

Dachiardite-K**(K₂Ca)(Al₄Si₂₀O₄₈)·13H₂O**

Crystal Data: Monoclinic. *Point Group:* 2/m, m or 2. As radiating aggregates of slightly flattened, acicular along [010], split crystals, to 8 mm.

Physical Properties: *Cleavage:* Perfect on {100}. *Fracture:* Stepped. *Tenacity:* Brittle. Hardness = 4 D(meas.) = 2.18(2) D(calc.) = 2.169

Optical Properties: Transparent. *Color:* Colorless, white aggregates. *Streak:* White. *Luster:* Vitreous.

Optical Class: Biaxial (+). $\alpha(\text{calc.}) = 1.477$ $\beta = 1.478(2)$ $\gamma = 1.481(2)$ $2V(\text{meas.}) = 65(10)^\circ$ $2V(\text{calc.}) = \text{n.d.}$ *Dispersion:* Distinct, $r < v$. *Orientation:* $Y = b$, YZ plane coincides with a cleavage plane and the mineral shows straight extinction in this plane.

Cell Data: *Space Group:* C2/m, Cm or C2. $a = 18.670(8)$ $b = 7.511(3)$ $c = 10.231(4)$ $\beta = 107.79(3)^\circ$ $Z = 1$

X-ray Powder Pattern: Eastern Rhodopes, Bulgaria.

3.457 (100), 4.870 (59), 8.85 (58), 9.76 (24), 3.768 (20), 2.966 (17), 3.807 (16)

Chemistry:	(1)
K ₂ O	4.51
CaO	3.27
BaO	0.41
Al ₂ O ₃	10.36
SiO ₂	67.90
H ₂ O	13.20
Total	99.65

(1) Eastern Rhodopes, Bulgaria; average of 6 electron microprobe analyses supplemented by IR spectroscopy, H₂O by TGA; corresponding to H_{26.23}K_{1.71}Ca_{1.04}Ba_{0.05}Al_{3.64}Si_{20.24}O₆₁.

Mineral Group: Zeolite group.

Occurrence: In the walls of opal-chalcedony veins cutting hydrothermally-altered volcanic rocks.

Association: Dachiardite-Ca, dachiardite-Na, ferrierite-Mg, ferrierite-K, clinoptilolite-Ca, clinoptilolite-K, mordenite, smectite, celadonite, calcite, barite, chalcedony, opal.

Distribution: From 1 km NW of the village of Zvezdel, and 0.5 km E of the village of Austa, Momchilgrad Municipality, Eastern Rhodopes, Bulgaria.

Name: The K-dominant analogue of *dachiardite*.

Type Material: Earth and Man National Museum, Sofia, Bulgaria (23927).

References: (1) Chukanov, N.V., S. Encheva, P. Petrov, I.V. Pekov, D.I. Belakovskiy, S.N. Britvin, and S.M. Aksenov (2016) Dachiardite-K, (K₂Ca)(Al₄Si₂₀O₄₈)·13H₂O, a new zeolite from Eastern Rhodopes, Bulgaria. *Zapiski RMO (Proceedings of the Russian Mineralogical Society)*, 145(1), 68-79 (in Russian); *Geology of Ore Deposits*, 58(8), 666-673 (English translation). (2) (2017) *Amer. Mineral.*, 102, 1962 (abs. ref. 1).