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Nota di contenuto	 Split and Splitless Injection for Quantitative Gas Chromatography; Contents; A Syringe Injection into Hot Vaporizing Chambers; 1. Introduction; 1.1. Syringe Injection; 1.2. Sample Evaporation inside the Needle; 1.2.1. Inaccurate Sample Volume; 1.2.2. Discrimination against High Boilers; 1.2.3. Poor Reproducibility; 1.2.4. Degradation of Labile Solutes; 1.3. Conclusions; 1.3.1. Fast Autosampler?; 1.3.2. Suppressing Evaporation inside the Needle; 1.3.3. Thermospray; 2 . Syringes; 2.1. Plunger-in-Barrel Syringes; 2.1.1. Plungers; 2.1.2. Plunger Guides; 2.2. Plunger-in-Needle Syringes 2.3. Syringe Needles2.3.1. Dimensions; 2.3.2. Needle Tips; 2.3.3. Fixed versus Removable Needles; 2.4. Cleaning of Syringes; 2.4.1. Basic Rules; 2.4.2. Cleaning Procedures; 2.4.3. Plugged Needles; 2.4.4. Blocked Plungers; 3 . Evaporation Inside the Needle; 3.1. The Three- Step Model; 3.2. Models of Evaporation inside the Needle; 3.2.1.

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	 3.2.3. Ejection from the Needle; 3.3. Conclusions Regarding Optimized Injection; 4 . How Much is Really Injected?; 4.1. Interpretations of ""Sample Volume"" 4.2. Communicating ""Sample Volumes"4.3. Effects on Quantitative Analysis; 5 . Syringe Needle Handling Minimizing Discrimination; 5.1. Definitions of Techniques; 5.2. Experimental Determination of Losses in the Needle; 5.2.1. Method with Two Instruments; 5.2.2. Experiment with a Single Instrument; 5.2.3. Test During Routine Analysis; 5.3. Comparison of Needle Handling Techniques; 5.3.1. Filled Needle Injection; 5.3.2. Slow Injection; 5.3.3. Cool Needle Injection; 5.3.4. Hot Needle Injection; 5.3.5. Solvent Flush Injection; 5.3.6. Air Plug Injection; 5.3.7. Sandwich Injection 5.4. Heating the Needle after Injection?5.5. Effect of Injecting Air; 5.5.1. Concerns Regarding the Column; 5.5.2. Detectors; 5.5.3. Oxidized Sample; 6 . Dependence of Discrimination on Sample Volume; 6.1. Experimental Results; 6.2. Discussion of Mechanism; 6.3. Conclusions; 7 . Solvent and Solutes; 7.1. Volatility of the Solvent; 7.2. Type of Solute; 7.3. Adsorption in the Syringe Needle; 7.4. ""Memory Effects"" Arising from the Syringe; 8 . Injector Temperature; 8.1. Imposed Temperature; 8.2. Temperature Gradient Towards the Septum; 8.2.1. Critical Rear of Needle 8.2.2. Actual Temperature Profiles8.2.3. Effect on Discrimination; 8.2.4. Quantitative Results Differing from One Injector to Another; 8.2.5. Conclusions; 8.3. Themostability of Septa; 8.3.1. Upper Temperature Limit; 8.3.2. Some Tips; 9 . Plunger-in-Needle Syringes; 9.1. Accuracy of Sample Volume; 9.2. Premature Explusion; 10 . Possibilities of Avoiding Evaporation in the Needle; 10.1. High Boiling Sample Matrix; 10.1.1. Injector Temperature versus Solvent Boiling Point; 10.1.2. Practical Aspects; 10.2. Cooled Septum; 10.3. Cooled Needle Technique; 10.4. Fast Injection by Autosampler 10.5. Evaporation in the Injector
Sommario/riassunto	This comprehensive and unique handbook of split and splitless injection techniques has been completely revised and updated. This new edition offers:- New insights concerning sample evaporation in the injector- Information about matrix effects- A new chapter on injector designThe real processes within the injector are for the first time visualized and explained by the CD-ROM included in the book. Furthermore the reader will understand the concepts of injection techniques and get a knowledge of the sources of error. The handbook also includes many practical guidelines.