Shlykovite $KCa[Si_4O_9(OH)]\cdot 3H_2O$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As distorted lamellae, to 1 mm, flattened along {001}; as fibers to 0.5 mm and as fibrous aggregates to 2 cm. Rarely as pinacoidal crystals to 0.4 mm.

Physical Properties: *Cleavage*: Perfect on {001}. *Fracture*: n.d. *Tenacity*: Lamellae pliable. Hardness = 2.5-3 D(meas.) = n.d. D(calc.) = 2.244

Optical Properties: Transparent. *Color*: Colorless. *Streak*: White. *Luster*: Vitreous; aggregates, pearly to silky.
Optical Class: Biaxial (-). α = 1.500(3) β = 1.509(2) γ = 1.515(2) 2V(meas.) = 60(20)° 2V(calc.) = 78° *Orientation*: *X* = *c*. *Dispersion:* Medium, *r* < *v*.

Cell Data: *Space Group*: $P2_1/c$. *a* = 6.4897(4) *b* = 6.9969(5), *c* = 26.714(2) β = 94.597(8)° Z = 4

X-ray Powder Pattern: Mt. Rasvumchorr, Khibiny massif, Kola Peninsula, Russia.
13.33 (100), 6.67 (76), 2.945 (62), 3.068 (57), 6.47 (55), 3.469 (45), 3.042 (45)

Chemistry:

	(1)
Na_2O	0.68
K_2O	11.03
CaO	13.70
SiO_2	59.86
H_2O	[14.73]
Total	100.00

(1) Mt. Rasvumchorr, Khibiny massif, Kola Peninsula, Russia; average of 7 electron microprobe analyses, H_2O by difference, OH/H_2O calculated for charge balance; corresponding to $(K_{0.96}Na_{0.09})_{\Sigma=1.05}Ca_{1.00}Si_{4.07}O_{9.932}(OH)_{0.68}\cdot 3H_2O$.

Occurrence: A late-stage hydrothermal mineral along fractures in a high-potassium peralkaline pegmatite in urtite rocks near the contact with nepheline-apatite rock.

Association: Cryptophyllite.

Distribution: At the Central mine, Mt. Rasvumchorr, Khibiny massif, Kola Peninsula, Russia.

Name: Honors geologist, Valeriy Georgievich Shlykov (1941-2007), Moscow State University, Russia.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia (3753/1).

References: (1) Pekov, I.V., N.V. Zubkova, Ya.E. Filinchuk, N.V. Chukanov, A.E. Zadov, D.Yu. Pushcharovsky, and E.R. Gobechiya (2010) Shlykovite $KCa[Si_4O_9(OH)]\cdot 3H_2O$ and Cryptophyllite $K_2Ca[Si_4O_{10}]\cdot 5H_2O$ - new mineral species from the Khibiny alkaline pluton, Kola Peninsula, Russia. Zap. Ross. Mineral. Obshch., 139(1), 37-50 (in Russian with English abstract); and Geology of Ore Deposits, 52, 767-777. (2) Zubkova, N.V., Ya.E. Filinchuk, I.V. Pekov, D.Yu. Pushcharovsky, and E.R. Gobechiya (2010) Crystal structures of shlykovite and cryptophyllite: comparative crystal chemistry of phyllosilicate minerals of the mountainite family. Eur. J. Mineral., 22, 547-555. (3) (2012) Amer. Mineral., 97, 1526-1527 (abs. refs. 1 and 2).