

Crystal Data: Hexagonal. *Point Group:* $6/m\ 2/m\ 2/m$. As thin, irregular plates having fibrous texture; fine-grained, massive, replacing ilmenite crystals and grains.

Physical Properties: *Fracture:* Subconchoidal. *Tenacity:* Brittle. Hardness = 5.5
D(meas.) = ~ 3.8 D(calc.) = [4.82] Magnetic.

Optical Properties: Opaque, transparent when very thin. *Color:* Dark steel-gray on fresh fractures, light brown to black; deep red in transmitted light. *Streak:* Reddish brown. *Luster:* Submetallic to metallic.
Optical Class: Uniaxial; moderate birefringence. *Pleochroism:* Very weak; in reds.
Absorption: $Z > X$. $n = \sim 2.62$

Cell Data: *Space Group:* $P6_322$. $a = 14.375(6)$ $c = 4.615(3)$ $Z = [6]$

X-ray Powder Pattern: South Neptune Island, South Australia.
1.6860 (100), 2.481 (80), 2.187 (70), 2.784 (20d), 3.897 (15d), 2.2993 (8), 1.6253 (6d)

Chemistry:	(1)	(2)
TiO ₂	58.84	60.01
Fe ₂ O ₃	34.65	39.99
Mn ₂ O ₃	0.60	
FeO	1.24	
H ₂ O ⁺	3.24	
Total	98.57	100.00

(1) South Neptune Island, South Australia; corresponds to $(\text{Fe}_{1.81}^{3+}\text{Fe}_{0.07}^{2+}\text{Mn}_{0.03}^{3+})_{\Sigma=1.91}\text{Ti}_{3.08}\text{O}_9 \cdot 0.75\text{H}_2\text{O}$. (2) $\text{Fe}_2\text{Ti}_3\text{O}_9$.

Occurrence: An intermediate product of the weathering of ilmenite.

Association: Ilmenite, rutile, anatase, hematite, gadolinite.

Distribution: On South Neptune Island, South Australia. In the USA, around Lakehurst, Ocean Co., New Jersey. Other occurrences have been tentatively noted in ilmenite-rich beach sands.

Name: From the Greek for *false* and its relation to *rutile*.

Type Material: Museum Victoria, Melbourne, Australia, M42789.

References: (1) Teufer, G. and A.K. Temple (1966) Pseudorutile – a new mineral intermediate between ilmenite and rutile in the natural alteration of ilmenite. *Nature*, 211, 179–181. (2) Grey, I.E. and A.F. Reid (1975) The structure of pseudorutile and its role in the natural alteration of ilmenite. *Amer. Mineral.*, 60, 898–906. (3) Grey, I.E., J.A. Watts, and P. Bayliss (1994) Mineralogical nomenclature: pseudorutile revalidated and neotype given. *Mineral. Mag.*, 58, 597–600.