Barioperovskite $BaTiO_3$

Crystal Data: Orthorhombic. *Point Group*: *mm*2. As irregular grains, to 10 μm, and tabular (at times, approaching dendritic) crystals to 8 μm.

Physical Properties: *Cleavage*: n.d. Hardness = n.d. D(meas.) = n.d. D(calc.) = 5.91

Optical Properties: n.d. *Color*: n.d. *Streak*: n.d. *Luster*: n.d.
Optical Class: n.d.

Cell Data: *Space Group*: *Amm2*. a = 3.9874 b = 5.6751 c = 5.6901 Z = 2

X-ray Powder Pattern: Calculated pattern PDF 81-2200.
2.830 (100), 2.845 (30), 2.009 (28), 2.312 (23), 2.316 (20), 1.637 (19), 4.018 (18)

Chemistry:

	(1)	(2)
BaO	65.46	65.74
TiO_2	34.57	34.26
SiO_2	0.89	.
Total	100.92	100.00

(1) Benitoite Mine, San Benito County, California, USA; average electron microprobe analysis supplemented by Raman spectroscopy; corresponds to $Ba_{0.97}Ti_{0.98}Si_{0.03}O_3$. (2) $BaTiO_3$.

Mineral Group: Single perovskites ABX_3, perovskite group.

Occurrence: As inclusions in a benitoite crystal in natrolite veins in blueschist bodies within serpentinite.

Association: Benitoite.

Distribution: From the Benitoite Mine (formerly the Dallas Gem Mine), near Santa Rita Peak, New Idria District, San Benito Mountains, San Benito County, California, USA.

Name: Prefix, *bario*, identifies the Ba-dominant member of the perovskite group.

Type Material: National Museum of Natural History, Washington D.C., USA (NMNH 174513).

References: (1) Ma, C. and G.R. Rossman (2008) Barioperovskite, $BaTiO_3$, a new mineral from the Benitoite Mine, California. Amer. Mineral., 93, 154-157. (2) Keeble, D.S. and P.A. Thomas (2009) On the tetragonality of the room-temperature ferroelectric phase of barium titanate, $BaTiO_3$. J. Applied Crystal., 42(3), 480-484. [*P4mm* on synthetic material] (3) Mitchell, R.H., M.D. Welch, and A.R. Chakhmouradia (2017) Nomenclature of the perovskite supergroup: A hierarchical system of classification based on crystal structure and composition. Mineral. Mag., 81(3), 411-461.