

Brenkite**Ca₂(CO₃)F₂**

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Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Prismatic crystals are flattened {010} and elongated along [001], exhibiting {010}, {110}, {102}, and {021}, to 6 mm; in radial and spherical aggregates.

Physical Properties: Hardness = ~ 5 D(meas.) = 3.10(4) D(calc.) = 3.126

Optical Properties: Semitransparent. *Color:* Colorless. *Streak:* White.
Optical Class: Biaxial (-). *Orientation:* $X = c; Y = a; Z = b.$ $\alpha = 1.525(5)$ $\beta = 1.590(5)$
 $\gamma = 1.593(5)$ $2V(\text{meas.}) = 26^\circ\text{--}28^\circ$ $2V(\text{calc.}) = 23.5^\circ$

Cell Data: *Space Group:* $Pbcn.$ $a = 7.650(2)$ $b = 7.550(2)$ $c = 6.548(2)$ $Z = 4$

X-ray Powder Pattern: Schellkopf, Germany.
 2.794 (100), 3.028 (80), 3.006 (80), 1.835 (80), 2.486 (70), 3.276 (60), 2.265 (60)

Chemistry:	(1)	(2)
CO ₂	24.6	24.70
CaO	62.3	62.95
F	21.3	21.33
-O = F ₂	9.0	8.98
Total	99.2	100.00

(1) Schellkopf, Germany; C and F average of four analyses, Ca average of two analyses, recalculated to oxides from an elemental analysis. (2) Ca₂(CO₃)F₂.

Occurrence: In voids and fissures in a porphyritic selbergite [formerly nosean-phonolite].

Association: Phillipsite, zeophyllite, gismondine, calcite.

Distribution: At the Schellkopf, 0.5 km west of Brenk, Eifel district, Germany.

Name: For Brenk, near the locality in Germany.

Type Material: Johannes Gutenberg University, Mainz, Germany; National Museum of Natural History, Washington, D.C., USA, 137256.

References: (1) Hentschel, G., U. Leufer, and E. Tillmanns (1978) Brenkit, ein neues Kalzium-Fluor-Karbonat vom Schellkopf/Eifel. Neues Jahrb. Mineral., Monatsh., 325–329 (in German with English abs.). (2) (1979) Amer. Mineral., 64, 241 (abs. ref. 1). (3) Leufer, U. and E. Tillmanns (1980) Die Kristallstruktur von Brenkit, Ca₂F₂CO₃. Tschermaks Mineral. Petrog. Mitt., 27, 261–266.