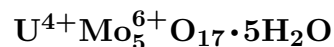


Mourite



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Crystal Data: Monoclinic. *Point Group:* m or $2/m$. As plates with rectangular outlines, elongated \parallel $[010]$, flattened on $\{100\}$, to 0.5 mm, in fanlike, spherulitic, or vermiform aggregates; as nodules and crusts.

Physical Properties: *Cleavage:* $\{100\}$, pronounced. Hardness = ~ 3 VHN = 75
D(meas.) = 3.78–4.12 D(calc.) = [4.22] Radioactive.

Optical Properties: Opaque to translucent. *Color:* Violet. *Streak:* Blue-violet.
Luster: Adamantine.

Optical Class: Biaxial. *Pleochroism:* Distinct; $X = Y$ = pale blue-violet with greenish tint; Z = pale blue-violet. *Orientation:* Positive elongation, extinction \parallel fiber axis, inclined to cleavage $\sim 10^\circ$. $n = > 1.780$ $\alpha = \text{n.d.}$ $\beta = \text{n.d.}$ $\gamma = \text{n.d.}$ $2V(\text{meas.}) = \text{n.d.}$ *Anisotropism:* Strong; X = rose; Y = green; Z = blue.

Cell Data: *Space Group:* Pa or $P2/a$. $a = 24.420$ $b = 7.183$ $c = 9.893$ $\beta = 102.00^\circ$
 $Z = 4$

X-ray Powder Pattern: Kyzylsai deposit, Kazakhstan.
5.897 (10), 12.77 (9), 2.871 (8), 1.728 (8), 3.285 (7), 3.193 (7), 3.148 (7)

Chemistry:	(1)	(2)	(3)	(1)	(2)	(3)
UO ₃	2.40	2.27		MgO	0.49	
MoO ₃	63.67	64.47	66.65	CaO	2.09	
SiO ₂	1.72	0.82		Na ₂ O	0.54	0.13
TiO ₂		0.06		K ₂ O	0.58	0.46
UO ₂	19.38	21.65	25.01	H ₂ O ⁺	6.07	7.73
Al ₂ O ₃	1.36	0.21		H ₂ O ⁻	1.67	1.12
Fe ₂ O ₃	0.57	0.05		H ₂ O		8.34
Tl ₂ O ₃		0.23		Total	[100.54]	99.29
PbO		0.09				100.00

(1) Kyzylsai deposit, Kazakhstan; original total given as 100.52%. (2) Do. (3) UMo₅O₁₇•5H₂O.

Occurrence: In the oxidized zone of a U–Mo deposit (Kyzylsai deposit, Kazakhstan); in a sandstone-hosted uranium deposit (Boso-Hackney prospect, Texas, USA).

Association: Uraninite, molybdenite, jordisite, ilsemannite, pyrite, umohoite, sedovite, iriginite, powellite, sodium uranospinite, uranophane, tyuyamunite, goethite, jarosite, kaolinite (Kyzylsai deposit, Kazakhstan); pyrite, marcasite, “opal,” chalcedony (Boso-Hackney prospect, Texas, USA).

Distribution: From the Kyzylsai Mo–U deposit, Chu-Ili Mountains, southwestern Balkhash region, Kazakhstan. At the Boso-Hackney prospect, about 19 km southwest of Falls City, Karnes Co., Texas, USA.

Name: For MOlybdenum and URanium in the composition.

Type Material: Mining Institute, St. Petersburg, 999/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 65196, 67299; National Museum of Natural History, Washington, D.C., USA, 127972.

References: (1) Kopchenova, E.V., K.V. Skvortsova, N.I. Silantieva, G.A. Sidorenko, and L.V. Mikhailova (1962) Mourite – a new supergene uranium-molybdenum mineral. Zap. Vses. Mineral. Obshch., 91, 67–71 (in Russian). (2) (1962) Amer. Mineral., 47, 1217 (abs. ref. 1). (3) Smith, M.L. and J. Marinenko (1971) Comparison of mourite from Karnes County, Texas with mourite from the U.S.S.R. Amer. Mineral., 56, 163–173. (4) Serezhkin, V.N., B.S. Osipov, and V.F. Chuvaev (1980) Structure and some physicochemical properties of mourite (1980) Geokhimiya, 10, 1557–1562 (in Russian). (5) (1980) Chem. Abs., 93, 570 (abs. ref. 4).

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