

# Brenkite



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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 =  $\sim 5$  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 <sub>2</sub>     | 24.6 | 24.70  |
| CaO                 | 62.3 | 62.95  |
| F                   | 21.3 | 21.33  |
| —O = F <sub>2</sub> | 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)  $\text{Ca}_2(\text{CO}_3)\text{F}_2$ .

**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,  $\text{Ca}_2\text{F}_2\text{CO}_3$ . Tschermaks Mineral. Petrog. Mitt., 27, 261–266.