

Crystal Data: Tetragonal. *Point Group:* 4/m. Crystals, prismatic acicular, to 0.2 mm, exhibiting {100}, {110} and {101}.

Physical Properties: *Cleavage:* none reported. *Fracture:* Splintery.

Tenacity: Very brittle. *Hardness* = 5-6 (estimated) *D*(meas.) = 4.0(1) *D*(calc.) = 4.20(1)

Optical Properties: Opaque. *Color:* Black; in reflected light grayish brown.

Streak: Reddish brown. *Luster:* Adamantine. *Bireflectance:* weak; brownish to grayish white.

Optical Class: n.d.

R₁-R₂: (420) 13.0-14.2, (440) 12.2-13.4, (460) 12.0-13.0, (480) 11.9-12.8, (500) 11.8-12.7, (520) 11.8-12.6, (540) 11.6-12.6, (560) 11.5-12.6, (580) 11.4-12.7, (600) 11.4-12.9, (620) 11.4-13.2, (640) 11.4-13.5, (660) 11.3-13.8, (680) 11.3-14.1, (700) 11.2-14.4, (720) 11.2-14.5

Cell Data: *Space Group:* I4/m. *a* = 10.219(3) *c* = 2.963(1) *Z* = 1

X-ray Powder Pattern: Calculated from structure refinement.

3.232 (100), 2.236 (40), 2.486 (34), 1.598 (33), 1.901 (31), 1.405 (26), 1.703 (22)

Chemistry:	(1)	(2)	(1)	(2)
SiO ₂	0.37	1.84	Na ₂ O	0.40
Al ₂ O ₃	-	0.14	K ₂ O	0.05
TiO ₂	67.78	66.43	La ₂ O ₃	0.50
CaO	0.02	0.19	Ce ₂ O ₃	0.56
FeO	9.20	8.06	<u>Nb₂O₅</u>	<u>1.00</u>
MgO	-	0.86	Total	98.13
BaO	18.25	18.16		96.77

(1) Kovodor, Kola Peninsula, Russia; average of 8 electron microprobe analyses, total iron as Fe²⁺, corresponding to (Ba_{0.96}Na_{0.10}K_{0.01}REE_{0.05})_{Σ=1.12}(Fe²⁺_{1.03}Ti_{6.82}Nb_{0.06}Si_{0.04})_{Σ=7.95}O₁₆.

(2) Oasis Dzetti, Prince Charles Mountains, eastern Antarctica; total iron as Fe²⁺, corresponding to (Ba_{0.95}Ca_{0.03}K_{0.03}Na_{0.10})_{Σ=1.11}(Fe_{0.90}Mg_{0.17})_{Σ=1.07}(Ti_{6.65}Nb_{0.03}Si_{0.24}Al_{0.02})_{Σ=6.94}O₁₆.

Mineral Group: Cryptomelane group.

Occurrence: In late-stage veins associated with metasomatized phoscorite-carbonatite rocks of an alkaline ultramafic complex (Kovodor, Russia); in carbonate-metasomatized lherzolitic and harzburgitic mantle xenoliths (Prince Charles Mountains, Antarctica).

Association: Dolomite, fluorapatite, niobian anatase (?), tetra-ferriphlogopite, rimkorolgitte, catapleiite, collinsite, pyrite (Kovodor, Russia); ferroan magnesite, clinohumite, mica, calcite, dolomite, chlorapatite (Prince Charles Mountains, Antarctica).

Distribution: From the Kovodor and Sebyavr Complexes, Kola Peninsula, Russia; near Oasis Dzetti, Prince Charles Mountains, Eastern Antarctica.

Name: Honors Professor Henry O.A. Meyer (1937–1995) for his contributions to the petrology and mineralogy of mantle-derived xenoliths and kimberlitic rocks.

Type Material: Geological Museum of the Kola Science Center, Apatity, Russia.

References: (1) Mitchell, R.H., V.N. Yakovenchuk, A.R. Chakhmouradian, P.C. Burns and Y.A. Pakhomovsky (2000) Henrymeyerite, a new hollandite-type Ba-Fe titanate from the Kovodor Complex, Russia. *Can. Mineral.*, 38, 617-626. (2) Kogarko L.N., G. Kurat and T. Ntaflos (2007) Henrymeyerite in the metasomatized upper mantle of eastern Antarctica, *Can. Mineral.*, 45, 497-501. (3) (2001) *Amer. Mineral.*, 86, 197–198 (abs. ref. 1).