# Acoustic and dielectric properties of propionic acid + amine mixtures.

Autorzy

Kazimierz Orzechowski

Jacek Gliński

U. Kaatze

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Acoustical attenuation measurements between 100 kHz and 2 GHz, complex (dielectric) permittivity measurements between 1 MHz and 40 GHz, as well as various auxiliary measurements (density, viscosity, heat of mixing, optical refractive index) of propionic acid mixtures with amines are reported. The data reveal a complex coupled reaction scheme, involving a variety of hydrogen bonded structures, of proton transfer complexes, and of completely dissociated species. The combined consideration of the data indicates the complexation of an acid molecule with another one or with a propionic acid-amine complex to be likely reflected by a high frequency relaxation term in the acoustical spectra of the mixtures. The additionally existing low frequency acoustical relaxation term is assigned to the formation of a complex from a molecule of base and an acid dimer.

Adres publiczny

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