

Parabariomicrolite discredited as identical to hydrokenomicrolite-3R

DANIEL ATENCIO

Instituto de Geociências - Universidade de São Paulo, Rua do Lago, 562–05508-080 - São Paulo - SP – Brasil

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ABSTRACT

Proposal 16-C was accepted by the Commission on New Minerals and Mineral Names of the International Mineralogical Association, and parabariomicrolite is discredited as identical to hydrokenomicrolite-3R. There are now two type localities: Alto do Giz pegmatite, Equador Co., Rio Grande do Norte, Brazil and Volta Grande pegmatite, Nazareno, Minas Gerais, Brazil.

KEYWORDS: parabariomicrolite, hydrokenomicrolite-3R.

MILLS *ET AL.* (2016) described hydrokenoelsmoreite-3C and hydrokenoelsmoreite-6R, two polytypes of a pyrochlore-super group mineral with formula $\square_2\text{W}_2\text{O}_6(\text{H}_2\text{O})$. Hydrokenoelsmoreite-3C crystallizes in space group $Fd\bar{3}m$, with the unit-cell parameter $a = 10.3065(3)$ Å. Hydrokenoelsmoreite-6R crystallizes in space group $R\bar{3}$ with the unit-cell parameters $a = 7.2882(2)$ Å and $c = 35.7056(14)$ Å.

Coulsellite (to be renamed fluornatrocoulsellite – a separate proposal now approved by the CNMNC-IMA) is a rhombohedral pyrochlore (Mumme *et al.*, 2010), with formula $(\text{Na,Ca})_2(\text{Mg,Al})_2\text{F}_6$. It occurs as a 3R polytype and crystallizes in space group $R\bar{3}m$ with the unit-cell parameters $a = 7.1620(6)$ Å and $c = 17.5972(3)$ Å.

Hydrokenomicrolite, a pyrochlore-super group mineral with formula $\square_2\text{Ta}_2[\text{O,OH}]_6(\text{H}_2\text{O})$ (Andrade *et al.*, 2013) crystallizes in space group $Fd\bar{3}m$, with the unit-cell parameter $a = 10.454(1)$ Å. Parabariomicrolite (Ercit *et al.*, 1986) crystallizes in space group $R\bar{3}m$ with the unit-cell parameters $a = 7.4290(6)$ Å and $c = 18.505(2)$ Å. Ercit *et al.* (1986) noted the resemblance of the powder X-ray diffraction pattern of parabariomicrolite to that of microlite, and derived a structure model for parabariomicrolite where the symmetry was reduced to rhombohedral by ordering of Ba and

vacancies on split A sites. Its empirical formula in terms of the pyrochlore-type formula $A_2B_2X_6Y$ is $[\square_{1.49}\text{Ba}_{0.36}\text{Na}_{0.07}\text{Sr}_{0.04}\text{K}_{0.03}\text{Pb}_{0.01}]_{\Sigma 2.00}(\text{Ta}_{1.94}\text{Nb}_{0.06})_{\Sigma 2.00}[(\text{O}_{4.92}(\text{OH})_{1.08})_{\Sigma 6.00}(\text{H}_2\text{O})_{1.00}]$, or ideally $\square_2\text{Ta}_2[\text{O,OH}]_6(\text{H}_2\text{O})$. Consequently, it is a 3R polytype of hydrokenomicrolite. The Commission on New Minerals and Mineral Names of the International Mineralogical Association accepted Proposal 16-C, and parabariomicrolite is discredited.

Due to the discreditation of parabariomicrolite, hydrokenomicrolite now has two type localities:

(1) Alto do Giz pegmatite, located 2 km S of the main road connecting Equador and Parelhas, Equador Co., Rio Grande do Norte, Brazil. (hydrokenomicrolite-3R polytype). Cotype specimen depository: Royal Ontario Museum, Toronto, Ontario, Canada (M22607) and U.S. National Museum of Natural History (Smithsonian Institution), Washington DC, USA (104739).

(2) Volta Grande pegmatite, Nazareno, Minas Gerais, Brazil. (hydrokenomicrolite-3C polytype). Cotype specimen depository: Museu de Geociências, Universidade de São Paulo, sample number DR725.

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