Ferripyrophyllite

\[
\text{Fe}_2^{3+}\text{Si}_4\text{O}_{10}(\text{OH})_2
\]

Crystal Data: [Monoclinic] (by analogy to pyrophyllite).  
Point Group: \([2/m]\)  Fine-scaly, granular, compact.

Physical Properties:  
Tenacity: Waxy.  
Hardness = 1.5–2  
\(D(\text{meas.}) = 2.97–3.01\)  
\(D(\text{calc.}) = 3.05\)

Optical Properties:  
Semitransparent.  
Color: Brownish yellow.  
Optical Class: Biaxial.  
\(\alpha = 1.650–1.660\)  
\(\beta = 1.676–1.678\)  
\(\gamma = 1.686–1.688\)  
\(2V(\text{meas.}) = \text{Small}\).

Cell Data:  
Space Group: n.d.  
\(a = 5.26\)  
\(b = 9.10\)  
\(c = 19.1\)  
\(\beta = 95°30'\)  
\(Z = [4]\)

X-ray Powder Pattern:  
The Strassenschacht, Germany.
4.54 (10), 9.6 (8), 1.518 (8), 3.17 (7), 2.62 (4), 2.47 (4), 1.725 (3)

Chemistry:  
(1) The Strassenschacht, Germany; by electron microprobe, analysis not given, stated to correspond to \(\text{Fe}^{3+}\text{Mg}_{0.11}\text{Ca}_{0.05}\text{(Si}_{3.80}\text{Al}_{0.13}\text{Fe}^{3+}_{0.07})\Sigma=4.00\text{O}_{10}(\text{OH})_2\text{•H}_2\text{O}\).  
(2) Mt. Tologay, Kazakhstan; by electron microprobe, analysis not given, stated to correspond to \(\text{Fe}^{3+}_{1.97}\text{Ca}_{0.18}(\text{Na, K})_{0.03}\text{Mg}_{0.02}(\text{Si}_{3.74}\text{Al}_{0.23})\Sigma=3.97\text{O}_{10}(\text{OH})_2\text{•1.5H}_2\text{O}\).

Polymorphism & Series:  
[Isostructural with the 2M modification of pyrophyllite.]

Occurrence:  
Found on museum specimens.

Association:  
n.d.

Distribution:  
From the Strassenschacht hematite deposit, south of Eibenstock, Saxony, Germany.  
At the Tulagai Pb–Cu deposit, near Akchatau, Kazakhstan.

Name:  
Presumably for its FERRIc iron content and relation to pyrophyllite.

Type Material:  
Moscow University, Moscow; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 79071, vis5430, 5431.

References:  
(2) (1979) Chem. Abs., 91, 24056 (abs. ref. 1).  