Mourite $U^{4+}Mo_5^{6+}O_{17}\cdot 5H_2O$

Crystal Data: Monoclinic. *Point Group:* m or $2/m$. As plates with rectangular outlines, elongated ‖ [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 ‖ fiber axis, inclined to cleavage ∼10°. $n = > 1.780$ α = n.d. β = n.d. γ = n.d. 2V(meas.) = n.d. *Anisotropism:* Strong; X = rose; Y = green; Z = blue.

Cell Data: *Space Group:* Pa or $P2/a$. $a = 24.420$ $b = 7.183$ $c = 9.893$ $\beta = 102.00°$ 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_2O	0.54	0.13	
TiO_2		0.06		K_2O	0.58	0.46	
UO_2	19.38	21.65	25.01	H_2O^+	6.07	7.73	
Al_2O_3	1.36	0.21		H_2O^-	1.67	1.12	
Fe_2O_3	0.57	0.05		H_2O			8.34
Tl_2O_3		0.23		Total	[100.54]	99.29	100.00
PbO		0.09					

(1) Kyzylsai deposit, Kazakhstan; original total given as 100.52%. (2) Do. (3) $UMo_5O_{17}\cdot 5H_2O$.

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).