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Nota di contenuto	SURFACTANTS AND INTERFACIAL PHENOMENA; Contents; Preface; 1 Characteristic Features of Surfactants; A Conditions Under Which Interfacial Phenomena and Surfactants Become Significant; B General Structural Features and Behavior of Surfactants; 1 General Use of Charge Types; 2 General Effects of the Nature of the Hydrophobic Group; I Characteristic Features and Uses of Commercially Available Surfactants; I.A Anionics; 1 Carboxylic Acid Salts; 2 Sulfonic Acid Salts; 3 Sulfuric Acid Ester Salts; 4 Phosphoric and Polyphosphoric Acid Esters; 5 Fluorinated Anionics; I.B Cationics 1 Long-Chain Amines and Their Salts2 Acylated Diamines and Polyamines and Their Salts; 3 Quaternary Ammonium Salts; 4 Polyoxyethylenated (POE) Long-Chain Amines; 5 Quaternized POE Long-Chain Amines; 6 Amine Oxides; I.C Nonionics; 1 POE Alkylphenols, Alkylphenol "Ethoxylates"; 2 POE Straight-Chain Alcohols, Alcohol "Ethoxylates"; 3 POE Polyoxypropylene glycols; 4 POE Mercaptans; 5 Long-Chain Carboxylic Acid Esters; 6 Alkanolamine "Condensates," Alkanolamides; 7 Tertiary Acetylenic Glycols and Their "Ethoxylates"; 8 POE Silicones; 9 N-Alkylpyrrolidones; 10 Alkylpolyglycosides

I.D Zwitterionics1 pH-Sensitive Zwitterionics; 2 pH-Insensitive Zwitterionics; I.E Newer Surfactants Based Upon Renewable Raw Materials; 1 a-Sulfofatty Acid Methyl Esters (SME); 2 Acylated Aminoacids; 3 N-Acyl L-Glutamates (AG); 4 N-Acyl Glycinates; 5 N-Acyl DL-Alaninates; 6 Other Acylated Aminoacids; 7 Nopol Alkoxylates; II Environmental Effects of Surfactants; II.A Surfactant Biodegradability; II. B Surfactant Toxicity To and Bioconcentration in Marine Organisms; III Some Useful Generalizations; References; Problems
2 Adsorption of Surface-Active Agents at Interfaces: The Electrical Double LayerI The Electrical Double Layer; II Adsorption at the Solid-Liquid Interface; II.A Mechanisms of Adsorption and Aggregation; II.B Adsorption Isotherms; 1 The Langmuir Adsorption Isotherm; II.C Adsorption from Aqueous Solution Onto Adsorbents with Strongly Charged Sites; 1 Ionic Surfactants; 2 Nonionic Surfactants; 3 pH Change; 4 Ionic Strength; 5 Temperature; II.D Adsorption from Aqueous Solution Onto Nonpolar, Hydrophobic Adsorbents
II.E Adsorption from Aqueous Solution Onto Polar Adsorbents without Strongly Charged SitesII.F Effects of Adsorption from Aqueous Solution on the Surface Properties of the Solid Adsorbent; 1 Substrates with Strongly Charged Sites; 2 Nonpolar Adsorbents; II.G Adsorption from Nonaqueous Solution; II.H Determination of the Specific Surface Areas of Solids; III Adsorption at the Liquid-Gas (L/G) and Liquid-Liquid (L/L) Interfaces; III.A The Gibbs Adsorption Equation; III.B Calculation of Surface Concentrations and Area per Molecule at the Interface By Use of the Gibbs Equation
III.C Effectiveness of Adsorption at the L/G and L/L Interfaces

Sommario/riassunto

This book is the premier text on the properties and applications of surfactants. The third edition is completely updated and revised, including new information on gemini surfactants (a new type of powerful surfactant), superspreading (or superwetting) by aqueous surfactant solutions of highly hydrophobic surfaces (important in agricultural applications), and dynamic surface tension (an important interfacial property not covered in the first two editions).* Clearly explains the mechanisms by which surfactants operate in interfacial processes* Uses a minimum of mathematics in explanation