Microsommite $(Na, Ca, K)_{7-8}(Si, Al)_{12}O_{24}(Cl, SO_4)_{2-3}$

Crystal Data: Hexagonal. *Point Group:* 622. As groups of minute prismatic crystals, striated ‖ their length.

Physical Properties: *Cleavage:* $\{10\bar{1}0\}$, perfect; {0001}, less distinct. Hardness = 6
D(meas.) = 2.42–2.53. D(calc.) = [2.48]

Optical Properties: Transparent. *Color:* Colorless. *Luster:* Silky to brilliant on $\{10\bar{1}0\}$, otherwise vitreous.
Optical Class: Uniaxial (+). $\omega = 1.521$ $\epsilon = 1.529$

Cell Data: *Space Group:* $P6_322$. a = 22.08(4) c = 5.33(2) Z = 3

X-ray Powder Pattern: Monte Somma, Italy.
4.81 (100), 3.69 (100), 3.29 (100), 2.670 (80), 2.660 (80), 2.765 (60), 2.455 (60)

Chemistry:

	(1)	(2)
SiO_2	31.70	30.74
Al_2O_3	32.07	31.57
CaO	14.72	10.77
Na_2O	12.45	8.46
K_2O	4.27	8.97
Cl	6.99	7.65
SO_3		5.17
$-O = Cl_2$	1.58	1.73
Total	[100.62]	101.60

(1) Monte Somma, Italy; original total given as 100.72%; corresponds to $(Na_{4.17}Ca_{2.72}K_{0.94})_{\Sigma=7.83}(Al_{6.53}Si_{5.47})_{\Sigma=12.00}O_{23}Cl_{2.04}$. (2) Do.; corresponds to $(Na_{2.90}Ca_{2.04}K_{2.02})_{\Sigma=6.96}(Al_{6.57}Si_{5.43})_{\Sigma=12.00}O_{23}[Cl_{2.29}(SO_4)_{0.68}]_{\Sigma=2.97}$.

Mineral Group: Cancrinite group.

Occurrence: In ejected volcanic masses and in leucitites.

Association: Nepheline.

Distribution: From Monte Somma, Campania, and at Pitigliano, near Grosseto, Tuscany, Italy.

Name: From the Greek for *small*, in allusion to crystal size, and for the original locality at Monte Somma, Italy.

Type Material: Natural History Museum, Paris, France, 97397.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 428.
(2) Bariand, P., F. Cesbron, and R. Giraud (1968) Une nouvelle espèce minérale: l'afghanite de Sar-e-Sang, Badakhshan, Afghanistan. Comparaison avec les minéraux du groupe de la cancrinite. Bull. Soc. fr. Minéral., 91, 34–42 (in French with English abs.).