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3.3.6 Influence of Operating Conditions on Sublimation Kinetics3.4 Product Quality and Stability During Drying and Storage; 3.4.1 Product Quality and Formulation; 3.4.2 Product Quality and Polymorphism; 3.5 Conclusions; References; 4 In-Line Product Quality Control of Pharmaceuticals In Freeze-Drying Processes; 4.1 Introduction; 4.2 Control of the Freezing Step; 4.3 Monitoring of the Primary Drying; 4.3.1 Monitoring of Single Vials; 4.3.2 Monitoring of a Group of Vials; 4.3.3 Monitoring of the Whole Batch; 4.3.3.1 Detection of the Endpoint of the Primary Drying
4.3.3.2 Monitoring the Primary Drying Using the Measurement of the Sublimation Flux

Sommario/riassunto

This five-volume series provides a comprehensive overview of all important aspects of modern drying technology, concentrating on the transfer of cutting-edge research results to industrial use.Volume 3 deals with product quality and formulation. Biochemical, physical, and mechanical transformations which can occur during drying are described as well as methods for monitoring product quality such as process analytical technology. The preservation of desired product properties is disucssed in detail for foods and biomaterials, freeze-dried active pharmaceutical ingredients, and highly porous