

Crystal Data: Hexagonal. *Point Group:* $\bar{3}$. Small, to 0.5 mm, mostly anhedral grains. A few grains show poorly defined rhombohedral and tabular forms.

Physical Properties: *Cleavage:* {0001}, perfect, and an imperfect prismatic cleavage. *Fracture:* Hackly. Hardness = ~ 1 VHN = 23.5 (50 g load). D(meas.) = 8.1 D(calc.) = 8.55

Optical Properties: Opaque. *Color:* Dark gray, oxidized surfaces become dull and darker; in reflected light, white with faint bluish cast. *Streak:* Dark gray to black. *Luster:* Bright metallic. *Pleochroism:* Brownish gray to bluish gray. *Anisotropism:* Moderate to distinct. *Birefractance:* Weak.

R_1 – R_2 : (470) 39.6–41.3, (546) 38.8–40.1, (589) 39.2–40.6, (650) 40.5–42.0

Cell Data: *Space Group:* $R\bar{3}$. $a = 12.12(1)$ $c = 18.175(5)$ $Z = 27$

X-ray Powder Pattern: Carlin mine, Nevada, USA (shows extreme preferred orientation). 3.030 (100), 2.290 (3), 2.020 (3), 1.749 (3), 2.712 (1), 1.681 (1), 1.513 (1)

Chemistry:	(1)	(2)
Tl	92.93	92.73
S	7.17	7.27
Total	100.09	100.00

(1) Carlin mine, Nevada, USA; average of three samples. (2) Tl₂S.

Occurrence: As small grains in brecciated fragments of carbonaceous limestone, a result of epithermal mineralization.

Association: Gold, arsenic, antimony, mercury, avicennite, organic carbon, quartz.

Distribution: In the USA, from the east pit of the Carlin mine [TL], 50 km northwest of Elko, and in the Deep Post orebody, Goldstrike mine, Lynn district, Eureka Co., Nevada.

Name: For the Carlin gold deposit, Nevada, USA, in which it was discovered.

Type Material: Department of Geology, Stanford University, Palo Alto, California, Epithermal Minerals Collection; National Museum of Natural History, Washington, D.C., USA, 132497.

References: (1) Radtke, A.S. and F.W. Dickson (1975) Carlinite, Tl₂S, a new mineral from Nevada. *Amer. Mineral.*, 60, 559–565. (2) Radtke, A.S., F.W. Dickson, and J.F. Slack (1978) Occurrence and formation of avicennite, Tl₂O₃, as a secondary mineral at the Carlin gold deposit, Nevada. *J. Res. U.S. Geol. Surv.*, 6, 241–246.