1. Record Nr. UNINA9911020161903321

Autore	Meyer Veronika
Titolo	Practical high-performance liquid chromatography / / Veronika R. Meyer
Pubbl/distr/stampa	Hoboken, N.J., : Wiley, 2010
ISBN	1-118-68134-7 1-282-55055-1 9786612550553 0-470-68842-4 0-470-68843-2
Edizione	[5th ed.]
Descrizione fisica	1 online resource (428 p.)
Disciplina	543.84 543/.84
Soggetti	High performance liquid chromatography Liquid chromatography
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes indexes.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Practical High-Performance Liquid Chromatography; Contents; Preface to the Fifth Edition; Important and Useful Equations for HPLC; 1 Introduction; 1.1 HPLC: A POWERFUL SEPARATION METHOD; 1.2 A FIRST HPLC EXPERIMENT; 1.3 LIQUID CHROMATOGRAPHIC SEPARATION MODES; 1.4 THE HPLC INSTRUMENT; 1.5 SAFETY IN THE HPLC LABORATORY; 1.6 COMPARISON BETWEEN HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY AND GAS CHROMATOGRAPHY; 1.7 COMPARISON BETWEEN HIGH-PERFORMANCE LIQUID CHROMATOGRAPHY AND CAPILLARY ELECTROPHORESIS; 1.8 UNITS FOR PRESSURE, LENGTH AND VISCOSITY; 1.9 SCIENTIFIC JOURNALS; 1.10 RECOMMENDED BOOKS 2 Theoretical Principles2.1 THE CHROMATOGRAPHIC PROCESS; 2.2 BAND BROADENING; 2.3 THE CHROMATOGRAM AND ITS PURPORT; 2.4 GRAPHICAL REPRESENTATION OF PEAK PAIRS WITH DIFFERENT DEGREE OF RESOLUTION; 2.5 FACTORS AFFECTING RESOLUTION; 2.6 EXTRA-COLUMN VOLUMES (DEAD VOLUMES); 2.7 TAILING; 2.8 PEAK CAPACITY AND STATISTICAL RESOLUTION PROBABILITY; 2.9 EFFECTS OF TEMPERATURE IN HPLC; 2.10 THE LIMITS OF HPLC; 2.11 HOW TO

OBTAIN PEAK CAPACITY; 3 Pumps; 3.1 GENERAL REQUIREMENTS; 3.2 THE SHORT-STROKE PISTON PUMP; 3.3 MAINTENANCE AND REPAIR; 3.4 OTHER PUMP DESIGNS
4 Preparation of Equipment up to Sample Injection4.1 SELECTION OF THE MOBILE PHASE; 4.2 PREPARATION OF THE MOBILE PHASE; 4.3 GRADIENT SYSTEMS; 4.4 CAPILLARY TUBING; 4.5 FITTINGS; 4.6 SAMPLE INJECTORS; 4.7 SAMPLE SOLUTION AND SAMPLE VOLUME; 5 Solvent Properties; 5.1 TABLE OF ORGANIC SOLVENTS; 5.2 SOLVENT SELECTIVITY; 5.3 MISCIBILITY; 5.4 BUFFERS; 5.5 SHELF LIFE OF MOBILE PHASES; 5.6 THE MIXING CROSS; 6 Detectors; 6.1 GENERAL; 6.2 UV DETECTORS; 6.3 REFRACTIVE INDEX DETECTORS; 6.4 FLUORESCENCE DETECTORS; 6.5 ELECTROCHEMICAL (AMPEROMETRIC) DETECTORS; 6.6 LIGHT-SCATTERING DETECTORS
6.7 OTHER DETECTORS6.8 MULTIPLE DETECTION; 6.9 INDIRECT DETECTION; 6.10 COUPLING WITH SPECTROSCOPY; 7 Columns and Stationary Phases; 7.1 COLUMNS FOR HPLC; 7.2 PRECOLUMNS; 7.3 GENERAL PROPERTIES OF STATIONARY PHASES; 7.4 SILICA; 7.5 CHEMICALLY MODIFIED SILICA; 7.6 STYRENE-DIVINYLBENZENE; 7.7 SOME OTHER STATIONARY PHASES; 7.8 COLUMN CARE AND REGENERATION; 8 HPLC Column Tests; 8.1 SIMPLE TESTS FOR HPLC COLUMNS; 8.2 DETERMINATION OF PARTICLE SIZE; 8.3 DETERMINATION OF BREAKTHROUGH TIME; 8.4 THE TEST MIXTURE; 8.5 DIMENSIONLESS PARAMETERS FOR HPLC COLUMN CHARACTERIZATION
8.6 THE VAN DEEMTER EQUATION FROM REDUCED PARAMETERS AND ITS USE IN COLUMN DIAGNOSIS8.7 VAN DEEMTER CURVES AND OTHER COHERENCES; 8.8 DIFFUSION COEFFICIENTS; 9 Adsorption Chromatography: Normal-Phase Chromatography; 9.1 WHAT IS ADSORPTION?; 9.2 THE ELUOTROPIC SERIES; 9.3 SELECTIVITY PROPERTIES OF THE MOBILE PHASE; 9.4 CHOICE AND OPTIMIZATION OF THE MOBILE PHASE; 9.5 APPLICATIONS; 10 Reversed-Phase Chromatography; 10.1 PRINCIPLE; 10.2 MOBILE PHASES IN REVERSED-PHASE CHROMATOGRAPHY; 10.3 SOLVENT SELECTIVITY AND STRENGTH; 10.4 STATIONARY PHASES
10.5 METHOD DEVELOPMENT IN REVERSED-PHASE CHROMATOGRAPHY

Sommario/riassunto

Jump into the HPLC adventure! Three decades on from publication of the 1st German edition of Veronika Meyer's book on HPLC, this classic text remains one of the few titles available on general HPLC aimed at practitioners. New sections on the following topics have been included in this fifth edition:Comparison of HPLC with capillary electrophoresisHow to obtain peak capacityvan Deemter curves and other coherencesHydrophilic interaction chromatographyMethod transferComprehensive two-dimensional HPLCFast separations at 1000 ba