Agaite $Pb_3Cu^{2+}Te^{6+}O_5(OH)_2(CO_3)$

Crystal Data: Orthorhombic. *Point Group*: *mm*2. As blades flattened on {010} and probably elongated along [001], to 200 μm.

Physical Properties: *Cleavage*: Perfect on {010}. *Tenacity*: Brittle. *Fracture*: Irregular. Hardness = 2-3 D(meas.) = n.d. D(calc.) = 6.987 Likely soluble in dilute HCl.

Optical Properties: Transparent. *Color*: Blue. *Streak*: Pale blue. *Luster*: Adamantine. *Optical Class*: Biaxial (–). α = [2.015] β = [2.065] γ = [2.070] (indices calculated). 2V(meas.) = 34(5)° *Orientation*: $X = b$, $Y = c$, $Z = a$. *Pleochroism*: X = pale blue, Y and Z = blue. *Absorption*: $X < Y = Z$.

Cell Data: *Space Group*: $Pca2_1$. a = 10.6522(7) b = 9.1630(5) c = 9.6011(7) Z = 4

X-ray Powder Pattern: Aga mine, Otto Mountain, near Baker, California, USA.
3.303 (100), 2.7472 (68), 1.7468 (40), 4.26 (28), 2.0814 (21), 2.0306 (17), 4.165 (14)

Chemistry:	(1)	(2)
PbO	65.91	67.86
CuO	7.75	8.06
TeO_3	17.41	17.80
CO_2	[4.33]	4.46
H_2O	[1.78]	1.83
Total	97.18	100.00

(1) Aga mine, Otto Mountain, near Baker, California, USA; average of 4 electron microprobe analyses, low analytical total ascribed to electron beam damage, H_2O and CO_2 calculated from stoichiometry; corresponds to $Pb_{3.00}Cu^{2+}_{0.99}Te^{6+}_{1.01}O_5(OH)_2(CO_3)$. (2) $Pb_3Cu^{2+}Te^{6+}O_5(OH)_2(CO_3)$.

Occurrence: A secondary phase formed by partial oxidation of tellurides, chalcopyrite and galena in quartz veins.

Association: Cerussite, Br-rich chlorargyrite, chrysocolla, goethite, khinite, markcooperite, muscovite, phosphohedyphane, timroseite, wulfenite.

Distribution: From the Aga mine, Otto Mountain, near Baker, California, USA.

Name: For the mine from which the first specimens were collected and for A.G. Andrews, from whose initials the name of the mine is derived.

Type Material: Natural History Museum of Los Angeles County, Los Angeles, California, USA (63590).

References: (1) Kampf, A.R., S.J. Mills, R.M. Housley, and J. Marty (2013) Lead-tellurium oxysalts from Otto Mountain near Baker, California: IX. Agaite, $Pb_3Cu^{2+}Te^{6+}O_5(OH)_2(CO_3)$, a new mineral with CuO_5-TeO_6 polyhedral sheets. Amer. Mineral., 98, 512-517.