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聚醚型非离子型表面活性剂的混合表面膜**I:Triton X-100,Triton X-305**与硬脂酸、十六醇、聚丙二醇的二元混合膜

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摘要 非离子型表面活性剂在乳化、起泡、分散、润湿、洗涤、润滑、防锈、抑制水蒸发等许多重要过程中有着广泛的应用.这些应用的关键往往在于界面膜性质的有效控制.关于非离子型表面活性剂的表面膜虽有过一些研究,但很少注意混合膜的,而实践中涉及的界面膜一般都是混合型的.本文报道Triton X-100. Triton X-305与硬脂酸. 十六醇.聚丙二醇所组成的二元混合物在水面上的单分子膜,并对结果作了初步解释.

关键词 界面 表面活性 聚醚 非离子表面活性剂 单分子膜 单分子层

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Mixed monolayers of polyether-type nonionic surfactants I: Binary mixture of polyoxyethylated i-Octyl phenols with stearic acid, cetyl alcohol and polypropylene glycol

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Abstract Film pressure (p) vs. surface area (a) isotherms were determine at 20?for single and mixed monolayers of Triton X-100 and Triton X-305 with polypropylene glycol (PPG), stearic acid (SA), or cetyl alcohol (CA) on the surface of 40% aqueous NaNO3 equimolar mixtures of TX 100/SA, TX 100/CA, TX 305/SA, and TX305/CA have p-a curves which show small pos. deviations from calculated average curves based on a simple additivity rule. As D. Shah and S. Shiao (1975) suggested, the expansion of mixed monolayers arising from unequal chain length probably is caused by thermal motion of the hydrocarbon chains. Equimolar mixtures of TX100/PPG and TX 305/PPG have p-a curves which show neg. deviations from calculated average curves. A previously proposed model in which the polyethylene glycol chain may be forced to enter the water phase under pressure can explain the results. A simple anal. of the shape of the compression curves of the surfac film indicates that in all these mixed monolayers, the 2 components are miscible on the surface of water.

Key words INTERFACES SURFACE ACTIVITY POLYETHER NON IONIC SURFACTANTS MONOMOLECULAR FILMS MONOLAYER

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