Giuseppettite $(Na, K, Ca)_{7-8}(Si, Al)_{12}O_{24}(SO_4, Cl)_{1-2}$

Crystal Data: Hexagonal. *Point Group:* $6mm$, $\overline{6}m2$, or $6/m\ 2/m\ 2/m$. As anhedral grains, in veinlets a few mm thick.

Physical Properties: Hardness = 6–7 D(meas.) = 2.35 D(calc.) = 2.365

Optical Properties: Transparent. *Color:* Pale blue-violet.
Optical Class: Uniaxial (+). $\omega = 1.491$ $\epsilon = 1.507$

Cell Data: *Space Group:* $P6_3mc$, $P\overline{6}2c$, or $P6_3/mmc$. a = 12.850(1) $c = 42.22(3)$ Z = 8

X-ray Powder Pattern: Sacrofano, Italy.
3.712 (100), 3.446 (80), 3.126 (70), 2.141 (66), 6.42 (62), 2.640 (62), 4.318 (53)

Chemistry:

	(1)
SiO_2	33.25
Al_2O_3	28.56
Fe_2O_3	0.03
CaO	4.85
Na_2O	14.37
K_2O	8.00
Cl	0.78
SO_3	9.92
$-O = Cl_2$	0.18
Total	99.58

(1) Sacrofano, Italy; by electron microprobe, SO_3 confirmed by IR; corresponds to $(Na_{5.0}K_{1.8}Ca_{1.0})_{\Sigma=7.8}(Al_{6.05}Si_{5.95})_{\Sigma=12.00}O_{24}(SO_4)_{1.8}Cl_{0.25}$.

Mineral Group: Cancrinite group.

Occurrence: As veinlets in a block of sanidinite volcanic ejecta.

Association: Potassic feldspar, nepheline, haüyne, biotite, kalsilite.

Distribution: At Sacrofano, in the Biachella Valley, Lazio, Italy.

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Type Material: University of Pavia, Pavia, Italy.

References: (1) Mazzi, F. and C. Tadini (1981) Giuseppettite, a new mineral from Sacrofano (Italy), related to the cancrinite group. Neues Jahrb. Mineral., Monatsh., 103–110. (2) (1982) Amer. Mineral., 67, 415 (abs. ref. 1).