

Truscottite

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Crystal Data: Hexagonal. *Point Group:* $\bar{3}$ or 3. In scales; as spheroidal aggregates, to 7 mm, with fibrous, platy structure.**Physical Properties:** *Cleavage:* Perfect on {0001}, micaceous. *Hardness* = 3.5
D(meas.) = 2.47–2.48 D(calc.) = 2.47**Optical Properties:** Transparent to translucent. *Color:* White. *Luster:* Pearly on the cleavage.*Optical Class:* Uniaxial (-). $\omega = 1.549\text{--}1.552$ $\epsilon = 1.522\text{--}1.530$ **Cell Data:** *Space Group:* $P\bar{3}$ or $P3$. $a = 9.720\text{--}9.735$ $c = 18.84\text{--}18.85$ $Z = 1$ **X-ray Powder Pattern:** Benkulen, Sumatra; resembles gyrolite or reyerite. (ICDD 29-382). 3.141 (100), 2.840 (80), 4.21 (70), 1.839 (70), 18.8 (60), 2.638 (55), 3.501 (45)**Chemistry:**

	(1)	(2)	(3)
SiO ₂	58.95	63.56	61.75
TiO ₂	0.00	0.08	
Al ₂ O ₃	1.03	0.81	
Fe ₂ O ₃	0.03		
FeO		0.66	
MnO	0.18	2.41	
MgO	0.27	0.70	
CaO	25.54	26.24	33.62
Na ₂ O	1.03		
K ₂ O	1.37		
H ₂ O ⁺	4.61	4.31	4.63
H ₂ O ⁻	1.07	0.48	
CO ₃	2.32		
SO ₃	2.57		
Total	98.97	99.25	100.00

(1) Benkulen, Sumatra; corresponding to $(\text{Ca}_{1.78}\text{Na}_{0.13}\text{K}_{0.12}\text{Mg}_{0.03}\text{Fe}_{0.03}\text{Mn}_{0.02})_{\Sigma=2.11}(\text{Si}_{3.82}\text{Al}_{0.08})_{\Sigma=3.90}\text{O}_{9.48}(\text{OH})_{2.00}$. (2) Toi mine, Japan; corresponding to $(\text{Ca}_{1.77}\text{Mn}_{0.13}\text{Mg}_{0.06}\text{Fe}_{0.03})_{\Sigma=1.99}(\text{Si}_{4.00}\text{Al}_{0.06})_{\Sigma=4.06}\text{O}_{9.18}(\text{OH})_{1.81}$. (3) $\text{Ca}_{14}\text{Si}_{24}\text{O}_{58}(\text{OH})_8 \cdot 2\text{H}_2\text{O}$.**Occurrence:** In epithermal gold-silver quartz veins cutting altered pyroclastics (Toi mine, Japan).**Association:** Quartz, adularia, rhodochrosite (Toi mine, Japan).**Distribution:** At the Lebong Donok Au-Ag mine, Benkulen, Sumatra, Indonesia. In Japan, in the Toi mine, Shizuoka Prefecture. From the Hatrurim Formation, Israel. On Kilauea volcano, Hawaii, and from Yellowstone National Park, Wyoming, USA.**Name:** For Professor Samuel John Truscott (1870–?), English mining geologist and formerly Manager of the Lebong Donok mine, Sumatra.**Type Material:** The Natural History Museum, London, England, 1925,1044.**References:** (1) Hövig, P. (1914) [Truscottiet.] Jaarboek van het Mijnwezen in Nederlandsch Oost-Indië, Batavia, 41 (for 1912), 202. (2) (1925) Mineral. Mag., 20, 466 (abs. ref. 1). (3) MacKay, A.L. and H.F.W. Taylor (1954) Truscottite. Mineral. Mag., 30, 450–457. (4) Heller, L. and H.F.W. Taylor (1956) Crystallographic data for the calcium silicates. H.M. Stationary Office, London, 26–28. (5) Minato, H. and A. Kato (1967) Truscottite from the Toi mine, Shizuoka Prefecture. Mineral. J. (Japan), 5, 144–156. (6) Lachowski, E.E., L.W. Murray, and H.F.W. Taylor (1979) Truscottite: composition and ionic substitutions. Mineral. Mag., 43, 333–336.

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