Belendorffite Cu_7Hg_6

Crystal Data: Hexagonal, pseudocubic. *Point Group:* $3m$. Massive, a nugget.

Physical Properties: Hardness = n.d. VHN = 45–206, 125 average (25 g load).
D(meas.) = 13.2(1) D(calc.) = 13.15

Optical Properties: Opaque. *Color:* Silvery, tarnishing rapidly to blackish brown; in reflected light, bright white with a yellowish tint. *Streak:* Silvery. *Luster:* Metallic.
Optical Class: Uniaxial. *Anisotropism:* Very weak.
R: (400) 66.2, (420) 67.0, (440) 67.6, (460) 68.3, (480) 69.7, (500) 70.2, (520) 71.0, (540) 71.9, (560) 72.8, (580) 73.4, (600) 74.1, (620) 74.7, (640) 75.3, (660) 76.0, (680) 76.4, (700) 76.9

Cell Data: *Space Group:* $R3m$ (by analogy to synthetic). $a = 9.4024(4)$ $c = ??$
alpha=90.425°??must convert to a and c??; $Z = 4R??$

X-ray Powder Pattern: Landsberg, Germany.
2.523 (100), 2.227 (100), 2.221 (100), 2.208 (100), 2.983 (80), 2.966 (80), 6.68 (60)

Chemistry:

	(1)	(2)
Cu	25.61	26.98
Hg	74.06	73.02
Total	99.67	100.00

(1) Landsberg, Germany; by electron microprobe, average of ten analyses, probably contains some mercury; corresponds to $Cu_{6.78}Hg_{6.22}$. (2) Cu_7Hg_6.

Polymorphism & Series: Dimorphous with kolymite.

Occurrence: In a mercury deposit.

Association: Mercury.

Distribution: From Landsberg, near Obermoschel, Rhineland-Palatinate, Germany [TL].

Name: In honor of Klaus Belendorff (1956–), mineral collector of Münster, Germany, who first noted the mineral.

Type Material: Institute for Mineralogy, Ruhr University, Bochum, Germany.

References: (1) Bernhardt, H.-J. and K. Schmetzer (1992) Belendorffite, a new copper amalgam dimorphous with kolymite. Neues Jahrb. Mineral., Monatsh., 21–28. (2) (1992) Amer. Mineral., 77, 1305–1309 (abs. ref. 1). (3) Lindahl, T. and S. Westman (1969) The structure of the rhombohedral gamma brass like phase in the copper-mercury system. Acta Chem. Scand., 23, 1181–1190.