Phosphorrösslerite $Mg(PO_3OH)\cdot 7H_2O$

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 H_2O; 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:* $X = b$; $Z \wedge c = 6.5°$. *Dispersion:* $r > v$. $\alpha = 1.477$ $\beta = 1.485$ $\gamma = 1.486$ 2V(meas.) = 38°10′

Cell Data: *Space Group:* $C2/c$ (synthetic). $a = 11.32(1)$ $b = 25.36(2)$ $c = 6.574(5)$ $\beta = 95°11(18)'$ 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_2O_5	28.07	28.80
MgO	16.28	16.36
H_2O	54.51	54.84
insol.	0.08	
Total	98.94	100.00

(1) Schellgaden, Austria. (2) $Mg(PO_3OH)\cdot 7H_2O$.

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 ($MgHPO_4\cdot 7H_2O$) 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.