

**Fluoro-potassic-pargasite****Crystal Data:** Monoclinic. *Point Group:* 2/m. Crystals prismatic to 2 cm.**Physical Properties:** *Cleavage:* Perfect on {110}. *Fracture:* Splintery. *Tenacity:* Brittle. Hardness = 6.5 D(meas.) = 3.46 D(calc.) = 3.151**Optical Properties:** Transparent. *Color:* Brownish black. *Streak:* Pale gray. *Luster:* Vitreous. *Optical Class:* Biaxial (+).  $\alpha = 1.638(2)$   $\beta = 1.641(2)$   $\gamma = 1.653(2)$   $2V(\text{meas.}) = 49.6(4)^\circ$   $2V(\text{calc.}) = 53.4^\circ$  *Orientation:*  $X \wedge a = 46.9^\circ$  (in  $\beta$  obtuse),  $Y \parallel b$ ,  $Z \wedge c = 31.4^\circ$  (in  $\beta$  acute). *Pleochroism:*  $X =$  colorless to very pale gray,  $Y =$  very pale gray,  $Z =$  colorless.**Cell Data:** *Space Group:* C2/m.  $a = 9.911(3)$   $b = 17.972(3)$   $c = 5.322(2)$   $\beta = 105.55(2)^\circ$   $Z = 2$ **X-ray Powder Pattern:** Tranomaro area, Fort Dauphin region, Madagascar. 3.133 (100), 3.270 (55), 2.809 (47), 8.413 (45), 2.698 (39), 3.374 (31), 2.934 (29)

<b>Chemistry:</b>	(1)
SiO <sub>2</sub>	40.20
TiO <sub>2</sub>	0.46
Al <sub>2</sub> O <sub>3</sub>	17.61
Fe <sub>2</sub> O <sub>3</sub>	[2.51]
FeO	[1.96]
MgO	16.95
MnO	0.05
CaO	13.18
Na <sub>2</sub> O	0.99
K <sub>2</sub> O	3.72
F	2.75
-O = F	1.16
H <sub>2</sub> O	[0.77]
Total	99.99

(1) Tranomaro area, Fort Dauphin region, Madagascar; average of 10 electron microprobe analyses, FeO:Fe<sub>2</sub>O<sub>3</sub> calculated from structure analysis, H<sub>2</sub>O calculated from stoichiometry; corresponding to (K<sub>0.69</sub>Na<sub>0.28</sub>Ca<sub>0.04</sub>) $\Sigma=1.01$ Ca<sub>2.00</sub>(Mg<sub>3.64</sub>Fe<sup>2+</sup><sub>0.24</sub>Mn<sub>0.01</sub>Al<sub>0.79</sub>Fe<sup>3+</sup><sub>0.27</sub>Ti<sub>0.05</sub>) $\Sigma=5.00$ (Si<sub>5.80</sub>Al<sub>2.20</sub>) $\Sigma=8.00$ O<sub>22</sub>[F<sub>1.26</sub>(OH)<sub>0.74</sub>] $\Sigma=2.00$ .

**Mineral Group:** Amphibole group, calcium amphibole subgroup.**Occurrence:** Part of a single crystal attributed to a skarn deposit.**Association:** Diopside, phlogopite, apatite, calcite, anhydrite, titanite.**Distribution:** From a skarn in the Tranomaro area, Fort Dauphin region, Madagascar.**Name:** Signifies an amphibole in the compositional range of *pargasite* with F > OH, Cl and K dominant in the A structural site.**Type Material:** Mineral Museum, Department of Earth Science, University of Pavia, Italy (2009-02).**References:** (1) Oberti, R., M. Boiocchi, F.C. Hawthorne, R. Pagano, and A. Pagano (2010) Fluoro-potassic-pargasite, KCa<sub>2</sub>(Mg<sub>4</sub>Al)(Si<sub>6</sub>Al<sub>2</sub>)O<sub>22</sub>F<sub>2</sub>, from the Tranomaro area, Madagascar: mineral description and crystal chemistry. *Mineralogical Magazine*, 74, 961-967. (2) (2014) *Amer. Mineral.*, 99, 244 (abs. ref. 1).