Mendozavilite

$$Na(Ca,Mg)_2Fe^{3+}_6(PO_4)_2(P^{5+}Mo^{6+}_{11}O_{39})(OH,Cl)_{10}\cdot 33H_2O$$

Crystal Data: Monoclinic or triclinic. *Point Group:* n.d. As crystals, to 20 μm, in masses.

Physical Properties: Hardness = 1.5 D(meas.) = 3.85 D(calc.) = n.d.

Optical Properties: Semitransparent. *Color:* Empire yellow to orange. *Streak:* Bright yellow. *Luster:* Vitreous.
Optical Class: Biaxial (+). *Pleochroism:* In pale yellows. *Dispersion:* $r > v$, very strong. *Absorption:* $Z > Y > X$. $\alpha = 1.762$ $\beta = 1.763$ $\gamma = 1.766$ 2V(meas.) = 5°–15°

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

X-ray Powder Pattern: Cumobabi deposit, Mexico.
8.77 (10), 9.46 (8), 3.676 (5), 1.820 (5), 3.118 (4), 1.552 (4), 11.56 (3)

Chemistry:

	(1)
MoO_3	50.47
P_2O_5	6.78
Al_2O_3	0.76
Fe_2O_3	14.31
MgO	0.35
CaO	2.48
Na_2O	1.25
Cl	0.26
H_2O	21.62
$-O = Cl_2$	0.06
Total	98.22

(1) Cumobabi deposit, Mexico; with $(OH)^{1-}$ calculated for charge balance, corresponds to $Na_{1.27}(Ca_{1.40}Mg_{0.27})_{\Sigma=1.67}Fe_{5.66}(PO_4)_2P_{1.02}Mo_{11.07}O_{39}[(OH)_{8.88}Cl_{0.23}]_{9.11}\cdot 33.44H_2O$.

Occurrence: In the oxidized zone of some molybdenum-bearing hydrothermal mineral deposits.

Association: Quartz, paramendozavilite (Cumobabi deposit, Mexico); molybdenite, schorl (Rustler mine, Utah, USA).

Distribution: From the Cumobabi molybdenum deposit, southwest of Cumpas, Sonora, Mexico. At the Rustler mine, Gold Hill, Tooele Co., Utah, USA. From Copaquiri, Antofagasta, Chile.

Name: To honor Heriberto Mendoza Avila (1924–), Phelps Dodge exploration geologist, who found the first specimen.

Type Material: The Natural History Museum, London, England, 1984,475.

References: (1) Williams, S. A. (1986) Mendozavilite and paramendozavilite, two new minerals from Cumobabi, Sonora. Boletín de Mineralogía, 2(1), 13–19. (2) (1988) Amer. Mineral., 73, 193 (abs. ref. 1).