Tritomite-(Ce) $(Ce, La, Ca, Y, Th)_5(Si, B)_3(O, OH, F)_{13}(?)$

Crystal Data: Metamict; hexagonal after heating at 1000 °C. *Point Group:* n.d. As pseudotetrahedral crystals, also as rounded aggregates.

Physical Properties: Hardness = 5.5 VHN = 544 D(meas.) = 3.72–3.81; 4.20 D(calc.) = n.d. Radioactive.

Optical Properties: Translucent. *Color:* Dark red-brown, amber, black; amber in thin section. *Streak:* Yellowish grey. *Luster:* Resinous.
Optical Class: Isotropic to weakly anisotropic. $n = 1.685$–1.763

Cell Data: *Space Group:* n.d. $a = 9.35$, after heating at 1000 °C. $c = 6.88$ Z = n.d.

X-ray Powder Pattern: Langesundsfjord, Norway; after heating at 600 °C–1000 °C, and the appearance of an apatitelike phase.
2.81 (100), 3.44 (40), 1.84 (40), 1.24 (40), 3.08 (30), 2.70 (30), 1.94 (30)

Chemistry:

	(1)		(1)
SiO_2	14.40	Nb_2O_5	1.70
TiO_2	0.28	MnO	0.30
ZrO_2	2.31	MgO	0.60
ThO_2	15.00	CaO	7.52
B_2O_3	2.00	SrO	0.62
Al_2O_3	0.85	F	4.00
RE_2O_3	41.44	H_2O^+	8.44
Fe_2O_3	1.71	$-O = F_2$	1.69
		Total	99.48

(1) Langesundsfjord, Norway; lanthanides by X-ray spectroscopy, Y by difference, approximate relative RE = Y [16.8]%, La 25.0%, Ce 44.0%, Pr 2.5%, Nd 10.0%, Sm 0.6%, Eu 0.1%, Gd 0.4%, Dy 0.5%, Er 0.1%.

Occurrence: In nepheline syenite pegmatites (Langesundsfjord, Norway).

Association: Aegirine, leucophanite, analcime, mosandrite, catapleiite (Langesundsfjord, Norway); augite, plagioclase, microcline, allanite, calcite, fluorite, quartz (Cardiff property, Canada).

Distribution: From Låven, Stokø, Arø, and other islands in the Langesundsfjord, from Brevik, and from Barkevik, Norway. On the Cardiff property, and in the Faraday mine, Bancroft district, Ontario, Canada.

Name: From the Greek for *three-fold* and *to cut*, describing the triangular, pseudotetrahedral shape of cavities left by the mineral in gangue, and *cerium* in the composition.

Type Material: National Museum of Natural History, Washington, D.C., USA, R1297.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 416. (2) Jaffe, H.W. and V.J. Molinski (1962) Spencite, the yttrium analogue of tritomite from Sussex County, New Jersey. Amer. Mineral., 47, 9–25. (3) Hogarth, D.D., H.R. Steacy, E.I. Semenov, E.G. Proshchenko, M.E. Kazakova, and Z.T. Kataeva (1973) New occurrences and data for spencite. Can. Mineral., 12, 66–71.