Byelorussite-(Ce) **$NaMn^{2+}Ba_2(Ce,La)_2Ti_2Si_8O_{26}(F,OH)\cdot H_2O$**

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:* $Z > Y \simeq X$. $\alpha = 1.743$ $\beta = 1.760(3)$ $\gamma = 1.820(5)$ 2V(meas.) = 58°–62°

Cell Data: *Space Group:* $P2_12_12_1$. $a = 10.57(6)$ $b = 9.69(6)$ $c = 22.38(10)$ 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_2O_3	23.59
FeO	0.82
MnO	2.58
ZnO	1.58
MgO	0.15
SrO	0.43
BaO	20.58
Na_2O	2.08
K_2O	0.40
F	0.98
H_2O	[1.45]
$-O = F_2$	0.41
Total	[99.56]

(1) Gomel district, Belarus; by electron microprobe, average of four analyses; $RE_2O_3 = La_2O_3$ 8.33%, Ce_2O_3 12.13%, Pr_2O_3 0.58%, Nd_2O_3 2.3%, Sm_2O_3 0.1%, Gd_2O_3 0.15%; corresponds to $(Na_{0.95}K_{0.12})_{\Sigma=1.07}(Mn_{0.52}Zn_{0.27}Fe_{0.16}Mg_{0.05})_{\Sigma=1.00}(Ba_{1.90}Sr_{0.06})_{\Sigma=1.96}RE_{2.03}Ti_{2.01}Si_{8.00}O_{26}[F_{0.73}(OH)_{0.27}]_{\Sigma=1.00}\cdot H_2O$.

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) – $NaMnBa_2Ce_2Ti_2Si_8O_{26}(F,OH)\cdot H_2O$ – 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).