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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. $\alpha=1.576(5)$ $\beta=1.582(5)$ $\gamma=1.587(5)$ $2V(meas.)=60(5)^{\circ}$

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

$$\begin{array}{c} & (1) \\ \mathrm{SiO}_2 & 41.61 \\ \mathrm{Al}_2\mathrm{O}_3 & 44.80 \\ \mathrm{Fe}_2\mathrm{O}_3 & 0.60 \\ \mathrm{Li}_2\mathrm{O} & 1.57 \\ \mathrm{Na}_2\mathrm{O} & 0.063 \\ \mathrm{K}_2\mathrm{O} & 0.012 \\ \underline{\mathrm{H}}_2\mathrm{O}^+ & 11.296 \\ \hline \mathrm{Total} & 99.951 \\ \end{array}$$

(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).