

Crystal Data: Monoclinic. *Point Group:* 2/m. As prismatic to tabular crystals, to 1 mm.

Physical Properties: *Cleavage:* Perfect on {100}. *Tenacity:* n.d. *Fracture:* n.d.
Hardness = ~5 D(meas.) = n.d. D(calc.) = 2.948 Non-fluorescent.

Optical Properties: Transparent. *Color:* Blue to colorless. *Streak:* White. *Luster:* Vitreous.
Optical Class: Biaxial (-). $\alpha = 1.597(2)$ $\beta = 1.627(2)$ $\gamma = 1.632(1)$ $2V(\text{meas.}) = 43(2)^\circ$
 $2V(\text{calc.}) = 44^\circ$ *Dispersion:* $r > v$. *Orientation:* $X = b$, $Z \wedge c = 6^\circ$. *Pleochroism:* $X = \text{light blue to colorless}$, $Y = \text{blue}$, $Z = \text{colorless}$. *Absorption:* $Y > X > Z$.

Cell Data: *Space Group:* C2/c. $a = 25.075(1)$ $b = 5.0470(3)$ $c = 13.4370(7)$ $\beta = 110.97(3)^\circ$ $Z = 4$

X-Ray Diffraction Pattern: Gentil mine, Mendes Pimentel, Minas Gerais, Brazil.
11.654 (100), 6.581 (62), 4.862 (62), 2.666 (45), 3.027 (40), 3.103 (31), 3.291 (23)

Chemistry:	(1)	(2)
Na ₂ O	4.07	4.43
CaO	0.06	
MgO	4.92	5.76
MnO	0.14	
FeO	[1.10]	
Fe ₂ O ₃	[1.45]	
Al ₂ O ₃	34.36	36.41
P ₂ O ₅	39.79	40.54
H ₂ O	[12.19]	12.87
Total	98.08	100.00

(1) Gentil mine, Mendes Pimentel, Minas Gerais, Brazil; average electron microprobe analysis, H₂O calculated, total iron divided over FeO and Fe₂O₃ to sum 1 apfu in the Mg site; corresponds to (Na_{0.94}Ca_{0.01}) $\Sigma=0.95$ (Mg_{0.88}Fe²⁺_{0.11}Mn_{0.01}) $\Sigma=1.00$ (Al_{4.84}Fe³⁺_{0.13}) $\Sigma=4.97$ (PO₄)_{4.03}(OH)_{5.76}·2H₂O.
(2) NaMgAl₅(PO₄)₄(OH)₆·2H₂O.

Polymorphism & Series: Member of the burangaite-matioliite solid-solution series.

Occurrence: A secondary hydrothermal mineral in granite pegmatite.

Association: Fluorapatite, crandallite, zoned gormanite-souzalite crystals.

Distribution: From the Gentil granite pegmatite mine, Mendes Pimentel, Minas Gerais, Brazil [TL]. 'Burangaite' from Hochgösch, Millstätter See-Rücken, Kärnten, Austria, and from Córrego Pomarolli, Linópolis, Divino das Laranjeiras, Minas Gerais, Brazil, are probably matioliite.

Name: Honors Paulo Anselmo *Matioli* (b. 1975), mineral collector, founder, and curator of the Museu de Ciências Naturais Jobas "José Bonifácio de Andrada e Silva", Santos, SP, Brazil. Matioli collected the samples used to describe the new Brazilian minerals coutinhoite and matioliite.

Type Material: Museu de Geociências, Instituto de Geociências, University of São Paulo, (DR453) and the Museu de Ciências Naturais Jobas "José Bonifácio de Andrada e Silva", Santos, SP, Brazil.

References: (1) Atencio, D., J.M.V. Coutinho, Y.P. Mascarenhas, and J.A. Ellena (2006) Matioliite, the Mg-analog of burangaite, from Gentil mine, Mendes Pimentel, Minas Gerais, Brazil, and other occurrences. Amer. Mineral., 91, 1932-1936.