

# Synthesis and characterization of pyridine-3-carboxylic acid hexamolybdochromate (C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub>)<sub>2</sub>[H<sub>3</sub>O]<sub>4</sub>[CrMo<sub>6</sub>O<sub>18</sub>(OH)<sub>6</sub>]·4H<sub>2</sub>O

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## Abstract

The Chemistry of heteropoly compounds (HPC) is one of the modern direction of Coordination chemistry. In current times, the high importance in the development of HPC chemistry is the synthesis of new hybrid, organic-inorganic heteropolystructures with preassigned physicochemical properties as well as the determination of common factors of change in these properties depending on the composition and structure. The X-ray diffraction study of the obtained compounds has showed that the packing of molecules into crystals is carried out with the formation of through channels along the c axis, which can play a significant role, for example, during catalytic processes. The ability of natural nicotinic acid to form complexes with heteropolyanion [CrMo<sub>6</sub>(OH)<sub>6</sub>O<sub>18</sub>]<sup>4-</sup> is known. The high biological activity of nicotinic acid, as well as the activity of a number of polymetallates to the suppression of certain types of viruses which was described in the literature, make it possible to consider hybrid materials based on these substances promising from the point of view of the consciousness of new pharmaceuticals. Based on this data, we have synthesized pyridine-3-carboxylic acid hexamolybdochromate of composition (C<sub>6</sub>H<sub>5</sub>NO<sub>2</sub>)<sub>2</sub>[H<sub>3</sub>O]<sub>4</sub>[CrMo<sub>6</sub>O<sub>18</sub>(OH)<sub>6</sub>]·4H<sub>2</sub>O. The compound was studied by chemical, X-ray diffraction, thermogravimetric, NMR and IR spectroscopic methods of analysis. It is established that the synthesized compound crystallizes in triclinic syngony with unit cell parameters: a = 9.1640(8)Å, b = 10.6441(11)Å, c = 10.8241(12)Å; α = 95.968(10)°, β = 109.864(12)°, γ = 105.059(11)°; ρ<sub>calc</sub> = 2.502 g/cm<sup>3</sup>, V = 937.2(2) Å<sup>3</sup>; Z = 1.

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