

Crystal Data: Monoclinic. *Point Group:* 2/m. As euhedral to subhedral sheets and tabular crystals to more than 6 mm.

Physical Properties: *Cleavage:* Perfect {001}. *Fracture:* n.d. *Tenacity:* Sectile. Hardness = n.d. VHN = 93.4-132, 109 average. D(meas.) = 3.15-3.20 D(calc.) = 3.23

Optical Properties: Translucent. *Color:* Iron-black. *Streak:* Gray. *Luster:* Submetallic. *Optical Class:* Biaxial (-). $\alpha = 1.596$ $\beta = \gamma = 1.648$ $2V(\text{meas.}) = \sim 0^\circ$ $2V(\text{calc.}) = 0^\circ$ *Orientation:* $Y = b$. *Pleochroism:* Strong, $X =$ pale brown, $Y =$ dark green, $Z =$ reddish brown.

Cell Data: *Space Group:* C2/m. $a = 5.369(8)$ $b = 9.289(3)$ $c = 10.153(8)$ $\beta = 100.49(1)^\circ$ $Z = 2$

X-ray Powder Pattern: Suzhou, near Shanghai, eastern China. 10.09 (100), 5.02 (13), 3.336 (56), 2.507 (14)

Chemistry:	(1)		(1)
K ₂ O	8.73	Li ₂ O	0.47
Na ₂ O	0.19	TiO ₂	1.29
Rb ₂ O	0.42	ZnO	0.27
CaO	0.02	NiO	0.01
BaO	0.44	SiO ₂	34.12
SrO	0.01	Al ₂ O ₃	13.89
FeO	26.19	H ₂ O	0.91
Fe ₂ O ₃	7.86	F	3.91
MgO	1.49	- O = F	1.65
MnO	0.68	Total	99.25

(1) Suzhou, near Shanghai, eastern China; average electron microprobe and wet chemical analyses, Fe partitioned by Mössbauer spectroscopy; corresponds to $(\text{K}_{0.92}\text{Na}_{0.03}\text{Rb}_{0.02}\text{Ba}_{0.01})_{\Sigma=0.98}$ $(\text{Fe}^{2+}_{1.82}\text{Fe}^{3+}_{0.49}\text{Al}_{0.19}\text{Mg}_{0.18}\text{Li}_{0.16}\text{Ti}_{0.08}\text{Mn}_{0.05}\text{Zn}_{0.02})_{\Sigma=2.99}(\text{Si}_{2.83}\text{Al}_{1.17})_{\Sigma=4.00}\text{O}_{10}[\text{F}_{1.03}(\text{OH})_{0.50}\square_{0.47}]_{\Sigma=2.00}$.

Mineral Group: Mica group. 1M polytype.

Occurrence: A rock-forming species in the upper part of an A-type granite.

Association: n.d.

Distribution: At Suzhou, near Shanghai, eastern China. At the Katugin Ta-Nb deposit, Chitinskaya Oblast', Kalar Range, Transbaikalia, eastern Siberia, Russia.

Name: Prefix, *fluor*, indicates the fluorine analog of *annite*.

Type Material: Geology and Mineral Resources Institute, Chengdu, and the Geological Museum of China, Beijing.

References: (1) Shen, G., Q. Lu, and J. Xu (2000) Fluorannite: A new mineral of the mica group from the western suburb of Suzhou City. *Acta Petrologica Mineral.*, 19(4), 355-362 (in Chinese, English abs.). (2) (2001) *Amer. Mineral.*, 86, 1534 (abs. ref. 1). (3) Brigatti, M.F., E. Caprilli, D. Malferri, and A. Mottana (2007) Crystal structure and crystal chemistry of fluorannite and its relationships to annite. *Mineral. Mag.*, 71(6), 683-690.