

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As microcrystalline aggregates to 40 μm.

**Physical Properties** [by analog to jeppeite]: *Cleavage:* [Along (100).] *Fracture:* n.d.  
*Tenacity:* [Brittle.] *Hardness =* [5-6] *D(meas.) =* n.d. *D(calc.) =* 3.51

**Optical Properties:** n.d. *Color:* n.d. *Streak:* n.d. *Luster:* [Submetallic.]  
*Optical Class:* n.d. *n(calc.) =* 2.27

**Cell Data:** Space Group: C2/m. *a =* 15.3632(26) *b =* 3.7782(7) *c =* 9.1266(15) *β =* 99.35(15)°  
*Z =* 2

**X-ray Powder Pattern:** Darby kimberlite field, Nunavut, Canada (synchrotron diffraction pattern).  
 3.02 (100), 3.66 (75), 7.57 (73), 6.31 (68), 2.96 (63), 2.96 (63), 2.71 (62)

<b>Chemistry:</b>	(1)	(2)
Na <sub>2</sub> O	6.87	11.45
K <sub>2</sub> O	5.67	
CaO	0.57	
TiO <sub>2</sub>	84.99	88.55
V <sub>2</sub> O <sub>3</sub>	0.31	
Cr <sub>2</sub> O <sub>3</sub>	0.04	
MnO	0.01	
Fe <sub>2</sub> O <sub>3</sub>	0.26	
SrO	0.07	
Total	98.79	100.00

(1) Darby kimberlite field, Nunavut, Canada; average of 6 electron probe microanalyses supplemented by micro-Raman and fluorescence spectroscopy; corresponds to [Na<sub>1.24</sub>K<sub>0.67</sub>Ca<sub>0.06</sub>]<sub>Σ=1.97</sub>[Ti<sub>5.96</sub>V<sub>0.023</sub>Fe<sub>0.018</sub>]<sub>Σ=6.00</sub>O<sub>13</sub>. (2) Na<sub>2</sub>Ti<sub>6</sub>O<sub>13</sub>.

**Occurrence:** In a heavily metasomatized pyroxenite xenolith in kimberlite, perhaps produced by a fractionated Na-rich kimberlitic melt that infiltrated a mantle-derived garnet pyroxenite and reacted with rutile during kimberlite crystallization.

**Association:** Rutile, priderite, perovskite, freudenbergite, ilmenite.

**Distribution:** From the Darby kimberlite field, ~200 km southwest of Kugaaruk, Nunavut, Canada.

**Name:** Honors Peter H. Nixon (b. 1935) retired Professor of Mantle Geology at Leeds University, U.K., for significant contributions to scientific knowledge on kimberlites and their mantle- and deep crustal-derived xenoliths. Nixon discovered the Letseng kimberlite, a world-famous source of large high-quality diamonds. He contributed to the model of orogenically emplaced mantle rocks from the diamond stability field, providing the first strong evidence for this process in the form of graphitized diamonds from the Beni Bousera peridotite massif.

**Type Material:** Royal Ontario Museum, Toronto, Canada (M59224).

**References:** (1) Anzolini, C., F. Wang, G.A. Harris, A.J. Locock, D. Zhang, F. Nestola, L. Peruzzo, S.D. Jacobsen, and D.G. Pearson (2019) Nixonite, Na<sub>2</sub>Ti<sub>6</sub>O<sub>13</sub>, a new mineral from a metasomatized mantle garnet pyroxenite from the western Rae Craton, Darby kimberlite field, Canada. *Amer. Mineral.*, 104(9), 1336-1344.