Zharchikhite $AlF(OH)_2$

Crystal Data: Monoclinic, pseudo-orthorhombic. *Point Group:* $2/m$. Crystals are prismatic, to 2.5 mm, elongated along [001], showing {110}, {010}, {101}, {111}, may be isolated; commonly in fine-grained masses and drusy aggregates.

Physical Properties: *Cleavage:* {010}, perfect. *Tenacity:* Very brittle. Hardness = 4.5 VHN = 596 ∥ elongation, 426 ⊥ elongation, 500 average. D(meas.) = 2.81(1) D(calc.) = 2.82

Optical Properties: Transparent. *Color:* Colorless. *Luster:* Vitreous.
Optical Class: Biaxial (–). *Orientation:* $Y = b$; $Z \wedge c = 43°$–$44°$. *Dispersion:* $r > v$, inclined.
$\alpha = 1.532(2)$ $\beta = 1.552(2)$ $\gamma = 1.567(2)$ 2V(meas.) = n.d. 2V(calc.) = 80°

Cell Data: *Space Group:* $P2_1/a$. $a = 5.164(1)$ $b = 7.834(1)$ $c = 5.179(1)$
$\beta = 116.244(8)°$ Z = [4]

X-ray Powder Pattern: Zharchikha deposit, Russia.
3.98 (10), 1.833 (9), 2.92 (8), 2.31 (7), 1.737 (7), 1.289 (7), 1.926 (5)

Chemistry:

	(1)	(2)	(3)
SiO_2	2.54	0.5	
Al_2O_3	59.03	61.8	63.73
MnO	0.07		
MgO	0.13		
CaO	0.39		
F	22.96		23.75
H_2O	24.55		22.52
$-O = F_2$	9.67		10.00
Total	100.00		100.00

(1) Zharchikha deposit, Russia; $(OH)^{1-}$ confirmed present by IR. (2) Do., by electron microprobe, partial analysis. (3) $AlF(OH)_2$.

Occurrence: In cavities in hydrothermally mineralized fault breccia in trachyte in a stockwork molybdenum deposit.

Association: Prosopite, ralstonite, gearksutite, barite, siderite.

Distribution: In the Zharchikha molybdenum deposit, 60 km south-southwest of Ulan-Ude, on the west side of Lake Baikal, Buryatia, eastern Siberia, Russia.

Name: For its occurrence in the Zharchikha deposit, Russia (the name simplified in transliteration).

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 87567.

References: (1) Bolokhontseva, S.V., S.V. Baturin, E.S. Ilmeyev, M.A. Papova, and S.P. Purusova (1988) Zharchikhite $AlF(OH)_2$ – a new mineral. Zap. Vses. Mineral. Obshch., 117, 79–83 (in Russian). (2) (1989) Amer. Mineral., 74, 504 (abs. ref. 1).