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Equilibrium; Chapter 7. Countercurrent Flow with Recycle; 7.1 Constant Flow Rates; 7.2 Analogy with Wetted-Wall Distillation; 7.3 Integration of the Fundamental Rate Equations; Chapter 8. Membrane Reactors; Symbols; Appendices: Data and Spreadsheet Calculations; 1 Representative Membrane Permeabilities and Selectivities; 2 Membrane Permeation Relationships
3 Single-Stage Membrane Separations
4 Multistage Membrane Separations; 5 Differential Permeation with Point Permeate Withdrawal; 6 Differential Permeation with Permeate Flow; 7 Countercurrent Flow with Recycle; 8 Membrane Reactors; Index

Sommario/riassunto

The petroleum, natural gas, and the chemical & petrochemical process industries, variously require the separation of mixtures -- whether of raw feedstream materials, reactants, intermediates, or products -- as comprising gases, liquids, or solutions. Membrane separations add another weapon to the arsenal of separation methods, including the upgrading of subquality natural gas reserves. This book furnishes the necessary derivations and calculations for numerically predicting the separations that can be obtained, based on the known respective membrane permeabilities of the pure components. A ver
