

Potassic-jeanlouisite**K(NaCa)(Mg₄Ti)Si₈O₂₂O₂**

Crystal Data: Monoclinic. *Point Group:* 2/m. As acicular crystals to ~200 µm.

Physical Properties: *Cleavage:* Good on {110}. *Tenacity:* n.d. *Fracture:* n.d. *Hardness* = n.d. D(meas.) = n.d. D(calc.) = 3.146 Nonfluorescent.

Optical Properties: Transparent. *Color:* Pale yellow to colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial (-). $\alpha = 1.674(2)$ $\beta = 1.688(2)$ $\gamma = 1.698(2)$ $2V(\text{meas.}) = 79(1)^\circ$ $2V(\text{calc.}) = 79.8^\circ$ *Orientation:* $X \wedge a = 17^\circ$ (in β obtuse), $Y \parallel b$, $Z \wedge c = 3^\circ$ (in β acute). Non-pleochroic.

Cell Data: *Space Group:* C2/m. $a = 9.937(1)$ $b = 18.010(2)$ $c = 5.2808(5)$ $\beta = 104.955(2)^\circ$ $Z = 2$

X-Ray Diffraction Pattern: Calculated pattern.
2.703 (100), 3.380 (87), 2.541 (80), 3.151 (79), 3.284 (68), 8.472 (59), 2.587 (52)

Chemistry:	(1)	(2)
SiO ₂	53.48	56.16
TiO ₂	7.30	9.33
Al ₂ O ₃	0.51	
Cr ₂ O ₃	0.04	
V ₂ O ₃	0.08	
Fe ₂ O ₃	[2.99]	
FeO	[1.29]	
MgO	17.97	18.83
MnO	0.10	
NiO	0.09	
ZnO	0.003	
CaO	6.01	6.55
Na ₂ O	4.20	3.62
K ₂ O	4.51	5.50
F	1.03	
-O = F	0.43	
Total	99.17	100.00

(1) Zirkle Mesa, Leucite Hills, near Superior, Wyoming, USA; average electron microprobe and FTIR spectroscopic analyses, Fe³⁺/Fe²⁺ calculated from total FeO = 3.99; corresponds to ^A(K_{0.84}Na_{0.16})_{Σ=1.00}^B(Ca_{0.93}Na_{1.02}Mg_{0.04}Mn_{0.01})_{Σ=2.00}^C(Mg_{3.85}Fe²⁺_{0.16}Ni_{0.01}Fe³⁺_{0.33}V³⁺_{0.01}Ti_{0.65})_{Σ=5.01}^T(Si_{7.76}Al_{0.09}Ti_{0.15})_{Σ=8.00}O₂₂^W[O_{1.53}F_{0.47}]_{Σ=2.00}. (2) K(NaCa)(Mg₄Ti)Si₈O₂₂O₂.

Mineral Group: Amphibole supergroup, sodium-calcium subgroup, oxo group.

Occurrence: Derived from potassic richterite via the coupled exchange ^CMg₋₁^WOH⁻₂^CTi⁴⁺₁^WO²⁻₂. In a specimen of leucite-lava.

Association: Leucite, amphibole.

Distribution From Zirkle Mesa, Leucite Hills, near Superior, Wyoming, USA.

Name: Honors *Jean-Louis Robert* (1948-2017) for contributions to the crystal-chemical characterization of micas and amphiboles, with a particular focus on natural and synthetic richterites with significant Ti content. The prefix indicates dominant K in the *A* site.

Type Material: Museum of Mineralogy, University of Pavia, Italy (2018-01).

References: (1) Oberti, R., M. Boiocchi, F.C. Hawthorne, G. Della Ventura, and G. Färber (2019) Potassic-jeanlouisite from Leucite Hill, Wyoming, USA, ideally K(NaCa)(Mg₄Ti)Si₈O₂₂O₂: the first species of oxo amphibole in the sodium-calcium subgroup. *Mineral. Mag.*, 83, 587-593.