Lunijianlaite $[LiAl_4(Si_3Al)O_{10}(OH)_8]\cdot[Al_2Si_4O_{10}(OH)_2]$

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Crystal Data: n.d. *Point Group:* n.d. Crystals acicular, to 2 mm, in radiating aggregates.

Physical Properties: *Cleavage:* {001}, perfect. Hardness = 2 D(meas.) = 2.75 D(calc.) = n.d.

Optical Properties: Transparent. *Color:* Colorless to white. *Luster:* Vitreous to pearly, silky in aggregates.
Optical Class: Biaxial (–). *Orientation:* May show inclined extinction. $\alpha = 1.576(5)$ $\beta = 1.582(5)$ $\gamma = 1.587(5)$ 2V(meas.) = 60(5)°

Cell Data: *Space Group:* n.d. $a = 5.09$ $b = 8.97$ $c = 23.397$ [c•sin β]. $\beta =$ n.d. Z = n.d.

X-ray Powder Pattern: Qingtian, China; * = cookeite overlaps.
4.704 (100*), 3.343 (47), 3.539 (45*), 2.919 (40), 14.267 (22*), 7.802 (22), 2.832 (22)

Chemistry:

	(1)
SiO_2	41.61
Al_2O_3	44.80
Fe_2O_3	0.60
Li_2O	1.57
Na_2O	0.063
K_2O	0.012
H_2O^+	11.296
Total	99.951

(1) Qingtian, China; by electron microprobe, Li by AA, H_2O by TGA; corresponds to $Li_{0.73}Al_{4.19}(Si_3Al)O_{10}(OH)_8 \cdot Al_2Si_4O_{10}(OH)_2$.

Polymorphism & Series: Regular 1:1 interstratification of cookeite and pyrophyllite.

Occurrence: Within corundum, in a hydrothermal pyrophyllite deposit in rhyolite.

Association: Corundum, diaspore, chlorite, illite, halloysite, svanbergite, zeolites, hematite.

Distribution: From Qingtian, Chekiang Province, China.

Name: From the Chinese *luni*, for the chlorite group, representing cookeite; *jian*, a connective; and *lain* for pyrophyllite.

Type Material: n.d.

References: (1) Youhua Kong, Xiuwen Peng, and Dehui Tian (1990) Lunijianlaite – a new regular interstratified mineral. Acta Mineral. Sinica, 10(4), 289–298 (in Chinese with English abs.). (2) (1992) Amer. Mineral., 77, 447–448 (abs. ref. 1).

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