147a Aggregation Properties of Inorganic Electrolyte-Sds-Peg Ternary System

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The aggregation properties of inorganic electrolyte-Sodium Dodecyl Sulfate (SDS)-Polyethyleneglycol (PEG) system was studied by means of surface tension measurement, fluorescence probe method, ultra-filtration and atomic absorption spectrometry in this paper. The results showed: two breakpoints (the first critical concentration c_1 , and the second critical concentration c_2) appeared at the surface tension and ultra-filtration curves of the systems in the presence of monovalent metal salt. It indicated that the soft cluster formed self-motivationally by PEG and the bound micelle of SDS with or without addition of alkali metal sulfate. c_1 decreased from 4.5 mmol.L^{-1} to 0.81 mmol.L^{-1} while c_2 increased slightly with increasing theconcentration of monovalent metal salt c_e. Therefore, the clusterization boundary of SDS-PEG extended. The specific saturation capacity of clusterization [$\square_\infty$] increased with the addition of alkali metal sulfate. Only one breakpoint (*cmc*) showed at the surface tension and ultra-filtration curves of the systems in the presence of bivalent metal inorganic electrolyte. The aggregation number of bound micelle (N_b) of the alkali metal sulfate salt- SDS-PEG system was measured using steady-state fluorescence technique. N_b increased with increasing SDS concentration(c) linearly when c was between c_1 and c_2 - (cmc-c_1), and increased monotonously withincreasing c_e, but decreased with increasing PEG concentration (c_p) because the number of combination points increased with c_p.