

Crystal Data: Monoclinic. *Point Group:* 2/*m*. Crystals subhedral, to 1 cm, short prismatic, elongated along [001], with {010} and {011}, other faces irregular, and a diamond-shaped cross-section showing {320}. In radiating clusters and long columnar anhedral crystals, intergrown with nitratine; as crusts.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 3.5
D(meas.) = 4.24(1) D(calc.) = 4.244 Slowly soluble in cold H₂O; readily soluble in hot H₂O.

Optical Properties: Transparent to translucent. *Color:* Colorless to bright yellow; colorless to very pale yellow in transmitted light. *Luster:* Vitreous.

Optical Class: Biaxial (-). *Orientation:* $X \wedge c = -47^\circ$; $Z = b$. *Dispersion:* $r < v$, moderate to strong. $\alpha = 1.772\text{--}1.779$ $\beta = 1.795\text{--}1.802$ $\gamma = 1.817\text{--}1.824$ 2V(meas.) = $86^\circ\text{--}96^\circ$

Cell Data: *Space Group:* $P2_1/c$. $a = 8.509(1)$ $b = 10.027(2)$ $c = 7.512(1)$
 $\beta = 95^\circ 16.00(55)'$ $Z = 4$

X-ray Powder Pattern: Pampa Pique III, Chile.

3.051 (100), 3.238 (90), 4.235 (80), 3.739 (60), 3.503 (60), 2.522 (60), 1.7768 (60)

Chemistry:

	(1)	(2)
I ₂ O ₅	81.4	81.83
CaO	14.1	13.75
SrO	0.4	
H ₂ O	4.1	4.42
Total	[100.0]	100.00

(1) Pampa Pique III, Chile; after deduction of 1/3 admixed lautarite, CO₂ 0.1%, insoluble 0.3%.

(2) Ca(IO₃)₂•H₂O.

Occurrence: In veins with nitratine and impregnating the enclosing decomposing rhyolite tuff in a small basin filled with nitrate caliche.

Association: Nitratine, anhydrite, lautarite, hydroboracite, halite.

Distribution: At Pampa Pique III, about one km north of Oficina Lautaro, Taltal district, Antofagasta, Chile.

Name: To honor Professor Juan Brügger (1887–1953), University of Chile, who wrote the first textbook on the geology of Chile.

Type Material: National Museum of Natural History, Washington, D.C., USA, 122445.

References: (1) Ericksen, G.E., M.E. Mrose, and J.W. Marinenko (1974) Mineralogical studies of the nitrate deposits of Chile IV. Brüggerite, Ca(IO₃)₂•H₂O, a new saline mineral. J. Res. U.S. Geol. Sur., 2, 471–478.