

Hundholmenite-(Y) $(Y,REE,Ca,Na)_{15}(Al,Fe^{3+})Ca_xAs^{3+}_{1-x}(Si,As^{5+})Si_6B_3(O,F)_{48}$

Crystal Data: Hexagonal. *Point Group:* 3m. As subhedral equant to tabular crystals to 7 mm.

Physical Properties: *Cleavage:* None. *Tenacity:* Brittle. *Fracture:* Uneven to subconchoidal. Hardness = ~5-6 D(meas.) = > 4.2 D(calc.) = 5.206(9) Nonfluorescent.

Optical Properties: Translucent. *Color:* Pale reddish to grayish brown, grayish yellow to gray; colorless in thin section. *Streak:* White. *Luster:* Vitreous to adamantine.

Optical Class: Uniaxial (-). $\omega = 1.7578(5)$ $\epsilon = 1.7487(5)$ Nonpleochroic.

Cell Data: *Space Group:* R3m. $a = 10.675(6)$ $c = 27.02(2)$ $Z = 3$

X-Ray Diffraction Pattern: Hundholmen, Tysfjord, Nordland County, Norway. 2.972 (100), 2.947 (76), 2.924 (66), 3.114 (43), 4.38 (33), 1.978 (37), 2.681 (36)

Chemistry:	(1)	(1)	(1)		
Na ₂ O	0.31	Pr ₂ O ₃	1.73	Yb ₂ O ₃	3.53
CaO	6.45	Nd ₂ O ₃	7.87	Lu ₂ O ₃	0.78
MnO	0.07	Sm ₂ O ₃	2.93	SiO ₂	15.05
PbO	0.14	Eu ₂ O ₃	0.83	ThO ₂	0.09
B ₂ O ₃	3.922	Gd ₂ O ₃	4.39	P ₂ O ₅	0.14
Al ₂ O ₃	1.23	Tb ₂ O ₃	0.49	As ₂ O ₃	[0.804]
Fe ₂ O ₃	0.793	Dy ₂ O ₃	4.20	As ₂ O ₅	[1.094]
Y ₂ O ₃	18.07	Ho ₂ O ₃	0.80	F	7.75
La ₂ O ₃	4.84	Er ₂ O ₃	3.16	- O = F ₂	3.26
Ce ₂ O ₃	12.70	Tm ₂ O ₃	0.79	Total	101.68

(1) Hundholmen, Tysfjord, Nordland County, Norway; average electron microprobe analysis, As₂O₃ and As₂O₅ recalculated from structure data, boron by ICP-AES; corresponds to $(Y,REE,Ca,Na)_{15}(Al,Fe^{3+})Ca_xAs^{3+}_{1-x}(Si,As^{5+})Si_6B_3(O,F)_{48}$ ($x = 0.78$).

Mineral Group: Vicanite group.

Occurrence: A late-stage, primary mineral in granite pegmatite.

Association: REE-bearing fluorite, allanite-(Ce).

Distribution: From Hundholmen [TL], 7 km northwest of Kjølpsvik, and at Stetind, Tysfjord, and at Lagmannsvik, Hamarøy, Nordland County, Norway.

Name: For *Hundholmen*, Norway, where the studied samples were collected and a suffix for the dominant rare earth element.

Type Material: Natural History Museum, University of Oslo, Norway (41590).

References: (1) Raade, G., O. Johnsen, M. Erambert, and O.V. Petersen (2007) Hundholmenite-(Y) from Norway - a new mineral species in the vicanite group: descriptive data and crystal structure. *Mineral., Mag.*, 71, 179-192.