Kusachiite $CuBi_2O_4$

Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m$. As short prismatic crystals, to 0.5 mm; in globular aggregates.

Physical Properties: *Cleavage:* {110}, perfect. Hardness = 4.5 VHN = 292–357 (25 g load). D(meas.) = 8.5(3) D(calc.) = 8.64

Optical Properties: Opaque. *Color:* Black; gray in reflected light, with deep red to dark brown internal reflections. *Streak:* Black. *Luster:* Metallic.
Optical Class: Uniaxial. *Pleochroism:* Gray, with faint bluish tint, and brownish gray. *Anisotropism:* Weak to distinct. *Bireflectance:* Weak.
R_1–R_2: (482) 19.0–21.1, (545) 18.0–20.2, (589) 17.6–19.7, (659) 17.3–19.5

Cell Data: *Space Group:* $P4/ncc$. $a = 8.511(2)$ $c = 5.823(2)$ $Z = 4$

X-ray Powder Pattern: Fuka, Japan.
3.191 (100), 2.695 (18), 1.947 (18), 4.26 (17), 2.913 (16), 2.404 (13), 1.728 (12)

Chemistry:

	(1)	(2)
Bi_2O_3	86.00	85.42
CuO	13.91	14.58
Total	99.91	100.00

(1) Fuka, Japan; by electron microprobe, average of six analyses; corresponding to $Cu_{0.96}Bi_{2.03}O_{4.00}$. (2) $CuBi_2O_4$.

Occurrence: On calcite crystals in a calcite vein between gehlenite-spurrite skarn and limestone; thought to be of low-temperature hydrothermal origin.

Association: Henmilite, sillénite, bakerite, tenorite, bultfonteinite, apophyllite, cuspidine, thaumasite.

Distribution: From Fuka, near Bicchu, Okayama Prefecture, Japan.

Name: To honor Dr. Isao Kusachi (1942–), Professor of Mineralogy, Okayama University, Okayama, Japan, for his work on skarn minerals of the Fuka area.

Type Material: National Science Museum, Tokyo, Japan.

References: (1) Henmi, C. (1995) Kusachiite, $CuBi_2O_4$, a new mineral from Fuka, Okayama Prefecture, Japan. Mineral. Mag., 59, 545–548. (2) (1996) Amer. Mineral., 81, 517 (abs. ref. 1).