

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Short prismatic crystals, to 2 mm, with large {101}, {111}, modified by {301}, {100}, {110}, {230}, {010}.

Physical Properties: *Cleavage:* Perfect on {101}. *Hardness* = 3 *D*(meas.) = 4.77(5)
D(calc.) = 4.887

Optical Properties: Transparent. *Color:* Bluish green, deep green; bluish green in transmitted light. *Luster:* Vitreous.

Optical Class: Biaxial (-). *Pleochroism:* *X* = colorless; *Y* = pale bluish green; *Z* = bluish green. *Orientation:* *X* = *c*; *Y* = *b*; *Z* = *a*. *Dispersion:* $r > v$, extreme. $\alpha = 1.786(5)$ $\beta = 2.070(10)$
 $\gamma = 2.075(10)$ $2V(\text{meas.}) = 0^\circ\text{--}5^\circ$

Cell Data: *Space Group:* $Pnma$. $a = 10.794(2)$ $b = 6.708(1)$ $c = 4.781(1)$ $Z = 4$

X-ray Powder Pattern: Chuquicamata, Chile. (ICDD 22-236).
 4.37 (100), 3.66 (65), 2.394 (60), 1.788 (55), 2.698 (50), 5.38 (40), 2.636 (30)

Chemistry:	(1)	(2)
I ₂ O ₅	64.79	65.33
CuO	30.62	31.14
Na ₂ O	0.59	
H ₂ O	3.68	3.53
<u>Total</u>	<u>99.68</u>	<u>100.00</u>

(1) Chuquicamata, Chile; H₂O + I₂ by the Penfield method, then I₂ dissolved by KI and titrated, H₂O taken by difference; corresponds to (Cu_{0.99}Na_{0.04})_{Σ=1.03}(IO₃)_{1.00}(OH)_{1.05}. (2) Cu(IO₃)(OH).

Occurrence: A rare mineral in the oxidized zone of a copper porphyry deposit.

Association: Kaolin, quartz.

Distribution: From Chuquicamata, Antofagasta, Chile.

Name: To honor Reno H. Sales (1876–1969), Chief Geologist of the Anaconda Company, responsible for initial development of the mine at Chuquicamata, Chile.

Type Material: Harvard University, Cambridge, Massachusetts, USA, 95027.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 315–316. (2) Ghose, S. and C. Wan (1978) Salesite, CuIO₃(OH), and Cu(IO₃)₂•2H₂O: a comparison of the crystal structures and their magnetic behavior. *Amer. Mineral.*, 63, 172–179.