Solubility of *d*-Element Salts in Organic and Aqueous–Organic Solvents: VII.[1] Structure of Nickel Chloride Solvatocomplexes

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Abstract—Four complexes $[Ni(DMA)_2(H_2O)_4]Cl_2 \cdot 2H_2O$, $[Ni(DMF)_2(H_2O)_4]Cl_2 \cdot 2H_2O$, and $[Ni(DMA)_6][NiCl_4]$, $[Ni(DMF)_2(H_2O)_2Cl_2]$ were isolated from ternary water-organic saline systems containing nickel chloride and *N*,*N*-dimethylacetamide–water and *N*,*N*-dimethylformamide–water binary solvents. The obtained complexes were studied by X-ray structural analysis. The formation of hydrogen bonds between water molecules of the nickel ion solvate sphere, chloride ions, and non-coordinated water molecules located in the cavity of the crystal structure was detected.

Keywords: nickel chloride solvates, hydrogen bonds, ternary systems, nickel complex compounds

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