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CRYSTAL STRUCTURES OF DOUBLE TETRAMETAPHOSPHATES $Li_2Mn(PO_3)_4$

M.S. Slobodyanik*, P.G. Nagorny*, O.M. Zaslavsky,**

O.V. Petrenco*, R.S. Boyko, R.V. Lavryk****

*** Taras Shevchenko National University of Kyiv**

****National University of Life and Environmental Sciences of Ukraine**

The progress of inorganic chemistry is syntheses of new phosphates. We learned of structure of new double phosphate $Li_2Mn(PO_3)_4$ by RSA methods. This phosphate is obtained from lows of systems Li_2O-P_2O_5.

RSA of white crystals ortorombic gabitus with parametrs 0,2x0,019x0,2 mm study on difractometr "Siemens P3/PC" in carbon monocromator. Structure of $Li_2Mn(PO_3)_4$ is ortor. syng., Pnma, parametrs of frame: a=9,268(1), b=9,421(1), c=10,088(1) A, V=880,9 A^3, Z=4, $\rho cal.$=2,901 g/sm^3.

The atomic coordinates of were used as starting parameters for structure refinements. The Mn cations were placed in the M(5) site. Alkali metal cations were placed in the M(4) site as it was obtained. The structure refinements in these models gave a good agreement between the observed and calculated patterns and reasonable values of isotropic thermal atomic parameters for all cations. Final plots of observed electron density maps did not show residual peaks.

The polyedrs $[MnO_6]$ have two equivalent bonds Mn-O(4) and Mn-O(5) with long 2,261 A and 2,198 A. All atoms of oxygen of polyedres $[MnO_6]$ have contacts with four tetraedrs $P(2)O_4$ through atoms O(5) and O(4), with tetraedrs $P(1)O_4$ and $P(3)O_4$ through atoms O(7) and O(8).