

# Dielectric Relaxation Study of Some Solutions Containing $\beta$ -Cyclodextrin and Dimethylsulfoxide

H. Betting and M. Stockhausen

Institut für Physikalische Chemie der Universität Münster, D-48149 Münster (Germany)

Reprint requests to Prof. M. St.; Fax: (+0251) 8323441.

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Dielectric spectra have been measured up to 72 GHz at 20°C for solutions of  $\beta$ -cyclodextrin (CD) in the following solvents over the whole solubility range of CD: dimethylsulfoxide (DMSO), DMSO/1,4-dioxane mixture (2:1 molar ratio), DMSO/water mixtures (2:1 and 1:2). The spectra are analyzed into a sum of Debye type spectral components. These are likely to be caused by different physical processes. The discussion shows (*i*) that there is a preferential CD-DMSO interaction, by far exceeding the CD-water interaction, and (*ii*) that, concerning CD-DMSO, a loose interaction can be distinguished from the formation of an inclusion complex.

*Key words:* Association; Dielectric Spectroscopy; Liquids.