

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

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Publication date

1990/8/1

Journal

Journal of Solid State Chemistry;(USA)

Volume

87

Issue

2

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  $P2/c$  with  $a = 13.904(6)$  {angstrom},  $b = 6.453(3)$  {angstrom},  $c = 20.64(1)$  {angstrom},  $\beta = 125.05$  {degree}(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  $(K_3Nb_6P_4O_{26})_n$   $KNb_2PO_8$  are discussed. Attention is drawn to the fact that for this particular  $n = 1$  value two structural forms can be expected.