

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Minute (0.1 to 1.1 mm) prismatic or bladelike grains, massively incrusting and cementing rock fragments. *Twinning:* Very thin twin lamellae at approximately 45° to the prominent cleavage in some grains.

Physical Properties: *Cleavage:* One direction parallel to the length of the lath-shaped grains; another direction, less prominent, perpendicular to the first. *Tenacity:* Sectile. Hardness = 1–2 VHN = 34–40 (50 g load). $D(\text{meas.}) = \text{n.d.}$ $D(\text{calc.}) = 7.1$

Optical Properties: Opaque. *Color:* Pale bronze to yellow-bronze. *Luster:* Metallic. *Pleochroism:* Very strong, bright yellow to blue-gray. *Anisotropism:* Very strong, brilliant yellow-white, grayish yellow-white, yellow-orange to gray.

R_1 – R_2 : (400) 25.6–30.7, (420) 24.4–30.0, (440) 23.0–30.5, (460) 21.3–37.0, (480) 19.7–47.9, (500) 18.1–56.8, (520) 16.6–63.4, (540) 15.2–67.8, (560) 13.8–70.8, (580) 12.7–73.1, (600) 11.8–74.9, (620) 11.3–76.4, (640) 11.2–77.4, (660) 11.6–78.2, (680) 12.9–78.9, (700) 15.0–79.3

Cell Data: *Space Group:* $Pmnm$. $a = 4.09$ $b = 6.95$ $c = 3.15$ $Z = 2$

X-ray Powder Pattern: Good Hope mine, Colorado, USA. 2.03 (100), 2.86 (70), 3.52 (60), 6.94 (40), 3.47 (30), 2.65 (30), 2.32 (30)

Chemistry:	(1)	(2)
Cu	32.5	33.24
Te	67.8	66.76
Total	100.3	100.00

(1) Good Hope mine, Colorado, USA; by electron microprobe. (2) CuTe.

Occurrence: Intermixed with other tellurides.

Association: Rickardite, tellurium (Good Hope mine, Colorado); rickardite, petzite, sylvanite (Byn'govsk deposit, Russia).

Distribution: In the Good Hope mine, Vulcan, Gunnison Co., Colorado, USA. From the Byn'govsk Au-Te deposit, Central Ural Mountains, Russia. In the Iriki mine, Kagoshima Prefecture, Japan. From the Jabal Sayid deposit, Saudi Arabia.

Name: After the locality, Vulcan, Colorado, USA.

Type Material: National Museum of Natural History, Washington, D.C., USA, R933, 85136.

References: (1) Cameron, E.N. and I.M. Threadgold (1961) Vulcanite, a new copper telluride from Colorado, with notes on certain associated minerals. *Amer. Mineral.*, 46, 258–268. (2) Anderko, K. and K. Schubert (1954) Untersuchungen im System Kupfer–Tellur. *Zeits. für Metallkunde*, 4, 371–378 (in German).