

Crystal Data: Monoclinic. *Point Group:* 2/m. As thick tabular (flattened along [010]), short prismatic or equant crystals to 1 mm, or as grains with irregular outlines to 2 mm.

Physical Properties: *Cleavage:* Perfect on {100}. *Tenacity:* Brittle. *Fracture:* Stepped. Hardness = ~2.5 D(meas.) = 2.13(1) D(calc.) = 2.112 Nonfluorescent.

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (+). $\alpha = 1.484(2)$ $\beta = 1.508(2)$ $\gamma = 1.546(2)$ $2V(\text{meas.}) = 75(10)^\circ$ $2V(\text{calc.}) = 80^\circ$ *Orientation:* $Y = b$, $Z \wedge c = 6(1)^\circ$. Non-pleochroic.

Cell Data: *Space Group:* $P2_1/c$. $a = 9.4734(2)$ $b = 7.5203(2)$ $c = 11.4205(2)$ $\beta = 97.300(2)^\circ$ $Z = 4$

X-Ray Diffraction Pattern: Chelkar salt dome, Western Kazakhstan, Kazakhstan. 2.898 (100), 9.39 (86), 2.832 (56), 2.935 (42), 4.696 (41), 3.130 (19), 3.296 (18)

Chemistry:	(1)	(2)
Na ₂ O	0.01	
K ₂ O	17.84	18.31
CaO	0.07	
B ₂ O ₃	67.21	67.68
H ₂ O	[13.91]	14.01
Total	99.04	100.00

(1) Chelkar salt dome, Western Kazakhstan, Kazakhstan; average electron microprobe and IR spectroscopic analyses, H₂O calculated from stoichiometry; corresponds to K_{0.98}B_{5.005}O₇(OH)₂·H₂O.
(2) K[B₅O₇(OH)₂]·H₂O.

Occurrence: In a halite-sylvite evaporitic rock in a salt dome. Formed by diagenesis or post-diagenetic processes.

Association: Carnallite, polyhalite, gypsum, strontioginorite, satimolite, quartz.

Distribution From the Chelkar salt dome (drillcore of borehole #800, depth 344-347 m), near Chelkar (Shalkar) lake, Western Kazakhstan, Kazakhstan.

Name: Honors Russian geologist, petrologist, and mineralogist Yakov Yakovlevich *Yarzhemskii* (1901-?), a specialist in the petrology of evaporite rocks and mineralogy and genesis of boron deposits related to evaporites.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (5154/1; 96257).

References: (1) Pekov, I.V., N.V. Zubkova, O.V. Korotchenkova, I.I. Chaikovskiy, V.O. Yapaskurt, N.V. Chukanov, D.I. Belakovskiy, I.S. Lykova, S.N. Britvin, and D.Y. Pushcharovsky (2020) Yarzhemskiite, K[B₅O₇(OH)₂]·H₂O, a new mineral from the Chelkar salt dome, Western Kazakhstan. *Mineral. Mag.*, 84, 335-342.