.4
[20 -5 18]	(2 8 0)	(4 -2 -5)	2.043	1.028	1.99	89.8	74.7
[20 -5 14]	(2 8 0)	(-4 -2 5)	2.043	1.028	1.99	78.1	80.3
[16 -4 29]	(2 8 0)	(-5 9 4)	2.043	1.025	1.99	73.4	53.4
[16 -4 11]	(2 8 0)	(-5 -9 4)	2.043	1.025	1.99	51.2	80.7
[12 -3 19]	(2 8 0)	(7 9 -3)	2.043	1.019	2.00	42.6	58.0
[20 -5 -1]	(2 8 0)	(1 5 -5)	2.043	1.019	2.01	77.8	77.9
[20 -5 9]	(2 8 0)	(1 -5 -5)	2.043	1.019	2.01	73.0	87.6
[20 -5 -4]	(2 8 0)	(0 4 -5)	2.043	1.017	2.01	83.5	73.7
[20 -5 4]	(2 8 0)	(0 -4 -5)	2.043	1.017	2.01	73.2	85.1
[20 -5 17]	(2 8 0)	(-3 5 5)	2.043	1.015	2.01	78.8	76.1
[20 -5 7]	(2 8 0)	(-3 -5 5)	2.043	1.015	2.01	72.2	89.5
[12 -3 26]	(2 8 0)	(8 6 -3)	2.043	1.013	2.02	51.0	47.2
[4 -1 -1]	(2 8 0)	(1 -1 5)	2.043	1.012	2.02	85.1	72.4
[20 -5 -3]	(2 8 0)	(-1 -1 -5)	2.043	1.012	2.02	79.3	75.1
[4 -1 4]	(2 8 0)	(-4 4 5)	2.043	1.009	2.02	84.5	72.0
[20 -5 12]	(2 8 0)	(4 4 -5)	2.043	1.009	2.02	72.4	83.2
[20 -5 14]	(2 8 0)	(2 -6 -5)	2.043	1.005	2.03	73.1	80.3
[20 -5 2]	(2 8 0)	(2 6 -5)	2.043	1.005	2.03	72.2	82.1
[16 -4 33]	(2 8 0)	(-7 5 4)	2.043	1.004	2.03	89.2	48.9
[16 -4 23]	(2 8 0)	(7 5 -4)	2.043	1.004	2.03	59.3	61.2
[12 -3 -11]	(2 8 0)	(-5 -9 -3)	2.043	1.004	2.03	42.6	56.5
[4 -1 8]	(2 8 0)	(-6 8 4)	2.043	1.003	2.04	79.5	50.0
[4 -1 4]	(2 8 0)	(-6 -8 4)	2.043	1.003	2.04	52.4	72.0
[20 -5 21]	(2 8 0)	(5 -1 -5)	2.043	1.001	2.04	84.3	70.7
[20 -5 19]	(2 8 0)	(-5 -1 5)	2.043	1.001	2.04	78.5	73.3