

**Crystal Data:** Orthorhombic. *Point Group:* 2/m 2/m 2/m. As lath-like crystals elongated along [010] and flattened on {101}, to 200 μm; in irregular fan-like divergent sprays to 400 μm.

**Physical Properties:** *Cleavage:* Very good parallel {100} and {001}. *Fracture:* Irregular. *Tenacity:* Brittle. *Hardness* = 3-4 *D(meas.)* = n.d. *D(calc.)* = 2.77

**Optical Properties:** Translucent. *Color:* Light brown, dark brown to black in aggregates.

*Luster:* Vitreous. *Streak:* Beige.

*Optical Class:* Biaxial (+).  $\alpha = 1.699(2)$   $\beta = 1.715(5)$   $\gamma = 1.737(5)$   $2V(\text{meas.}) = 86^\circ$

$2V(\text{calc.}) = 82^\circ$  *Pleochroism:* Strong: *X* = yellowish green, *Y* = yellowish brown, *Z* = dark brown.

*Absorption:*  $Z \gg Y > X$ . *Orientation:*  $X = c$ ,  $Y = b$ ,  $Z = a$ .

**Cell Data:** Space Group: *Cmca*.  $a = 6.2499(6)$   $b = 8.7479(9)$   $c = 19.9554(17)$   $Z = 4$

**X-ray Powder Pattern:** Tanco pegmatite, Bernic Lake, southeastern Manitoba, Canada.

9.9 (100), 2.644 (80), 3.273 (60), 3.126 (60), 4.92 (50), 2.542 (40), 2.376 (40)

<b>Chemistry:</b>	(1)
Na <sub>2</sub> O	12.44
CaO	1.09
MgO	0.12
ZnO	0.08
Fe <sub>2</sub> O <sub>3</sub>	16.51
Mn <sub>2</sub> O <sub>3</sub>	18.81
Al <sub>2</sub> O <sub>3</sub>	0.34
P <sub>2</sub> O <sub>5</sub>	32.37
<u>H<sub>2</sub>O</u>	<u>[20.44]</u>
Total	102.20

(1) Tanco pegmatite, Bernic Lake, southeastern Manitoba, Canada; average electron microprobe analysis supplemented by IR spectroscopy, H<sub>2</sub>O calculated from structure analysis; corresponds to (Na<sub>0.89</sub>Ca<sub>0.04</sub>)<sub>Σ=0.93</sub>(Mn<sup>3+</sup><sub>0.53</sub>Fe<sup>3+</sup><sub>0.46</sub>Al<sub>0.01</sub>)<sub>Σ=1.00</sub>(PO<sub>4</sub>)<sub>1.01</sub>(OH)(H<sub>2</sub>O)<sub>2</sub>.

**Occurrence:** In a zoned, rare-element granitic pegmatite, as an overgrowth on collinsite-fairfieldite, whitlockite, and other phosphates on a fracture surface that cuts a lithiophyllite nodule altered by strongly oxidizing, low-temperature, hydrothermal fluids.

**Association:** Lithiophilite, lithiophosphate, collinsite, fairfieldite, whitlockite.

**Distribution:** From zone 5, Tanco pegmatite, Bernic Lake, southeastern Manitoba, Canada.

**Name:** Honors mineralogist T. Scott Ercit (b. 1957) of the Canadian Museum of Nature, Ottawa, Ontario, Canada for his contributions to the mineralogy of granitic pegmatites.

**Type Material:** Canadian Museum of Nature, Ottawa, Ontario, Canada (CMNMC82944).

**References:** (1) Fransolet, A.-M., M.A. Cooper, P. Černý, F.C. Hawthorne, R. Chapman, J.D. Grice (2000) The Tanco pegmatite at Bernic Lake, southeastern Manitoba. XV. Ercitite, NaMn<sup>3+</sup>PO<sub>4</sub>(OH)(H<sub>2</sub>O)<sub>2</sub>, a new phosphate mineral species. *Can. Mineral.*, 38, 893-898. (2) (2001) *Amer. Mineral.*, 86(5-6), 767 (abs. ref. 1). (3) Cooper, M.A., F.C. Hawthorne, and P. Černý (2009) The crystal structure of ercitate, Na<sub>2</sub>(H<sub>2</sub>O)<sub>4</sub>[Mn<sup>3+</sup><sub>2</sub>(OH)<sub>2</sub>(PO<sub>4</sub>)<sub>2</sub>], and its relation to bermanite, Mn<sup>2+</sup>(H<sub>2</sub>O)<sub>4</sub>[Mn<sup>3+</sup><sub>2</sub>(OH)<sub>2</sub>(PO<sub>4</sub>)<sub>2</sub>]. *Can. Mineral.*, 47, 173-180. (4) (2009) *Amer. Mineral.*, 94(10), 1501 (abs. ref. 3).