Montesommaite $(K,Na)_9Al_9Si_{23}O_{64}\cdot 10H_2O$

Crystal Data: Orthorhombic, pseudotetragonal. *Point Group:* $mm2$. Dipyramidal crystals, truncated by pedions, to 0.1 mm.

Physical Properties: Hardness = n.d. D(meas.) = 2.34(4) D(calc.) = 2.30

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (–). *Orientation:* $X = c$; $Y = a$ or b, $Z = a$ or b. $\alpha = 1.498(1)$ $\beta = 1.506(1)$ $\gamma = 1.507(1)$ 2V(meas.) = 35(5)° 2V(calc.) = 39°

Cell Data: *Space Group:* $Fdd2$. $a = 10.099(1)$ $b = 10.099(1)$ $c = 17.307(3)$ Z = 1

X-ray Powder Pattern: Pollena, Italy.
3.299 (100), 3.130 (100), 6.589 (75), 4.334 (43), 2.797 (30), 2.347 (22), 1.784 (22)

Chemistry:

	(1)
SiO_2	55.7
Al_2O_3	19.8
Na_2O	0.2
K_2O	16.7
H_2O	[7.6]
Total	[100.0]

(1) Pollena, Italy; by electron microprobe, H_2O by difference; corresponding to $(K_{8.6}Na_{0.2})_{\Sigma=8.8}(Si_{22.6}Al_{9.4})_{\Sigma=32.00}O_{73.9}H_{20.5}$.

Mineral Group: Zeolite group.

Occurrence: In volcanic scoria.

Association: Dolomite, calcite, chabazite, natrolite.

Distribution: From Pollena, Monte Somma, Campania, Italy.

Name: For Monte Somma, the volcano ancestral to Vesuvius, Italy, in the remnants of which the mineral occurs.

Type Material: National Museum of Natural History, Washington, D.C., USA, 165440.

References: (1) Rouse, R.C., P.J. Dunn, J.D. Grice, J.L. Schlenker, and J.B. Higgins (1990) Montesommaite, $(K,Na)_9Al_9Si_{23}O_{64}\cdot 10H_2O$, a new zeolite related to merlinoite and the gismondine group. Amer. Mineral., 75, 1415–1420.