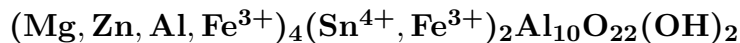


Pengzhizhongite

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Crystal Data: Hexagonal. *Point Group:* $\bar{3} 2/m$. Tabular crystals, to 1 mm.**Physical Properties:** Hardness = ~ 8 D(meas.) = 4.22(3) D(calc.) = 4.16**Optical Properties:** Transparent. *Color:* Light yellowish brown to light yellow, may be colorless. *Streak:* White. *Luster:* Vitreous.*Optical Class:* Uniaxial (+). $\omega = 1.802(2)$ $\epsilon = 1.814(2)$ **Cell Data:** *Space Group:* $P\bar{3}m1$. $a = 5.692(5)$ $c = 13.78(2)$ $Z = 1$ **X-ray Powder Pattern:** Anhua area, China.

2.423 (100), 2.846 (90), 1.414 (50), 1.545 (40), 1.639 (30), 2.624 (20), 1.842 (20)

Chemistry:

| | |
|--------------------------------|--------------|
| | (1) |
| SiO ₂ | 1.48 |
| SnO ₂ | 18.73 |
| Al ₂ O ₃ | 56.00 |
| Fe ₂ O ₃ | 8.38 |
| MnO | 0.40 |
| ZnO | 4.73 |
| MgO | 8.03 |
| H ₂ O ⁺ | 1.88 |
| <u>Total</u> | <u>99.63</u> |

(1) Anhua area, China; by electron microprobe, total Fe as Fe₂O₃; corresponding to (Mg_{1.93}Zn_{0.56}Al_{0.99}Si_{0.24}Fe_{0.22}Mn_{0.05})_{Σ=3.99}(Sn_{1.21}Fe_{0.79})_{Σ=2.00}Al_{9.71}O₂₂(OH)₂.**Polymorphism & Series:** 6H polymorph; 24M polymorph reported.**Occurrence:** An accessory mineral in high-temperature tungsten ore.**Association:** Quartz, scheelite, muscovite, magnetite, rutile, nigerite, cassiterite, zircon, taaffeite.**Distribution:** From the Anhua area, Hunan Province, China.**Name:** To honor Peng Zhizhong, Chinese mineralogist, Wuhan Geological College, Beijing, China, who determined the crystal structure.**Type Material:** [China University of Geosciences, Wuhan, China].

; pengzhizhongite-6T = magnesionigerite-2N1S; pengzhizhongite-24R = magnesionigerite-6N8S; [full list given under högbomite];