

Synthesis and properties of iron (II) quinoline-2-carboxylates, crystal structure of *trans*-diaquabis(quinoline-2-carboxylato)iron (II) bis(dichloromethane) solvate.

Autorzy

Danuta Dobrzyńska

Lucjan B. Jerzykiewicz

Marek Duczmal

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Streszczenie

Two mononuclear iron complexes with the quinoline-2-carboxylate ion (quin-2-c ion) have been obtained by the reaction of iron powder with quinoline-2-carboxylic acid in dichloromethane. The compounds $[\text{Fe}(\text{quin-2-c})_2]$ (**1**), $[\text{Fe}(\text{quin-2-c})_2(\text{H}_2\text{O})_2] \cdot 2\text{CH}_2\text{Cl}_2$ (**2**) and $[\text{Fe}(\text{quin-2-c})_2(\text{H}_2\text{O})_2] \cdot 2\text{EtOH} \cdot 2\text{H}_2\text{O}$ (**3**) have been investigated by IR and UV–Vis spectroscopy, magnetic susceptibility and field-dependent magnetization measurements. The structure of **2** has been characterised by X-ray diffraction. The 2D bilayered frameworks of **2** and **3** are constructed by extensive hydrogen bonding interactions between water and the organic ligand coordinated to iron (II). The magnetic properties of **2** and **3** were interpreted on the basis of a spin Hamiltonian that included axial and rhombic crystal field components. The weak antiferromagnetic (**2**) and ferromagnetic (**3**) interactions are evident in the low temperature data and possibly occur via strong hydrogen bonds.

Słowa kluczowe

Iron (II) complexes, Crystal structure, Magnetic properties, Hydrogen bonds

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