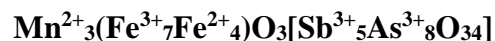


Lepageite

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As crystals to 30 μm . *Twinning:* Non-merohedral twin-component (180° rotation about c^*) indicated by structure analysis, twin law [-0.998 -0.001 0.005/0.000 -1.000 -0.002/0.729 -0.025 0.998].

Physical Properties: *Cleavage:* None. *Fracture:* n.d. *Tenacity:* n.d. *Hardness:* = n.d. *D(meas.):* = n.d. *D(calc.):* = 5.192

Optical Properties: Opaque. *Color:* Brownish black. *Streak:* n.d. *Luster:* Metallic. *Optical Class:* n.d.

Cell Data: Space Group: $P\bar{1}$. $a = 10.607(3)$ $b = 10.442(3)$ $c = 15.260(5)$ $\alpha = 89.58(1)^\circ$ $\beta = 104.479(8)^\circ$ $\gamma = 89.706(9)^\circ$ $Z = \text{n.d.}$

X-ray Powder Pattern: Calculated pattern.

2.831 (100), 2.854 (92), 2.846 (88), 2.898 (85), 2.487 (34), 2.474 (34), 2.463 (34)

Chemistry:	(1)	(2)
As ₂ O ₃	31.62	30.68
Sb ₂ O ₃	26.23	28.26
Fe ₂ O ₃	21.17	21.67
FeO	10.74	11.14
MnO	8.44	8.25
<u>MgO</u>	<u>0.26</u>	<u> </u>
Total	98.46	100.00

(1) Szklary pegmatite, Lower Silesia, southwest Poland; average electron microprobe analysis, overall 2⁺ cation and Fe³⁺ content fixed by stoichiometry; corresponds to (Fe³⁺_{6.90}Fe²⁺_{3.89}Mn²⁺_{3.10}Mg_{0.16}) $\Sigma=14.05$ (As³⁺_{8.32}Sb³⁺_{4.68}) $\Sigma=13.00$ O₃₇. (2) Mn²⁺₃(Fe³⁺₇Fe²⁺₄)O₃[Sb³⁺₅As³⁺₈O₃₄].

Occurrence: A primary accessory mineral in a lens of granitic LCT (Li-Cs-Ta) pegmatite formed during injection of an evolved LCT-type melt related to anatectic processes within a metasedimentary-metavolcanic complex into serpentinite.

Association: Mn-Be-Na-Cs-bearing cordierite, schafarzikite, harmotome, Ba-bearing microcline, barite, hematite.

Distribution: From the Szklary pegmatite, ~6 km north of Ząbkowice Śląskie, Lower Silesia, southwest Poland.

Name: Honors Yvon Le Page (b. 1943) a crystallographer who developed the program MISSYM that has played a major role in the solution of complex mineral structures (including lepageite), solved the structures of many minerals, and was involved in the description of several new minerals.

Type Material: Mineralogical Museum, University of Wrocław, Poland (MMWr IV7926).

References: (1) Pieczka, A., M.A. Cooper, and F.C. Hawthorne (2019) Lepageite, Mn²⁺₃(Fe³⁺₇Fe²⁺₄)O₃[Sb³⁺₅As³⁺₈O₃₄], a new arsenite-antimonite mineral from the Szklary pegmatite, Lower Silesia, Poland. *Amer. Mineral.*, 104(7), 1043-1050.