

Crystal Data: Hexagonal. *Point Group:* $\bar{3} 2/m$. As hexagonal tabular crystals, to 10 cm, or equant to elongated flat crystals. Well-formed crystals display dominant {001} and subordinate {100} and {101}. Also as subparallel or interpenetrant crystal aggregates.

Physical Properties: *Cleavage:* Imperfect on {001}. *Tenacity:* Brittle. *Fracture:* Conchoidal to irregular. Hardness = 8 D(meas.) = 2.97-3.14 (variable with Cs content) D(calc.) = 3.06

Optical Properties: Transparent to translucent. *Color:* Raspberry-red to pink. *Streak:* Colorless to white. *Luster:* Vitreous. Some specimens display chatoyancy.

Optical Class: Uniaxial (-). $\epsilon = 1.611$ $\omega = 1.620$ *Pleochroism:* Strong, *E* = Orange-red, *O* = Purple-violet.

Cell Data: Space Group: $R\bar{3}c$. $a = 15.946(4)$ $c = 27.803(8)$ $Z = 18$

X-ray Powder Pattern: Sakavalana pegmatite, Fianarantsoa province, central Madagascar. 3.271 (100), 2.871 (52), 3.027 (41), 3.019 (29), 2.215 (14), 1.636 (14), 2.229 (12), 1.749 (12)

Chemistry:	(1)		(1)
SiO ₂	54.58	Rb ₂ O	0.44
TiO ₂	0.01	Cs ₂ O	18.23
Al ₂ O ₃	16.88	Li ₂ O	2.12
FeO	0.02	BeO	8.14
MnO	0.02	<u>H₂O</u>	<u>0.28</u>
CaO	0.22	Total	101.54
Na ₂ O	0.46		
K ₂ O	0.14		

(1) Sakavalana pegmatite, Fianarantsoa province, central Madagascar; laser ablation ICP mass spectroscopic analysis, IR spectroscopy confirms H₂O; corresponds to (Cs_{0.83}Rb_{0.03}Na_{0.10}K_{0.02}Ca_{0.02}) $\Sigma=1.00$ (Be_{2.10}Li_{0.92})Al_{2.14}Si_{5.86}O₁₈.

Occurrence: A late-stage hydrothermal mineral in miarolitic pockets in and near the core of a differentiated, rare-element, granitic pegmatite dike.

Association: Smoky quartz, K-feldspar ('amazonite'), albite ('cleavelandite'), tourmaline-group minerals, spodumene, lithian muscovite, danburite.

Distribution: From the Sakavalana pegmatite, Ampandramaika-Malakialina pegmatite district, a few kilometers northwest of Ambatovita village, Fianarantsoa province, central Madagascar. Also reported from Afghanistan and Myanmar.

Name: Honors Federico Pezzotta (b. 1965), mineralogist at the Natural History Museum, Milan, Italy, in recognition of his contributions to Madagascar mineralogy.

Type Material: National Museum of Natural History, Washington, D.C., USA; the Canadian Museum of Nature, Ottawa, Canada, and the Natural History Museum, Bern, Switzerland (NMBE-36990).

References: (1) Laurs, B.M., W.B. Simmons, G.R. Rossman, E.P. Quinn, S.F. Mc-Clure, A. Peretti, T. Armbruster, F.C. Hawthorne, A.U. Falster, D. Günther, M.A. Cooper, and B. Grobéty (2003) Pezzottaite from Ambatovita, Madagascar: A new gem mineral. *Gems & Gemology*, 39, 284-301. (2) Hawthorne, F.C., M.A. Cooper, W.B. Simmons, A.U. Falster, B.M. Laurs, T. Armbruster, G.R. Rossman, A. Peretti, D. Günter [sic], and B. Grobéty (2004) Pezzottaite, Cs(Be₂Li)Al₂Si₆O₁₈, a spectacular new beryl-group mineral from the Sakavalana pegmatite, Fianarantsoa Province, Madagascar. *Mineral. Record*, 35, 369-78. (3) (2005) *Amer. Mineral.*, 90, 1231 (abs. refs. 1 & 2). (4) Gatta, G. Diego, I. Adamo, M. Meven, and E. Lambruschi (2012) A single-crystal neutron and X-ray diffraction study of pezzottaite, Cs(Be₂Li)Al₂Si₆O₁₈. *Physics and Chemistry of Minerals*, 39(10), 829-840.