

Supplementary Materials

Carbonation of Sodium Aluminate/Sodium Carbonate Solutions for Precipitation of Alumina Hydrates – Avoiding Dawsonite Formation.

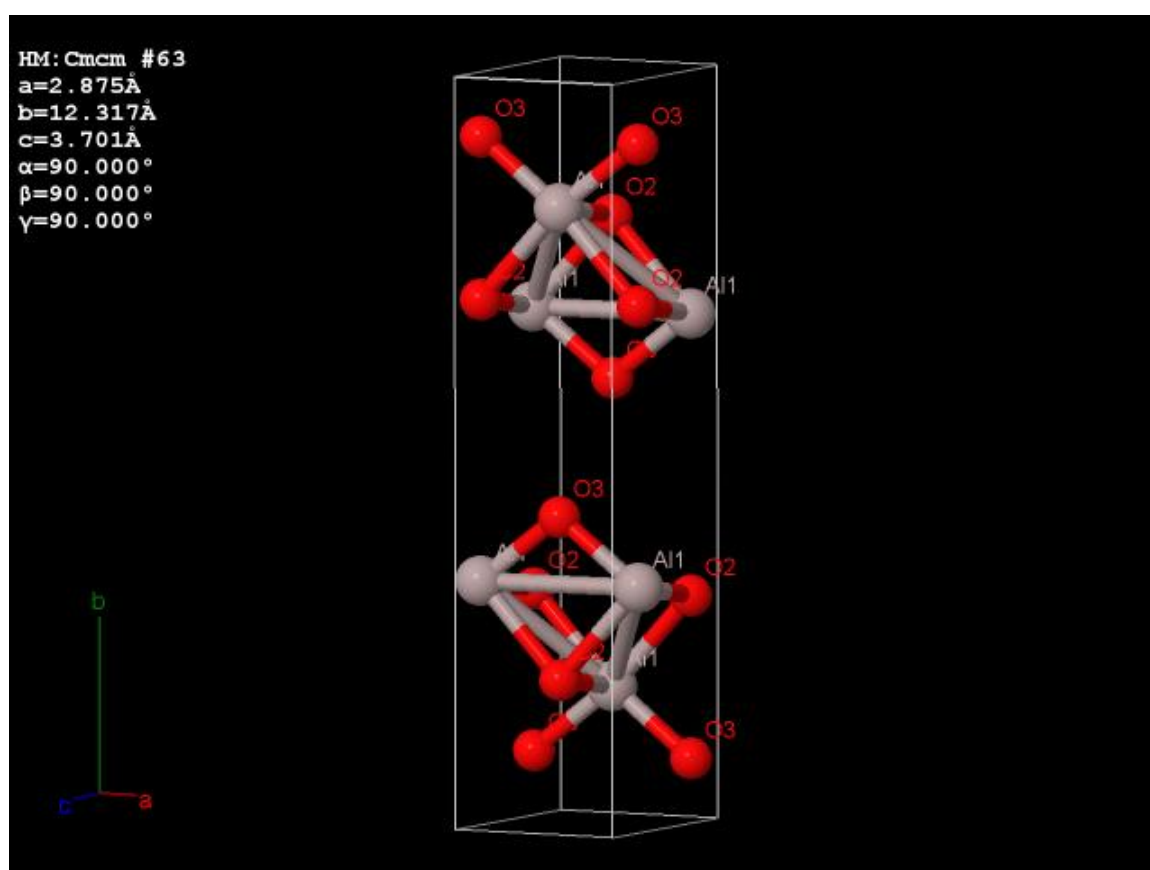


Figure S1. Crystal structure of boehmite. PDF 04-016-2858 [1].

