New Coordination Polymers Based on Transition Metal Squarates and Pyrazine Ligands

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Three new coordination polymers have been prepared by hydrothermal reaction of squaric acid, pyrazine and the metal halides $FeCl_2 \cdot 4\,H_2O$, $CoBr_2$ and $NiBr_2$. In their crystal structures the metal atoms are coordinated by four water molecules and two pyrazine ligands within slightly distorted octahedra. The pyrazine ligands connect the metal atoms *via* μ-N,N'-coordination to linear chains which are connected via hydrogen bonding. The squarate dianions are not coordinated to the metal atoms and are located between the chains. The thermal behaviour of all compounds was investigated using TG-DTA-MS measurements. A complex behaviour for all compounds is found and the decomposition temperatures increase from Fe to Ni. From these investigations there are no hints for the occurrence of stoichiometric intermediate compounds.

Key words: Coordination Polymers, Transition Metal Squarates, Crystal Structures, Thermoanalysis