Rhodizite  
\((K, Cs)Al_4Be_4(B, Be)_{12}O_{28}\)

Crystal Data: Cubic. Point Group: \(\overline{4}3m\). Typically as well-formed dodecahedra and tetrahedra, to 3.5 cm, modified by \(\{001\}\) and \(\{\overline{1}1\}\). Twinning: On \(\{111\}\), uncommon.

Physical Properties: Cleavage: \(\{111\}\) and \(\{\overline{1}1\}\), indistinct. Fracture: Conchoidal. Hardness = 8–8.5  
\(D(\text{meas.}) = 3.22–3.44\)  
\(D(\text{calc.}) = 3.2–3.62\)  
Strongly piezoelectric and pyroelectric.

Optical Properties: Transparent to translucent. Color: Colorless to white, may have a pale gray or pale yellow tinge; in transmitted light, colorless. Luster: Vitreous to slightly adamantine.

Optical Class: Isotropic, may display zoned anomalous birefringence.  
\(n = 1.693(1)\)

Cell Data:  
Space Group: \(P\overline{4}3m\). \(a = 7.317–7.319\) \(Z = 1\)

X-ray Powder Pattern:  
Manjaka, Madagascar; very similar to londonite.  
2.983 (100), 2.440 (51), 3.274 (48), 2.111 (37), 1.775 (25), 1.956 (22), 2.205 (21)

Chemistry:  
(1) (2)  
\(\text{SiO}_2\) 0.08  
\(\text{CaO}\) 0.18  
\(\text{CO}_2\) 0.15  
\(\text{K}_2\text{O}\) 0.03  
\(\text{Ba}_2\text{O}_3\) 50.2 [49.60]  
\(\text{Na}_2\text{O}\) 0.06  
\(\text{Fe}_2\text{O}_3\) 0.02  
\(\text{K}_2\text{O}\) 2.77  
\(\text{Al}_2\text{O}_3\) 25.8  
\(\text{Rb}_2\text{O}\) 0.73  
\(\text{BeO}\) 14.3 [16.21]  
\(\text{Cs}_2\text{O}\) 6.4  
\(\text{MnO}\) 0.03  
\(\text{H}_2\text{O}^+\) 0.32  
\(\text{MgO}\) 0.01  
Total \([101.0]\) \([99.79]\)

(1) Ambatofinandrahana, Madagascar; \(\text{SiO}_2\) by ICP, \(\text{SiO}_2\) 6.23% assumed as quartz; calculated neglecting impurities, corresponds to \((K_{0.46}Cs_{0.36}Rb_{0.06}Na_{0.02}L_{0.02})_{\Sigma=1.02}Al_{1.99}Be_{4.00}\) \((B_{11.33}Be_{0.55})_{\Sigma=11.90}O_{28,90}\).  
(2) Andasy, Madagascar; by electron microprobe, average of seven analyses, \(\text{BeO}\) and \(\text{BeO}\) calculated for stoichiometry; corresponds to \((K_{0.82}Cs_{0.09}Rb_{0.04}Na_{0.05}Li_{0.02}Ca_{0.01})_{\Sigma=1.03}(Al_{1.99}Si_{0.01})_{\Sigma=4.00}Be_{4.00}(B_{10.99}Be_{1.00})_{\Sigma=11.99}O_{28,90}\).

Occurrence: A rare late-stage accessory mineral in alkali-rich granite pegmatites.

Association: Londonite, elbaite, spodumene, beryl, bâhierite, albite, microcline, quartz.

Distribution: Found near Sarapulka and Shaitanka, Mursinka district, Ural Mountains, Russia. In Madagascar, from Antandrokomby, near Mt. Bity, at Andasy, Besesitra, and Isina, Manandona Valley, Antsirabe district; from Flakarandava, south of the Manandona Valley; from the Ambatofinandrahana district, in the Ankara Mountains; at Antsongombato, 25 km southwest of Mahaiza, Betafo district; from Ampakita and Sahaniutry, in the Sahatany Valley; and from Ambalalechifotsy. In England, from Meldon and Okehampton, Devon. In the USA, found in the Animikie Red Ace pegmatite, near Pine River, Florence Co., Wisconsin.

Name: From the Greek for rose-colored, for the rose-red color the mineral imparts to the blowpipe flame.

References:  

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