

Crystal Data: Monoclinic. *Point Group:* 2/m. As fanlike aggregates to 1 mm of tabular crystals, elongate along [010], to 0.1 mm, with lance-like terminations at ~80°; as lamellar curved crystals and as crusts.

Physical Properties: *Cleavage:* None. *Fracture:* n.d. *Tenacity:* n.d. *Hardness:* = 4.5
D(meas.) = 4.2 D(calc.) = 4.09-4.13

Optical Properties: Translucent. *Color:* Orange-brown. *Streak:* Light brown. *Luster:* Vitreous. *Optical Class:* Biaxial (+). α (calc.) = 1.78 β = 1.79(1) γ = 1.85(2) $2V$ (meas.) = 48(5)°
Dispersion: Distinct, $r > v$. *Orientation:* Z parallels [010], $X \wedge c = 10^\circ$ (in obtuse β).
Pleochroism: Strong, X = yellow, Y = brown, Z = pale yellow.

Cell Data: *Space Group:* C2/m. $a = 9.024(1)$ $b = 6.230(1)$ $c = 7.421(1)$ $\beta = 115.15(1)^\circ$ $Z = 2$

X-ray Powder Pattern: Saxony, Germany.
2.545 (100), 2.828 (88), 2.972 (82), 4.955 (66), 3.398 (54), 3.115 (51)

Chemistry:	(1)	(2)
CaO	12.18	12.60
MgO		0.72
NiO	5.76	3.36
CoO	15.70	15.94
Fe ₂ O ₃	11.53	11.97
As ₂ O ₅	49.36	49.02
H ₂ O	[6.39]	[6.39]
Total	100.92	100.00

(1) Saxony, Germany; average electron microprobe analysis, H₂O calculated; corresponds to Ca_{1.01}(Co_{0.97}Fe_{0.67}Ni_{0.36})_{Σ=2.00}(AsO₄)_{2.00}[(OH)_{0.69}(H₂O)_{1.31}]_{Σ=2.00}. (2) Bou Azzer district, Anti-Atlas, Morocco; average electron microprobe analysis, H₂O calculated.

Polymorphism & Series: Solid solution among Co, Fe³⁺, and Ni-dominant endmembers is common.

Mineral Group: Tsumcorite-group, lotharmeyerite subgroup.

Occurrence: In the oxidation zone of polymetallic ore deposits.

Association: Alumopharmacosiderite, bariumpharmacosiderite, arseniosiderite, zeunerite, olivenite, rooseveltite (Rappold and Pucher mines); Co- and Ni-bearing mawbyite, cobalttsumcorite, galena, arseniosiderite, plumbogummite (Am Roten Berg, Schneeberg-Neustädtel); erythrite, heterogenite (Tazalaght deposit); roselite, roselite-beta, dolomite, quartz (Bou Azzer district).

Distribution: In dump material from the Rappold, Pucher and Am Roten Berg mines, near Scheeberg, Saxony, Germany; at the Tazalaght Cu-As deposit, near Tazalaght, 40 km east of Tafraout city, Bou Azzer district, Anti-Atlas, Morocco.

Name: The prefix, *cobalt*, indicates the cobalt analog of *lotharmeyerite*.

Type Material: Bergakademie, Freiberg, Saxony, Germany.

References: (1) Krause, W., H. Effenberger, H.-J. Bernhardt, and M. Martin (1999) Cobaltlotharmeyerite, Ca(Co,Fe,Ni)₂(AsO₄)₂(OH,H₂O)₂, a new mineral from Schneeberg, Germany. N. Jb. Mineral. Mh., 1999, 505-517. (2) (2000) Amer. Mineral., 85, 873 (abs. ref. 1). (3) Sarp, H. and G. Favreau (2000) Seconde occurrence du nouveau minéral cobaltlotharmeyerite Ca(Co,Fe,Ni)₂(AsO₄)₂(OH,H₂O)₂. Arch. Sci. Genève 53(1), 49-54 (in French).