

Crystal Data: Hexagonal (synthetic). *Point Group:* $\bar{3} 2/m$. Fine-grained crystalline, massive, as crusts, to 2 mm thick.

Physical Properties: Hardness = 4 D(meas.) = 5.85(7) D(calc.) = 5.772

Optical Properties: Semitransparent. *Color:* Dark grass-green, blue-green, pale brown. *Streak:* Pale green, pale blue-green.

Optical Class: [Uniaxial.] $\omega = \text{n.d.}$ $\epsilon = \text{n.d.}$

Cell Data: *Space Group:* $R\bar{3}m$ (synthetic). $a = 5.9511(5)$ $c = 27.5676(20)$ $Z = 1$

X-ray Powder Pattern: Johanngeorgenstadt, Germany.

2.060 (vvs), 3.76 (vs), 2.329 (s), 5.05 (s), 2.862 (s), 2.492 (s), 1.485 (s)

Chemistry:	(1)	(2)	(3)	(4)
P ₂ O ₅	0.14			
As ₂ O ₅	36.57	36.3	37.6	35.19
Bi ₂ O ₃	0.24			
Fe ₂ O ₃	trace			
FeO		1.3	0.6	
CoO	0.54	1.2	0.7	
NiO	62.07	60.9	61.3	64.81
CuO	0.34	0.3	0.7	
Total	99.90	[100.0]	100.9	100.00

(1) Johanngeorgenstadt, Germany. (2) Do.; total Fe as FeO, recalculated after deduction of quartz 13.9%; corresponds to (Ni_{15.91}Fe_{0.34}Co_{0.31}Cu_{0.08})_{Σ=16.64}As_{6.15}O₃₂. (3) South Terras mine, Cornwall, England; total Fe as FeO; corresponds to (Ni_{15.77}Co_{0.18}Fe_{0.17}Cu_{0.17})_{Σ=16.29}As_{6.29}O₃₂. (4) Ni₁₇As₆O₃₂.

Occurrence: A rare secondary mineral in hydrothermal Ni–As–U ore deposits.

Association: Bismuth, bunsenite, xanthiosite (Johanngeorgenstadt, Germany); xanthiosite (South Terras mine, Cornwall, England).

Distribution: From Johanngeorgenstadt, Saxony, Germany. In the South Terras mine, St. Stephen-in-Brannel, Cornwall, England.

Name: From the Greek for *copper rust*, an allusion to its appearance.

Type Material: The Natural History Museum, London, England, 32590 and 1907,103.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 870. (2) Davis, R.J., M.H. Hey, and A.W.G. Kingsbury (1965) Xanthiosite and aerugite. *Mineral. Mag.*, 35, 72–83. (3) Fleet, M.E. and J. Barbier (1989) Structure of aerugite (Ni_{8.5}As₃O₁₆) and interrelated arsenate and germanate structural series. *Acta Cryst.*, 45, 201–205.