

**Crystal Data:** Tetragonal. *Point Group:* 4/m 2/m 2/m. Crystals tabular on {001}, to 0.1 mm.

**Physical Properties:** *Cleavage:* Perfect on {001}. *Tenacity:* Brittle. *Hardness* = ~5  
D(meas.) = 3.08(6) D(calc.) = 3.09

**Optical Properties:** Transparent to translucent. *Color:* Azure. *Luster:* Vitreous.  
*Optical Class:* Uniaxial (-). *Pleochroism:* O = blue; E = nearly colorless, pale rose.  
 $\omega = 1.633(3)$   $\epsilon = 1.590(3)$

**Cell Data:** *Space Group:* P4/ncc.  $a = 7.30(1)$   $c = 15.12(2)$   $Z = 4$

**X-ray Powder Pattern:** Synthetic.  
3.29 (100), 3.78 (90), 3.00 (90), 3.36 (80), 3.19 (50), 2.270 (50), 7.63 (40)

| Chemistry:                     | (1)   | (2)    |
|--------------------------------|-------|--------|
| SiO <sub>2</sub>               | 64.44 | 63.92  |
| Al <sub>2</sub> O <sub>3</sub> | 2.12  |        |
| Fe <sub>2</sub> O <sub>3</sub> | 0.39  |        |
| CuO                            | 12.09 | 21.16  |
| CaO                            | 12.19 | 14.92  |
| Na <sub>2</sub> O              | 2.52  |        |
| K <sub>2</sub> O               | 1.06  |        |
| H <sub>2</sub> O <sup>+</sup>  | 2.59  |        |
| CO <sub>2</sub>                | 1.18  |        |
| SO <sub>3</sub>                | 1.08  |        |
| Total                          | 99.66 | 100.00 |

(1) Vesuvius, Italy; sample contaminated with 13% quartz. (2) CaCuSi<sub>4</sub>O<sub>10</sub>.

**Occurrence:** Intimately mixed with quartz (Vesuvius, Italy); in a mudstone xenolith ejected from a scoria cone (Sattelberg volcanic cone, Germany).

**Association:** Quartz.

**Distribution:** In Italy, on Vesuvius, Campania. From Wheal Edward, Cornwall, England. At Summit Rock, near Diamond Lake, Douglas Co., Oregon, USA. From the Sattelberg volcanic cone, near Brenk, Eifel district, Germany. At Messina, Transvaal, South Africa.

**Name:** For a high copper content and presumed similarity to *rivaite*.

**Type Material:** National Museum of Natural History, Washington, D.C., USA, 135505.

**References:** (1) Minguzzi, C. (1938) Cuprorivaite: Un nuovo minerale. *Period. Mineral.*, 9(3), 333–345 (in Italian). (2) (1939) *Amer. Mineral.*, 24, 350 (abs. ref. 1). (3) Pabst, A. (1959) Structures of some tetragonal silicates. *Acta Cryst.*, 12, 733–739. (4) Mazzi, F. and A. Pabst (1962) Reexamination of cuprorivaite. *Amer. Mineral.*, 47, 409–411.