Proshchenkoite-(Y) $(Y, REE, Ca, Na, Mn)_{15}Fe^{2+}Ca(P, Si)Si_6B_3(O, F)_{48}$

Crystal Data: Hexagonal. *Point Group*: 3*m*. As irregular grains to 0.3 mm; in nest-like accumulations of irregular form, thin veinlets, or small disseminations.

Physical Properties: *Cleavage*: None. *Tenacity*: Brittle. *Fracture*: Uneven to conchoidal. Hardness = ~5 D(meas.) = 4.72 (partially metamict) D(calc.) = 2.423 Nonfluorescent.

Optical Properties: Transparent to translucent. *Color*: Brownish to reddish, orange-yellow in thin fragments. *Streak*: Light brown. *Luster*: Vitreous to greasy.
Optical Class: Uniaxial (-). ω = 1.734(2) ε = 1.728(2)

Cell Data: *Space Group*: *R*3*m*. a = 10.7527(7) c = 27.4002(18) Z = 3

X-ray Powder Pattern: Tommot *REE*-Nb deposit, Yakutia, Russia.
2.968 (100b), 3.144 (77b), 3.028 (45b), 4.441 (36), 1.782 (32), 1.713 (32), 2.672 (30)

Chemistry:

	(1)	(2)		(1)	(2)
Na_2O	1.32	2.11	Tb_2O_3	0.36	0.42
MgO	n.d.	0.20	Dy_2O_3	3.02	3.52
CaO	5.23	5.60	Ho_2O_3	0.47	0.85
MnO	2.38	2.15	Er_2O_3	1.54	1.70
PbO	0.12	n.a.	Tm_2O_3	0.38	0.06
B_2O_3	4.08	n.d.	Yb_2O_3	0.91	1.34
Al_2O_3	n.d.	1.27	Lu_2O_3	0.26	n.a.
Fe_2O_3	n.d.	3.69	SiO_2	13.90	14.0
FeO	[2.19]	n.d.	TiO_2	0.07	0.14
Y_2O_3	15.30	14.01	ThO_2	0.93	0.93
La_2O_3	5.54	6.25	P_2O_5	1.83	2.83
Ce_2O_3	15.24	13.71	As_2O_5	0.18	n.a.
Pr_2O_3	1.95	2.37	H_2O	n.a.	2.00
Nd_2O_3	9.79	9.22	F	9.36	7.85
Sm_2O_3	2.78	3.03	$-O = F_2$	3.94	3.31
Eu_2O_3	0.89	n.a.	Total	100.01	100.13
Gd_2O_3	3.93	4.19	[n.a. = not analyzed n.d. = not detected]		

(1) Tommot *REE*-Nb deposit, Yakutia, Russia; average electron microprobe analysis, FeO from structure; corresponds to $(Y_{3.70}REE_{7.54}Ca_{1.55}Na_{1.16}Mn_{0.77}Th_{0.10}Pb_{0.01})_{\Sigma=4.83}(Fe^{2+}_{0.83}Mn_{0.15}Ti_{0.02})_{\Sigma=1.00}$ $Ca_{1.00}(P_{0.70}Si_{0.26}As_{0.04})_{\Sigma=1.00}Si_{6.05}B_{3.20}(O_{34.55}F_{13.45})_{\Sigma=48}$. (2) Do.; wet chemical analysis.

Mineral Group: Vicanite group.

Occurrence: In pegmatites and the enclosing crystalline schists and aegirinized gneisses.

Association: Chevkinite, fergusonite, gadolinite, britholite, alkali amphibole, fluorite, pyrite, molybdenite.

Distribution: From the Tommot *REE*-Nb deposit in Yakutia, Russia.

Name: Honors Evgeniy Grigor'evich *Proshchenko* (1929-1996), Russian mineralogist and senior author of the first paper about the material now a new species. A suffix indicates the dominant rare earth element.

Type Material: Natural History Museum, University of Oslo, Norway (42029).

References: (1) Raade, G., J.D. Grice, M. Erambert, P. Kristiansson, and T. Witzke (2008) Proshchenkoite-(Y) from Russia - a new mineral species in the vicanite group: Descriptive data and crystal structure. Mineral. Mag., 72, 1071-1082.