Srilankite $(Ti, Zr)O_2$

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As idiomorphic inclusions, less than 1 mm, intergrown with associated minerals.

Physical Properties: *Cleavage:* One direction, poor. *Fracture:* Conchoidal. *Tenacity:* Brittle. Hardness = ∼6.5 VHN = 900–1000 D(meas.) = ∼4.6 D(calc.) = 4.77 Commonly radioactive.

Optical Properties: Opaque, translucent in thin fragments. *Color:* Black, brownish black; dark blue in transmitted light; gray-white in reflected light. *Luster:* Submetallic to adamantine. *Optical Class:* Biaxial (–); high birefringence. n = [2.38] 2V(meas.) = 16(1)° *Anisotropism:* Observed.
R_1–R_2: (480) 19.4–18.6, (546) 18.4–16.0, (589) 18.5–16.4, (649) 18.7–17.0

Cell Data: *Space Group: Pbcn.* $a = 4.706(5)$ $b = 5.553(5)$ $c = 5.024(4)$ $Z = 4$

X-ray Powder Pattern: Rakwana, Sri Lanka.
2.92 (100), 1.516 (35), 1.721 (30), 3.61 (25), 1.692 (25), 1.864 (15), 1.793 (15)

Chemistry:

	(1)
TiO_2	56.30
$(Zr, Hf)O_2$	43.97
Total	100.27

(1) Rakwana, Sri Lanka; by electron microprobe, average of 50 analyses of four grains, UO_2 0.15(5)% in three grains; corresponds to $[Ti_{0.66}(Zr, Hf)_{0.34}]_{\Sigma=1.00}O_2$.

Occurrence: In pebbles found in concentrates from a placer gemstone mine.

Association: Zirconolite, baddeleyite, geikielite, spinel, perovskite.

Distribution: From Rakwana, Sri Lanka.

Name: For Sri Lanka, the country where the mineral was first collected.

Type Material: National Museum of Natural History, Washington, D.C., USA, 165370.

References: (1) Willgallis, A., E. Siegmann, and T. Hettiaratchi (1983) Srilankite, a new Zr–Ti-oxide mineral. Neues Jahrb. Mineral., Monatsh., 151–157. (2) (1984) Amer. Mineral., 69, 212 (abs. ref. 1). (3) Willgallis, A. and H. Hartl (1983) $(Zr_{0.33}Ti_{0.67})O_2$ – ein natürliches Zirkonium-Titanoxid mit $\alpha-PbO_2-$Struktur. Zeits. Krist., 164, 59–66 (in German with English abs.).