Backite Pb$_2$Al(TeO$_6$)Cl

Crystal Data: Hexagonal. Point Group: 32. As hexagonal plates, to 0.08 mm, displaying {10\overline{1} 0}, {01\overline{1} 0} and {0001}; typically in rosettes, to 0.15 mm.


Cell Data: Space Group: P312. a = 5.0441(7) c = 9.4210(5) Z = 1


Chemistry: (1)

\[
\begin{array}{ll}
\text{TeO}_3 & 24.05 \\
\text{Al}_2\text{O}_3 & 7.07 \\
\text{PbO} & 63.74 \\
\text{S} & 1.15 \\
\text{Cl} & 2.28 \\
\text{O} = \text{Cl} & 1.09 \\
\text{Total} & 97.20 \\
\end{array}
\]

(1) Grand Central Mine, Tombstone Hills, Cochise County, Arizona, USA; average of 3 electron microprobe analyses supplemented by Raman spectroscopy, valences determined from structure analysis; corresponding to Pb$_{2.05}$Al$_{1.00}$Te$_{0.98}$O$_6$(Cl$_{0.46}$S$_{0.53}$).

Occurrence: A secondary mineral in the oxidation zone of rocks containing Ag- and Au-bearing galena and minor amounts of copper and zinc minerals.

Association: Schieffelinite, oboyerite, rodalquilarite, cerussite, jarosite.

Distribution: From the Grand Central Mine, Contention-Grand Central mine group, Tombstone District, Tombstone Hills, Cochise County, Arizona, USA.

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Type Material: Royal Ontario Museum, Toronto, Canada (M56436), and the Natural History Museum of Los Angeles County, Los Angeles, California, USA (64499, 64500).