

Walstromite

BaCa₂Si₃O₉

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Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Crystals nearly equant to short prismatic; grains anhedral to subhedral, to 1.5 cm.

Physical Properties: *Cleavage:* Perfect on {011}, {010}, {100}. *Hardness* = ~3.5
D(meas.) = 3.67(6) D(calc.) = 3.73 Fluoresces dull pink under SW UV and bright pink under LW UV.

Optical Properties: Transparent to translucent. *Color:* White to colorless; colorless in thin section. *Streak:* White. *Luster:* Subvitreous, pearly on cleavages.

Optical Class: Biaxial (-). *Dispersion:* Weak. $\alpha = 1.668(2)$ $\beta = 1.684(2)$ $\gamma = 1.685(2)$
 $2V(\text{meas.}) = 30^\circ$ $2V(\text{calc.}) = 28^\circ$

Cell Data: *Space Group:* $P\bar{1}$. $a = 6.743(5)$ $b = 9.607(5)$ $c = 6.687(5)$ $\alpha = 69^\circ 51'$
 $\beta = 102^\circ 14'$ $\gamma = 97^\circ 6.5'$ $Z = 2$

X-ray Powder Pattern: Fresno Co., California, USA.

2.99 (100), 6.58 (20), 2.70 (20), 4.40 (15), 3.35 (15), 3.20 (15), 3.06 (15)

Chemistry:

	(1)	(2)	(3)
SiO ₂	39.6	38.8	40.44
TiO ₂	< 0.01	0.03	
Al ₂ O ₃	0.07		
FeO	< 0.02	< 0.01	
MnO	0.33	0.18	
MgO	< 0.05	< 0.1	
CaO	26.1	26.2	25.16
SrO	0.53		
BaO	33.3	34.5	34.40
K ₂ O	< 0.05	< 0.05	
Total	[100.00]	[100.00]	100.00

(1–2) Fresno Co., California, USA; by D-C arc spectrography, stated to be recalculated to 100.00%. (3) BaCa₂Si₃O₉.

Occurrence: Disseminated in a sanbornite-quartz gneissic metamorphic rock, especially where the quartz content is high.

Association: Sanbornite, quartz, wollastonite, celsian, taramellite, pyrrhotite, pyrite, witherite, fresnoite.

Distribution: From the Rush Creek and Big Creek areas, Fresno Co., and on Trumbull Peak, near Incline, Mariposa Co., California, USA.

Name: For Robert E. Walstrom, mineral collector of Fresno, California, USA, who first recognized the distinctive character of the mineral.

Type Material: California Division of Mines & Geology, San Francisco, California, USA.

References: (1) Alfors, J.T., M.C. Stinson, R.A. Matthews, and A. Pabst (1965) Seven new barium minerals from eastern Fresno Co., California. *Amer. Mineral.*, 50, 314–340. (2) Glasser, L.S.D. and F.P. Glasser (1968) The crystal structure of walstromite. *Amer. Mineral.*, 53, 9–13.