

Crystal Data: Triclinic. *Point Group:* $\bar{1}$ or 1. As small crystals to 1 mm, more commonly massive.

Physical Properties: *Cleavage:* Pronounced on {001}. Hardness = n.d. VHN = n.d. D(meas.) = n.d. D(calc.) = 5.71

Optical Properties: Opaque. *Color:* Lead-gray. *Luster:* Metallic.
R₁-R₂: n.d.

Cell Data: *Space Group:* $P\bar{1}$ or $P1$. $a = 9.215$ $b = 8.524$ $c = 7.980$ $\alpha = 55^\circ 59(6)'$
 $\beta = 62^\circ 30(6)'$ $\gamma = 69^\circ 24(6)'$ $Z = 2$

X-ray Powder Pattern: Binntal, Switzerland.

3.339 (100), 2.834 (50), 2.879 (30), 2.667 (30), 4.555 (25), 4.233 (25), 2.985 (25)

Chemistry:

	(1)	(2)
Pb	25.2	26.38
Tl	26.	26.03
Cu	6.9	8.09
Ag	2.7	
As	20.5	19.08
S	19.	20.42
Total	100.3	100.00

(1) Binntal, Switzerland; by electron microprobe. (2) PbTlCuAs₂S₅.

Occurrence: Overgrowing other lead sulfosalts.

Association: Dufrenoyite, rathite, pyrite.

Distribution: In Switzerland, at the Lengenbach quarry, Binntal, Valais.

Name: For Wallis, the German name for the Swiss Canton in which the Lengenbach quarry is located.

Type Material: Mineralogical-Petrographical Institute, University of Bern, Bern, Switzerland, L2533-63.

References: (1) Nowacki, W. (1965) Über einige Mineralfunde aus dem Lengenbach (Binnatal, Kt. Wallis). *Eclogae Geol. Helveticae*, 58, 403–406 (in German). (2) (1966) *Amer. Mineral.*, 51, 532 (abs. ref. 1). (3) Nowacki, W., G. Burri, P. Engel, and F. Marumo (1965) Über einige Mineralstufen aus dem Lengenbach (Binnatal) II. *Neues Jahrb. Mineral., Monatsh.*, 43–48 (in German). (4) (1969) *Amer. Mineral.*, 54, 1497 (abs. ref. 3). (5) Takéuchi, Y., M. Ohmasa, and W. Nowacki (1968) The crystal structure of wallisite, PbTlCuAs₂S₅, the Cu analogue of hatchite, PbTlAgAs₂S₅. *Zeits. Krist.*, 127, 349–365.