

Crystal Data: Hexagonal. *Point Group:* 6/*m*. As rare striated subhedral hexagonal prismatic crystals, to 1.5 mm, exhibiting {10 $\bar{1}$ 0}, {01 $\bar{1}$ 1}, {0001}; commonly granular.

Twining: On {10 $\bar{1}$ 0}, uncommon.

Physical Properties: *Cleavage:* On {0001}. Hardness = 2–3 D(meas.) = 2.786(2)
D(calc.) = [2.83] Slightly soluble in H₂O.

Optical Properties: Transparent to translucent. *Color:* Colorless to white; colorless in thin section. *Luster:* Greasy to silky in aggregates.

Optical Class: Uniaxial (-). $\omega = 1.570(2)$ $\epsilon = 1.564(2)$

Cell Data: *Space Group:* P6₃/*m*. $a = 9.446(1)$ $c = 6.895(1)$ $Z = 2$

X-ray Powder Pattern: Cesano, Italy.

2.727 (100), 3.448 (87), 1.844 (71), 3.896 (66), 2.822 (60), 2.636 (49), 2.269 (47)

Chemistry:

	(1)
SO ₃	52.6
CaO	18.9
SrO	0.72
Na ₂ O	23.3
K ₂ O	0.21
F	0.25
Cl	0.44
H ₂ O	2.91
-O = (F, Cl) ₂	0.21
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Total	99.12

(1) Cesano, Italy; by electron microprobe, corresponds to (Ca_{1.54}Na_{0.44}Sr_{0.03}) $_{\Sigma=2.01}$ (Na_{2.98}K_{0.02}) $_{\Sigma=3.00}$ [(OH)_{0.44}Cl_{0.06}F_{0.06}] $_{\Sigma=0.56}$ (SO₄)_{2.99}•0.44H₂O.

Occurrence: As vein and cavity fillings in brecciated rock in an active geothermal field.

Association: Görgeyite, pyrite, gypsum, anhydrite, apthitalite, kalistrontite, glauberite.

Distribution: From drill core at the edge of the Baccano caldera, Cesano geothermal field, east of Lake Bracciano, Lazio, Italy.

Name: For the locality near Cesano, Italy.

Type Material: City Museum of Natural History, Milan; Mineralogy Museum, University of Rome, Rome, Italy 24316/1; Natural History Museum, Vienna, Austria, L6891; National Museum of Natural History, Washington, D.C., USA, 150333.

References: (1) Cavarretta, G., A. Mottana, and F. Tecce (1981) Cesanite, Ca₂Na₃[(OH)(SO₄)₃], a sulphate isotypic to apatite, from the Cesano geothermal field (Latium, Italy). *Mineral. Mag.*, 44, 269–273. (2) (1982) *Amer. Mineral.*, 67, 621 (abs. ref. 1). (3) Tazzoli, V. (1983) The crystal structure of cesanite, Ca_{1+x}Na_{4-x}(SO₄)₃(OH)_x•(1-x)H₂O, a sulphate isotypic to apatite. *Mineral. Mag.*, 47, 59–63. (4) Deganello, S. (1983) The crystal structure of cesanite at 21 and 236 °C. *Neues Jahrb. Mineral., Monatsh.*, 305–313.