

Interfacial tension and interface phase transitions in two-phase water-long-chained alcohols systems.

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The interfacial tensions of six two-phase systems of water-normal alcohols (number of carbon atoms from 10 to 15) were measured in function of temperature, using the Wilhelmy plate method. In all cases, unusual dependencies of the interfacial tension τ on the temperature T were found. At temperatures close to the melting point of the organic phase, the interfacial tension behaves linearly, with a considerably large, positive slope. A few degrees above the melting point a phase transition occurs, and the dependence $\tau = f(T)$ becomes parabolical, resembling the water-alcohols systems with lower numbers of carbon atoms. The results obtained are interpreted in terms of interface structure and solid-like monolayer formed on the interface.

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