

**Hingganite-(Yb)****(Yb, Y)BeSiO<sub>4</sub>(OH)**

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**Crystal Data:** Monoclinic. *Point Group:*  $2/m$ . As acicular crystals, to 2 mm, in spherical aggregates.

**Physical Properties:** Hardness = 6–7  $D(\text{meas.}) = \text{n.d.}$   $D(\text{calc.}) = 4.83$

**Optical Properties:** Transparent. *Color:* Colorless. *Luster:* Vitreous.  
*Optical Class:* Biaxial (+). *Orientation:*  $X \wedge c = 20^\circ$ ;  $Z \wedge c = 23^\circ$ .  $\alpha = 1.725$   $\beta = 1.738$   
 $\gamma = 1.760$   $2V(\text{meas.}) = 65^\circ$

**Cell Data:** *Space Group:*  $P2_1/a$ .  $a = 9.888(5)$   $b = 7.607(3)$   $c = 4.740(2)$   $\beta = 90.45(4)^\circ$   
 $Z = 4$

**X-ray Powder Pattern:** Kola Peninsula, Russia.  
 3.13 (10), 2.85 (10), 2.572 (8), 2.542 (8), 1.977 (8), 6.07 (7)

Chemistry:	(1)
SiO <sub>2</sub>	22.11
Y <sub>2</sub> O <sub>3</sub>	8.56
Yb <sub>2</sub> O <sub>3</sub>	34.07
RE <sub>2</sub> O <sub>3</sub>	19.37
BeO	10.90
CaO	1.14
H <sub>2</sub> O	[3.74]
Total	[99.89]

(1) Kola Peninsula, Russia; by electron microprobe, H<sub>2</sub>O stated to be by difference; RE<sub>2</sub>O<sub>3</sub> = Tb<sub>2</sub>O<sub>3</sub> 0.05%, Dy<sub>2</sub>O<sub>3</sub> 2.47%, Ho<sub>2</sub>O<sub>3</sub> 1.03%, Er<sub>2</sub>O<sub>3</sub> 8.22%, Tm<sub>2</sub>O<sub>3</sub> 3.10%, Lu<sub>2</sub>O<sub>3</sub> 4.50%; corresponds to (Yb<sub>0.45</sub>Y<sub>0.20</sub>RE<sub>0.30</sub>Ca<sub>0.05</sub>)<sub>Σ=1.00</sub>Be<sub>1.13</sub>Si<sub>0.96</sub>O<sub>3.92</sub>(OH)<sub>1.08</sub>.

**Mineral Group:** Gadolinite group.

**Occurrence:** Formed by very late-stage replacement reactions in “amazonite”-rich pegmatites.

**Association:** Plumbian microlite [plumbomicrolite], fluorite, keiviite-(Yb), bastnäsite.

**Distribution:** From Mt. Ploskaya, Keivy massif, Kola Peninsula, Russia.

**Name:** For the predominance of *ytterbium* and its relation to *hingganite*-(Y).

**Type Material:** Central Siberian Geological Museum, Novosibirsk, 5768; Mining Institute, St. Petersburg, 1590/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 84278–84280.

**References:** (1) Voloshin, A.V., Y.A. Pakhomovskii, Y.P. Men'shikov, A.S. Povarennykh, E.N. Matvinenko, and O.V. Yakubovich (1983) Hingganite-(Yb), a new mineral from amazonite pegmatites of the Kola Peninsula. *Doklady Acad. Nauk SSSR*, 270, 1188–1192 (in Russian). (2) (1984) *Amer. Mineral.*, 69, 811 (abs. ref. 1). (3) Yakubovich, O.V., E.N. Matvinenko, A.V. Voloshin, and M.A. Simonov (1983) The crystal structure of hingganite-(Yb), (Y<sub>0.51</sub>TR<sub>0.36</sub>Ca<sub>0.13</sub>)•Fe<sub>0.065</sub>Be[SiO<sub>4</sub>](OH). *Kristallografiya (Sov. Phys. Crystal.)*, 28, 457–460 (in Russian).