Table S1. X-ray Powder Diffraction data for boehmite. PDF 04-016-2858 [1].

d(Å)	2Theta (°)	I	h	k	l	Comment
6.1585	14.371	999	0	2	0	
3.17199	28.109	500	0	2	1	
3.07925	28.974	57	0	4	0	
2.80011	31.936	5	1	1	0	
2.35523	38.181	435	1	3	0	
2.23293	40.36	1	1	1	1	
2.05283	44.078	24	0	6	0	
1.98695	45.62	42	1	3	1	
1.87075	48.631	290	1	5	0	
1.8503	49.204	195	0	0	2	
1.79513	50.822	4	0	6	1	
1.77205	51.532	45	0	2	2	
1.66954	54.953	91	1	5	1	
1.58599	58.115	10	0	4	2	
1.54371	59.867	5	1	1	2	
1.53963	60.042	45	0	8	0	
1.50086	61.76	1	1	7	0	
1.455	63.932	127	1	3	2	
1.4377	64.795	62	2	0	0	
1.4215	65.625	4	0	8	1	
1.40006	66.76	18	2	2	0	
1.39082	67.263	54	1	7	1	
1.3744	68.176	13	0	6	2	

It is pointed out that the entries of these tables, marked with red color, are highlighted in our experimental X-ray diffraction patterns, observed in Figure 2&4 of the manuscript.

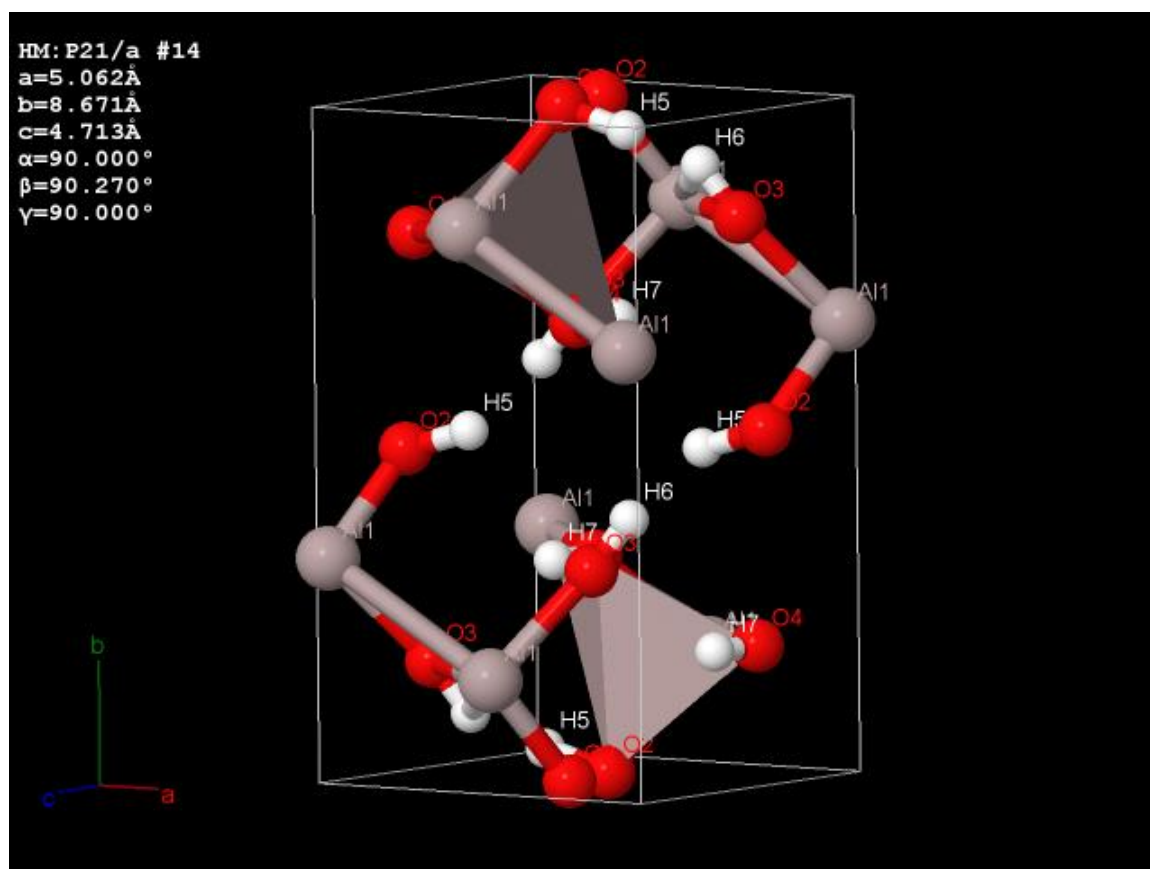


Figure S2. Crystal structure of bayerite. PDF 01-074-1119 [1].

