Aschamalmite $Pb_6Bi_2S_9$

Crystal Data: Monoclinic. *Point Group:* $2/m$, m, or 2. As prismatic, lathlike crystals, to 5 cm; also as thick, slightly bent plates.

Physical Properties: *Cleavage:* Perfect on {001}. Hardness = n.d. VHN = 150–181 (25 g load). D(meas.) = n.d. D(calc.) = 7.33

Optical Properties: Opaque. *Color:* Lead-gray; creamy white in reflected light. *Luster:* Metallic. *Anisotropism:* Moderate, from gray to red-brown.
R_1–R_2: (470) 45.1–48.1, (546) 43.4–46.3, (589) 42.9–46.3, (650) 42.9–46.3

Cell Data: *Space Group:* $C2/m$, Cm, or $C2$. $a = 13.71$ $b = 4.09$ $c = 31.43$ $\beta = 91.0°$ Z = 4

X-ray Powder Pattern: Ascham Alm, Austria.
3.426 (100), 3.378 (88), 2.941 (54), 2.926 (54), 2.861 (48), 3.525 (42), 2.067 (42)

Chemistry:

	(1)	(2)
Pb	62.95	63.76
Bi	22.56	21.44
S	14.89	14.80
Total	100.40	100.00

(1) Ascham Alm, Austria; by electron microprobe, corresponding to $Pb_{5.89}Bi_{2.05}S_{9.00}$.
(2) $Pb_6Bi_2S_9$.

Occurrence: In alpine veins, cutting gneiss.

Association: Cosalite, galena, quartz, albite, orthoclase, calcite, chlorite.

Distribution: From near Ascham Alm, Untersulzbachtal, Salzburg, Austria [TL]. At Granite Gap, Hidalgo Co., New Mexico, USA.

Name: For its occurrence at Ascham Alm, Austria.

Type Material: Museum of Natural History, Vienna, Austria; Division of Mineral Chemistry, C.S.I.R.O., Port Melbourne, Victoria, Australia; National Museum of Natural History, Washington, D.C., USA, 160379.

References: (1) Mumme, W.G., G. Niedermayr, P.R. Kelly, and W.H. Paar (1983) Aschamalmite, $Pb_{5.92}Bi_{2.06}S_9$, from Untersulzbach Valley in Salzburg, Austria – "monoclinic heyrovskyite". Neues Jahrb. Mineral., Monatsh., 433–444. (2) (1984) Amer. Mineral., 69, 810 (abs. ref. 1).