

Crystal Data: Orthorhombic. *Point Group:* 2/m 2/m 2/m. As prismatic to curved lamellar crystals to 1.5 cm.

Physical Properties: *Cleavage:* Poor on {010} and {100}; weak parting on {011}.
Fracture: Irregular. *Tenacity:* Brittle. D(meas.) = 3.39(1) D(calc.) = 3.49 *Hardness* = 6

Optical Properties: Translucent. *Color:* Pinkish orange, brownish yellow to brown, straw-yellow in aggregates. *Streak:* n.d. *Luster:* Vitreous.

Optical Class: Biaxial (+). $\alpha = 1.730(5)$ $\beta = 1.740(5)$ $\gamma = 1.765(5)$ $2V(\text{meas.}) = 75(2)^\circ$
 $2V(\text{calc.}) = 72.7(9)^\circ$ *Pleochroism:* Strong, *X* = colorless, *Y* = yellow, *Z* = straw-yellow.
Orientation: *X* = *a*, *Y* = *b*, *Z* = *c*. *Dispersion:* Moderate, $r < v$.

Cell Data: *Space Group:* *Imma*. $a = 8.0884(4)$ $b = 10.497(5)$ $c = 13.9372(6)$ $Z = 4$

X-ray Powder Pattern: Liley, Eifel Mountains, Germany.
2.907 (100), 8.353 (70), 3.196 (50), 2.097 (50), 2.241 (40), 2.179 (40), 3.377 (30)

Chemistry:	(1)
SiO ₂	37.82
Nb ₂ O ₅	3.18
Al ₂ O ₃	0.17
TiO ₂	15.54
ZrO ₂	0.42
Fe ₂ O ₃	[5.63]
MnO	0.32
MgO	0.53
BaO	20.60
CaO	1.36
K ₂ O	5.32
Na ₂ O	6.14
F	0.78
H ₂ O	0.58
-O=F	0.33
Total	98.06

(1) Liley, Eifel Mountains, Germany; electron microprobe analysis, Fe₂O₃ calculated from FeO, H₂O determined by SIMS; corresponds to (Ba_{0.85}K_{0.13}) $\Sigma=0.98$ (K_{0.59}Na_{0.26}Ca_{0.15}) $\Sigma=1.00$ Na(Ti_{1.23}Fe³⁺_{0.45}Nb_{0.15}Mg_{0.08}Mn_{0.03}Zr_{0.02}Al_{0.01}) $\Sigma=1.97$ (Si_{3.99}Al_{0.01}O₁₂)(O_{1.33}OH_{0.41}F_{0.26}) $\Sigma=2.00$.

Mineral Group: Shcherbakovite group.

Occurrence: Lines the walls of cavities in alkaline syenite, also a rock-forming mineral in syenite.

Association: Potassic feldspar, kalsilite, aegirine, galena (Murun).

Distribution: From Liley [Löhley], Eifel Mountains, Germany; from Murun, Siberia, Russia, and near the Noonkanbah sheep station, Wolgidee Hills, West Kimberley District, Australia.

Name: For *Noonkanbah* sheep station, Wolgidee Hills, West Kimberley District, Australia, near the locality that produced the first specimens.

Type Material: Royal Ontario Museum, Department of Earth Sciences, Toronto, Canada (M54065).

References: (1) Uvarova, Y.A., E. Sokolova, F.C. Hawthorne, R.P. Liferovich, R.H. Mitchell, I.V. Pekov, and A.E. Zadov (2010) Noonkanbahite, BaKNaTi₂(Si₄O₁₂)O₂, a new mineral species: description and crystal structure. *Mineral. Mag.*, 74(3), 441-450. (2) (2011) *Amer. Mineral.*, 96, 1657 (abs. ref. 1).