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Nota di contenuto	COLUMNS FOR GAS CHROMATOGRAPHY; CONTENTS; Preface; Acknowledgments; 1 Introduction; 1.1 Evolution of Gas Chromatographic Columns; 1.2 Central Role Played by the Column; 1.3 Justification for Column Selection and Care; 1.4 Literature on Gas Chromatographic Columns; 1.5 Gas Chromatographic Resources on the Internet; References; 2 Packed Column Gas Chromatography; 2.1 Introduction; 2.2 Solid Supports and Adsorbents; Supports for Gas-Liquid Chromatography; Adsorbents for Gas-Solid Chromatography; 2.3 Stationary Phases; Requirements of a Stationary Phase; USP Designation of Stationary Phases Kovats Retention IndexMcReynolds and Rohrschneider Classifications of Stationary Phases; Evaluation of Column Operation; Optimization of Packed Column Separations; 2.4 Column Preparation; Coating Methods; Tubing Materials and Dimensions; Glass Wool Plugs and Column Fittings; Filling the Column; Conditioning the Column and Column

Care; 2.5 United States Pharmacopeia and National Formulary Chromatographic Methods; References; 3 Capillary Column Gas Chromatography; 3.1 Introduction; Significance and Impact of Capillary Gas Chromatography
Chronology of Achievements in Capillary Gas ChromatographyComparison of Packed and Capillary Columns; 3.2 Capillary Column Technology; Capillary Column Materials; Fused Silica and Other Glasses; Extrusion of a Fused-Silica Capillary Column; Aluminum-Clad Fused-Silica Capillary Columns; Fused-Silica-Lined Stainless Steel Capillary Columns; 3.3 Preparation of Fused-Silica Capillary Columns; Silanol Deactivation Procedures; Static Coating of Capillary Columns; Capillary Cages; Test Mixtures for Monitoring Column Performance; Diagnostic Role Played by Components of Test Mixtures
3.4 Chromatographic Performance of Capillary ColumnsGolay Equation Versus the van Deemter Expression; Choice of Carrier Gas; Measurement of Linear Velocity and Flow Rate; Effect of Carrier Gas Viscosity on Linear Velocity; Phase Ratio; Coating Efficiency; 3.5 Stationary-Phase Selection for Capillary Gas Chromatography; Requirements; History; Comparison of Columns from Manufacturers; Polysiloxane Phases; Polyethylene Glycol Phases; Cross-Linked Versus Chemically Bonded Phase; Chemical Bonding; MS-Grade Phases Versus Polysilarylene or Polysilphenylene Phases; Sol-Gel Stationary Phases Phenylpolycarborane-Siloxane Phases3.6 Specialty Columns; EPA Methods; Chiral Stationary Phases; Gas-Solid Adsorption Capillary Columns: PLOT Columns; 3.7 Capillary Column Selection; Practical Considerations of Column Diameter, Film Thickness, and Column Length; Capillary Columns of 0.53 mm i.d.: Megabore Columns; Correlation of Column Dimensions and Film Thickness with Parameters in the Fundamental Resolution Equation; Column Selection for Gas Chromatography by Specifications; 3.8 Column Installation and Care; Carrier Gas Purifiers; Ferrule Materials and Fittings; Column Installation Column Conditioning

Sommario/riassunto

Choosing the right column is key in Gas Chromatography Gas Chromatography (GC) is the most widely used method for separating and analyzing a wide variety of organic compounds and gases. There have been many recent advancements in both packed column and capillary column GC. With numerous options and considerations, selecting the right column can be complicated. This resource provides essential guidance for scientists and technicians, including:Methods of choosing both capillary and packed columnsSelection of dimensions (column length, I.D., film thickness, etc.) and type of column