1. Record Nr. UNINA9910143963403321

Autore	Tadros Th. F
Titolo	Applied surfactants [[electronic resource]] : principles and applications / / Tharwat F. Tadros
Pubbl/distr/stampa	Weinheim ; ; [Great Britain], : Wiley-VCH, c2005
ISBN	1-280-51982-7 9786610519828 3-527-60481-2 3-527-60453-7
Descrizione fisica	1 online resource (656 p.)
Disciplina	668.1
Soggetti	Surface active agents Chemistry, Technical
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Applied Surfactants; Contents; Preface; 1 Introduction; 1.1 General Classification of Surface Active Agents; 1.2 Anionic Surfactants; 1.2.1 Carboxylates; 1.2.2 Sulphates; 1.2.3 Sulphonates; 1.2.4 Phosphate-containing Anionic Surfactants; 1.3 Cationic Surfactants; 1.4 Amphoteric (Zwitterionic) Surfactants; 1.5 Nonionic Surfactants; 1.5.1 Alcohol Ethoxylates; 1.5.2 Alkyl Phenol Ethoxylates; 1.5.3 Fatty Acid Ethoxylates; 1.5.4 Sorbitan Esters and Their Ethoxylated Derivatives (Spans and Tweens); 1.5.5 Ethoxylated Fats and Oils; 1.5.6 Amine Ethoxylates 1.5.7 Ethylene Oxide-Propylene Oxide Co-polymers (EO/PO)1.5.8 Surfactants Derived from Mono- and Polysaccharides; 1.6 Speciality Surfactants - Fluorocarbon and Silicone Surfactants; 1.7 Polymeric Surfactants; 1.8 Toxicological and Environmental Aspects of Surfactants; 1.8.1 Dermatological Aspects; 1.8.2 Aquatic Toxicity; 1.8.3 Biodegradability; References; 2 Physical Chemistry of Surfactant Solutions; 2.1 Properties of Solutions of Surface Active Agents; 2.2 Solubility-Temperature Relationship for Surfactants; 2.3 Thermodynamics of Micellization; 2.3.1 Kinetic Aspects 2.3.2 Equilibrium Aspects: Thermodynamics of Micellization2.3.3 Phase

Separation Model; 2.3.4 Mass Action Model; 2.3.5 Enthalpy and Entropy of Micellization; 2.3.6 Driving Force for Micelle Formation; 2.3.7 Micellization in Other Polar Solvents; 2.3.8 Micellization in Non-Polar Solvents; 2.4 Micellization in Surfactant Mixtures (Mixed Micelles); 2.4.1 Surfactant Mixtures with no Net Interaction; 2.4.2 Surfactant Mixtures with a Net Interaction; 2.5 Surfactant-Polymer Interaction; 2.5.1 Factors Influencing the Association Between Surfactant and Polymer; 2.5.2 Interaction Models
2.5.3 Driving Force for Surfactant-Polymer Interaction2.5.4 Structure of Surfactant-Polymer Complexes; 2.5.5 Surfactant-Hydrophobically Modified Polymer Interaction; 2.5.6 Interaction Between Surfactants and Polymers with Opposite Charge (Surfactant-Polyelectrolyte Interaction); References; 3 Phase Behavior of Surfactant Systems; 3.1 Solubility-Temperature Relationship for Ionic Surfactants; 3.2 Surfactant Self-Assembly; 3.3 Structure of Liquid Crystalline Phases; 3.3.1 Hexagonal Phase; 3.3.2 Micellar Cubic Phase; 3.3.3 Lamellar Phase; 3.3.4 Bicontinuous Cubic Phases
3.3.5 Reversed Structures3.4 Experimental Studies of the Phase Behaviour of Surfactants; 3.5 Phase Diagrams of Ionic Surfactants; 3.6 Phase Diagrams of Nonionic Surfactants; References; 4 Adsorption of Surfactants at the Air/Liquid and Liquid/Liquid Interfaces; 4.1 Introduction; 4.2 Adsorption of Surfactants; 4.2.1 Gibbs Adsorption Isotherm; 4.2.2 Equation of State Approach; 4.3 Interfacial Tension Measurements; 4.3.1 Wilhelmy Plate Method; 4.3.2 Pendent Drop Method; 4.3.3 Du Nouy's Ring Method; 4.3.4 Drop Volume (Weight) Method; 4.3.5 Spinning Drop Method; References
5 Adsorption of Surfactants and Polymeric Surfactants at the Solid/Liquid Interface

Sommario/riassunto

While currently available titles either focus on the basics or on very specific subtopics, this text meets the need for a comprehensive survey of surfactants and their properties, with a strong emphasis on applications and their correlation to the fundamentals.The author covers their classification, physical properties, phase behavior, adsorption, effects - such as wetting, spreading and adhesion - as well as industrial applications in personal care and cosmetics, pharmaceuticals, agrochemicals and food products.Professor Tadros is a well-known expert on the topic of surfactants, with