

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:* $P4_32$, $P\bar{4}3m$, or $Pm\bar{3}m$. $a = 5.4563(24)$ $Z = 1$

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.