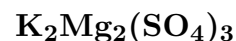


Langbeinite



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Crystal Data: Cubic. *Point Group:* 23. Crystals are rare, to 2 cm, equant {100}, {111}, $\{\bar{1}11\}$, many other modifying forms; in nodules, disseminated granular, typically bedded massive.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = 3.5–4
D(meas.) = 2.83 D(calc.) = 2.77 Slowly soluble in H₂O; piezoelectric.

Optical Properties: Transparent *Color:* Colorless, may be pale shades of yellow, pink, red, green, gray; colorless in transmitted light. *Luster:* Vitreous.
Optical Class: Isotropic. $n = 1.5329\text{--}1.5347$

Cell Data: *Space Group:* $P2_13$. $a = 9.919(2)$ $Z = 4$

X-ray Powder Pattern: Synthetic.

3.137 (100), 2.651 (35), 4.051 (25), 2.992 (16), 2.753 (16), 2.405 (12), 1.609 (12)

Chemistry:	(1)	(2)
SO ₃	57.99	57.87
MgO	19.91	19.43
K ₂ O	22.72	22.70
Total	100.62	100.00

(1) Hall, Austria. (2) K₂Mg₂(SO₄)₃.

Occurrence: A principal ore of potash, mined from marine salt deposits.

Association: Carnallite, halite, sylvite.

Distribution: In Germany, from Wilhelmshall, near Halberstadt; at Solvayhall, near Bernberg; from Hattord, Hesse; and elsewhere. At Hall and Hallstatt, Austria. From Stebnyk, near Drogobych, Ukraine. At Sleights, Eskdale, Yorkshire, England. In the Mayo mine, Salt Range, Punjab, India. From the Qarhan salt lake, Qinghai Province, and the “Q” Basin [Jiangnan Plain] potash deposits, Hubei Province, China. In the USA, in New Mexico, in commercial quantities in the Carlsbad potash district, Eddy Co.

Name: To honor A. Langbein, of Leopoldshall [Stassfurt], Germany.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana’s system of mineralogy, (7th edition), v. II, 434–435. (2) Mereiter, K. (1979) Refinement of the crystal structure of langbeinite, K₂Mg₂(SO₄)₃. Neues Jahrb. Mineral., Monatsh., 182–188. (3) (1968) NBS Mono. 25, 40–41.