

# Komplexe zweier vierzehngliedriger Tetraazadibenzo-Makrocyclen. Strukturen eines freien Liganden und von Nickel(II)-, Kupfer(II)- und Zink(II)-Komplexen

Complexes of Two 14-Membered N<sub>4</sub> Dibenzo Macrocycles.

Crystal Structures of a Free Ligand and of Nickel(II), Copper(II) and Zinc(II) Complexes

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Macrocyclic N<sub>4</sub>-Donor Ligands, Transition Metal Complexes, Crystal Structure

The syntheses and structural characterizations of complexes of two 14-membered macrocyclic *trans*-N<sub>4</sub> dibenzo ligands, 5,7,8,9,14,16,17,18-octahydrodibenzo[e,l]-[1,4,8,11]-tetraazacyclotetradecine-6,15-dimethyl (L<sup>3</sup>) resp. -6,15-diacetamide (L<sup>4</sup>), are presented. The crystal structures of five compounds have been determined by single crystal X-ray diffraction. The free ligand L<sup>3</sup> has a saddle-shaped structure with intramolecular hydrogen bonds. This conformation of the ligand exists also in the Zn(II) complex in which the metal ion is five-coordinated with the metal center outside the cavity. The coordination polyhedron is intermediate between a trigonal bipyramid and a square pyramid. In *cis*-[Ni(L<sup>3</sup>)(NCS)<sub>2</sub>] the ligand is folded along an N···N axis. The nickel ion in this complex shows an approximate octahedral geometry. For Ni(II) and Cu(II) complexes of ligand L<sup>4</sup> the overall geometry is also distorted octahedral. The folding of the ligand causes a *cis*-N<sub>4</sub>O<sub>2</sub> coordination.

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