

**Crystal Data:** Orthorhombic. *Point Group:*  $mm2$ . Crystals are lathlike, slightly elongated along [001], to 0.2 mm, in subparallel aggregates.

**Physical Properties:** *Cleavage:* One, parallel to {001}. *Fracture:* Uneven. Hardness = 2.5–3 VHN = 95–101, 98 average (10 g load). D(meas.) = n.d. D(calc.) = 5.09

**Optical Properties:** Opaque to translucent. *Color:* Brown-black to black, dark red in thin fragments; in reflected light, grayish white with bluish tint, with bright red internal reflections. *Streak:* Raspberry-red.

*Optical Class:* Biaxial.

$R_1$ – $R_2$ : (480) 28.5–30.5, (546) 28.5–31.5, (589) 27.0–28.5, (656) 27.0–29.0

**Cell Data:** *Space Group:*  $Fdd2$ .  $a = 15.4764(8)$   $b = 47.602(3)$   $c = 5.8489(4)$   $Z = 16$

**X-ray Powder Pattern:** Binntal, Switzerland.

3.801 (100), 2.767 (43), 2.732 (41), 3.389 (23), 2.656 (24), 2.901 (19), 3.755 (15)

**Chemistry:**

	(1)	(2)	(3)
Pb	25.08	23.44	25.01
Tl	25.51	24.71	24.66
Cu		< 0.04	
Sn	0.06	< 0.04	
As	27.09	27.03	27.12
Sb		1.32	
S	23.50	23.17	23.21
Total	100.91	[100.00]	100.00

(1) Binntal, Switzerland; by electron microprobe, average of three analyses; corresponds to  $Pb_{1.00}Tl_{1.03}As_{2.99}S_{5.98}$ . (2) Do.; by electron microprobe, original total given as 100.02%; corresponds to  $Pb_{0.94}Tl_{1.00}(As_{2.98}Sb_{0.09})_{\Sigma=3.07}S_{6.06}$ . (3)  $PbTlAs_3S_6$ .

**Occurrence:** In a hydrothermal deposit in dolostone.

**Association:** Baumhauerite, realgar, orpiment, hutchinsonite, hatchite, wallisite, lorandite, sartorite, jentschite, ernigglite, stalderite, bernardite.

**Distribution:** From the Lengenbach quarry, Binntal, Valais, Switzerland [TL].

**Name:** Honors Dr. Andreas Edenharter (1933–), University of Göttingen, Göttingen, Germany, who had previously synthesized the compound.

**Type Material:** Natural History Museum, Basel, Switzerland, L 18,393.

**References:** (1) Graeser, S. (1988) Three new mineral species from the Binntal. *Uni Nova*, 49, 17–19 (in German). (2) Graeser, S. and H. Schwander (1992) Edenharterite ( $TlPbAs_3S_6$ ): a new mineral from Lengenbach, Binntal (Switzerland). *Eur. J. Mineral.*, 4, 1265–1270. (3) (1993) *Amer. Mineral.*, 78, 845–846 (abs. refs. 1 and 2). (4) Berlepsch, P. (1995) Chemical and crystallographical investigations on edenharterite ( $TlPbAs_3S_6$ ). *Schweiz. Mineral. Petrogr. Mitt.*, 75, 277–281. (5) Berlepsch, P. (1996) Crystal structure and crystal chemistry of the homeotypes edenharterite ( $TlPbAs_3S_6$ ) and jentschite ( $TlPbAs_2SbS_6$ ) from Lengenbach, Binntal (Switzerland). *Schweiz. Mineral. Petrogr. Mitt.*, 76, 147–157.