Paramendozavilite $NaAl_4Fe^{3+}_7(PO_4)_5(P^{5+}Mo^{6+}_{12}O_{40})(OH)_{16}\cdot 56H_2O$

Crystal Data: Monoclinic or triclinic. *Point Group:* n.d. Crystals, in coatings. *Twinning:* Observed optically ‖ cleavage, polysynthetic.

Physical Properties: *Cleavage:* One, perfect. Hardness = 1 D(meas.) = 3.35 D(calc.) = n.d.

Optical Properties: Semitransparent. *Color:* Pale yellow. *Streak:* Very pale yellow. *Luster:* Vitreous.
Optical Class: Biaxial (–). *Pleochroism:* In pale yellows. *Orientation:* Extinction oblique to cleavage. *Absorption:* $Z > Y > X$. $\alpha = 1.686$ $\beta = 1.710$ $\gamma = 1.720$ 2V(meas.) = 60°

Cell Data: *Space Group:* n.d. Z = n.d.

X-ray Powder Pattern: Cumobabi deposit, Mexico.
14.36 (10), 9.48 (10), 7.38 (7), 10.18 (6), 7.98 (5), 6.56 (5), 12.90 (4)

Chemistry:

	(1)	(2)
MoO_3	42.01	42.13
P_2O_5	10.32	10.39
Al_2O_3	4.65	4.97
Fe_2O_3	13.36	13.63
MgO	0.16	
CaO	0.59	
Na_2O	0.54	0.76
Cl	0.65	
H_2O	28.05	28.12
$-O = Cl_2$	0.15	
Total	100.18	100.00

(1) Cumobabi deposit, Mexico. (2) $NaAl_4Fe_7(PO_4)_5(PMo_{12}O_{40})(OH)_{16}\cdot 56H_2O$.

Occurrence: In the oxidized zone of a molybdenum-bearing pegmatitic breccia in granodiorite.

Association: Mendozavilite, biotite, kaolinite.

Distribution: From the Cumobabi molybdenum deposit, southwest of Cumpas, Sonora, Mexico.

Name: From the Greek *para*, for *near* and its chemical relation to *mendozavilite*.

Type Material: The Natural History Museum, London, England, 1984,476.

References: (1) Williams, S. A. (1986) Mendozavilite and paramendozavilite, two new minerals from Cumobabi, Sonora. Boletín de Mineralogía, 2(1), 13–19 (in English). (2) (1988) Amer. Mineral., 73, 194 (abs. ref. 1).