

Crystal Data: Monoclinic, pseudohexagonal. *Point Group:* 2/*m*, *m*, or 2. Needlelike crystals, elongated along [001], to 1 mm, in radial fibrous aggregates and crusts.

Physical Properties: *Tenacity:* Flexible. Hardness = Soft. D(meas.) = 3.58 (synthetic). D(calc.) = 3.64 Radioactive.

Optical Properties: Translucent to transparent. *Color:* Yellow to pale yellow; nearly colorless in transmitted light. *Luster:* Vitreous.

Optical Class: Biaxial (+). *Orientation:* Z = elongation. $\alpha = 1.537\text{--}1.551$ $\beta = 1.555\text{--}1.686$ $\gamma = 1.680\text{--}1.690$ 2V(meas.) = Small.

Cell Data: *Space Group:* C2/*m*, *Cm*, or C2. $a = 11.85(2)$ $b = 6.80(1)$ $c = 4.25(1)$ $\beta = 93^\circ 51(20)'$ Z = 2

X-ray Powder Pattern: Menzenschwand, Germany.
5.93 (10), 3.40 (8), 2.96 (6), 2.23 (6), 2.02 (5), 1.970 (5b), 4.27 (4)

Chemistry: Qualitative microchemical and electron microprobe analyses typically show major U with traces of Pb, H₂O, CO₃ attributed to impurities. Characterization of naturally-occurring material thus rests on equivalence of the X-ray pattern and optical properties with the synthetic compound, and chemical behavior as a peroxide.

Occurrence: A very rare mineral in the oxidized zone of some uranium-bearing mineral deposits.

Association: Uranophane, rutherfordine, lepersonnite (Shinkolobwe, Congo); billietite, uranophane, rutherfordine, barite, quartz, hematite, "limonite" (Menzenschwand, Germany); tengchongite, calcurmolite, kivuite (Tengchong Co., China).

Distribution: From Shinkolobwe, Katanga Province, Congo (Shaba Province, Zaire). At Menzenschwand, Black Forest, Germany. From Mitterberg, Salzburg, Austria. In France, at Davignac, Corrèze, and from the Mas-d'Alary uranium deposit, three km south-southeast of Lodève, Hérault. In Tengchong Co., and at Tongbiguan village, Yingjiang Co., Yunnan Province, China.

Name: To honor Franz Edward Studt, geologist, who published a geological map of Shaba (Katanga) Province in 1913.

Type Material: n.d.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 275. (2) Walenta, K. (1974) On studtite and its composition. *Amer. Mineral.*, 59, 166–171. (3) Zhi-Xiong Wang, Tian-Zhu Zeng, and Jin-Shiu Yin (1979) Discovery of studtite in China. *K'o Hsueh T'ung Pao*, 24(10), 453–454 (in Chinese). (4) (1979) *Chem. Abs.*, 91, 164 (abs. ref. 3). (5) Deliens, M. and P. Piret (1983) Metastudtite, UO₄•2H₂O, a new mineral from Shinkolobwe, Shaba, Zaire. *Amer. Mineral.*, 68, 456–458.