Shcherbakovite  

**Crystal Data:** Orthorhombic.  
**Point Group:** 2/m 2/m 2/m.  
Crystals are long prismatic, to 6 cm; terminated crystals are uncommon.

**Physical Properties:**  
**Cleavage:** Two directions, observed microscopically, may be parting.  
**Tenacity:** Brittle.  
**Fracture:** Uneven.  
**Hardness:** 6.5  
**VHN:** 731-845  
**D(meas.):** 2.968  
**D(calc.):** 3.194

**Optical Properties:** Opaque, translucent on thin edges.  
**Color:** Dark brown to blue-green.  
**Luster:** Vitreous, greasy on fracture surfaces.  
**Optical Class:** Biaxial (-).  
**Pleochroism:** Distinct;  
**X:** pale yellow;  
**Y:** yellow;  
**Z:** brownish yellow.  
**Dispersion:**  
**r < v;** strong.  
**Absorption:**  
**Z > Y > X.**  
**α:** 1.707  
**β:** 1.745  
**γ:** 1.776  
**2V(meas.):** 82°

**Cell Data:**  
**Space Group:** Imma.  
**a:** 8.1538(4)  
**b:** 10.5569(5)  
**c:** 13.9882(6)  
**Z:** 4

**X-ray Powder Pattern:** Wolgidee Hills, Western Australia; nearly identical to batiste.  
2.911 (100), 3.201 (80), 3.399 (75), 2.634 (70), 2.191 (60), 2.102 (60), 1.680 (60)

**Chemistry:**

<table>
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<tr>
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<th>(1)</th>
<th>(2)</th>
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<th>(2)</th>
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<tbody>
<tr>
<td>SiO₂</td>
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<td>40.57</td>
<td>MnO</td>
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<tr>
<td>TiO₂</td>
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<td>(Nb,Ta)₂O₅</td>
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<td>ZrO₂</td>
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<td>MgO</td>
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<td>Na₂O</td>
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<td>FeO</td>
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<td>Total</td>
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</table>

(1) Khibiny massif, Russia; corresponds to (K₁₋₂₃Na₁₋₁₀Ba₀₋₂₄Ca₀₋₀₈Mg₀₋₀₄)(Σ₋₂₋₆₉)
(Ti₁₋₃₁Nb₀₋₁₄Fe₀₋₁₂Zr₀₋₀₆Oₓ₋₁₋₉₈Si₁₋₃₀(OH)₀₋₄₋₁₋₄₀)Σ₋₁₋₄₋₀₀
(2) Mount Rasvumchur, Khibiny massif, Russia; electron microprobe analysis, H₂O from crystal structure analysis, Mn, Mg, Al, Ta, Sr, F, Cl not detected, corresponds to (K₀₋₀₆Ba₀₋₂₃Na₀₋₀₇Ca₀₋₀₂)(Σ₋₀₋₉₈K₀₋₁₋₀₁(Ti₁₋₄₀Nb₀₋₁₂Fe₀₋₀₄Zr₀₋₀₁)Σ₋₁₋₉₉)
(O₁₋₁₂OH₀₋₄₈)Σ₋₂₋₀₀(Si₄O₁₂)

**Polymorphism & Series:** Forms a series with batiste.

**Occurrence:** Very rare, in pegmatite in a differentiated alkaline massif as a hydrothermal pectolite–natrolite vein cutting leucite-normative kalsilite–nepheline rischorrite (Khibiny massif, Russia); in lamproite (Leucite Hills, Wyoming, USA).

**Association:** Natrolite, manganese pectolite, albite, potassic feldspar, astrophyllite, strontian fluorapatite, titanite (Khibiny massif, Russia); priderite, jeppeite, wadeite, perovskite, phlogopite, richterite (Wolgidee Hills, Western Australia).

**Distribution:** From Mts. Rasvumchur and Yukspor, Khibiny massif, Kola Peninsula, Russia.  
In the Wolgidee Hills, West Kimberley district, Western Australia. From Emmons Mesa, Zirkel Mesa, and Black Butte, Leucite Hills, Sweetwater Co., Wyoming, USA.

**Name:** For Academician Demitri Ivanovich Shcherbakov (1893-1966), Russian mineralogist and geochemist, Institute of Geology of Ore Deposits, Petrology, Mineralogy, and Geochemistry, Moscow, Russia.

**Type Material:** A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia; 57256.

**References:**  
(2) (1955) Amer. Mineral., 40, 788 (abs.)