Minjiangite $BaBe_2(PO_4)_2$

Crystal Data: Hexagonal. *Point Group*: 6/*m* 2/*m* 2/*m*. As subhedral to euhedral crystals, to 200 μm.

Physical Properties: *Cleavage*: None observed. *Fracture*: n.d. *Tenacity*: Brittle.
Hardness = ~ 6 D(meas.) = n.d. D(calc.) = 3.49

Optical Properties: Transparent to translucent. *Color*: White. *Streak*: n.d. *Luster*: Vitreous.
Optical Class: Uniaxial (+). ω = 1.587(3) ε = 1.602(2) (Synthetic $BaBe_2(PO_4)_2$)

Cell Data: *Space Group*: *P*6/*mmm*. *a* = 5.029(1) *c* = 7.446(1) Z = 1 (Synthetic $BaBe_2(PO_4)_2$)

X-ray Powder Pattern: Nanping No. 31 pegmatite, northwest Fujian Province, southeastern China.
3.763 (100), 2.836 (81.3), 2.090 (63.9), 2.515 (32.3), 2.178 (25.6), 1.507 (25.4), 2.162 (19)

Chemistry:	(1)	(2)
P_2O_5	40.16	41.11
BaO	43.01	44.40
BeO	14.06	14.49
SiO_2	0.17	
CaO	0.17	
SrO	0.08	
FeO	0.03	
MgO	0.01	
TiO_2	0.07	
K_2O	0.05	
Na_2O	0.11	.
Total	97.92	100.00

(1) Nanping No. 31 pegmatite, northwest Fujian Province, southeastern China; average of 8 electron microprobe analyses, supplemented by FTIR and Raman spectroscopy, BeO by SIMS; corresponding to $(Ba_{0.99}Ca_{0.01}Na_{0.01})_{\Sigma=1.01}Be_{1.98}(P_{1.99}Si_{0.01})_{\Sigma=2.00}O_8$. (2) $BaBe_2(PO_4)_2$.

Occurrence: In fractures cutting montebrasite, as a late hydrothermal secondary mineral in a Be-rich, zoned pegmatite.

Association: Montebrasite, quartz, muscovite, hydroxylapatite, palermoite.

Distribution: From the 515 m level, Zone IV, Nanping No. 31 pegmatite, northwest Fujian Province, southeastern China.

Name: For the Minjiang River, located near the Nanping pegmatite.

Type Material: Geological Museum of China, Beijing, China (M11842) and the Laboratory of Mineralogy, University of Liège, Belgium (20390, 20386).

References: (1) Rao, C., F. Hatert, R.C. Wang, X.P. Gu, F. Dal Bo and C.W. Dong (2015) Minjiangite, $BaBe_2(PO_4)_2$, a new mineral from Nanping No. 31 pegmatite, Fujian Province, southeastern China. Mineral. Mag., 79(5), 1195-1202. (2) Dal Bo, F., F. Hatert, and M. Baijot (2014) Crystal chemistry of synthetic $M^{2+}Be_2P_2O_8$ (M^{2+} = Ca, Sr, Pb, Ba) beryllophosphates. Can. Mineral., 52(2), 337-350. (3) (2016) Amer. Mineral., 101, 2127-2128 (abs. refs. 1 & 2).