

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Irregular to subhedral grains, to 0.9 mm.

Physical Properties: Hardness = 2–2.5 VHN = 60–63, 61 average (100 g load) (synthetic). D(meas.) = n.d. D(calc.) = 6.185

Optical Properties: Translucent. *Color:* Deep red to maroon, tarnishing to darker colors; blue-gray in reflected light, with abundant red internal reflections. *Luster:* Vitreous, tarnishing to metallic.

Optical Class: Biaxial. *Birefractance:* Very low.

R_1 – R_2 : (400) 29.1–30.2, (420) 28.5–29.5, (440) 27.6–28.7, (460) 26.8–27.8, (480) 26.0–26.8, (500) 25.2–25.9, (520) 24.5–25.0, (540) 23.8–24.2, (560) 23.3–23.6, (580) 22.8–23.1, (600) 22.3–22.7, (620) 22.0–22.3, (640) 21.7–22.0, (660) 21.5–21.8, (680) 21.3–21.6, (700) 21.1–21.5

Cell Data: *Space Group:* $Pnma$. $a = 8.894(8)$ $b = 10.855(9)$ $c = 9.079(9)$ $Z = 4$.

X-ray Powder Pattern: Mercur deposit, Utah, USA. 2.813 (vs), 3.99 (s), 2.264 (ms), 4.14 (m), 3.80 (m), 3.47 (m), 3.35 (m)

Chemistry:	(1)	(2)
Tl	75.7	75.11
As	9.16	9.18
S	15.6	15.71
Total	100.4	100.00

- (1) Mercur deposit, Utah, USA; by electron microprobe, average of analyses on two grains;
 (2) Tl₃AsS₄.

Occurrence: In a sediment-hosted disseminated gold deposit, in sulfide-rich carbonaceous ore, probably formed by alteration of Tl-As-rich sulfosalts or sulfides.

Association: Pyrite, realgar, orpiment, calcite.

Distribution: From the Mercur gold deposit, southern Oquirrh Mountains, about 56 km southwest of Salt Lake City, Tooele Co., USA [TL].

Name: In honor of Dr. Jen-Ho Fang (1929–), crystal chemist, University of Alabama, Tuscaloosa, Alabama, USA.

Type Material: National Museum of Natural History, Washington, D.C., USA, 17071.

References: (1) Wilson, J.R., P.K. Sen Gupta, P.D. Robinson, and A.J. Criddle (1993) Fangite, Tl₃AsS₄, a new thallium arsenic sulfosalts from the Mercur Au deposit, Utah, and revised optical data for gillulyite. *Amer. Mineral.*, 78, 1096–1103.