Joséite

Crystal Data: Hexagonal. Point Group: 3 2/m. Ribbonlike sheets and plates, to 5 cm, rarely with straight edges.


R₁–R₂: (400) 51.7–53.7, (420) 51.6–53.9, (440) 51.6–54.0, (460) 51.6–54.4, (480) 51.6–54.7, (500) 51.6–55.0, (520) 51.6–55.2, (540) 51.5–55.4, (560) 51.3–55.4, (580) 51.1–55.5, (600) 50.9–55.4, (620) 50.6–55.3, (640) 50.3–55.1, (660) 50.0–54.8, (680) 49.7–54.6, (700) 49.3–54.3

Cell Data: Space Group: R̅3m. a = 4.24(1) c = 39.69(6) Z = 3

X-ray Powder Pattern: Glacier Gulch, Canada.
3.07 (10), 2.24 (5), 2.11 (5), 1.744(3), 1.537 (3), 4.38 (2), 3.61 (2)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
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</thead>
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<tr>
<td>Bi</td>
<td>79.15</td>
<td>81.23</td>
<td>82.7</td>
<td>81.34</td>
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<tr>
<td>Te</td>
<td>15.93</td>
<td>14.67</td>
<td>12.0</td>
<td>12.42</td>
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<tr>
<td>Se</td>
<td>1.48</td>
<td>2.84</td>
<td></td>
<td></td>
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<tr>
<td>S</td>
<td>3.15</td>
<td>1.46</td>
<td>6.0</td>
<td>6.24</td>
</tr>
</tbody>
</table>

Total 99.71 100.20 100.7 100.00

(1) San José, Brazil; corresponds to Bi₄Te₀.₃₂Se₀.₁₂S₀.₄₀. (2) Do.; corresponds to Bi₄Te₀.₅₈Se₀.₃₇S₀.₄₇. (3) Glacier Gulch, Canada; corresponds to Bi₄Te₀.₉₅S₁.₈₉. (4) Bi₄TeS₂.

Occurrence: In bismuth-rich hydrothermal deposits.

Association: Gold, bismuth, bismuthinite, galenobismutite, hessite, cosalite, laitakarite, tetradymite, joséite-B.

Distribution: From San José, near Marianna, Minas Gerais, Brazil [TL]. In Canada, at Glacier Gulch, Hudson Bay Mountain, near Smithers; and the Windpass mine, near Chu Chu, British Columbia; and in Yukon Territory, from placers in Clear Creek, McQuesten district, and in Highet Creek, Mayo district. In Spain, at Serrania de Ronda, Málaga Province. From the Carrock mine, Caldbeck Fells, and the Coniston mines, Cumbria, and at Penlee Quarry, Cornwall, England. From Băiţa (Războinica), Romania. In the Sosukchan deposit, northeastern Sakha, and the Tyrnyauz W–Mo deposit, left bank of the Baksan River Valley, northern Caucasus Mountains, Russia. At Kingsgate, New South Wales, and Maldon, Victoria, Australia. From Chilu, Fujian Province, China. In the Tsumo mine, about 50 km northwest of Hiroshima City, Akita Prefecture, Japan. Additional localities are increasingly becoming known.

Name: For the locality at San José in Brazil.


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