Cameronite $AgCu_7Te_{10}$

Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m$, $4mm$, or $\overline{4}2m$. As anhedral equidimensional grains, up to about 200 μm in diameter.

Physical Properties: *Fracture:* Subconchoidal. *Tenacity:* Brittle. Hardness = [3.5–4] VHN = 150–173, 163 average (100 g load). D(meas.) = n.d. D(calc.) = 7.144

Optical Properties: Opaque. *Color:* Gray. *Streak:* Black. *Luster:* Metallic. *Pleochroism:* Slight, pale gray to pale brownish gray. *Anisotropism:* Distinct, medium gray to slate-gray to brownish gray.
R_1–R_2: (400) 23.6–28.4, (420) 25.6–30.1, (440) 27.4–31.4, (460) 28.9–32.5, (480) 30.1–33.1, (500) 31.0–33.6, (520) 31.6–33.7, (540) 32.1–33.8, (560) 32.5–33.7, (580) 32.8–33.6, (600) 33.0–33.4, (620) 33.1–33.2, (640) 33.3–33.0, (660) 33.4–32.7, (680) 33.5–32.6, (700) 33.6–32.3

Cell Data: *Space Group:* $P4_2/mmc$, $P4_2mc$, or $P\overline{4}2c$. $a = 12.695(2)$ $c = 42.186(6)$ $Z = 16$

X-ray Powder Pattern: Good Hope mine, Colorado, USA.
3.45 (100), 2.118 (100), 1.804 (60), 1.377(40), 1.222 (40), 1.815 (30), 1.151 (30)

Chemistry:

	(1)	(2)	(3)
Ag	6.34	6.3	5.89
Cu	24.44	24.1	24.33
Te	69.10	69.6	69.78
Total	99.88	100.0	100.00

(1) Good Hope mine, Colorado, USA; by electron microprobe, average of two analyses; corresponding to $Ag_{1.09}Cu_{7.10}Te_{10.00}$. (2) Do.; by electron microprobe, corresponding to $Ag_{1.07}Cu_{6.95}Te_{10.00}$. (3) $AgCu_7Te_{10}$.

Occurrence: One of a number of metallic tellurium-bearing minerals in a hydrothermal deposit.

Association: Tellurium, rickardite, vulcanite, arsenopyrite, pyrite.

Distribution: From the Good Hope mine, Vulcan, Gunnison Co., Colorado, USA [TL].

Name: In honor of Professor Eugene Nathan Cameron (1910–), University of Wisconsin, who first recognized the mineral as a new species.

Type Material: Canadian Museum of Nature, Ottawa, Canada, 64956; The Natural History Museum, London, England, 1984,356, E.1000, R933; National Museum of Natural History, Washington, D.C., USA, 162713.

References: (1) Roberts, A.C., D.C. Harris, A.J. Criddle, and W.W. Pinch (1986) Cameronite, a new copper-silver telluride from the Good Hope mine, Vulcan, Colorado. Can. Mineral., 24, 379–384. (2) (1987) Amer. Mineral., 72, 1023 (abs. ref. 1). (3) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 70.