Direnzoite $NaK_6MgCa_2(Al_{13}Si_{47})O_{120}\cdot 36H_2O$

Crystal Data: Orthorhombic. *Point Group*: 2/*m* 2/*m* 2/*m*. As spherical aggregates to 0.5 mm of radiating striated acicular microcrystals to 50 μm.

Physical Properties: *Cleavage*: Distinct along [010]. *Fracture*: Splintery and uneven. *Tenacity*: Brittle. Hardness = 4.5 D(meas.) = 2.12(3) D(calc.) = 2.080 Non-fluorescent.

Optical Properties: Translucent to transparent. *Color*: Colorless. *Streak*: White. *Luster*: Vitreous to silky.
Optical Class: Biaxial (+). *n*(calc.) = 1.483(3) Non-pleochroic.

Cell Data: *Space Group*: *Pmmn.* *a* = 7.57887(18) *b* = 18.20098(57) *c* = 26.15387(83)

X-ray Powder Pattern: Mont Peylenc, near St. Pierre Eynac, Massif Central, France.
3.182 (100), 3.484 (71), 9.744 (60), 3.269 (55), 2.907 (48), 3.549 (47), 4.234 (44)

Chemistry:

	(1)
SiO_2	62.45
Al_2O_3	15.11
MgO	1.39
Fe_2O_3	0.27
CaO	2.69
Na_2O	0.77
K_2O	2.85
BaO	0.04
SrO	0.08
H_2O	[14.35]
Total	100.00

(1) Mont Peylenc, near St. Pierre Eynac, Massif Central, France; average electron microprobe analysis, H_2O calculated by difference and confirmed by crystal structure analysis; corresponding to $(Na_{1.12}K_{2.73}Mg_{1.56}Ca_{2.17}Fe_{0.15}Sr_{0.03}Ba_{0.01})_{\Sigma=7.77}Al_{13.40}Si_{46.98}O_{120}\cdot 35.99H_2O$.

Mineral Group: Zeolite.

Occurrence: Formed by hydrothermal crystallization in the vugs of a highly porphyritic basalt xenolith.

Association: Mordenite, phillipsite, merlinoite, erionite, analcime, chabazite, calcite, aragonite.

Distribution: From Mont Peylenc, near St. Pierre Eynac, Massif Central, France.

Name: Honors Dr. Francesco *Di Renzo*, (b. 1954), Research Director, Laboratoire de Matériaux Catalytiques et Catalyse en Chimie Organique, Ecole Nationale Supérieure de Chimie de Montpellier (France), for his contributions in the fields of zeolites, mesoporous materials, and catalysis.

Type Material: n.d.

References: (1) Galliand, E. and A.F. Gualtieri (2008) Direnzoite, $[NaK_6MgCa_2(Al_{13}Si_{47}O_{120})\cdot 36H_2O]$, a new zeolite from Massif Central (France): Description and crystal structure. Amer. Mineral., 93, 95-102.