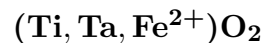


Strüverite



©2001-2005 Mineral Data Publishing, version 1

Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m$. As dipyrnidal, prismatic crystals, to several cm, with striated prism faces. *Twining:* Common on {101}.

Physical Properties: *Cleavage:* {110}, distinct. *Fracture:* Conchoidal. Hardness = 6–6.5 VHN = 911–998 D(meas.) = 4.2–5.8 D(calc.) = [5.68–5.77]

Optical Properties: Opaque, translucent through thin edges. *Color:* Black; red or reddish brown in transmitted light; light gray in reflected light. *Streak:* Grayish black. *Luster:* Adamantine, resinous.

Optical Class: Uniaxial (+). *Pleochroism:* Strong; *E* = brown; *O* = dark bluish green or greenish blue. *Absorption:* $E > O$. $n = > 2.6$ *Anisotropism:* Strong. *Bireflectance:* Weak. R_1 – R_2 : n.d.

Cell Data: *Space Group:* $P4_2/mnm$. $a = 4.62$ – 4.64 $c = 2.98$ – 3.00 $Z = 2$

X-ray Powder Pattern: Altai Mountains, Mongolia; almost identical to ilmenorutile. 3.25 (10), 1.699 (10), 2.495 (9), 1.641 (7), 1.375 (7), 1.183 (7), 1.054 (7)

Chemistry:

	(1)	(2)
Nb ₂ O ₅	6.5	9.30
Ta ₂ O ₅	35.5	33.12
SiO ₂		0.41
TiO ₂	47.8	47.0
SnO ₂	0.3	
Al ₂ O ₃		0.60
FeO	9.2	9.70
MnO	0.1	0.09
MgO		0.03
CaO		0.05
Total	99.4	100.30

(1) Craveggia, Italy; by electron microprobe, total Fe as FeO, total Mn as MnO. (2) Altai Mountains, Mongolia; corresponds to $(\text{Ti}_{0.63}\text{Ta}_{0.16}\text{Fe}_{0.15}\text{Nb}_{0.07})_{\Sigma=1.01}\text{O}_2$.

Polymorphism & Series: Forms a series with ilmenorutile; Ta:Nb > 1.

Occurrence: A late primary mineral in granite pegmatites; rarely detrital.

Association: Columbite, ilmenite, beryl, cassiterite, zircon, monazite, albite, microcline.

Distribution: From Craveggia, Val Vigezzo, Piedmont, Italy. At Věžná, near Rožná, and Písek, Czech Republic. In the Etta mine, near Keystone, Pennington Co., South Dakota, USA. At Tongafeno, Fefana, Mananjary, Ampangabé, and elsewhere in Madagascar. From near Salak North, Kuala Kangsar, Perak, Malaya. At Globe Hill, Western Australia. Other localities are reported, either undefined, or the material requiring modern confirmation.

Name: Honors Professor Giovanni Strüver (1842–1915), mineralogist, University of Rome, Rome, Italy.

Type Material: The Natural History Museum, London, England, 1906,123; Natural History Museum, Paris, France, 108.371.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 554–561 [rutile, part]. (2) Vlasov, K.A., Ed. (1966) Mineralogy of rare elements, v. II, 412–414. (3) Černý, P., F. Čech, and P. Povondra (1964) Review of ilmenorutile-strüverite minerals. Neues Jahrb. Mineral., Abh., 101, 142–172. (4) Clark, A.M. (1974) A tantalum-rich variety of sphene. Mineral. Mag., 39, 605–607. (5) Černý, P., B.J. Paul, F.C. Hawthorne, and R. Chapman (1981) A niobian rutile-disordered columbite intergrowth from the Huron claim pegmatite, southeastern Manitoba. Can. Mineral., 19, 541–548.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior written permission of Mineral Data Publishing.