A New 1D Coordination Polymer Constructed From a Dissymmetrical Oxamidate Ligand: Structure and Magnetic Properties

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An e wc o m p l e x \( \{ \left\{ \left\{ \left\{ \mathrm{Cu(oxbe)} \right\} \mathrm{Cu(tmen)} \right\} \right\} _2 \cdot 2\mathrm{ClO}_4 \} _n \) (\( \mathrm{H}_3\mathrm{oxbe} = \mathrm{N}-\mathrm{benzoato}-\mathrm{N'}-(2\text{-aminoethyl})\text{-oxamido} \), \( \mathrm{tmen} = \mathrm{N},\mathrm{N},\mathrm{N'},\mathrm{N'}\text{-tetramethylethylene diamine} \)) has been synthesized and characterized by IR spectroscopy, elemental analysis, and single-crystal X-ray diffraction, and by its magnetic properties. It crystallizes in the triclinic system, space group \( \overline{P}1 \), with \( a = 1.364(2), b = 1.379(2), c = 1.516(3) \) nm, \( \alpha = 64.402(3), \beta = 66.098(3), \gamma = 89.604(3) \)°, \( V = 2.301(7) \) nm\(^3\), \( Z = 2 \), \( D_{\text{calc}} = 1.71 \) g cm\(^{-3}\). The structure of \( I \) consists of tetracationic units. Through syn-anti carboxylate bridges, the complex features a chain structure.

**Key words:** Oxamidate Ligand, Crystal Structure, Magnetic Property