

Crystal Data: Hexagonal. *Point Group:* 32. In microcrystalline nodules, intimately mixed with grattarolaite, as crystallites to $< 1000 \text{ \AA}$.

Physical Properties: *Tenacity:* Brittle. Hardness = n.d. $D(\text{meas.}) = \text{n.d.}$ $D(\text{calc.}) = 3.04$

Optical Properties: Opaque. *Color:* Reddish brown. *Streak:* Brown. *Luster:* Greasy. *Optical Class:* Uniaxial. $\omega = \text{n.d.}$ $\epsilon = \text{n.d.}$

Cell Data: *Space Group:* $P3_121$ (synthetic). $a = 5.048(3)$ $c = 11.215(8)$ $Z = 3$

X-ray Powder Pattern: Synthetic.

3.445 (100), 4.360 (19), 2.362 (14), 1.8846 (12), 2.180 (10), 1.4214 (10)

Chemistry: (1) Due to the tiny particle sizes (average about 260 \AA) only bulk composition of the mixture could be determined; this is compatible with a composition of $\text{Fe}_{1.04}\text{P}_{0.96}\text{O}_{4.00}$; the identity of the mineral rests also on its X-ray powder pattern compared to synthetic material.

Occurrence: Very rare, in microcrystalline nodules in lignite beds which appear to have naturally burned.

Association: Grattarolaite, heterosite.

Distribution: From the Castelnuovo mine, Santa Barbara lignite district, 30 km southeast of Florence, Florence, Italy.

Name: Honoring Francesco Rodolico (1905–1988), Professor of Mineralogy, Florence University, Florence, Italy.

Type Material: Museum of Natural History, Florence University, Florence, Italy, 2087/RI.

References: (1) Cipriani, C., M. Mellini, G. Pratesi, and C. Viti (1997) Rodolicoite and grattarolaite, two new phosphate minerals from Santa Barbara mine, Italy. *Eur. J. Mineral.*, 9, 1101–1106. (2) (1998) *Amer. Mineral.*, 83, 654 (abs. ref. 1). (3) Arnold, H. (1986) Crystal structure of FePO_4 at 294 and 20 K. *Zeits. Krist.*, 177, 139–142.