

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.

Twinning: 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
Total	99.12

(1) Cesano, Italy; by electron microprobe, corresponds to (Ca_{1.54}Na_{0.44}Sr_{0.03})_{Σ=2.01} (Na_{2.98}K_{0.02})_{Σ=3.00} [(OH)_{0.44}Cl_{0.06}F_{0.06}]_{Σ=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) Cesante, 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 cesante, 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 cesante at 21 and 236 °C. Neues Jahrb. Mineral., Monatsh., 305–313.