

One-dimensional copper(II) compound with a double out-of-plane carboxylato-bridge- another polymorphic form of Cu(pyridine-2-carboxylate)₂.

Autorzy

Bogumiła Żurowska

Jerzy Mroziński

Zbigniew Ciunik

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Streszczenie

The crystal and molecular structure of a blue-violet copper(II) compound of the formula Cu(2-pic)₂ (2-pic = 2-picolinate or pyridine-2-carboxylate ion) was determined. Its structure consists of a copper atom lying in the centre of symmetry, *trans* square-planar coordinated via two pyridine nitrogens and the carboxylate oxygen atoms of the two picolinate anions. The bonding interaction between the copper and the oxygen of carboxylate atoms of neighboring planes completes the square-planar coordination to a strongly tetragonally distorted octahedral stereochemistry chromophore), when long axial Cu–O bond distances are included. This intermolecular interaction, with the Cu···Cu distance of 5.163 Å, is weak, but permits to define the structure as a one-dimensional chain with a double out-of-plane carboxylate bridge. The magnetic behavior of the compound can be explained as a result of magnetic exchange within the chain through long Cu–O axial bonds ($J = -0.73 \text{ cm}^{-1}$) and a superexchange pathway through the hydrogen bond network between adjacent molecules ($zJ' = -0.06 \text{ cm}^{-1}$). The magnitude and the nature of the exchange coupling are explained on the basis of the structural data results.

Słowa kluczowe

Copper(II), Pyridinecarboxylate, Structure, Magnetism

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