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Lepageite, $Mn_3^{2+}(Fe_7^{3+}Fe_4^{2+})O_3[Sb_5^{3+}As_8^{3+}O_{34}]$, a new arsenite-antimonite mineral from the Szklary pegmatite, Lower Silesia, Poland

Adam Pieczka[1,*], Mark A. Cooper[2], and Frank C. Hawthorne[2]

[1]AGH University of Science and Technology, Department of Mineralogy, Petrography and Geochemistry, 30-059 Kraków, Mickiewicza 30, Poland. Orcid 0000-0002-2841-7313

[2]Department of Geological Sciences, University of Manitoba, Winnipeg, Manitoba R3T 2N2,Canada

Abstract

Lepageite, a new arsenite-antimonite mineral, was discovered in a granitic pegmatite hosted by serpentinites of the Szklary massif, Lower Silesia, southwest Poland. Lepageite is a primary mineral formed during injection of an evolved LCT-type melt related to anatectic processes within the metasedimentary-metavolcanic complex of the nearby Góry Sowie Block, ~380 Ma, into serpentinite of the Szklary massif and its contamination by fluid-mobile serpentinite-hosted elements, among others As and Sb, transported in the form of $H_2AsO_3^-$ and $HSbO_2$ species at pH ≈ 9–11 and a low redox potential of –0.7 to –0.3 V.

Keywords: Lepageite, new mineral, arsenite, antimonite, chemical composition, crystal structure, crystallization conditions, Szklary, Poland