

Crystal Data: Monoclinic. *Point Group:* $2/m$. As terminated crystals, to 1 cm, prismatic along [001], with prominent {100}, {110}, and {100}.

Physical Properties: Hardness = 2.5–3 VHN = n.d. D(meas.) = 5.07 D(calc.) = 5.04

Optical Properties: Opaque. *Color:* Black; white with a creamy tint in reflected light, with rare red-purple internal reflections. *Luster:* Semimetallic. *Pleochroism:* Weak in air, grayish white to brownish gray in oil. *Anisotropism:* Distinct, brownish gray to bluish gray.

R_1 – R_2 : (400) 33.1–35.1, (420) 33.1–34.4, (440) 33.1–33.7, (460) 32.1–33.1, (480) 31.6–32.6, (500) 31.0–32.3, (520) 30.5–31.9, (540) 30.0–31.5, (560) 29.5–31.1, (580) 28.9–30.6, (600) 28.4–30.2, (620) 28.0–29.8, (640) 27.6–29.5, (660) 27.2–29.0, (680) 26.1–28.5, (700) 26.4–28.4

Cell Data: *Space Group:* $P2_1/n$. $a = 8.098(5)$ $b = 19.415(12)$ $c = 9.059(6)$
 $\beta = 91.96(8)^\circ$ $Z = 4$

X-ray Powder Pattern: Alšar, Macedonia.

3.493 (100), 2.832 (100), 4.15 (90), 3.696 (90), 2.913 (90), 2.356 (90), 3.599 (70)

Chemistry:

	(1)	(2)	(3)
Tl	19.3	19.4	20.2
Sb	50.8	51.8	50.8
As	5.3	5.0	3.7
S	24.7	25.4	24.5
Total	100.1	101.6	99.2

(1–3) Alšar, Macedonia; by electron microprobe, the average corresponding to $\text{Tl}_{1.01}(\text{Sb}_{4.36}\text{As}_{0.64})_{\Sigma=5.00}\text{S}_{8.01}$.

Polymorphism & Series: Dimorphous with pierrotite.

Occurrence: Of hydrothermal origin, in cavities in realgar (Alšar, Macedonia).

Association: Realgar (Alšar, Macedonia); avicennite (Lookout Pass, Utah, USA).

Distribution: From Alšar (Allchar), near Rošden, Macedonia [TL]. At the Jas Roux deposit, 10 km east of Chapelle-en-Valgaudemar, Hautes-Alpes, France. In the Hemlo gold deposit, Thunder Bay district, Ontario, Canada. From near Lookout Pass, Tooele Co., Utah, USA.

Name: For its relation to pierrotite.

Type Material: National School of Mines, Paris, France.

References: (1) Johan, Z., P. Picot, J. Hak, and M. Kvaček (1975) La parapierrotite, un nouveau minéral thallifère d'Allchar (Yougoslavie). *Tschermaks Mineral. Petrog. Mitt.*, 22, 200–210 (in French with English abs.). (2) (1976) *Amer. Mineral.*, 61, 504 (abs. ref. 1). (3) Engle, P. (1980) Die Kristallstruktur von synthetischem Parapierrotit, TlSb_5S_8 . *Zeits. Krist.*, 151, 203–216 (in German with English abs.). (4) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 415.