Hingganite-(Yb) $(Yb,Y)BeSiO_4(OH)$

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

Physical Properties: Hardness = 6–7 D(meas.) = n.d. D(calc.) = 4.83

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

Cell Data: *Space Group:* $P2_1/a$. a = 9.888(5) $b = 7.607(3)$ $c = 4.740(2)$ $\beta = 90.45(4)°$ 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_2	22.11
Y_2O_3	8.56
Yb_2O_3	34.07
RE_2O_3	19.37
BeO	10.90
CaO	1.14
H_2O	[3.74]
Total	[99.89]

(1) Kola Peninsula, Russia; by electron microprobe, H_2O stated to be by difference; RE_2O_3 = Tb_2O_3 0.05%, Dy_2O_3 2.47%, Ho_2O_3 1.03%, Er_2O_3 8.22%, Tm_2O_3 3.10%, Lu_2O_3 4.50%; corresponds to $(Yb_{0.45}Y_{0.20}RE_{0.30}Ca_{0.05})_{\Sigma=1.00}Be_{1.13}Si_{0.96}O_{3.92}(OH)_{1.08}$.

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), $(Y_{0.51}TR_{0.36}Ca_{0.13})\cdot Fe_{0.065}Be[SiO_4](OH)$. Kristallografiya (Sov. Phys. Crystal.), 28, 457–460 (in Russian).