Magnesiopascoite $Ca_2Mg(V_{10}O_{28}) \cdot 16H_2O$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As tabular to equant to prismatic crystals, to several mm, typically intergrown in parallel groups; displaying prominent {001} with numerous small faces that produce striations at 120° to one another.

Physical Properties: *Cleavage*: Perfect on {001}. *Fracture*: Conchoidal, curved. *Tenacity*: Brittle. Hardness = 2.5 D(meas.) = 2.43(2) D(calc.) = 2.442

Optical Properties: Transparent. *Color*: Bright orange. *Streak*: Yellow. *Luster*: Adamantine. *Optical Class*: Biaxial (–). $\alpha = 1.769(3)$ $\beta = 1.802(3)$ $\gamma = 1.807(3)$ 2V(meas.) = 45(5)° 2V(calc.) = 42° *Pleochroism*: *Y* = Orange; *Z* = yellow. *Orientation:* $X = b$; $Z \wedge a = 20°$.

Cell Data: *Space Group*: *C*2/*m*. $a = 19.8442(15)$ $b = 9.9353(8)$ $c = 10.7149(8)$ $\beta = 120.305(1)°$ $Z = 2$

X-ray Powder Pattern: Blue Cap mine, San Juan County, Utah, USA.
8.571 (100), 7.270 (40), 8.872 (30), 9.242 (20), 2.137 (20), 5.477 (15), 4.590 (15)

Chemistry:

	(1)	(2)
CaO	7.78	8.31
MgO	2.67	2.98
ZnO	0.23	
CoO	0.05	
V_2O_5	71.32	67.35
H_2O	21.94	21.35
Total	103.99	100.00

(1) Blue Cap mine, San Juan County, Utah, USA; average of 4 electron microprobe analyses, H_2O calculated from structure, corresponding to $Ca_{1.77}(Mg_{0.85}Zn_{0.04}Co_{0.01})(H_2O)_{15.34}(H_3O)_{0.66}(V_{10}O_{28})$.
(2) $Ca_2Mg(V_{10}O_{28}) \cdot 16H_2O$.

Mineral Group: Pascoite group.

Occurrence: Product of groundwater leaching and oxidation of vanadium oxides in a post-mining environment.

Association: Gypsum, rossite, pyrite, montroseite, martyite.

Distribution: Blue Cap and Vanadium Queen mines, near La Sal, San Juan County, Utah, USA.

Name: As the magnesium analog of *pascolite*.

Type Material: Natural History Museum of Los Angeles County, California, USA, 58610 and 58611.

References: (1) Kampf, A.R. and I.M. Steele (2008) Magnesiopascoite, a new member of the pascoite group: description and crystal structure. Can. Mineral., 46, 679–686. (2) (2009) Amer. Mineral., 94, 400 (abs. ref. 1).