Table S2. X-ray Powder Diffraction data for bayerite. PDF 01-074-1119 [1].

d(Å)	2Theta (°)	I	h	k	l	Comment
4.71295	18.814	1000	0	0	1	
4.37155	20.298	471	1	1	0	
4.3355	20.468	258	0	2	0	
4.14082	21.442	6	0	1	1	
3.29282	27.058	3	1	2	0	
3.21158	27.755	135	1	1	−1	
3.19857	27.871	152	1	1	1	Line with multiple indexes
3.19857	27.871	152	0	2	1	
2.70316	33.113	35	1	2	−1	
2.50998	35.744	4	1	3	0	
2.46389	36.436	23	0	3	1	
2.35647	38.16	49	0	0	2	
2.274	39.601	9	0	1	2	
2.23418	40.337	43	2	0	−1	
2.22542	40.502	349	2	0	1	
2.21754	40.653	668	1	3	−1	
2.18578	41.27	5	2	2	0	

2.16351	41.715	6	2	1	−1	
2.15556	41.876	21	2	1	1	
2.07783	43.52	8	1	1	−2	
2.07078	43.676	29	1	1	2	Line with multiple indexes
2.07078	43.676	29	0	2	2	
1.99271	45.481	3	1	4	0	
1.98599	45.644	10	2	2	−1	
1.97983	45.794	27	2	2	1	
1.96941	46.05	13	0	4	1	
1.9191	47.33	11	1	2	−2	
1.90412	47.725	8	2	3	0	
1.83662	49.595	5	1	4	1	Line with multiple indexes
1.83662	49.595	5	1	4	−1	
1.7633	51.806	2	2	3	1	
1.72874	52.922	37	2	0	−2	
1.71999	53.212	274	2	0	2	Line with multiple indexes
1.71999	53.212	274	1	3	−2	
1.71599	53.346	91	1	3	2	
1.69537	54.047	16	2	1	−2	
1.68772	54.312	10	2	1	2	
1.65625	55.432	8	3	1	0	
1.64641	55.792	8	2	4	0	
1.64059	56.007	6	1	5	0	
1.62752	56.497	2	0	5	1	
1.60579	57.332	22	2	2	−2	
1.59929	57.587	19	2	2	2	
1.59538	57.741	26	0	4	2	
1.57243	58.665	19	3	2	0	Line with multiple indexes
1.57243	58.665	19	0	0	3	
1.56031	59.166	19	3	1	1	
1.55578	59.356	24	2	4	−1	
1.55013	59.594	25	1	5	1	Line with multiple indexes
1.55013	59.594	25	1	5	−1	
1.54582	59.777	5	0	1	3	
1.52299	60.766	3	1	4	−2	
1.49357	62.094	4	3	2	−1	
1.48964	62.276	10	3	2	1	
1.48362	62.558	3	2	3	−2	
1.48034	62.712	4	1	1	−3	
1.47701	62.869	10	1	1	3	Line with multiple indexes
1.47701	62.869	10	0	2	3	
1.45718	63.825	90	3	3	0	
1.44517	64.419	49	0	6	0	
1.43059	65.156	2	2	5	0	
1.41957	65.726	2	1	2	−3	
1.39376	67.102	21	3	3	−1	

1.39056	67.277	21	3	3	1	Line with multiple indexes
1.39056	67.277	21	1	6	0	
1.38167	67.768	24	0	6	1	Line with multiple indexes
1.38167	67.768	24	0	3	3	
1.3679	68.545	3	2	5	1	
1.35799	69.115	2	3	1	−2	
1.35158	69.49	11	3	1	2	Line with multiple indexes
1.35158	69.49	11	2	4	−2	
1.34739	69.737	10	1	5	−2	Line with multiple indexes
1.34739	69.737	10	2	4	2	
1.34546	69.852	7	1	5	2	

It is pointed out that the entries of these tables, marked with red color, are highlighted in our experimental X-ray diffraction patterns, observed in Figure 2&4 of the manuscript.

References

1. Gates-Rector, S.; Blanton, T. The Powder Diffraction File: a quality materials characterization database. *Powder Diffraction* **2019**, *34*, 352–360.