

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 ₂	17.55	15.97
Al ₂ O ₃	23.22	24.15
CaO	25.13	25.60
SrO	1.09	0.74
BaO	0.90	0.81
Na ₂ O	0.13	0.04
K ₂ O	0.18	0.01
H ₂ O ⁺		28.00
H ₂ O ⁻		4.5
H ₂ O	[31.80]	
Total	[100.00]	99.82

(1) Bellerberg volcano, Germany; by electron microprobe, H₂O by difference; corresponding to (Ca_{1.90}Sr_{0.04}Ba_{0.03}Na_{0.02}K_{0.01})_{Σ=2.00}Al_{1.93}Si_{1.24}O_{2.13}(OH)_{10.44}•2.25H₂O. (2) Montalto di Castro, Italy; by electron microprobe, H₂O by TGA; corresponding to (Ca_{1.94}Sr_{0.03}Ba_{0.02}Na_{0.01})_{Σ=2.00}Al_{2.02}Si_{1.13}O_{1.85}(OH)_{10.85}•2.25H₂O.

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•Al₂O₃•SiO₂•8H₂O, 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•Al₂O₃•SiO₂•8H₂O. 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.