Nabaphite

\[ \text{NaBaPO}_4 \cdot 9\text{H}_2\text{O} \]

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Crystal Data: Cubic. Point Group: 23. As irregular grains, to 5 mm.

Physical Properties: Cleavage: On \{100\}, distinct. Fracture: Semiconchoidal. Tenacity: Brittle. Hardness = \( \sim 2 \) D(meas.) = 2.3 D(calc.) = 2.26 Readily dehydrates in air; partly decomposed in \( \text{H}_2\text{O} \). Fluoresces pale violet under UV.

Optical Properties: Transparent, turbid with alteration. Color: Colorless, snow-white with alteration. Luster: Dull vitreous [sic]. Optical Class: Isotropic. \( n = 1.504(1) \)

Cell Data: Space Group: \( P2_13 \). \( a = 10.711(9) \) Z = 4

X-ray Powder Pattern: Mt. Yukspor, Kola Peninsula, Russia. 2.598 (10), 2.866 (9), 5.36 (8), 4.81 (8), 2.102 (8), 3.575 (7), 3.794 (6)

Chemistry:

\[
\begin{array}{ccc}
P_2\text{O}_5 & 18.86 & 17.00 \\
\text{CaO} & 0.04 & \\
\text{SrO} & 0.86 & \\
\text{BaO} & 37.00 & 36.74 \\
\text{Na}_2\text{O} & 6.31 & 7.42 \\
\text{H}_2\text{O} & 36.94 & 38.84 \\
\hline
\text{Total} & [100.01] & 100.00 \\
\end{array}
\]

(1) Mt. Yukspor, Kola Peninsula, Russia; by electron microprobe, average of three analyses, recalculated to 100\%, \( \text{H}_2\text{O} \) by TGA; corresponding to \( \text{Na}_{0.80}(\text{Ba}_{0.95}\text{Sr}_{0.05})\text{P}_{1.05}\text{O}_4 \cdot 8.07\text{H}_2\text{O} \).

(2) \( \text{NaBaPO}_4 \cdot 9\text{H}_2\text{O} \).

Occurrence: A rare late-stage hydrothermal mineral in cavities in ijolite-urtite pegmatite in a differentiated alkalic massif.

Association: Natrolite, pectolite, shcherbakovite, wadeite, eudialyte, lamprophyllite, ferrian biotite, aegirine, microcline.

Distribution: On Mt. Yukspor, Khibiny massif, Kola Peninsula, Russia.

Name: For sodium, \text{NA}trium, \text{BA}rium, and \text{PH}osphorus in the composition.

Type Material: Geology Museum, Kola Branch, Academy of Sciences, Apatity, 5713/2; Mining Institute, St. Petersburg, 1635/1; A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 80819.