Kokchetavite

**Crystal Data:** Hexagonal. *Point Group: 6/m 2/m 2/m.* Crystals platy or prismatic, to 7 μm, with well developed (001) steps and (100) planes.


D(meas.) = n.d. D(calc.) = 2.45


**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:**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>SiO₂</td>
<td>64.6</td>
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<tr>
<td>Al₂O₃</td>
<td>18.0</td>
</tr>
<tr>
<td>K₂O</td>
<td>15.5</td>
</tr>
<tr>
<td>Na₂O</td>
<td>&lt; 0.3</td>
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<tr>
<td>Total</td>
<td>100.1</td>
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(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).