Ferro-pedrizite $NaLi_2(Fe^{2+}{}_2Al_2Li)Si_8O_{22}(OH)_2$

Crystal Data: Monoclinic. *Point Group*: 2/*m.* As acicular to flattened prismatic crystals, to 50 mm, displaying {110}, {100} and {010}; in random, radial or subparallel aggregates.

Physical Properties: *Cleavage*: Perfect on {110}, intersecting at ~56º; less-perfect on {001}. *Fracture*: Splintery. *Tenacity*: Brittle. *Hardness* = ~ 6 D(meas.) = 3.13(1)-3.16(1) D(calc.) = 3.138

Optical Properties: Transparent. *Color*: Dark gray-blue to violet-blue. *Streak*: Pale gray. *Luster*: Vitreous.
Optical Class: Biaxial (-). α = 1.614(3) β = 1.638(3) γ = 1.653(3) 2V(meas.) = 75(5)° 2V(calc.) = 76° *Orientation*: $Y = b$; $Z \wedge c$ = 3-4°, $X \wedge a \approx 16°$. *Dispersion*: Weak, $r < v$. *Pleochroism:* Weak, X = colorless, $Y = Z$ = pale lilac-gray. *Absorption*: $X < Y \approx Z$.

Cell Data: *Space Group*: *C*2/*m.* a = 9.3716(4) b = 17.649(1) c = 5.2800(6) β = 102.22(1)° Z = 2

X-ray Powder Pattern: Sutlug pegmatite, Tyva Republic, Eastern Siberia, Russia.
3.009 (100), 8.147 (52), 2.6865 (29), 2.7102 (28), 4.420 (22), 2.6236 (21), 2.4824 (19)

Chemistry:	(1)		(1)
Li_2O	4.67	Fe_2O_3	[4.60]
Na_2O	2.54	Al_2O_3	13.13
K_2O	0.13	SiO_2	57.59
CaO	0.29	F	1.15
MgO	4.48	H_2O	1.50
MnO	0.59	$-O = F_2$	0.48
FeO	[9.06]	Total	99.25

(1) Sutlug pegmatite, Tyva Republic, Eastern Siberia, Russia; average of 5 electron microprobe analyses, Fe^{2+}/Fe^{3+} from Mössbauer spectroscopy, Li by ICP-MS, H_2O by gas chromatography; corresponds to $(Na_{0.60}K_{0.02})_{\Sigma=0.62}(Li_{1.89}Na_{0.07}Ca_{0.04})_{\Sigma=2.00}(Fe^{2+}{}_{1.03}Mg_{0.90}Mn^{2+}{}_{0.07}Al_{1.88}Fe^{3+}{}_{0.47}Li_{0.65})_{\Sigma=5.00}[(Si_{7.79}Al_{0.21})_{\Sigma=8.00}O_{22}][(OH)_{1.36}F_{0.49}O_{0.15}]_{\Sigma=2.00}$.

Mineral Group: Amphibole supergroup, lithium amphibole group.

Occurrence: In veinlets associated with the metasomatism of spodumene-microcline pegmatite hosted by marble.

Association: Quartz, albite, microcline, spodumene, cassiterite, beryl, columbite-(Mn), fluorapatite, fergusonite-β-(Y), schorl, trilithionite, fluorite.

Distribution: From the Sutlug pegmatite, Targi River Basin, Tyva Republic, Eastern Siberia, Russia.

Name: As the Fe^{2+}-dominant analogue of *pedrizite.*

Type Material: Mineralogical Museum, Tomsk State University, Russia (19116).

References: (1) Konovalenko, S.I., S.A. Ananyev, N.V. Chukanov, S.M. Aksenov, R.K. Rastsvetaeva, A.I. Bakhtin, A.G. Nikolaev, R.R. Gainov, F.G. Vagizov, A.N. Sapozhnikov, D.I. Belakovskiy, Y.V. Bychkova, G. Klingelhöfer, and M. Blumers (2015) Ferro-pedrizite, $NaLi_2(Fe^{2+}{}_2Al_2Li)Si_8O_{22}(OH)_2$, a new amphibole-supergroup mineral from the Sutlug pegmatite, Tyva Republic, Russia. Eur. J. Mineral., 27, 417-426. (2) (2016) Amer. Mineral., 101, 1712-1713 (abs. ref. 1).