Record Nr.	UNISA996206293603316
Titolo	Food mixing [[electronic resource] ] : principles and applications / / edited by P.J. Cullen
Pubbl/distr/stampa	Ames, Iowa, : Blackwell Pub., c2009
ISBN	1-282-37150-9 9786612371509 1-4443-1292-8 1-4443-0988-9
Descrizione fisica	1 online resource (320 p.)
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Disciplina	664 664/.024
Soggetti	Food industry and trade - Mathematical models Mixing - Mathematical models Food mixes
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	Cover; Contents; Contributors; 1 Mixing in the food industry: trends and challenges; 1.1 Role of mixing; 1.2 Design criteria for mixing; 1.3 Specific challenges in food mixing; 1.3.1 Quality assurance compliance through mixing; 1.3.2 Engineering texture through mixing; 1.4 Advances in the science of mixing; 1.5 Book objectives; 2 Mixing fundamentals; 2.1 Introduction; 2.2 Defining mixing; 2.2.1 Macromixing; 2.2.2 Mesomixing; 2.2.3 Micromixing; 2.3 Scale of scrutiny; 2.4 Quantifying mixedness; 2.4.1 Inference of mixing indices; 2.5 Determining the end point of mixing; 2.5.1 Solids mixing 2.5.2 Fluid mixing2.5.3 Multi-phase mixing; 2.5.4 Alternative measures of mixedness in industrial practice; 2.6 Residence time distributions; 2.6.1 Modelling of residence time distributions; 3 Kinematics of flow and mixing mechanisms; 3.1 Introduction; 3.2 Fluid mixing; 3.2.1 Kinematics of fluid flow; 3.2.2 Quantification of flow regimes; 3.2.3 Chaotic advection; 3.2.4 Fluid mixing mechanisms; 3.3 Solids mixing; 3.3.1 Mixing flow in solids; 3.3.2 Solids mixing mechanism; 3.4 Identification of mixing mechanisms; 3.4.1 Solids; 3.4.2 Fluids; 4

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8.2.1 Mass conservation
The mixing of liquids, solids and gases is one of the most common unit operations in the food industry. Mixing increases the homogeneity of a system by reducing non-uniformity or gradients in composition, properties or temperature. Secondary objectives of mixing include control of rates of heat and mass transfer, reactions and structural changes. In food processing applications, additional mixing challenges include sanitary design, complex rheology, desire for continuous processing and the effects of mixing on final product texture and sensory profiles. Mixing ensures delivery of a product wi