

Crystal Data: Monoclinic. *Point Group:* 2/m, m, or 2. As equant to tapering bladelike crystals, elongated along [010], showing {001}, curved {101}, {201}, terminated by {110} and {111}, to 6 mm; in crystalline druses. *Twining:* About [h0l], probable.

Physical Properties: *Cleavage:* On {001}, good. Hardness = ~3 D(meas.) = 4.23(5)
D(calc.) = 4.21-4.29

Optical Properties: Semitransparent. *Color:* Dark reddish orange. *Streak:* Pale orange to yellow-orange. *Luster:* Vitreous.

Optical Class: Biaxial (+). $\alpha = 1.797(5)$ $\beta = 1.804(5)$ $\gamma = 1.815(5)$ 2V(meas.) = ~80°

Pleochroism: Strong; X = Z = yellow-orange; Y = red-brown. *Orientation:* Y = b; Z \wedge c = -40°.

Dispersion: r >> v, strong, inclined. *Absorption:* Y >> X > Z.

Cell Data: *Space Group:* C2/m, Cm, or C2. a = 9.066(4) b = 6.276(2) c = 7.408(2) $\beta = 116.16(3)^\circ$
Z = 2

X-ray Powder Pattern: Ojuela mine, Mapimí, Mexico.

2.557 (100), 3.414 (90), 3.175 (90), 2.912 (90), 4.94 (80), 2.822 (80), 2.710 (80)

Chemistry:	(1)	(2)
As ₂ O ₅	45.7	47.0
Fe ₂ O ₃	2.7	
Mn ₂ O ₃	13.4	18.7
ZnO	18.3	14.2
CaO	11.3	11.4
H ₂ O	[8.6]	8.4
Total	[100.0]	99.7

(1) Ojuela mine, Mapimí, Mexico; by electron microprobe, total Fe as Fe₂O₃, total Mn as Mn₂O₃, H₂O by difference; corresponds to Ca_{0.96}(Zn_{1.07}Mn_{0.81}Fe_{0.16})_{Σ=2.04}(AsO₄)_{1.89}(OH,H₂O)₂. (2) Do.; by electron microprobe, total Mn as Mn₂O₃, H₂O by moisture evolution analyzer.

Mineral Group: Tsumcorite group, lotharmeyerite subgroup.

Occurrence: In the oxidized zone of an arsenic-rich polymetallic base-metal deposit.

Association: Adamite, cryptomelane, chalcophanite, goethite.

Distribution: From the Ojuela mine, Mapimí, Durango, Mexico.

Name: Honors Julius *Lothar Meyer* (1830-1895), German chemist and physician, Karlsruhe Polytechnic Institute and University of Tübingen, Germany, for his contributions to chemistry.

Type Material: National Museum of Natural History, Washington, D.C., USA (149482).

References: (1) Dunn, P.J. (1983) Lotharmeyerite, a new mineral from Mapimi, Durango, Mexico. *Mineral. Record*, 14, 35-36. (2) (1983) *Amer. Mineral.*, 68, 849 (abs. ref. 1). (3) Kampf, A.R., J.E. Shigley, and G.R. Rossman (1984) New data on lotharmeyerite. *Mineral. Record*, 15, 223-226. (4) Krause, W., K. Belendorff, H.-J. Bernhardt, C. McCammon, H. Effenberger, and W. Mikenda (1998) Crystal chemistry of the tsumcorite-group minerals. New data on ferrilotharmeyerite, tsumcorite, thometzekite, mounanaite, helmutwinklerite, and a redefinition of gartrellite. *Eur. J. Mineral.*, 10, 179-206. (5) Brugger, J., S.V. Krivovichev, U. Kolitsch, N. Meisser, M. Andrut, S. Ansermet, and P.C. Burns (2002) Description and crystal structure of manganlotharmeyerite, Ca(Mn³⁺,□,Mg)₂{AsO₄,[AsO₂(OH)₂]}₂(OH,H₂O)₂, from the Starlera Mn deposit, Swiss Alps, and a redefinition of lotharmeyerite. *Can. Mineral.*, 40, 1597-1608. (6) (2003) *Amer. Mineral.*, 88, 1627 (abs. ref. 5).