Synthesis, Characterization and Crystal Structure of a Binuclear Cadmium Iodide Complex with a Multi-\(N\)-donor Oxazolidine Ligand

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The ligand, 2-(2-(pyridin-2-yl)oxazolidin-3-yl)-\(N\)-(pyridin-2-ylmethylene)ethanamine, POPME, was prepared via microwave-supported Schiff base and oxazolidination reactions. The cadmium iodide complex \([\text{Cd}_{2}(\text{POPME})(\mu-\text{I})_{2}\text{I}_{2}]\) was prepared and identified by elemental analysis, IR, Raman and \(^1\text{H}\) and \(^{13}\text{C}\) NMR spectroscopy and single-crystal X-ray diffraction. In the crystal structure two Cd(II) ions with coordination numbers four and six are bridged by two iodide anions. Cd1 and Cd2 have distorted octahedral CdI\(_2\)N\(_4\) and tetrahedral CdI\(_4\) geometries, respectively. Weak intermolecular hydrogen bonds H···I and H···O stabilize the supramolecular network.

Key words: X-Ray Crystal Structure, Cadmium, Oxazolidine Ligand, Bridging Iodide