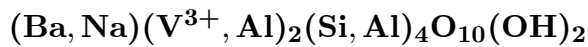


Chernykhite

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Crystal Data: Monoclinic. *Point Group:* 2/m or m. In small veinlets and leaflets, to 5 mm.**Physical Properties:** *Cleavage:* Perfect on {001}. *Hardness* = 2.5–3.6 on {001}; 2.9–4.5 ⊥ {001}. *D*(meas.) = 3.14–3.16 *D*(calc.) = 3.10**Optical Properties:** Translucent. *Color:* Olive-green, dark green. *Streak:* Light green. *Luster:* Pearly on cleavage.*Optical Class:* Biaxial (-). $\alpha = 1.640\text{--}1.643$ $\beta = 1.686\text{--}1.691$ $\gamma = 1.702\text{--}1.704$
2V(meas.) = 11°–12°**Cell Data:** *Space Group:* C2/c or Cc. $a = 5.29(1)$ $b = 9.182(2)$ $c = 20.023(6)$
 $\beta = 95^\circ 41(5)'$ $Z = 4$ **X-ray Powder Pattern:** Kara-Tau Mountains, Kazakhstan.
3.33 (100), 2.607 (70), 1.996 (60), 1.660 (60), 3.01 (50), 1.530 (50), 2.887 (40)**Chemistry:**

	(1)	(2)
SiO ₂	29.90	30.06
Al ₂ O ₃	25.90	27.24
Fe ₂ O ₃	0.40	0.36
V ₂ O ₄	5.40	5.30
V ₂ O ₃	18.30	18.90
MgO	1.60	trace
BaO	9.35	9.60
Na ₂ O	1.32	
K ₂ O	0.70	0.90
H ₂ O ⁺	6.00	6.10
H ₂ O ⁻	1.10	1.00
Total	99.97	99.46

(1) Kara-Tau Mountains, Kazakhstan; corresponds to (Ba_{0.28}Na_{0.20}K_{0.07})_{Σ=0.55}(V_{1.13}³⁺Al_{0.65}V_{0.30}⁴⁺Mg_{0.18}Fe_{0.02})_{Σ=2.28}(Si_{2.30}Al_{1.70})_{Σ=4.00}O₁₀(OH)₂. (2) Do.; corresponds to (Ba_{0.29}K_{0.09})_{Σ=0.38}(V_{1.18}³⁺Al_{0.76}V_{0.29}⁴⁺Fe_{0.02})_{Σ=2.25}(Si_{2.30}Al_{1.70})_{Σ=4.00}O₁₀(OH)₂.**Polymorphism & Series:** 2M₁ polytype.**Mineral Group:** Mica group.**Occurrence:** In small veinlets cutting carbonate rocks interbedded with vanadium-rich lower Paleozoic shales.**Association:** n.d.**Distribution:** From the Balasauskandyk and Kurumsak vanadium deposits, northwestern Kara-Tau Mountains, southern Kazakhstan.**Name:** Honoring Viktor Vasil'evich Chernykh (1889–1941), Professor of Mineralogy, the Mining Institute, St. Petersburg, Russia.**Type Material:** Alma-Ata, Kazakhstan; Mining Institute, St. Petersburg, 1056/1; Vernadsky State Geological Museum, Moscow, 49845; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 72369, vis5548.

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