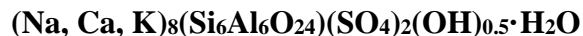


Biachellaite**Crystal Data:** Hexagonal. *Point Group:* 3. As equant dipyramidal-pinacoidal crystals to 1 cm.**Physical Properties:** *Cleavage:* Perfect on {10 $\bar{1}$ 0}, imperfect (parting?) on {0001}.*Tenacity:* Brittle. *Fracture:* n.d. *Hardness* = 5 *D(meas.)* = 2.51(1) *D(calc.)* = 2.515**Optical Properties:** Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous.*Optical Class:* Uniaxial (+). ω = 1.512(1) ϵ = 1.514(1)**Cell Data:** *Space Group:* P3. a = 12.913(1) c = 79.605(5) Z = 15**X-Ray Diffraction Pattern:** Biachella Valley, Sacrofano Caldera, Latium region, Italy.

3.720 (100), 3.300 (47), 11.07 (19), 6.45 (18), 3.576 (18), 3.220 (16), 4.782 (15)

Chemistry:

	(1)
Na ₂ O	10.06
K ₂ O	5.85
CaO	12.13
Al ₂ O ₃	26.17
SiO ₂	31.46
SO ₃	12.71
Cl	0.45
H ₂ O	1.6
<u>-O = Cl₂</u>	<u>0.10</u>
Total	100.33

(1) Biachella Valley, Sacrofano Caldera, Latium region, Italy; average electron microprobe analysis supplemented by IR spectroscopy, H₂O by TGA; corresponding to (Na_{3.76}Ca_{2.50}K_{1.44}) $\Sigma=7.70$ (Si_{6.06}Al_{5.94}O₂₄)(SO₄)_{1.84}Cl_{0.15}(OH)_{0.43}·0.81H₂O.

Mineral Group: Cancrinite group.**Occurrence:** Found in cavities in volcanic ejecta.**Association:** Sanidine, diopside, andradite, leucite, hauyne.**Distribution:** From the Biachella Valley, Sacrofano Caldera, Sacrofano municipality, Rome province, Latium region, Italy.**Name:** For the discovery locality, the *Biachella Valley*.**Type Material:** A.E. Fersman Mineralogical Museum, RAS, Moscow, Russia (3642/1).

References: (1) Chukanov, N.V., R.K. Rastsvetaeva, I.V. Pekov, A.E. Zadov, R. Allori, N.V. Zubkova, G. Giester, D.Y. Pushcharovsky, and K.V. Van (2008) Biachellaite (Na,Ca,K)₈(Si₆Al₆O₂₄)(SO₄)₂(OH)_{0.5}·H₂O, a new member of the cancrinite group. *Zap. Ross. Mineral. Obshch.*, 137(3), 57-66. (2) Rastsvetaeva, R.K. and N.V. Chukanov (2008) Model of the crystal structure of biachellaite as a new 30-layer member of the cancrinite group. *Crystallography Reports*, 53, 981-988.