

Crystal Data: Orthorhombic. *Point Group:* 2/m 2/m 2/m. As irregular inclusions to 300 μm .

Physical Properties: *Cleavage:* None observed. *Tenacity:* n.d. *Fracture:* n.d. Hardness = n.d. D(calc.) = 11.18

Optical Properties: Opaque. *Color:* Black, bluish gray in reflected light. *Luster:* Metallic. *Optical Class:* n.d. Very weakly birefractant. *Pleochroism:* Very weak, gray to slightly bluish gray. Weakly anisotropic, dark brown to dark blue.
 R_1 - R_2 : (470) 50.9-51.7 (37.4-37.6)_{oil}, (546) 51.1-51.3 (36.7-37.6)_{oil}, (589) 50.7-51.8 (36.3-38.0)_{oil}, (650) 50.2-51.2 (35.5-37.5)_{oil}

Cell Data: *Space Group:* Pbcm. $a = 8.9671(4)$ $b = 8.8758(4)$ $c = 7.8419(5)$ $Z = 4$

X-ray Powder Pattern: Calculated pattern.

2.938 (100), 2.095 (47), 2.989 (31), 2.833 (23), 1.853 (17), 1.960 (16), 2.219 (15)

Chemistry:	(1)	(2)
Au	56.33	56.25
Tl	19.68	19.46
Te	24.30	24.29
Total	100.31	100.00

(1) Karonie gold deposit, Eastern Goldfields province, Western Australia, Australia; average of 17 electron microprobe analyses; corresponding to Au_{3.00}Tl_{1.01}Te_{2.00}. (2) Au₃TlTe₂.

Occurrence: In microvugs and microfractures roughly following the metamorphic banding, mainly within areas of epidote and prehnite alteration (greenschist facies) of quartz amphibolite.

Association: Gold (low Ag), tellurobismuthite, molybdenite, petzite, hessite, calaverite, melonite, mattagamite, frobergite, altaite, pyrrhotite, ferrohornblende, calcic plagioclase (An₃₁), ilmenite, pyrite, zircon.

Distribution: From the Main Zone orebody, Karonie gold deposit, Eastern Goldfields province, Western Australia, Australia.

Name: Honors Professor Russell M. Honea (1929-2002), University of Colorado, Boulder, Colorado, USA.

Type Material: Natural History Museum, London, England (BM 2015, 36).

References: (1) Rice, C.M., M.D. Welch, J.W. Still, A.J. Criddle, and C.J. Stanley (2016) Honeaite, a new gold-thallium-telluride from the Eastern Goldfields, Yilgarn Craton, Western Australia. *Eur. J. Mineral.*, 28(6), 979-990. (2) (2017) *Amer. Mineral.*, 102, 1567 (abs. ref. 1). (3) Welch, M.D., J.W. Still, C.M. Rice, and C.J. Stanley (2017) A new telluride topology: the crystal structure of honeaite Au₃TlTe₂. *Mineral. Mag.*, 81(3), 611-618.