Dachiardite-K $(K_2Ca)(Al_4Si_{20}O_{48})\cdot 13H_2O$

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 (+). α(calc.) = 1.477 β = 1.478(2) γ = 1.481(2) 2V(meas.) = 65(10)° 2V(calc.) = 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 *C*2. *a* = 18.670(8) *b* = 7.511(3) *c* = 10.231(4) β = 107.79(3)° 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_2O	4.51
CaO	3.27
BaO	0.41
Al_2O_3	10.36
SiO_2	67.90
H_2O	13.20
Total	99.65

(1) Eastern Rhodopes, Bulgaria; average of 6 electron microprobe analyses supplemented by IR spectroscopy, H_2O by TGA; corresponding to $H_{26.23}K_{1.71}Ca_{1.04}Ba_{0.05}Al_{3.64}Si_{20.24}O_{61}$.

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, $(K_2Ca)(Al_4Si_{20}O_{48})\cdot 13H_2O$, 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).