

Phosphorrösslerite

Mg(PO₃OH)·7H₂O

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Crystal Data: Monoclinic. *Point Group:* $2/m$. Crystals equant or short prismatic [100], may be skeletal; forms noted include {010}, {100}, {110}, {011}, {120}, {111}, {140}, $\{\bar{1}11\}$. Also in botryoids, druses, and crusts.

Physical Properties: *Fracture:* Conchoidal. Hardness = 2.5 D(meas.) = 1.725(4)
D(calc.) = 1.741 Soluble in H₂O; alters to newberyite on exposure.

Optical Properties: Semitransparent, opaque on exposure. *Color:* Colorless, pale yellow or honey-brown when included with iron oxides or organic material, turning white on exposure.

Luster: Vitreous, changing to dull on exposure.

Optical Class: Biaxial (-). *Orientation:* $X = b$; $Z \wedge c = 6.5^\circ$. *Dispersion:* $r > v$. $\alpha = 1.477$
 $\beta = 1.485$ $\gamma = 1.486$ $2V(\text{meas.}) = 38^\circ 10'$

Cell Data: *Space Group:* $C2/c$ (synthetic). $a = 11.32(1)$ $b = 25.36(2)$ $c = 6.574(5)$
 $\beta = 95^\circ 11(18)'$ $Z = 8$

X-ray Powder Pattern: Synthetic. (ICDD 19-761).

3.29 (100), 2.82 (100), 4.55 (90), 4.42 (90), 4.13 (90), 4.02 (90), 2.704 (90)

Chemistry:

	(1)	(2)
P ₂ O ₅	28.07	28.80
MgO	16.28	16.36
H ₂ O	54.51	54.84
insol.	0.08	
Total	98.94	100.00

(1) Schellgaden, Austria. (2) Mg(PO₃OH)·7H₂O.

Occurrence: In cold (10 °C) wet muck in an abandoned mine.

Association: n.d.

Distribution: From the Stüblbau works, Schellgaden, Austria.

Name: As the *phosphate* analog of *rösslerite*.

Type Material: Harvard University, Cambridge, Massachusetts, USA, 107177.

References: (1) Friedrich, O.M. and J. Robitsch (1939) Phosphorrösslerit (MgHPO₄·7H₂O) als Mineral aus dem Stüblbau zu Schellgaden. *Zentralb. Mineral. Geol. Paleon., Abt. A*, Nr. 5, 142-155 (in German). (2) (1940) *Amer. Mineral.*, 25, 313-314 (abs. ref. 1). (3) Palache, C., H. Berman, and C. Frondel (1951) *Dana's system of mineralogy*, (7th edition), v. II, 713-714. (4) Street, R.L.T. and A. Whitaker (1973) The isostructurality of rösslerite and phosphorrösslerite. *Zeits. Krist.*, 137, 246-255.