

Crystal Data: Triclinic. *Point Group:* 1. Generally rounded to irregular grains, to 1 cm; may be aggregated into larger equidimensional masses.

Physical Properties: *Cleavage:* {1 $\bar{1}$ 0}, {0 $\bar{1}$ 1}, {1 $\bar{1}$ 1}. *Fracture:* Flat, conchoidal. *Tenacity:* Brittle. Hardness = 2.5 VHN = 223–253, 238 average (100 g load) D(meas.) = 9.94 D(calc.) = [9.91]

Optical Properties: Opaque. *Color:* Yellowish white. *Luster:* Metallic. *Pleochroism:* Very weak. *Anisotropism:* Weak to moderate, pale gray, yellow-brown, and blue-gray.
R₁–R₂: (400) 46.1–49.9, (420) 47.6–51.3, (440) 49.0–52.8, (460) 50.5–54.5, (480) 52.1–55.9, (500) 53.6–57.1, (520) 54.9–58.2, (540) 56.1–59.0, (560) 57.1–59.7, (580) 57.9–60.3, (600) 58.7–60.8, (620) 59.3–61.2, (640) 59.8–61.5, (660) 60.2–61.9, (680) 60.6–62.1, (700) 61.0–62.4

Cell Data: *Space Group:* P1. *a* = 12.11 *b* = 13.44 *c* = 10.80 α = 104°23' β = 97°30' γ = 107°56' *Z* = 12

X-ray Powder Pattern: Robb-Montbray mine, Canada.
2.087 (100), 2.983 (80), 2.922 (60), 4.425 (40), 2.119 (40), 7.363 (20), 11.2 (10)

Chemistry:	(1)	(2)	(3)
Au	44.32	46.66	50.72
Ag	0.55	0.37	
Pb	1.61	1.02	
Sb	0.90	1.12	
Bi	2.81	3.23	
Te	49.80	46.66	49.28
Total	99.99	99.76	100.00

- (1) Robb-Montbray deposit, Canada; corresponds to (Au_{1.73}Bi_{0.10}Sb_{0.06}Pb_{0.06}Ag_{0.04})_{Σ=1.99}Te_{3.00}.
 (2) Do.; by electron microprobe, corresponds to (Au_{1.97}Bi_{0.13}Sb_{0.08}Pb_{0.04}Ag_{0.03})_{Σ=2.25}Te_{3.00}.
 (3) Au₂Te₃.

Occurrence: With other tellurides, sulfides, and gold in coarsely crystalline masses almost free from gangue (Robb-Montbray mine, Canada).

Association: Calaverite, gold, tellurobismuthite, altaite, petzite, melonite, frohbergite, chalcopyrite, pyrite, sphalerite, chalcocite, covellite, marcasite (Robb-Montbray mine, Canada).

Distribution: From the Robb-Montbray mine, Montbray Township, Quebec, Canada [TL]. At the April Fool mine, Delamar district, Lincoln Co., Nevada, USA. From the Voronezhskiy massif, 50 km south of Orel, Russia. At Enasen, Sweden. From Musariu, Romania. At Kalgoorlie, Western Australia. In the Dongping gold deposit, Hebei Province, China. Several undefined localities are known.

Name: For the Robb-Montbray mine, Canada.

Type Material: Royal Ontario Museum, Toronto, Canada, M15815, M19883; Harvard University, Cambridge, Massachusetts, USA, 97681, 102067.

References: (1) Peacock M.A. and R.M. Thompson (1946) Montbrayite, a new gold telluride. *Amer. Mineral.*, 31, 515–526. (2) Rucklidge, J. (1969) Frohbergite, montbrayite, and a new Pb–Bi telluride. *Can. Mineral.*, 9, 709–716. (3) Bachechi, F. (1971) Crystal structure of montbrayite. *Nature, Phys. Sci.*, 231, 67–68. (4) Bachechi, F. (1972) Synthesis and stability of montbrayite, Au₂Te₃. *Amer. Mineral.*, 57, 146–154. (5) Criddle, A.J., C.J. Stanley, and W.H. Paar (1991) The optical properties of montbrayite, Au₂Te₃, from Robb Montbray, Quebec, compared with those of the other gold tellurides. *Can. Mineral.*, 29, 223–229.