Rudenkoite $Sr_3Al_{3.5}Si_{3.5}O_{10}(OH_{7.5},O_{0.5})Cl_2•H_2O$

Crystal Data: Monoclinic. *Point Group: m*, 2 or 2/*m*. As spheroidal aggregates of radiating fibers, to 7 mm, elongated on [100].

Physical Properties: *Cleavage:* None. *Fracture:* n.d. *Tenacity*: Flexible. Hardness = 1.5 (for aggregates). D(meas.) = 3.17(1) D(calc.) = 3.18

Optical Properties: Translucent. *Color:* White. *Luster:* n.d.
Optical Class: Biaxial (+). α = 1.639(2) β = 1.648(2) γ = 1.665(2) 2V(meas.) = 75(10)°
2V(calc.) = 72.71° *Dispersion:* Average, *r* > *v*. *Orientation: X* = *a*. *Pleochroism*: None.

Cell Data: *Space Group: P*2/*m*, *P*2, or *Pm*. *a* = 5.893(5) *b* = 7.262(5) *c* = 10.288(8)
β = 97.23(3)° *Z* = 1

X-ray Powder Pattern: Emel'dzhaksky deposit, Aldan province, southern Yakutsk, Russia.
10.13 (100), 2.96 (100), 2.90 (100), 2.505 (100), 3.23 (80), 2.182 (80), 1.855 (70)

Chemistry:

	(1)
CaO	0.86
SrO	34.61
BaO	0.54
Al_2O_3	21.01
SiO_2	24.73
Cl	9.06
H_2O	10.10
-O = Cl	2.04
Total	98.87

(1) Emel'dzhaksky deposit, Aldan province, southern Yakutsk, Russia; electron microprobe analysis, H_2O by Penfield method, OH^- and H_2O confirmed by IR; corresponding to $(Sr_{2.83}Ba_{0.33}Ca_{0.13})_{\Sigma=2.99}(Al_{3.49}Si_{3.48})_{\Sigma=6.97}O_{10.16}(OH)_{7.88}Cl_{2.16}•0.8H_2O$.

Occurrence: Formed in the last stages of (metasomatic) prehnitization, in garnet-wollastonite metamorphic rock (skarn) at the contact between pegmatite and calcite marble.

Association: Prehnite, calcite, spinel, diopside, fluorapatite.

Distribution: At the Emel'dzhaksky phlogopite deposit, Aldan province, Aldan Shield, southern Yakutsk, Russia.

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Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Science, Moscow, Russia; 3121/1.

References: (1) Chukanov, N.V., V.T. Dubinchuk, M.N. Murashko, A.E. Zadov, and V.Yu. Karpenko, (2004) Rudenkoite, $Sr_3Al_{3.5}Si_{3.5}O_{10}(OH_{7.5},O_{0.5})Cl_2•H_2O$, a new mineral from phlogopite deposits of southern Yakutsk. Zapiski Vseross. Mineral. Obshch. 133(3), 37-41 (in Russian, English abstract). (2) (2005) Amer. Mineral., 90, 770-771 (abs. ref. 1).