Michenerite

Crystal Data: Cubic. Point Group: 23. Typically as minute grains.

VHN = 306–317 (25 g load). D(meas.) = ~9.5 D(calc.) = ~10.0

R: (400) 52.6, (420) 53.6, (440) 55.3, (460) 55.8, (500) 56.1, (520) 56.4, (540) 56.5, (560) 56.7, (580) 56.9, (600) 57.1, (620) 57.1, (640) 57.9, (660) 58.6, (680) 58.8, (700) 59.3

Cell Data: Space Group: P2_1_3. a = 6.646 Z = 4

X-ray Powder Pattern: Synthetic PdBiTe.
2.974 (100), 2.000 (90), 2.715 (80), 1.773 (80), 1.451 (70), 1.234 (70), 0.8668 (70)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
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</thead>
<tbody>
<tr>
<td>Pd</td>
<td>24.0</td>
<td>24.1</td>
<td>24.02</td>
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<tr>
<td>Pt</td>
<td>n.d.</td>
<td>1.1</td>
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<tr>
<td>Ag</td>
<td>0.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ni</td>
<td>0.1</td>
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<td></td>
</tr>
</tbody>
</table>

Total 99.7 99.8 100.00

(1) Vermilion mine, Sudbury, Canada; by electron microprobe, corresponding to Pd_{0.99}Bi_{0.99}Sb_{0.01}Te_{1.00}. (2) Kambalda, Australia; by electron microprobe, corresponding to Pd_{0.96}Pt_{0.02}Bi_{0.74}Sb_{0.18}Te_{1.08}. (3) PdBiTe.

Mineral Group: Pyrite group.

Occurrence: A principal palladium mineral in Cu–Ni sulfide deposits.

Association: Testibiopalladite, froodite, merenskyite, moncheite, kotulskite, melonite, sobolevskite, hollingworthite, sperrylite, hessite, chalcopyrite, pentlandite, cubanite, pyrrhotite.

Distribution: In Canada, in Ontario, from the Frood [TL] and other mines in the Sudbury district; at the Pipe mine, Manitoba; in the Wellgreen deposit, Yukon Territory. In the USA, from the New Rambler Cu–Ni mine, Medicine Bow Mountains, east of Encampment, Albany Co., Wyoming; and in the Stillwater complex, Montana. From the Las Aguillas deposit, San Luis Province, Argentina. In Russia, at the Oktyabr mine, Noril’sk region, western Siberia; from the Monchegorsk deposit, Kola Peninsula; in the Bissersk placers, Ural Mountains; at the Vostok deposit, Lukkulaisvaaara layered intrusion, Karelia. From Hitura, Finland. At the Gabbr Akarem, Eastern Desert, Egypt. In the Ban Phuc deposit, northwest Vietnam. At Kambalda, 56 km south of Kalgoorlie, Western Australia. From the Rustenburg mine, in the Merensky Reef, Bushveld complex, Transvaal, South Africa. At Danba, Sichuan Province, China. Known in trace amounts from a few other localities.

Name: In honor of Dr. Charles Edward Michener (1907– ), Canadian geologist for the Canadian Nickel Company, who discovered the mineral.

Type Material: All original material consumed by analysis; redefined, Canadian Geological Survey, Ottawa; Royal Ontario Museum, Toronto, Canada, M31189 and M29438.


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