

Crystal Data: Monoclinic. *Point Group:* 2/m. Crystals wedge-shaped, up to 3 cm; massive, as a coating on cassiterite.

Physical Properties: Hardness = 3.5–4 D(meas.) = 4.3(2) D(calc.) = [4.55] Fluoresces pale to bright yellow or yellow-green under UV.

Optical Properties: Translucent. *Color:* Very pale creamy yellow to deep yellow-orange, colorless. *Luster:* Resinous.

Optical Class: Biaxial (-). $\alpha = 1.764\text{--}1.765$ $\beta = 1.783\text{--}1.786$ $\gamma = 1.798\text{--}1.801$
2V(meas.) = 84°–86°

Cell Data: *Space Group:* A2/a. $a = 7.156(6)$ $b = 8.895(9)$ $c = 6.668(4)$ $\beta = 113.4(1)^\circ$
Z = 4

X-ray Powder Pattern: Synthetic.

3.28 (100), 5.05 (50), 2.639 (45), 3.06 (35), 2.665 (30), 2.412 (20), 2.099 (20)

Chemistry:	(1)	(2)
SiO ₂	21.26	22.49
SnO ₂	58.48	56.38
FeO		0.15
CaO	19.14	20.94
LOI	0.50	
Total	99.38	99.96

(1) Sungei Lah Valley, Malaya; corresponds to Ca_{0.95}Sn_{1.07}Si_{0.98}O₅. (2) Gumble, Australia; by electron microprobe, corresponding to Ca_{1.00}Sn_{1.00}Fe_{0.01}Si_{1.00}O₅.

Occurrence: In tin-rich contact metamorphic skarn deposits, probably a hydrothermal alteration product of cassiterite or other tin-bearing minerals.

Association: Cassiterite, quartz, calcite, wollastonite, pyroxene, garnet.

Distribution: In the Sungei Lah Valley, Chenderiang, Perak State, and other locations in Malaya, Malaysia. From Piniok, Thailand. In the Toroku and Mitate mines, Miyazaki Prefecture; the Sampo mine, Okayama Prefecture; the Hoei mine, Oita Prefecture; and the Kuga mine, Yamaguchi Prefecture, Japan. In the Kan'onsk deposit, headwaters of the Seimchan River, Yakutia, Russia. From Alpe Rosso, Val Vigezzo, Piedmont, Italy. At the Red-a-Ven Brook mine, Meldon, Devon, England. From near Gumble and Bourke, New South Wales, Australia. From the JC claims, near Dorsey Lake, Cassiar Mountains, and near Ash Mountain, McDame, British Columbia, Canada. From the Mesa Grande district, San Diego Co., California, USA.

Name: For the localities in Malaya, Malaysia.

Type Material: n.d.

References: (1) Ingham, F.T. and E.F. Bradford (1960) The geology and mineral resources of the Kinta Valley, Perak Federation of Malaya. Geol. Sur. District Memoir No. 9, 1–347, esp. 105. (2) (1961) Amer. Mineral., 46, 768–769 (abs. ref. 1). (3) Takenouchi, S. (1971) Hydrothermal synthesis and consideration of the genesis of malayaite. Mineralium Deposita, 6, 335–347. (4) Higgins, J.B. and P.H. Ribbe (1977) The structure of malayaite, CaSnOSiO₄, a tin analog of titanite. Amer. Mineral., 62, 801–806. (5) Mulholland, I.R. (1984) Malayaite and tin-bearing garnet from a skarn at Gumble, NSW, Australia. Mineral. Mag., 48, 27–30.