

Crystal Data: Hexagonal. *Point Group:* 6/m 2/m 2/m. Crystals platy or prismatic, to 7 μm, with well developed (00*1) steps and (10*0) planes.

Physical Properties: *Cleavage:* n.d. *Tenacity:* n.d. *Fracture:* n.d. *Hardness =* n.d.
D(meas.) = n.d. D(calc.) = 2.45

Optical Properties: n.d. *Color:* n.d. *Streak:* n.d. *Luster:* n.d.
Optical Class: Biaxial.

Cell Data: Space Group: *P6/mcc.* *a* = 10.5757(3) *c* = 15.6404(6) *Z* = 8

X-ray Powder Pattern: Kokchetav Massif, northern Kazakhstan. (selective area diffraction pattern) 7.82(001), 4.56(100), 3.93(101), 2.98(102), 2.63(110), 2.51(111), 2.26(103), 1.80(104), 1.72(210), 1.68(211)

Chemistry:	(1)
SiO ₂	64.6
Al ₂ O ₃	18.0
K ₂ O	15.5
<u>Na₂O</u>	<u>< 0.3</u>
Total	100.1

(1) Kokchetav Massif, northern Kazakhstan; average of several EDS analyses, Raman spectroscopic analysis similar to sanidine, IR spectroscopy confirms absence of OH⁻ and H₂O; stated to be close to KAlSi₃O₈.

Polymorphism & Series: A metastable polymorph of orthoclase, microcline and sanidine.

Mineral Group: Feldspar group.

Occurrence: As inclusions in clinopyroxene and garnet within ultrahigh-grade granitic and biotite gneiss (estimated 900-1000 °C and 5.8-6.5 GPa).

Association: Diopside, grossular-rich garnet, phengite mica, potassium feldspar, pyrrhotite, cristobalite, quartz, titanite, zircon, talc.

Distribution: From Kumdy-Kol, Kokchetav Massif, northern Kazakhstan.

Name: For the locality of the first specimens, the *Kokchetav* Massif.

Type Material: National Museum of Natural Science, Taichung, (Taiwan) Republic of China (NMNS004438-P010220).

References: (1) Hwang, S.-L., P. Shen, H.-T. Chu, T.-F. Yui, J.G. Liou, N.V. Sobolev, R.-U. Zhang, V.S. Shatsky, and A.A. Zayachkovsky (2004) Kokchetavite: a new potassium-feldspar polymorph from the Kokchetav ultrahigh-pressure terrain. *Contrib. Mineral. Petrol.*, 148, 380-389. (2) (2005) *Amer. Mineral.*, 90, 1228-1229 (abs. ref. 1). (3) Hwang, S.-L., T.-F. Yui, H.-T. Chu, P. Shen, J.G. Liou, and N.V. Sobolev (2013) Oriented kokchetavite compound rods in clinopyroxene of Kokchetav ultrahigh-pressure rocks. *Journal of Asian Earth Sciences*, 63, 56-69. (4) Romanenko, A.V., S.V. Rashchenko, A.G. Sokol, A.V. Korsakov, Y.V. Seryotkin, K.V. Glazyrin, and K. Musiyachenko (2021) Crystal structures of K-cymrite and kokchetavite from single-crystal X-ray diffraction. *Amer. Mineral.*, 106, 404-409.