Wesselsite $SrCuSi_4O_{10}$

Crystal Data: Tetragonal. *Point Group*: 4/*m* 2/*m* 2/*m.* As plates, to 50 μm, typically in clusters to 200 μm.

Physical Properties: *Cleavage*: Perfect on {001}. *Fracture*: n.d. *Tenacity*: Brittle. Hardness = n.d. D(meas.) = 3.2(1) D(calc.) = 3.32

Optical Properties: Translucent. *Color*: Blue. *Streak*: White to light blue. *Luster*: n.d. *Optical Class*: Uniaxial (-). ω = 1.630(2) ε = 1.590(5) *Pleochroism*: Strong, blue to pale blue to pink.

Cell Data: *Space Group*: *P*4/*ncc.* *a* = 7.374(1) *c* = 15.636(2) Z = 4

X-ray Powder Pattern: Wessels mine, Northern Cape Province, South Africa.
3.33 (100), 3.12 (55), 3.03 (50), 3.44 (40), 7.79 (35), 2.61 (30), 2.32 (30)

Chemistry:	(1)	(2)
SrO	24.0	24.47
CuO	18.8	18.78
SiO_2	56.9	56.75
Total	99.7	100.00

(1) Wessels mine, Northern Cape Province, South Africa; electron microprobe analysis, corresponds to $Sr_{0.98}Cu_{1.00}Si_{4.01}O_{10}$. (2) $SrCuSi_4O_{10}$. (3) Wessels mine, Northern Cape Province, South Africa; electron microprobe analysis of crystal used for structure determination, no analysis given; corresponds to $Sr_{0.90}Ba_{0.10}Cu_{1.00}Si_{4.00}O_{10}$.

Polymorphism & Series: Forms a solid solution series with effenbergerite.

Mineral Group: Gillespite group.

Occurrence: In a hydrothermally-altered sedimentary manganese deposit.

Association: Hennomartinite, sugulite, pectolite, xonotlite, quartz.

Distribution: From the central-eastern ore body of the Wessels mine, Kalahari Manganese Field, Northern Cape Province, South Africa.

Name: Named for the Wessels mine, South Africa, where the first specimens were collected.

Type Material: Institute for Mineralogy and Crystallography, University of Vienna, Austria (8H/01.055#1).

References: (1) Giester, G. and B. Rieck (1996) Wesselsite, $SrCu[Si_4O_{10}]$, a further new gillespite-group mineral from the Kalahari Manganese Field, South Africa. Mineral. Mag., 60(5), 795-798. (2) Rieck, B., H. Pristacz, and G. Giester (2015) Colinowensite, $BaCuSi_2O_6$, a new mineral from the Kalahari Manganese Field, South Africa and new data on wesselsite, $SrCuSi_4O_{10}$. Mineral. Mag., 79(7), 1769-1778. (3) (2016) Amer. Mineral., 101, 2356 (abs. ref. 2).