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Nota di contenuto	Crystallization: Basic Concepts and Industrial Applications; Contents; List of Contributors; 1 Crystallization: Introduction; 2 Mechanisms of Crystallization; 2.1 Crystal Lattice; 2.1.1 Arrangement of Building Blocks and Symmetries; 2.1.2 Unit Cell; 2.1.3 Miller Indices to Describe Crystal Faces; 2.1.4 Lattice Defects; 2.1.5 Equilibrium, Growth, and Dissolution Form of Crystals; 2.1.6 Morphology and Habit; 2.2 Nucleation of Crystals; 2.2.1 Mechanism of Primary Nucleation; 2.2.2 Metastable Zone and Induction Time for Nucleation; 2.2.3 Form Crystallized: Ostwald's Law of Stages 2.3 Growth and Growth Rate of Crystals2.3.1 Kink Position and F, S, and K Faces; 2.3.2 Growth of Ideal Crystals; 2.3.3 Growth of Real Crystals; 2.3.4 Transport Phenomena; Further Reading; 3 Solubility and Solution Equilibria in Crystallization; 3.1 Phase Equilibria and Phase Diagrams: General Issues; 3.1.1 Phases, Phase Rule, and Binary Systems; 3.1.2 Melt and Solution Equilibria; 3.1.3 Thermodynamic Description of SLE: Liquidus Curve in the Phase Diagram; 3.1.4 Phase Diagrams of Ternary and Quaternary Systems; 3.2 Melt Phase Diagrams; 3.2.1 Types of Phase Diagrams and Their Occurrence 3.2.2 Measurement of Melt Phase Diagrams3.2.2.1 Methods; 3.2.2.2 DSC and How to Measure and Interpret DSC Data; 3.2.3 Example of a Diastereomeric System; 3.3 Solution Equilibria; 3.3.1 Solubility and

Concentration Units; 3.3.2 Solubility Curves of Inorganic and Organic Substances; 3.3.2.1 Inorganic Substances; 3.3.2.2 Organic Substances; 3.3.3 Solvates, Polymorphs, and Cocrystals; 3.3.4 Influence of Solvents and Impurities; 3.3.5 Measurement of Solubilities and Corroboration; 3.3.5.1 Ensuring Equilibrium Conditions; 3.3.5.2 Excess Method as a Classical Isothermal Method
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Sommario/riassunto

With its content stemming from tried and tested course notes, this book draws on the expertise from authors based at leading pharmaceutical companies such as Bayer, AstraZeneca and Novartis, as well as leading academic institutions. As such, it represents the perfect blend of theoretical background and application-oriented discussions, including the latest research developments and industrial examples. In the first section, the basic mechanisms are introduced, ensuring an understanding of supersaturation. In addition, the solubility of the substance and its dependences on process conditions
