

**Crystal Data:** Monoclinic. *Point Group:* 2/m. Typically as elongated crystals, short to long prismatic and striated parallel [101], to 5 cm, or equant, showing large {100}, { $\bar{1}11$ }, { $\bar{1}31$ }, {210}, minor {001}, {110}, {101}; may be massive, cleavable.

**Physical Properties:** *Cleavage:* On {210}, perfect; on {001}, imperfect. *Fracture:* Uneven to subconchoidal. Hardness = 3.5–4 D(meas.) = 3.66–3.71 D(calc.) = 3.72 Pale yellowish to red fluorescence under SW and LW UV.

**Optical Properties:** Transparent to translucent. *Color:* Colorless to white, pale gray, bright to pale green, pale yellow; colorless in transmitted light. *Luster:* Vitreous to resinous.

*Optical Class:* Biaxial (-). *Orientation:* Z = b; X  $\wedge$  c = 64°; Y  $\wedge$  c = -26°. *Dispersion:* r > v, weak.  $\alpha = 1.525$   $\beta = 1.684$   $\gamma = 1.686$  2V(meas.) = 15°

**Cell Data:** *Space Group:* P2<sub>1</sub>/m. a = 8.092(1) b = 5.2344(6) c = 6.544(1)  
 $\beta = 106.05(1)^\circ$  Z = 2

**X-ray Powder Pattern:** Alston, England. (ICDD 15-285).  
3.125 (100), 3.140 (90), 4.018 (40), 4.345 (25), 2.157 (25), 2.512 (20), 2.379 (20)

Chemistry:	(1)	(2)
CO <sub>2</sub>	29.95	29.59
MgO	0.50	
CaO	18.75	18.85
SrO	1.81	
BaO	48.92	51.56
Total	99.93	100.00

(1) Vuoriyarvi massif, Russia; corresponds to Ba<sub>0.92</sub>Ca<sub>1.03</sub>Sr<sub>0.08</sub>Mg<sub>0.03</sub>(CO<sub>3</sub>)<sub>2.00</sub>.

(2) BaCa(CO<sub>3</sub>)<sub>2</sub>.

**Polymorphism & Series:** Trimorphous with alstonite and paralstonite.

**Occurrence:** A relatively uncommon accessory mineral in metallic veins, formed by reaction of hydrothermal fluids with limestone; however it may be the dominant barium-bearing species; rarely in carbonatites and Alpine veins.

**Association:** Barite, calcite, strontianite, siderite, alstonite, benstonite, witherite, norsethite, fluorite, sphalerite, pyrrhotite, quartz.

**Distribution:** In England, from the Bleagill mine, Alston, Cumbria, and at Holwell, Mendip Hills, Somerset. From Llantrisant, Wales. In the Himmelsfürst mine, Freiberg, Saxony, Germany. At Stříbro, Czech Republic. In the Vuoriyarvi carbonatite complex, and from the Khibiny massif, Kola Peninsula, Russia. At the Ediacara mine, west of Beltana, and from north of Angaston, Mount Lofty Ranges, South Australia. From the Bayan Obo Fe–Nb–RE deposit, 130 km north of Baotou, Inner Mongolia, China. On the Rough claims, north of Sifton Pass, British Columbia, and at the Jason Pb–Zn deposits, Macmillan Pass, Yukon Territory, Canada. In the USA, from the Westvaco trona mine, about 30 km west of Green River, Sweetwater Co., Wyoming; in the Pigeon Roost mine, 5 km northeast of Glenwood, Montgomery Co., Arkansas; at the Juanita mine, Magdalena district, Socorro Co., New Mexico.

**Name:** For *barium* with calcium and carbonate (*calcite*) in its composition.

**References:** (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 220–221. (2) Dickens, B. and J.S. Bowen (1971) The crystal structure of BaCa(CO<sub>3</sub>)<sub>2</sub> (barytocalcite). J. Res. Nat. Bur. Stnd., A – Phys. and Chem., 75A(3), 197–203. (3) Kapustin, Y.L. (1971) Mineralogy of carbonatites. Nauka Publishers, Moscow, 152–153 (in English).

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