

Crystal Data: Monoclinic. *Point Group:* 2/m. Crystals are tabular on {010} and elongated along [001], to 2 mm; typically in radiating aggregates.

Physical Properties: *Cleavage:* Perfect on {010}; good on {100} and {001}. Hardness = ~3 D(meas.) = 4.15 D(calc.) = 4.17 (Mg:Zn = 2.65:0.35)

Optical Properties: Transparent. *Color:* Blue-violet. *Streak:* White to very pale violet. *Luster:* Vitreous.

Optical Class: Biaxial (+). *Pleochroism:* Strong; X = red-violet; Y = blue-violet; Z = blue-green. *Orientation:* Y = b; X ∧ c ≈ 16°. α = 1.715(4) β = 1.743(4) γ = 1.783(4) 2V(meas.) = 80(5)°

Cell Data: *Space Group:* C2/c. a = 11.870(3) b = 12.755(3) c = 6.770(2) β = 113.42(3)° Z = 4

X-ray Powder Pattern: Tsumeb, Namibia.

2.75 (10), 3.25 (8), 4.06 (5), 2.64 (5), 1.660 (5), 3.50 (4), 1.952 (4)

Chemistry:

	(1)
As ₂ O ₅	55.8
CuO	15.8
ZnO	5.4
MgO	18.3
Na ₂ O	5.4
Total	100.7

(1) Tsumeb, Namibia; by electron microprobe, corresponds to Na_{1.03}Cu_{1.18}(Mg_{2.70}Zn_{0.39})_{Σ=3.09}(As_{0.72}O₄)₃.

Occurrence: A very rare secondary mineral in oxidized copper ore.

Association: Cuprian adamite, conichalcite, chalcocite, tennantite.

Distribution: Found at Tsumeb, Namibia.

Name: Honors Professor Johannes-Erich Hiller (1911–1972), mineralogist, University of Stuttgart, Stuttgart, Germany.

Type Material: University of Stuttgart, Stuttgart, Germany, NM11; National Museum of Natural History, Washington, D.C., USA, 146969.

References: (1) Keller, P., H. Hess, and P.J. Dunn (1982) Johillerit, Na(Mg, Zn)₃Cu(AsO₄)₃, ein neues Mineral aus Tsumeb, Namibia. *Tschermaks Mineral. Petrog. Mitt.*, 29, 169–175 (in German with English abs.). (2) (1982) *Amer. Mineral.*, 67, 1075 (abs. ref. 1). (3) Keller, P. and H. Hess (1988) Die Kristallstrukturen von O'Danielit, Na(Zn, Mg)₃H₂(AsO₄)₃, und Johillerit, Na(Mg, Zn)₃Cu(AsO₄)₃. *Neues Jahrb. Mineral., Monatsh.*, 395–404 (in German with English abs.).