

Itoite



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Crystal Data: Orthorhombic (by analogy to anglesite). *Point Group:* n.d. As a very fine-grained incrustation or alteration of fleischerite.

Physical Properties: Hardness = n.d. $D(\text{meas.}) = \text{n.d.}$ $D(\text{calc.}) = 6.67$

Optical Properties: Transparent to translucent. *Color:* White; colorless in transmitted light. *Luster:* Silky.

Optical Class: [Biaxial.] $n = 1.84\text{--}1.85$ $\alpha = \text{n.d.}$ $\beta = \text{n.d.}$ $\gamma = \text{n.d.}$ $2V(\text{meas.}) = \text{n.d.}$

Cell Data: *Space Group:* [*Pnma*] (by analogy to anglesite). $a = 8.47$ $b = 5.38$ $c = 6.94$
 $Z = 4$

X-ray Powder Pattern: Tsumeb, Namibia; close to anglesite.

2.065 (10), 3.326 (9), 3.003 (9), 4.240 (8), 3.209 (7), 3.794 (6), 3.604 (6)

Chemistry: (1) Tsumeb, Namibia; presence of essential Pb, Ge, $(\text{SO}_4)^{2-}$ confirmed by qualitative analysis; the composition proposed is that of anglesite with replacement of $1/3$ $(\text{SO}_4)^{2-}$ by $[\text{GeO}_2(\text{OH})_2]^{2-}$.

Occurrence: Very rare, in an oxidized zone of a polymetallic germanium-bearing sulfide deposit, as an alteration product of fleischerite, perhaps produced by grinding for X-ray analysis.

Association: Fleischerite, mimetite, cerussite, anglesite, plumbojarosite, tennantite, dolomite.

Distribution: From Tsumeb, Namibia.

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Type Material: Technical University, Berlin, Germany, 57/1405; Harvard University, Cambridge, Massachusetts; National Museum of Natural History, Washington, D.C., USA, 162597.

References: (1) Frondel, C. and H. Strunz (1960) Fleischerit und Itoit, zwei neue Germanium-Mineralien von Tsumeb. Neues Jahrb. Mineral., Monatsh., 132–142 (in German with English abs.). (2) (1960) Amer. Mineral., 45, 1313 (abs. ref. 1).