

1. Record Nr.	UNINA9910782552403321
Titolo	Developing solid oral dosage forms : pharmaceutical theory and practice // executive editors, Yihong Qiu, Yisheng Chen, Geoff G.Z. Zhang ; associate editors, Linong Liu, William R. Porter
Pubbl/distr/stampa	Amsterdam ; ; Boston ; ; London, : Academic, 2009
ISBN	1-282-73750-3 9786612737503 0-08-093272-X
Edizione	[1st ed.]
Descrizione fisica	1 online resource (976 pages)
Altri autori (Persone)	QiuYihong ChenYisheng (Of Novast Laboratories) ZhangGeoff G. Z
Disciplina	615.19
Soggetti	Solid dosage forms Solid dosage forms - Research
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Developing Solid Oral Dosage Forms: Pharmaceutical Theory and Practice; Copyright Page; Contents; List of Contributors; Foreword; PART I: THEORIES AND TECHNIQUES IN THE CHARACTERIZATION OF DRUG SUBSTANCES AND EXCIPIENTS; Chapter 1. Solubility of Pharmaceutical Solids; 1.1 Introduction; 1.1.1 Implication of Solubility in Dosage Form Development; 1.1.2 Basic Concepts of Solubility and Dissolution; 1.2 Thermodynamics of Solutions; 1.2.1 Volume of Mixing; 1.2.2 Enthalpy of Mixing; 1.2.3 Entropy of Mixing; 1.2.4 Free Energy of Mixing; 1.3 Theoretical Estimation of Solubility 1.3.1 Ideal Solutions; 1.3.2 Effect of Crystallinity; 1.3.3 Non-ideal Solutions; 1.3.4 Regular Solution Theory; 1.3.5 Aqueous Solution Theory; 1.3.6 The General Solubility Equation (GSE); 1.4 Solubilization of Drug Candidates; 1.4.1 Solubility Enhancement by pH Control and Salt Formation; 1.4.2 Solubilization Using Complexation; 1.4.3 Solubilization by Cosolvents; 1.4.4 Solubilization by Surfactants (Micellar Solubilization); 1.4.5 Solubilization by Combination of

Approaches; 1.5 Experimental Determination of Solubility; 1.5.1 Stability of Solute and Solvent; 1.5.2 Shakers and Containers 1.5.3 Presence of Excess Undissolved Solute; 1.5.4 Determination of Equilibrium; 1.5.5 Phase-separation; 1.5.6 Determination of Solute Content in the Dissolved Phase; 1.5.7 Experimental Conditions; Chapter 2. Crystalline and Amorphous Solids; 2.1 Introduction; 2.2 Definitions and Categorization of Solids; 2.3 Thermodynamics and Phase Diagrams; 2.3.1 Polymorphs; 2.3.2 Solvates/Hydrates; 2.3.3 Cocrystals; 2.3.4 Amorphous Solids; 2.4 Pharmaceutical Relevance and Implications; 2.4.1 Solubility; 2.4.2 Dissolution Rate and Bioavailability; 2.4.3 Hygroscopicity; 2.4.4 Reactivity and Chemical Stability 2.4.5 Mechanical Properties; 2.5 Transformations Among Solids; 2.5.1 Induced by Heat; 2.5.2 Induced by Vapor; 2.5.3 Induced by Solvents; 2.5.4 Induced by Mechanical Stresses; 2.6 Methods of Generating the Solids; 2.6.1 Through Gas; 2.6.2 Through Liquid; 2.6.3 Through Solid; 2.7 Amorphous Drugs and Solid Dispersions; 2.7.1 Characteristics of Amorphous Phases; 2.7.2 Characteristics of Amorphous Solid Dispersions; 2.7.3 Crystallization of Amorphous Drug and Dispersions; 2.8 Special Topics; 2.8.1 Polymorph Screening and Stable Form Screening; 2.8.2 High Throughput Crystallization 2.8.3 Miniaturization in Crystallization; Chapter 3. Analytical Techniques in Solid-state Characterization; 3.1 Introduction; 3.2 Review of Analytical Techniques and Methods; 3.3 Microscopic Methods; 3.3.1 Optical Microscopy; 3.3.2 Electron Microscopy; 3.4 Thermal Analysis; 3.4.1 Differential Scanning Calorimetry; 3.4.2 Thermogravimetric Analysis; 3.4.3 Microcalorimetry; 3.5 Diffraction Methods; 3.5.1 Single-crystal X-ray Diffraction; 3.5.2 Powder X-ray Diffraction; 3.6 Vibrational Spectroscopy; 3.6.1 Infrared Spectroscopy; 3.6.2 Raman Spectroscopy; 3.6.3 Near-infrared ; 3.7 Solid-State Nuclear Magnetic Resonance Spectroscopy

---

## Sommario/riassunto

This book is intended for pharmaceutical professionals engaged in research and development of oral dosage forms. It covers essential principles of physical pharmacy, biopharmaceutics and industrial pharmacy as well as various aspects of state-of-the-art techniques and approaches in pharmaceutical sciences and technologies along with examples and/or case studies in product development. The objective of this book is to offer updated (or current) knowledge and skills required for rational oral product design and development.

---