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X-RAY POWDER DATA FOR ULEXITE AND HALOTRICHITE

GRETTA S. BAUR AND L. B. SAND, *Department of Mineralogy, University of Utah, Salt Lake City, Utah.*

During a study, described elsewhere in this journal, on an optical property exhibited by fibrous minerals, routine *x*-ray diffraction analyses were made of the specimens. It was found that the three principal diffractions of ulexite had not been reported nor had any diffraction data on halotrichite.

The *x*-ray powder data for two ulexite samples and the ASTM data are presented in Table 1. Note the use of molybdenum radiation in the ASTM data, which probably accounts for the omission of the most prominent diffractions in the lower angle region. The chemical analysis for the ulexite specimen from Boron, California is given in Table 2.

The *x*-ray powder data and the chemical analysis for the halotrichite specimen studied are presented in Tables 3 and 4, respectively.

A General Electric XRD3 diffractometer unit with nickel filtered copper radiation was used. The samples were ground to pass 325 mesh and packed in a $3\frac{1}{2}'' \times 1''$ sample holder avoiding orientation as much as possible.

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TABLE 1. *X*-RAY DIFFRACTION POWDER DATA ON ULEXITE

Harmon's Specimen Boron, California CuKα		"Cottonball" Antofagasta, Chile CuKα		Ulexite ASTM Card 2-0914 MoKα	
d Å	rel. I	d Å	rel. I	d Å	rel. I
12.3	100	12.4	76		
7.89	71	7.89	100		
6.06	71	6.02	55		
4.62	19	4.62	9	4.70	20
4.37	34	4.35	26	4.39	30
4.19	64	4.17	54	4.18	40
		4.00	14		
3.60	18	3.60	9	3.64	20
3.34	15	3.31	10		
3.22	28	3.21	16	3.24	40
3.11	49	3.10	28	3.13	50
3.02	38	3.01	18	3.03	40
2.92	29	2.91	12		
2.85	49	2.85	35	2.84	60
2.77	23	2.77	30		
2.67	63	2.66	55	2.69	100
2.58	34	2.58	23	2.60	70
2.415	13	2.409	9	2.42	30
2.350	6				
2.279	10				
2.236	23	2.231	20	2.24	40
2.174	19	2.184	14	2.19	40
2.130	4	2.125	6		
2.088	18				
2.065	50	2.065	48	2.07	70
2.026	28	1.996	20	2.02	30
1.938	25	1.928	13	1.93	60
		1.897	6		
1.879	11	1.872	7	1.88	30
1.809	9	1.802	7		
1.789	12	1.783	8	1.79	30
1.751	15	1.748	9	1.75	50
1.714	11	1.708	8	1.71	20
1.697	7	1.691	6		
1.663	6	1.660	4		
1.643	6	1.641	5		
1.601	6	1.596	3		
1.572	6	1.569	5		
1.550	6	1.548	5		
1.470	6	1.470	4		
1.443	5	1.439	4		
1.420	3	1.420	2		
1.390	2	1.402	2		
1.367	3	1.363	2		
1.331	3	1.330	2		

TABLE 2. CHEMICAL ANALYSIS OF ULEXITE

Boron, California

Na_2O	7.8%
CaO	14.2
B_2O_3	43.7
H_2O	34.2
	99.9%

TABLE 3. *X*-RAY DIFFRACTION POWDER DATA ON HALOTRICHITE

White Mountains, California

d Å	rel. I	d Å	rel. I
10.4	17	2.96	18
9.50	13	2.86	27
7.82	11	2.76	20
6.02	28	2.67	23
5.24	16	2.61	18
4.77	100	2.55	18
4.62	31	2.447	10
4.29	55	2.390	6
4.09	45	2.279	12
3.95	33	2.231	6
3.75	40	2.009	14
3.48	100	1.947	7
3.30	18	1.868	20
3.16	17	1.776	6
3.05	17	1.663	6

TABLE 4. CHEMICAL ANALYSIS OF HALOTRICHITE

Pacific Coast Pyrophyllite Mine, White Mountains, California

FeO	6.8%
Al_2O_3	12.0
SO_3	37.1
H_2O	43.8
	99.7%