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Self-association of *cis*-9-octadecen-1-ol in the pure liquid state and in decane solutions as observed by viscosity, self-diffusion, nuclear magnetic resonance, electron spin resonance and near-infrared spectroscopic measurements.

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Streszczenie

The self-association of cis-9-octadecen-1-ol in the pure liquid state and in decane solutions has been studied mainly through near-infrared spectroscopic observation over the temperature range298.—348. 1K. The analysis of the sharp bandat 1410 nm (the first overtone band of OH-stretching vibration mode attributed to free OH-monomer and partly to OH- polymer) leads to a conclusion that the apparent degree of association ,n, of the polymer of cis-9-octadecen-l-ol is 2.37 —3.78 (average2.95) both in the pure liquid state and indecane solutions ;the n value has a tendency to decrease with an increase in temperature. The apparent association constant,K,whichis relatively low, also decreases with an in crease in temperature. The low Kvalue, which means small portions of polymerized molecules,is most likely responsible for the high self-diffusionand the low viscosity of cis-9-octadecen-1 -ol, compared with those of cis-9-octadecennoic acid, existing almost entirely as cyclic dimers.

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