

## The niobium phosphate bronze $K_{5-x}Nb_8P_5O_{34}$ , a new tunnel structure, first member of the series $(K_3Nb_6P_4O_{26})_n \cdot KNb_2PO_8$

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### Publication date

1990/8/1

### Journal

Journal of Solid State Chemistry

### Volume

87

### Issue

2

### Pages

360-365

### Publisher

Academic Press

### Description

A new niobium phosphate bronze  $K_{5-x}Nb_8P_5O_{34}$  has been isolated. The structure of this phase has been determined from a single crystal of composition  $K_4Nb_8P_5O_{34}$  by X-ray diffraction. It crystallizes in the space group  $P2_1c$  with  $a = 13.904(6) \text{ \AA}$ ,  $b = 6.453(3) \text{ \AA}$ ,  $c = 20.64(1) \text{ \AA}$ ,  $\beta = 125.05^\circ(1)$ . This structure consists of  $[Nb_3P_2O_{13}]^\infty$  layers parallel to (100) linked through  $PO_4$  tetrahedra and  $[Nb_2O_{11}]$  units. The structural relationships between this bronze and the other members of the series  $(K_3Nb_6P_4O_{26})_n \cdot KNb_2PO_8$  are discussed. Attention is drawn to the fact that for this particular  $n = 1$  value two structural forms can be expected.