

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As clasts to ~100 μm of sub-micrometer grains.

**Physical Properties:** *Cleavage:* n.d. *Fracture:* n.d. *Tenacity:* n.d. *Hardness =* n.d. *D(meas.) =* n.d. *D(calc.) =* 4.37

**Optical Properties:** n.d. *Color:* n.d. *Streak:* n.d. *Luster:* n.d.  
*Optical Class:* n.d.

**Cell Data:** *Space Group:* P2/c. *a* = 4.519(3) *b* = 5.503(8) *c* = 4.888(2) *β* = 90.59(8)° *Z* = 4

**X-ray Powder Pattern:** Nördlinger Ries impact crater, Bavaria, Germany.  
2.852 (100), 3.490 (88), 2.833 (70), 2.359 (33), 1.647 (27), 1.671 (26), 2.094 (22)

<b>Chemistry:</b>	(1)
TiO <sub>2</sub>	99.25
FeO	0.42
CaO	0.03
Total	99.70

(1) Nördlinger Ries impact crater, Bavaria, Germany; average of 10 electron microprobe analyses; corresponds to (Ti<sub>0.997</sub>Fe<sub>0.005</sub>)O<sub>2</sub>.

**Polymorphism & Series:** High-pressure polymorph of TiO<sub>2</sub>.

**Occurrence:** As complete or partial replacement of rutile clasts trapped in a shock-melt vein in a xenolith of garnet-sillimanite in suevite. Riesite forms by transformation from akaogiite upon release from the shock state.

**Association:** Majorite-rich garnet, stishovite, jadeite-rich clinopyroxene, akaogiite.

**Distribution:** From the Nördlinger Ries impact Crater, Swabia, Bavaria, Germany.

**Name:** For the type locality.

**Type Material:** Geosciences Institute, Ruprecht Karl University of Heidelberg, Baden-Württemberg, Germany (ZLN114c).

**References:** (1) Tschauer, O., C. Ma, A. Lanzirotti, and M.G. Newville (2020) Riesite, a new high-pressure polymorph of TiO<sub>2</sub> from the Ries impact structure. *Minerals*, 10(1), 78. (2) (2020) *Amer. Mineral.*, 105, 1923 (abs. ref. 1).