

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As anhedral plates, up to 3 cm.
Twinning: Polysynthetic on {100}.

Physical Properties: *Cleavage:* Perfect on {001}; imperfect on {100} and {010}.
Tenacity: Brittle. Hardness = 5 D(meas.) = 3.70(2) D(calc.) = 3.77

Optical Properties: Semitransparent. *Color:* White to colorless; in thin section, colorless.
Luster: Pearly.

Optical Class: Biaxial (-). *Orientation:* $X = a; Y = b; Z = c$. $\alpha = 1.598(1)$ $\beta = 1.617(2)$
 $\gamma = 1.625(2)$ $2V(\text{meas.}) = 67^\circ$ $2V(\text{calc.}) = 65^\circ$

Cell Data: *Space Group:* $Pcmn$. $a = 4.629(1)$ $b = 7.688(1)$ $c = 13.523(1)$ $Z = 4$

X-ray Powder Pattern: Trumbull Peak, California, USA.
3.97 (100), 3.092 (75), 3.342 (70), 2.720 (55), 3.422 (50), 2.130 (40), 6.79 (30)

Chemistry:	(1)
SiO ₂	44.16
Al ₂ O ₃	0.41
Fe ₂ O ₃	0.23
MgO	0.28
CaO	0.20
SrO	0.08
BaO	54.04
H ₂ O ⁺	0.54
H ₂ O ⁻	0.15
Total	100.09

(1) Trumbull Peak, California, USA; average of two analyses, corresponds to $(\text{Ba}_{0.95}\text{Mg}_{0.02}\text{Fe}_{0.01}^{3+}\text{Ca}_{0.01})_{\Sigma=0.99}(\text{Si}_{1.98}\text{Al}_{0.02})_{\Sigma=2.00}\text{O}_{4.98} \cdot 0.10\text{H}_2\text{O}$.

Occurrence: In veins in metamorphosed sediments, largely quartzites and hornfels (Trumbull Peak, California, USA).

Association: Quartz, gillespite, diopside, schorl, celsian, pyrrhotite, witherite (Trumbull Peak, California, USA); gillespite, pellyite, taramellite, fresnoite, muirite, barite (Gunn claim, Canada).

Distribution: From Trumbull Peak, near Incline, Mariposa Co., California, USA. On the Gunn claim, Itsy Mountains, near Macmillan Pass, Yukon Territory, Canada.

Name: For Frank Sanborn (1862–1936), mineralogist with the California Division of Mines, San Francisco, California, USA.

Type Material: n.d.

References: (1) Rogers, A.F. (1932) Sanbornite, a new barium silicate mineral from Mariposa County, California. *Amer. Mineral.*, 17, 161–172. (2) Douglass, R.M. (1958) The crystal structure of sanbornite, BaSi₂O₅. *Amer. Mineral.*, 43, 517–536. (3) Hesse, K.-F. (1980) Crystal chemistry of silica-rich barium silicates. III: refinement of the crystal structures of the layer silicates Ba₂[Si₄O₁₀] (I), (sanbornite), and Ba₂[Si₄O₁₀] (h). *Zeits. Krist.*, 153, 33–41.