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Structural Study and Properties of a New Iron Phosphate $Rb_9Fe_7(PO_4)_{10}$. — A single crystal of the new title compound is synthesized in a flux of $Rb_2Mo_2O_7$ from a starting mixture of Rb_2CO_3, $Fe(NO_3)_3$, $(NH_4)_2HPO_4$, and MoO_3 (Pt crucible, 473, 673, and 873 K for 24 h at each temperature). $Rb_9Fe_7(PO_4)_{10}$ is characterized by single crystal XRD, Moessbauer spectroscopy, and magnetic susceptibility measurements. It crystallizes in the monoclinic space group $P2_1/a$ with Z = 2. The three-dimensional framework is formed by isolated FeO_6 octahedra, FeO_5 bipyramids, and Fe_2O_{10} units linked by phosphate tetrahedra to form large intersecting tunnels. The compound exhibits antiferromagnetic ordering below 19 K and paramagnetic behavior in the range 50—300 K. — (HIDOURI*, M.; WATTIAUX, A.; LOPEZ, M. L.; PICO, C.; AMARA, M. B.; J. Alloys Compd. 506 (2010) 2, 569-574, DOI:10.1016/j.jallcom.2010.07.089 ; UR Materiaux Inorg., Fac. Sci., 5019 Monastir, Tunisia; Eng.) — W. Pewestorf