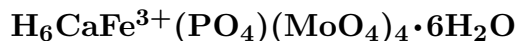


Melkovite



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Crystal Data: Monoclinic. *Point Group:* *m*. Crystals are pseudo-hexagonal, very thin, platy, to 2 μm , in powdery aggregates in veinlets.

Physical Properties: *Cleavage:* One, perfect. *Tenacity:* Brittle. *Hardness* = ~ 3
D(meas.) = 2.969–2.973 D(calc.) = n.d.

Optical Properties: Transparent. *Color:* Lemon-yellow, brownish yellow. *Luster:* Dull to waxy.

Optical Class: Biaxial (?), anomalous blue interference color. *Pleochroism:* Weak; colorless to light green. *Orientation:* Extinction wavy to nearly parallel \perp to the cleavage. $n = 1.838$

Cell Data: *Space Group:* *Aa*. $a = 17.46$ $b = 18.48$ $c = 10.93$ $\beta = 94.5^\circ$ $Z = 6$

X-ray Powder Pattern: Shunak Mountains, Kazakhstan.

2.916 (9), 3.537 (8), 8.42 (7), 3.036 (7), 1.789 (7), 1.992 (6), 2.415 (5)

Chemistry:

	(1)	(2)
MoO ₃	57.17	60.94
P ₂ O ₅	7.86	7.51
ZrO ₂	0.97	
Fe ₂ O ₃	10.90	8.45
CaO	5.15	5.94
Na ₂ O	1.12	
K ₂ O	0.28	
H ₂ O	16.59	17.16
Total	100.04	100.00

(1) Shunak Mountains, Kazakhstan; by electron microprobe, total Fe as Fe₂O₃, MoO₄ and PO₄ confirmed by IR; disregarding ZrO₂, corresponds to H₆Na_{0.18}K_{0.03}Ca_{0.92}Fe_{0.68}³⁺(MoO₄)_{3.96}(PO₄)_{0.56}•6.2H₂O. (2) H₆CaFe³⁺(PO₄)(MoO₄)₄•6H₂O.

Occurrence: Localized along joints in sandstone, formed by alteration of molybdenite in the oxidized zone of small molybdenite–fluorite deposits.

Association: Fluorite, molybdenite, magnetite, powellite, ferrimolybdate, iriginite, jarosite.

Distribution: In the Shunak Mountains, 60 km west of the Mointy railroad station, Kazakhstan.

Name: To honor Professor Vyacheslav Gavrilovich Melkov (1911–1991), Russian mineralogist specializing in uranium minerals, of the All-Union Research Institute of Mineral Resources, Moscow, Russia.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 72716; National Museum of Natural History, Washington, D.C., USA, 160237.

References: (1) Yegorov, B.L., A.D. Dara, and V.M. Senderova (1969) Melkovite, a new phosphomolybdate from the oxidized zone. *Zap. Vses. Mineral. Obshch.*, 98, 207–212 (in Russian). (2) (1970) *Amer. Mineral.*, 55, 320 (abs. ref. 1).