Kentbrooksite $(Na,REE)_{15}(Ca,REE)_6Mn_3Zr_3Nb(Si_{25}O_{73})(O,OH,H_2O)_3(F,Cl)_2$

Crystal Data: Hexagonal. *Point Group*: 3*m*. As anhedral to subhedral aggregates to 2 cm.

Physical Properties: *Cleavage*: None. *Tenacity*: Brittle. *Fracture*: Uneven. Hardness = 5-6
D(meas.) = 3.10(4) D(calc.) = 3.08 Strongly pyroelectric.

Optical Properties: Transparent. *Color*: Yellow-brown. *Streak*: White. *Luster*: Vitreous.
Optical Class: Uniaxial (-). ω = 1.628(2) ε = 1.623(2) Nonpleochroic.

Cell Data: *Space Group*: *R*3*m*. *a* = 14.1686(2) *c* = 30.0847(4) Z = 3

X-Ray Diffraction Pattern: Amdrup Fjord, Kangerdlugssuaq intrusion, East Greenland.
2.839 (100), 2.961 (91), 11.385 (43), 7.088 (41), 3.380 (37), 4.295 (34), 5.682 (30)

Chemistry:

	(1)		(1)
SiO_2	45.34	Nb_2O_5	2.26
ZrO_2	11.08	Al_2O_3	0.21
Na_2O	14.51	SrO	0.49
CaO	5.62	TiO_2	0.56
FeO	1.58	HfO_2	0.36
MnO	8.01	MgO	0.06
K_2O	0.43	Cl	0.29
La_2O_3	2.23	F	0.88
Ce_2O_3	2.44	H_2O	1.28
Nd_2O_3	0.69	-O = Cl	0.07
Y_2O_3	1.46	-O = F	0.37
		Total	99.34

(1) Amdrup Fjord, Kangerdlugssuaq intrusion, East Greenland; average electron microprobe analysis supplemented by IR spectroscopy, H_2O by CHN analysis; corresponds to $(Na_{14.93}REE_{0.44}Y_{0.42}K_{0.30}Sr_{0.15})_{\Sigma=16.24}(Ca_{3.27}Mn_{1.78}REE_{0.62}Na_{0.33})_{\Sigma=6.00}(Mn_{1.90}Fe_{0.72}Al_{0.13}Mg_{0.05})_{\Sigma=2.80}(Nb_{0.55}Zr_{0.12}Ti_{0.10})_{\Sigma=0.77}Si_{0.60}(Zr_{2.81}Hf_{0.06}Ti_{0.13})_{\Sigma=3}[(Si_3O_9)_2(Si_9O_{27})_2O_2][F_{1.51}Cl_{0.27}(OH)_{0.22}]_{\Sigma=2}\cdot 2.3H_2O$.

Polymorphism & Series: The Nb,*REE*,Mn,F endmember of a series in the eudialyte group.

Mineral Group: Eudialyte group.

Occurrence: In alkaline pegmatitic bodies cutting pulaskite.

Association: Kupletskite, låvenite, catapleiite, hjortdahlite, eudialyte, alkali feldspar, nepheline, aegirine, albite.

Distribution: From near the head of Amdrup Fjord, Kangerdlugssuaq intrusion, East Greenland.

Name: Honors geologist C. *Kent Brooks* for significant contributions to the understanding of the Kangerdlugssuaq area as a rifted continental margin.

Type Material: Geological Museum, University of Copenhagen, Denmark and in the Canadian Museum of Nature, Ottawa, Ontario, Canada.

References: (1) Johnsen, O., J.D. Grice, and R.A. Gault (1998) Kentbrooksite from the Kangerdlugssuaq intrusion, East Greenland, a new Mn-REE-Nb-F end-member in a series within the eudialyte group: Description and crystal structure. Eur. J. Mineral., 10, 207-219. (2) (1999) Amer. Mineral., 84, 194 (abs. ref. 1). (3) Rastsvetaeva, R.K. and N.V. Chukanov (2012) Classification of eudialyte-group minerals. Geology of Ore Deposits 54, 487-497.