atomic proportions on the basis of Si±Al+Be=13. The results of this calculation suggest the following formula for bavenite:

\[ \text{H}_2\text{Ca}\text{Be}_{2+}\text{Al}_{3-x}\text{SiO}_{17} \pm n\text{H}_2\text{O} \]

where \( x \) varies from 0.10 to 0.84, the average total oxygen is 28 and the average \( n = 1.08 \).

Determinations of the lattice parameters are noted in Table 2. Data listed under 3 were derived from the powder data given by Switzer and Reichen (1960) after first indexing the data with the cell of Ksanda and Merwin (1933). The powder data do not appear to require the larger cell found by Claringbull (1940). The data give \( V = 555 \) for bavenite and 553 for pilinite. For formula deduced above, using \( V = 554 \), the calculated density for \( x = 0, n = 1 \) is 2.80 and for \( x = 1, n = 1 \) it is 2.75. The latter is in close agreement with the measured values 2.745 (Ksanda and Merwin, 1933), 2.74 (Claringbull, 1940) and others given in Table 1.

With a fibrous mineral such as bavenite, measured values of specific gravity are generally low, and it is unlikely that such measurements could be accurate enough to confirm the variations in \( x \).

References


The American Mineralogist, Vol. 48, September-October, 1963

Rogersite = Weinschenkite

E. Wm. Heinrich and Shi H. Quon, The University of Michigan, Ann Arbor, Michigan.

The University of Michigan Mineralogical Collections contain a single small specimen (ca. 1X.75X.5 inches), labelled “Rogersite on Euxenite, Mitchell Co., N.C.”. Palache et al. (1944, p. 800) state that rogersite is “Probably an altered samarskite . . . . Of little validity.” Rogersite was described by Smith in 1877 (p. 367) as a hydrated columbate of rare earths of the yttrium subgroup. Smith (1877, p. 367) describes the mineral as follows: “On some of the samarskite, but more especially on

\[ ^1 \text{Contribution No. 253, The Mineralogical Laboratory, Department of Geology and Mineralogy, The University of Michigan, Ann Arbor, Michigan.} \]
Table 1. X-ray Powder Diffraction Data for Rogersite and Weinschenkite

<table>
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<tr>
<td>d (Å)</td>
<td>I</td>
</tr>
<tr>
<td>7.5</td>
<td>100</td>
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<tr>
<td>5.1</td>
<td>20</td>
</tr>
<tr>
<td>4.6</td>
<td>20</td>
</tr>
<tr>
<td>4.15</td>
<td>100</td>
</tr>
<tr>
<td>3.7</td>
<td>30</td>
</tr>
<tr>
<td>3.0</td>
<td>100</td>
</tr>
<tr>
<td>2.8</td>
<td>60</td>
</tr>
<tr>
<td>2.6</td>
<td>60</td>
</tr>
<tr>
<td>2.49</td>
<td>30</td>
</tr>
<tr>
<td>2.45</td>
<td>30</td>
</tr>
<tr>
<td>2.39</td>
<td>40</td>
</tr>
<tr>
<td>2.16</td>
<td>45</td>
</tr>
<tr>
<td>1.85</td>
<td>40</td>
</tr>
<tr>
<td>1.82</td>
<td>30</td>
</tr>
<tr>
<td>1.63</td>
<td>40</td>
</tr>
<tr>
<td>1.58</td>
<td>20</td>
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The rogersite of our specimen corresponds to this description. X-ray powder data indicate that the mineral coated by the rogersite is samars-kite, in our specimen. An x-ray powder photograph of the rogersite gives spacings and intensities that correspond in detail to those of weinschen-kite (Table 1).

The analyses by Smith (1877) are as follows:

<p>| | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>Water</td>
<td>17.41</td>
</tr>
<tr>
<td>Columbic acid</td>
<td>18.10</td>
</tr>
<tr>
<td>Yttria, etc.</td>
<td>60.12</td>
</tr>
<tr>
<td>(lost)</td>
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</table>

The water content is approximately correct for weinschenkite, which contains 16.38% H₂O. The method of analysis for niobium is not indi-
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cated. The specific gravities are comparable: weinschenkite 3.26–3.27; rogersite 3.313.

This study was supported by Michigan Memorial Phoenix Project 204.

REFERENCES


THE AMERICAN MINERALOGIST, VOL. 48, SEPTEMBER-OCTOBER, 1963

SAMPLE CONTAINER CONTAMINATION IN THE INFRARED SPECTRA OF MINERALS

R. J. P. Lyon, Stanford Research Institute, Menlo Park, California.

Many infrared spectra of otherwise pure minerals show the characteristic peaks of polystyrene abraded from the walls of the sample containers during preparation. In the commonly used alkali halide-pelleting technique, the sample and the potassium bromide (KBr) are shaken on a dentist’s amalgamator or “Wig-L-Bug.” Despite the small length of time involved (one to two minutes) sufficient abrasion takes place for the contaminant to be readily visible in the spectrum of the ensuing mixture. Polystyrene has a very marked infrared spectrum, and its presence is still observable even at concentrations far below 1 per cent.

The capsules often supplied with the amalgamator are made of polystyrene with polyethylene caps. A ball of hard “plexiglass” (polymethacrylate) is used inside the capsule to assist in the mixing action.

It is extremely important that steel capsules be used for mineralogical samples, rather than the plastic vials. Preferably the plexiglass ball should also be replaced with a small, hard glass bead. The beads possess little or no infrared spectrum and their effect cannot be seen in the spectrum of the sample.

Tracings of typical infrared curves, in the region from 1500 cm⁻¹ (6.6 microns) to 660 cm⁻¹ (15.0 microns) appear in Fig. 1. Curve A was prepared from powdered KBr without any shaking in the Wig-L-Bug. The KBr in curve B was shaken in a steel capsule for 2 minutes, with a glass bead, and shows only a small, broad dip in the region of 1020 cm⁻¹ (9.8 microns). Curves C and D show the characteristic doublets (solid black) of polystyrene at 1490, 1448 cm⁻¹ (6.70, 6.92 microns) and 752,692 cm⁻¹ (13.30, 14.45 microns). The KBr was shaken in the polystyrene vials with