

Crystal Data: Tetragonal. *Point Group:* $\bar{4}2m$. As thin square tablets, to 3 mm, with prominent {001}, also {011}, {111}, and {110}.

Physical Properties: *Cleavage:* Perfect on {010}, distinct on {001}, poor on {110}. *Fracture:* Irregular. Hardness = ~5 D(meas.) = 3.034 D(calc.) = 3.03 Strongly piezoelectric.

Optical Properties: Transparent. *Color:* Colorless. *Luster:* Vitreous. *Optical Class:* Uniaxial (+). $\omega = 1.664(1)$ $\epsilon = 1.672(1)$

Cell Data: *Space Group:* $P\bar{4}2m$. $a = 7.48(2)$ $c = 5.044(3)$ $Z = [2]$

X-ray Powder Pattern: Gugua, China.

2.765 (10), 1.709 (7), 1.485 (7), 5.25 (4), 2.97 (4), 2.359 (4), 2.315 (4)

Chemistry:	(1)	(2)	(3)		(1)	(2)	(3)
SiO ₂	45.26	44.90	46.70	Na ₂ O		0.72	
TiO ₂	0.02	trace		K ₂ O		0.20	
(Zr,Hf)O ₂	0.45			F		0.25	
Al ₂ O ₃	1.08	2.17		Cl	0.73	0.18	
Fe ₂ O ₃	0.03	0.11		H ₂ O ⁺	0.40	0.90	
MnO	0.11	0.07		H ₂ O ⁻	0.02	0.36	
BeO	8.89	9.49	9.72	P ₂ O ₅		0.08	
MgO	0.39	0.38		-O = (F, Cl) ₂	0.17	0.15	
CaO	42.94	40.09	43.58	Total	100.15	[99.75]	100.00

(1) Gugua, China. (2) Do.; original total given as 99.79%. (3) Ca₂BeSi₂O₇.

Polymorphism & Series: Dimorphous with jeffreyite.

Mineral Group: Melilite group.

Occurrence: In cavities in skarns and melanite adjacent to an alkalic syenite.

Association: Orthoclase, vesuvianite, aegirine, titanite, apatite, prehnite.

Distribution: Near the village of Gugua, otherwise unlocated in China.

Name: For the locality near Gugua, China.

Type Material: n.d.

References: (1) Chi-Jui Peng, Rung-Lung Tsao, and Zu-Rung Zou (1962) Guguaite, Ca₂BeSi₂O₇, a new beryllium mineral and its relation to the melilite group. *Scientia Sinica*, 11, 977–988 (in English). (2) (1963) *Amer. Mineral.*, 48, 211–212 (abs. ref. 1). (3) Kimata, M. and H. Ohashi (1982) The crystal structure of synthetic guguaite, Ca₂BeSi₂O₇. *Neues Jahrb. Mineral., Abh.*, 143, 210–222.