

Byelorussite-(Ce)**NaMn²⁺Ba₂(Ce, La)₂Ti₂Si₈O₂₆(F, OH)•H₂O**

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Crystal Data: Orthorhombic. *Point Group:* 222. As crystals, tabular to thin tabular, to 2.5 cm.

Physical Properties: *Cleavage:* Perfect on {001}, imperfect on {100}, poor on {010}.
Fracture: Brittle. Hardness = 5.5–6 D(meas.) = 3.92 D(calc.) = 4.09

Optical Properties: Semitransparent. *Color:* Pale yellow to brown. *Streak:* White.
Luster: Vitreous.

Optical Class: Biaxial (+). *Pleochroism:* In pale yellows. *Orientation:* X = a; Y = b; Z = c.
Absorption: Z > Y ≈ X. α = 1.743 β = 1.760(3) γ = 1.820(5) 2V(meas.) = 58°–62°

Cell Data: *Space Group:* P2₁2₁2₁. a = 10.57(6) b = 9.69(6) c = 22.38(10) Z = [4]

X-ray Powder Pattern: Gomel district, Belarus.

2.783 (100), 3.00 (68), 2.95 (63), 4.42 (59B), 2.91 (52), 2.606 (52), 3.30 (45B)

Chemistry:

	(1)
SiO ₂	33.98
TiO ₂	11.35
RE ₂ O ₃	23.59
FeO	0.82
MnO	2.58
ZnO	1.58
MgO	0.15
SrO	0.43
BaO	20.58
Na ₂ O	2.08
K ₂ O	0.40
F	0.98
H ₂ O	[1.45]
–O = F ₂	0.41
Total	[99.56]

(1) Gomel district, Belarus; by electron microprobe, average of four analyses; RE₂O₃ = La₂O₃ 8.33%, Ce₂O₃ 12.13%, Pr₂O₃ 0.58%, Nd₂O₃ 2.3%, Sm₂O₃ 0.1%, Gd₂O₃ 0.15%; corresponds to (Na_{0.95}K_{0.12})_{Σ=1.07}(Mn_{0.52}Zn_{0.27}Fe_{0.16}Mg_{0.05})_{Σ=1.00}(Ba_{1.90}Sr_{0.06})_{Σ=1.96}RE_{2.03}Ti_{2.01}Si_{8.00}O₂₆[F_{0.73}(OH)_{0.27}]_{Σ=1.00}•H₂O.

Mineral Group: Joaquinite group.

Occurrence: In a salband of a quartz vein in lower Proterozoic metasomatized granosyenites.

Association: Brookite, bastnäsite, montmorillonite, quartz, magnesio-riebeckite, aegirine, albite, leucophanite, titanite.

Distribution: In the Diabazov rare earth–Be deposit, near Zhitkovichi, Gomel district, Belarus.

Name: For the occurrence in Belarus (formerly Byelorussia, USSR), and the *cerium* content.

Type Material: A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 88051.

References: (1) Shpanov, E.P., G.N. Netschelyustov, S.V. Baturin, and L.S. Solntseva (1989) Byelorussite-(Ce) – NaMnBa₂Ce₂Ti₂Si₈O₂₆(F, OH)•H₂O – a new mineral of the joaquinite group. Zap. Vses. Mineral. Obshch., 118(5), 100–107 (in Russian). (2) (1991) Amer. Mineral., 76, 665–666 (abs. ref. 1).

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