

Molecular tectonics: P-H-thiacalix[4]arene pyridyl appended positional isomers as tectons for the formation of 1D and 2D mercury coordination networks

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Abstract

Three p-H-thiacalix[4]arene pyridyl appended coordinating tectons (2-4) in a 1,3-alternate conformation have been prepared and structurally characterised in the solid state. These compounds are positional isomers differing only by the position of the nitrogen atom on the pyridyl ring. Their combinations with HgCl₂ lead to the formation of 1- and 2-D neutral mercury coordination networks. Whereas for tecton 2 (ortho isomer) a 2D architecture resulting from the bridging of consecutive tectons by the mononuclear HgCl₂ unit is obtained, for tecton 3 (meta isomer) again a 2D network is formed. However, in that case, the interconnection of consecutive organic tectons 3 takes place through a binuclear Hg₂Cl₄ species. Finally, in the case of tecton 4 (para position), a 1D ribbon type double chain arrangement resulting from the bridging of consecutive tectons by trinuclear Hg₃Cl₆ units followed by the interconnection of two chains through the fusion of the trinuclear centres into a hexanuclear node is observed. © The Royal Society of Chemistry 2013.

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