Strontiomelane $SrMn_2^{3+}Mn_6^{4+}O_{16}$

Crystal Data: Cubic. *Point Group:* $4/m\ \overline{3}\ 2/m$. Crystals are octahedra, to 0.5 mm.

Physical Properties: *Cleavage:* Noted, may be a parting. *Tenacity:* Friable. Hardness = n.d. VHN = 245 D(meas.) = 3.8 D(calc.) = n.d.

Optical Properties: Semitransparent. *Color:* Light yellow, white in the interior, may have a pale blue cast. *Luster:* [Vitreous to resinous] (by analogy to the pyrochlore group). *Optical Class:* Isotropic. $n = 2.08$

Cell Data: *Space Group:* $Fd3m$. a = 10.53 Z = 8

X-ray Powder Pattern: n.d.

Chemistry:

	(1)	(2)		(1)	(2)
Nb_2O_5	71.72	67.1	MnO	0.00	
Ta_2O_5	0.31		MgO	0.00	
SiO_2	0.00		CaO	0.42	4.6
TiO_2	0.03	3.5	SrO	16.08	14.0
ThO_2	0.00		BaO	0.37	
Al_2O_3	0.21		Na_2O	0.11	2.6
RE_2O_3	1.86	0.0	K_2O	0.28	
Fe_2O_3	1.53	0.5	H_2O	7.56	[7.7]
			Total	100.48	[100.0]

(1) Tatarkskoye deposit, Russia; RE = La 30.5%, Ce 59%, Pr 2%, Nd 2.3%, Sm 2.2%, Eu 0.54%, Gd 0.18%, Dy 0.9%, Ho 0.18%, Er 0.72%, Yb 1.3%, Lu 0.18%; corresponding to $(Sr_{0.55}RE_{0.04}Ca_{0.03}K_{0.02}Ba_{0.01}Na_{0.01})_{\Sigma=0.66}(Nb_{1.91}Fe_{0.07}Al_{0.01}Ta_{0.01})_{\Sigma=2.00}[O_{4.09}(OH)_{2.97}]_{\Sigma=7.06}$. (2) Mt. Weld, Australia; by electron microprobe, total Fe as Fe_2O_3, H_2O by difference; corresponding to $(Sr_{0.50}Na_{0.31}Ca_{0.30})_{\Sigma=1.11}(Nb_{1.87}Ti_{0.16}Fe_{0.02})_{\Sigma=2.05}O_6(OH)$.

Mineral Group: Pyrochlore group and subgroup; $Sr_A > 20\%$; $(Nb + Ta)_B > 2Ti_B$; $Nb_B > Ta_B$.

Occurrence: Replacing pyrochlore in laterites above a weathered complex dolomitic carbonatite cutting metasedimentary clastic-carbonate rocks (Tatarkskoye deposit, Russia); a weathering product of pyrochlore in a carbonatite (Mt. Weld, Australia).

Association: Bariopyrochlore, pyrochlore, goethite, crandallite, ilmenorutile, manganese oxides, quartz (Tatarkskoye deposit, Russia); pyrochlore, plumbopyrochlore, ceriopyrochlore (Mt. Weld, Australia).

Distribution: From Mt. Vavnbed, Lovozero massif, Kola Peninsula, and in the Tatarkskoye deposit, Yenisei Ridge, Siberia, Russia. In the Mt. Weld carbonatite, 35 km south of Laverton, Western Australia. In the USA, in the Wilson Springs (Potash Sulphur Springs) mine, Garland Co., Arkansas. At St. Andre, near Oka, Quebec, Canada. From the Lueshe carbonatite, 150 km north of Goma, Kivu Province, Congo (Zaire).

Name: For STRONTIum in the composition, and membership in the *pyrochlore* group.

Type Material: Geology Museum, Kola Branch, Academy of Sciences, Apatity, Russia, 5536.

References: (1) Lapin, A.V., A.A. Malyshev, V.V. Ploshko, and G.Y. Cherepivskaya (1986) Strontiopyrochlore from lateritic weathered mantle of carbonatite. Doklady Acad. Nauk SSSR, 290, 1212–1217 (in Russian). (2) (1988) Amer. Mineral., 73, 930 (abs. ref. 1). (3) Lottermoser, B.G. and B.M. England (1988) Compositional variation in pyrochlores from the Mt Weld carbonatite laterite, Western Australia. Mineral. Petrol., 38, 37–51.