

# Strätlingite



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**Crystal Data:** Hexagonal. *Point Group:*  $\bar{3} 2/m$ . Platy crystals, to 0.5 mm, and in rosettes.

**Physical Properties:** *Cleavage:* Perfect on {0001}. *Hardness* = n.d. *D*(meas.) = n.d.  
*D*(calc.) = 1.96–1.98

**Optical Properties:** Transparent. *Color:* Colorless to light green.  
*Optical Class:* Uniaxial (-).  $\omega = 1.534$   $\epsilon = \text{n.d.}$

**Cell Data:** *Space Group:*  $R\bar{3}m$ .  $a = 5.745(7)$   $c = 37.77(1)$   $Z = 3$

**X-ray Powder Pattern:** Bellerberg volcano, Germany.

12.5 (100), 4.16 (100), 6.2 (70), 2.87 (70), 2.61 (40), 2.49 (40), 2.12 (40)

## Chemistry:

	(1)	(2)
SiO <sub>2</sub>	17.55	15.97
Al <sub>2</sub> O <sub>3</sub>	23.22	24.15
CaO	25.13	25.60
SrO	1.09	0.74
BaO	0.90	0.81
Na <sub>2</sub> O	0.13	0.04
K <sub>2</sub> O	0.18	0.01
H <sub>2</sub> O <sup>+</sup>		28.00
H <sub>2</sub> O <sup>-</sup>		4.5
H <sub>2</sub> O	[31.80]	
Total	[100.00]	99.82

(1) Bellerberg volcano, Germany; by electron microprobe, H<sub>2</sub>O by difference; corresponding to (Ca<sub>1.90</sub>Sr<sub>0.04</sub>Ba<sub>0.03</sub>Na<sub>0.02</sub>K<sub>0.01</sub>)<sub>Σ=2.00</sub>Al<sub>1.93</sub>Si<sub>1.24</sub>O<sub>2.13</sub>(OH)<sub>10.44</sub>•2.25H<sub>2</sub>O. (2) Montalto di Castro, Italy; by electron microprobe, H<sub>2</sub>O by TGA; corresponding to (Ca<sub>1.94</sub>Sr<sub>0.03</sub>Ba<sub>0.02</sub>Na<sub>0.01</sub>)<sub>Σ=2.00</sub>Al<sub>2.02</sub>Si<sub>1.13</sub>O<sub>1.85</sub>(OH)<sub>10.85</sub>•2.25H<sub>2</sub>O.

**Occurrence:** In a metamorphosed limestone xenolith in basalt (Bellerberg volcano, Germany); within metamorphosed clay xenoliths in phonolite (Montalto di Castro, Italy).

**Association:** Nepheline, melilite, garnet, thomsonite, gismondine, ettringite, hydrocalumite (Bellerberg volcano, Germany); tobermorite, ettringite, calcite, vertumnite (Montalto di Castro, Italy).

**Distribution:** At the Bellerberg volcano, two km north of Mayen, Eifel district, Germany. In a quarry at Campomorto, Montalto di Castro, Lazio, Italy.

**Name:** For W. Strätling, who synthesized the mineral.

**Type Material:** University of Erlangen, Nürnberg, Germany; National Museum of Natural History, Washington, D.C., USA, 137064.

**References:** (1) Hentschel, G. and H.-J. Kuzel (1976) Strätlingit, 2CaO•Al<sub>2</sub>O<sub>3</sub>•SiO<sub>2</sub>•8H<sub>2</sub>O, ein neues Mineral. Neues Jahrb. Mineral., Monatsh., 326–330 (in German with English abs.). (2) Kuzel, H.-J. (1976) Crystallographic data and thermal decomposition of synthetic gehlenite hydrate 2CaO•Al<sub>2</sub>O<sub>3</sub>•SiO<sub>2</sub>•8H<sub>2</sub>O. Neues Jahrb. Mineral., Monatsh., 319–325. (3) (1977) Amer. Mineral., 62, 395 (abs. refs. 1 and 2). (4) Rinaldi, R., M. Sacerdoti, and E. Passaglia (1990) Strätlingite: crystal structure, chemistry, and a reexamination of its polytype vertumnite. Eur. J. Mineral., 2, 841–849.