

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)

Chemistry:	(1)
Na ₂ O	12.44
CaO	1.09
MgO	0.12
ZnO	0.08
Fe ₂ O ₃	16.51
Mn ₂ O ₃	18.81
Al ₂ O ₃	0.34
P ₂ O ₅	32.37
<u>H₂O</u>	<u>[20.44]</u>
Total	102.20

(1) Tanco pegmatite, Bernic Lake, southeastern Manitoba, Canada; average electron microprobe analysis supplemented by IR spectroscopy, H₂O calculated from structure analysis; corresponds to (Na_{0.89}Ca_{0.04})_{Σ=0.93}(Mn³⁺_{0.53}Fe³⁺_{0.46}Al_{0.01})_{Σ=1.00}(PO₄)_{1.01}(OH)(H₂O)₂.

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, NaMn³⁺PO₄(OH)(H₂O)₂, 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, Na₂(H₂O)₄[Mn³⁺₂(OH)₂(PO₄)₂], and its relation to bermanite, Mn²⁺(H₂O)₄[Mn³⁺₂(OH)₂(PO₄)₂]. *Can. Mineral.*, 47, 173-180. (4) (2009) *Amer. Mineral.*, 94(10), 1501 (abs. ref. 3).