

**Fleischerite****Pb<sub>3</sub>Ge<sup>4+</sup>(SO<sub>4</sub>)<sub>2</sub>(OH)<sub>6</sub>•3H<sub>2</sub>O**

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**Crystal Data:** Hexagonal. *Point Group:*  $\bar{6}m2$ . Prismatic to fibrous crystals, to 1.5 cm, typically in rounded aggregates.

**Physical Properties:** Hardness = "Soft. D(meas.) = 4.2–4.4 D(calc.) = 4.59

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

*Optical Class:* Uniaxial (+).  $\omega = 1.747$   $\epsilon = 1.776$

**Cell Data:** *Space Group:*  $P\bar{6}2c$ .  $a = 8.89$   $c = 10.86$   $Z = 2$

**X-ray Powder Pattern:** Tsumeb, Namibia.

3.619 (10), 2.635 (8), 3.437 (6), 2.214 (6), 1.889 (6), 7.681 (5), 2.800 (5)

**Chemistry:**

	(1)	(2)
SO <sub>3</sub>	15.06	15.36
Ga <sub>2</sub> O <sub>3</sub>	0.86	
Fe <sub>2</sub> O <sub>3</sub>	0.05	
PbO	63.34	64.23
GeO	8.18	10.04
H <sub>2</sub> O <sup>+</sup>	11.35	
H <sub>2</sub> O <sup>-</sup>	0.21	
H <sub>2</sub> O		10.37
insol.	0.56	
Total	99.61	100.00

(1) Tsumeb, Namibia; corresponds to Pb<sub>2.84</sub>(Ge<sub>0.93</sub>Ga<sub>0.09</sub>)<sub>Σ=1.02</sub>(SO<sub>4</sub>)<sub>1.88</sub>(OH)<sub>5.91</sub>•3.47H<sub>2</sub>O.

(2) Pb<sub>3</sub>Ge(SO<sub>4</sub>)<sub>2</sub>(OH)<sub>6</sub>•3H<sub>2</sub>O.

**Occurrence:** Very rare in an oxidized portion of a dolostone-hosted hydrothermal germanium-bearing polymetallic ore deposit.

**Association:** Cerussite, anglesite, melanotekite, kegelite, alamosite, mimetite, tennantite, plumbojarosite, itoite.

**Distribution:** From Tsumeb, Namibia.

**Name:** Honors Dr. Michael Fleischer (1908–1998), mineralogist and geochemist, U.S. Geological Survey, Washington, D.C., USA.

**Type Material:** National School of Mines, Paris, France; Technical University, Berlin, Germany, 57/1405; Harvard University, Cambridge, Massachusetts, 111461; National Museum of Natural History, Washington, D.C., USA, 115310, 162620.

**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). (3) Otto, H.H. (1975) Die Kristallstruktur von Fleischerit, Pb<sub>3</sub>Ge[(OH)<sub>6</sub>|(SO<sub>4</sub>)<sub>2</sub>]•3H<sub>2</sub>O, sowie kristallchemische Untersuchungen an isotypen Verbindungen. Neues Jahrb. Mineral., Abh., 123, 160–190 (in German with English abs.).