

**Juanitaite****(Cu, Ca, Fe<sup>2+</sup>)<sub>10</sub>Bi(AsO<sub>4</sub>)<sub>4</sub>(OH)<sub>11</sub>·H<sub>2</sub>O**

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**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m or *mm2*. As flakes or as rosettes of thin, sometimes bent, tabular crystals, to 1 cm; forms observed include {010}, {201}, {100}.

**Physical Properties:** *Cleavage:* Perfect, micaceous, on {010}. *Hardness* = 1  
D(meas.) = 2.843 D(calc.) = 2.849

**Optical Properties:** Translucent. *Color:* Yellow to greenish yellow. *Streak:* Yellow.  
*Luster:* Silky in aggregates, vitreous.  
*Optical Class:* Biaxial (-) (?). *Orientation:* X = b; Y = a; Z = c. *Dispersion:* r < v, strong.  
 $\alpha$  = n.d.  $\beta$  = 1.658  $\gamma$  = 1.664 2V(meas.) = ~60°

**Cell Data:** *Space Group:* *Pcmm*, *Pcm2<sub>1</sub>*, or *Pc2m*. a = 11.98(8) b = 20.37(10)  
c = 9.95(8) Z = 2

**X-ray Powder Pattern:** Hagendorf, Germany.  
9.96 (10b), 5.09 (5), 3.37 (5), 3.30 (5), 3.79 (4), 4.91 (3), 3.08 (3)

**Chemistry:**

	(1)	(2)
P <sub>2</sub> O <sub>5</sub>	31.0	30.64
Al <sub>2</sub> O <sub>3</sub>	0.08	
Fe <sub>2</sub> O <sub>3</sub>	28.4	30.64
MnO	2.80	
ZnO	14.6	15.62
MgO	0.06	
CaO	5.89	5.38
Na <sub>2</sub> O	0.04	
K <sub>2</sub> O	0.01	
H <sub>2</sub> O <sup>+</sup>	8.70	
H <sub>2</sub> O <sup>-</sup>	9.10	
H <sub>2</sub> O		17.72
Total	100.68	100.00

- (1) Hagendorf, Germany; corresponds to Ca<sub>2.18</sub>Zn<sub>3.71</sub>Mn<sub>0.82</sub>Fe<sub>7.35</sub><sup>3+</sup>(PO<sub>4</sub>)<sub>9.03</sub>(OH)<sub>9</sub>·16H<sub>2</sub>O.  
(2) Ca<sub>2</sub>Zn<sub>4</sub>Fe<sub>8</sub>(PO<sub>4</sub>)<sub>9</sub>(OH)<sub>9</sub>·16H<sub>2</sub>O.

**Occurrence:** A late-forming mineral in a complex granite pegmatite.

**Association:** Mitridatite, manganese oxides.

**Distribution:** From Hagendorf, Bavaria, Germany.

**Name:** Honors Dr. Gerhard Jung, Albrück, Germany, who found the first specimen.

**Type Material:** n.d.

**References:** (1) Moore, P.B. and J. Ito (1980) Jungit und Matulait: Zwei neue tafelige Phosphat-Mineralien. *Aufschluss*, 31, 55-61 (in German with English abs.). (2) (1980) *Amer. Mineral.*, 65, 1067 (abs. ref. 1). (3) (1981) *Amer. Mineral.*, 66, 1280 (correction).