

Crystal Data: Monoclinic. *Point Group:* 2/m. Crystals to 750 μm display striated and curved faces, also as aggregates of stacked lamellar crystals with oblique terminal faces.

Physical Properties: *Cleavage:* None. *Tenacity:* Brittle. *Fracture:* Uneven. Hardness = ~ 3-3.5 VHN = 170-203, 188 average (25 g load). D(meas.) = n.d. D(calc.) = 3.692 (for analysis 1)

Optical Properties: Opaque. *Color:* Gray-black or dark copper-red, gray with bright-red internal reflections in reflected light. *Streak:* Black. *Luster:* Metallic.

Optical Class: n.d. *Anisotropism:* Distinct, grayish white to bluish tints.

R₁-R₂: (471.1) 27.9-29.8, (548.3) 27.8-31.0, (586.6) 27.3-30.8, (652.3) 27.0-30.5

Cell Data: *Space Group:* P2₁/c. *a* = 8.8925(2) *b* = 8.4154(2) *c* = 8.5754(2) *β* = 108.665(3)°
Z = 4

X-ray Powder Pattern: Lengenbach quarry, Imfeld, Binn Valley, Canton Valais, Switzerland. 3.762 (100), 4.23 (80), 2.622 (80), 3.875 (70), 3.278 (70), 2.931 (70), 2.714 (70)

| Chemistry: | (1) | (2) |
|------------|--------------|--------------|
| Tl | 34.72 | 35.08 |
| Pb | 35.45 | 35.56 |
| As | 12.80 | 12.86 |
| Sb | 0.04 | |
| <u>S</u> | <u>16.22</u> | <u>16.51</u> |
| Total | 99.24 | 100.00 |

(1) Lengenbach quarry, Imfeld, Binn Valley, Canton Valais, Switzerland; average of 9 electron microprobe analyses; corresponds to Tl_{1.001}Pb_{1.008}(As_{1.007}Sb_{0.002})_{Σ=1.009}S_{2.982}. (2) TlPbAsS₃.

Occurrence: In vugs in lenses and ribbons of recrystallized metadolostone.

Association: Hutchinsonite, barite, Tl-bearing dufrénoysite, realgar, pyrite, dolomite.

Distribution: From the Lengenbach quarry, Imfeld, Binn Valley, Canton Valais, Switzerland.

Name: Honors Richard Harrison Solly (1851-1925) for his contributions to the mineralogy of Lengenbach during the period of investigations, at the beginning of the 20th Century.

Type Material: Mineralogical Collection, Geology Museum, University of Lausanne, Switzerland (MGL no. 080126).

References: (1) Meisser, N., P. Roth, F. Nestola, C. Biagioni, L. Bindi, and M. Robyr (2017) Richardsollyite, TlPbAsS₃, a new sulfosalt from the Lengenbach quarry, Binn Valley, Switzerland. Eur. J. Mineral., 29(4), 679-688. (2) (2018) Amer. Mineral., 103, 835 (abs. ref. 1).