Deuteration of methanol slightly increases τ. The presence of the small solvent isotope effect suggests a small component of CTTS character in the luminescence transition.

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Complex Metal Hexachlorostannates with Organic Molecules with Nitrogen Atoms as Donors

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Using donicity [1–3] as a term to reflect the complexing properties of the substances in CCl_4 as solvent, a great number of metal hexachlorostannates could be obtained with different ligands of lower donicity as that of the water [4–6] and higher one [7].

The present paper contains data regarding the preparation of coordination compounds in CCl_4, as solvent, with $SnCl_4$ as chlorine acceptor in Li, Na, K, Rb and Cs as alkalichlorides whose cation has been put to react with organic compounds containing nitrogen donor atom, functioning as ligands that have complexed the metal cation. The general formula of the coordination compounds in solutions is $(ML)_2$-$SnCl_6$, where the ligand L could be trimethyl-amine, dimethyl-amine, n-butyl-amine, ethylene-diamine, tetramethylethylene-diamine, pyridine, 2-methyl-pyridine and quinoline.

As the reactions are strongly exothermic they have been carried out in 1*M*-solutions in CCl_4 referring to each reactant: $SnCl_4$ and the ligand L. The alkali chlorides have been added to the solution of $SnCl_4$ in CCl_4 after the solution of $SnCl_4$ in CCl_4, added slowly, had led to an abundant formation of stable complex precipitates, which have been filtered and washed with CCl_4.

It is interesting to note that an attempt to obtain complexes using CuCl showed that no analogous complexation is achieved and the reaction does not yield a unitary product, while a darkening of the solution to dark blue has been observed, explained through the formation of Cu(II) aminocomplexes.

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Structural-Energetical Aspects of Interreaction in Carbonyl Metal Systems

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Theoretical arguments have so far been based on the earlier unknown facts of the possibility of the tensimetric method with the membrane zero-manometer for the definition of the solubility and thermodynamic properties of the dissolution process. In this report the structures of metal carbonyls are compared with the thermodynamic characteristics of the dissolution process of the same compounds and clusters form of the group elements. The alternation of the characteristic frequencies of M–C and C–O bonds of iron carbonyls gives the possibility to consider that the negative end of dipole moment, the order bond and the dissociation energy of metal carbonyl bond (DM –CO) do not increase practically