Rruffite $Ca_2Cu(AsO_4)_2 \cdot 2H_2O$

Crystal Data: Monoclinic. *Point Group*: 2/*m.* In granular or blocky aggregates and druses of crystals to 0.3 mm. *Twinning*: Common on (100).

Physical Properties: *Cleavage*: Perfect on {010}. *Tenacity*: Brittle. *Fracture*: n.d. Hardness = ~3 D(meas.) = 3.79(3) D(calc.) = 3.77(2) Nonfluorescent.

Optical Properties: Transparent. *Color*: Pale or light blue. *Streak*: White. *Luster*: Vitreous. *Optical Class*: Biaxial (-). $\alpha = 1.725(1)$ $\beta = 1.734(1)$ $\gamma = 1.740(1)$ 2V(meas.) = 80(2)° *Orientation*: $Y = b$, $X \wedge c = 49°$. *Dispersion*: Weak, $r < v$.

Cell Data: *Space Group*: $P2_1/c$. $a = 5.8618(2)$ $b = 12.7854(5)$ $c = 5.7025(2)$ $\beta = 109.425(2)°$ Z = 2

X-Ray Diffraction Pattern: Maria Catalina mine, Pampa Larga district, Tierra Amarilla, Chile. 2.827 (100), 3.377 (92), 2.983 (89), 4.177 (59), 3.190 (56), 2.114 (49), 5.087 (42)

Chemistry:

	(1)
As_2O_5	50.37
CaO	24.75
CuO	17.80
SO_3	0.04
H_2O	[6.81]
Total	98.05

(1) Maria Catalina mine, Pampa Larga district, Tierra Amarilla, Chile; average electron microprobe analysis supplemented by Raman spectroscopy, water calculated by difference; corresponds to $Ca_{2.01}Cu_{1.01}(AsO_4)_{2.02} \cdot 1.9H_2O$.

Mineral Group: Roselite group.

Occurrence: Secondary mineral in the oxidation zone of a Cu-As ore deposit.

Association: Quartz, baryte, mansfieldite, alumopharmacosiderite, conichalcite, metazeunerite, barahonite-(Al).

Distribution: From the Maria Catalina mine, Pampa Larga district, Tierra Amarilla, Chile.

Name: For the *RRUFF* project, an Internet-based internally consistent and integrated database of Raman spectra, X-ray diffraction, and chemical data for minerals.

Type Material: Mineral Museum, University of Arizona (18813) and the RRUFF project (R070431), Tucson, Arizona, USA.

References: (1) Yang, H., R.A. Jenkins, R.T. Downs, S.H. Evans, and K.T. Tait (2011) Rruffite, $Ca_2Cu(AsO_4)_2 \cdot 2H_2O$, a new member of the roselite group, from Tierra Amarilla, Chile. Can. Mineral., 49, 877-884.