

**Crystal Data:** Cubic. *Point Group:* 432,  $\bar{4}3m$ , or  $4/m\bar{3}2/m$ . Forms in exsolution texture with stannite, to 0.5 mm.

**Physical Properties:** Hardness = 4 VHN = 243–282, 265 average (100 g load).  
D(meas.) = n.d. D(calc.) = 4.45

**Optical Properties:** Opaque. *Color:* Greenish steel-gray; in polished section, purplish olive-gray with a red tint. *Streak:* Lead-gray with olive tint. *Luster:* Metallic. *Anisotropism:* Nearly isotropic.

$R_1$ – $R_2$ : (400) 22.5, (420) 22.5, (440) 22.5, (460) 22.6, (480) 22.6, (500) 22.6, (520) 22.6, (540) 22.7, (560) 22.6, (580) 22.5, (600) 22.5, (620) 22.6, (640) 22.6, (660) 22.6, (680) 22.6, (700) 22.4

**Cell Data:** *Space Group:*  $P432$ ,  $P\bar{4}3m$ , or  $Pm3m$ .  $a = 5.4563(24)$   $Z = 1$

**X-ray Powder Pattern:** Ikuno mine, Japan.

3.15 (100), 1.927 (40), 1.650 (20), 2.73 (10), 5.47 (6), 3.85 (6), 2.44 (6)

**Chemistry:**

|       | (1)   | (2)  | (3)  |
|-------|-------|------|------|
| Cu    | 21    | 19.6 | 18.9 |
| Zn    | 14    | 13.7 | 18.0 |
| Cd    |       | 0.6  | 0.7  |
| Fe    | 5     | 6.9  | 4.5  |
| Ag    | 3.5   | 0.2  | 0.1  |
| In    | 23    | 22.0 | 23.8 |
| Sn    | 4     | 7.2  | 4.9  |
| S     | 30    | 29.1 | 29.0 |
| Total | 100.5 | 99.3 | 99.9 |

(1) Ikuno mine, Japan; by electron microprobe, corresponding to  $(\text{Cu}_{1.41}\text{Zn}_{0.92}\text{In}_{0.86}\text{Fe}_{0.38}\text{Sn}_{0.14}\text{Ag}_{0.14})_{\Sigma=3.85}\text{S}_{4.00}$ . (2) Do.; by electron microprobe, corresponds to  $(\text{Cu}_{1.36}\text{Zn}_{0.92}\text{In}_{0.84}\text{Fe}_{0.54}\text{Sn}_{0.27}\text{Cd}_{0.02}\text{Ag}_{0.01})_{\Sigma=3.96}\text{S}_{4.00}$ . (3) Do.; by electron microprobe, corresponds to  $(\text{Cu}_{1.32}\text{Zn}_{1.22}\text{In}_{0.92}\text{Fe}_{0.36}\text{Sn}_{0.18}\text{Cd}_{0.03})_{\Sigma=4.03}\text{S}_{4.00}$ .

**Occurrence:** In a banded hydrothermal vein.

**Association:** Stannite, sphalerite, chalcopyrite, cassiterite, matildite, cobaltian arsenopyrite, quartz, calcite.

**Distribution:** From the Ikuno mine, Hyogo Prefecture, Japan [TL].

**Name:** Honors Dr. Kin-ichi Sakurai (1912–1993), Japanese mineral collector.

**Type Material:** National Science Museum, Tokyo, Japan, M15843; National School of Mines, Paris, France; Harvard University, Cambridge, Massachusetts, 108788; National Museum of Natural History, Washington, D.C., USA, 120592.

**References:** (1) Kato, A. (1965) Sakuraiite, a new mineral. Chigaku Kenkyu [Earth Science Studies], Sakurai volume, 1–5 (in Japanese). (2) (1968) Amer. Mineral., 53, 1421 (abs. ref. 1). (3) Shimizu, M., A. Kato, and T. Shiozawa (1986) Sakuraiite: chemical composition and extent of (Zn, Fe)In-for-CuSn substitution. Can. Mineral., 24, 405–409. (4) Kissin, S.A. and D.R. Owens (1986) The crystallography of sakuraiite. Can. Mineral., 24, 679–683.