

Food Packaging Materiali Tecnologie E Qualit Degli Alimenti

What is the state of current European governance on new and emerging technologies, and where is it going? What is, and what can be, the role of human rights in governance arrangements? These are the main questions that this book answers for both European and non-European scholars. It provides a wide picture of current European governance, notably in biotechnology, nanotechnology and synthetic biology, and discusses the model of Responsible Research and Innovation, which is gaining popularity within the European Union, under a human rights perspective. It shows how human rights can contribute to governance frameworks without posing obstacles to research and innovation. The theory presented in the book is followed by practical guidelines drawn from human rights law. Starting from the Strasbourg Court jurisprudence, it provides a complete review of the wide range of rights that the European Convention on Human Rights protects in light of the challenges of techno-scientific advances. This analysis will come in handy for private actors, policymakers, regulators, as well as judges in solving hard cases raised by techno-scientific progress in the future.

The industrial world consumes millions of kilos of processed food per day. Consistency of taste and texture, standards of raw materials, adherence to health codes, and uniform weights, are established industry specifications. Failure to meet any one of these can result in tons of food destroyed and billions of dollars lost. By the end of the 20th c

The value of the groceries purchases in the USA is over \$500 billion annually, most of which is accounted for by packaged foods. Plastic packaging of foods is not only ubiquitous in developed economies, but increasingly commonplace in the developing world, where plastic packaging is instrumental in decreasing the proportion of the food supply lost to spoilage. This new handbook is a combination of new material and updated chapters, chosen by Dr. Sina Ebnesajjad, from recently published books on this subject. Plastic Films in Food Packaging offers a practical handbook for engineers, scientists and managers working in the food packaging industry, providing a tailor-made package of science and engineering fundamentals, best practice techniques and guidance on new and emerging technologies. By covering materials, design, packaging processes, machinery and waste management together in one book, the authors enable the reader to take a lifecycle approach to food packaging. The Handbook addresses questions related to film grades, types of packages for different types of foods, packaging technologies, machinery and waste management. Additionally the book provides a review of new and emerging technologies. Two chapters cover the development of barrier films for food packaging and the regulatory and safety aspects of food packaging. Essential information and practical guidance for engineers and scientists working at all stages of the food packaging lifecycle: from design through manufacture to recycling Includes key published material on plastic films in food packaging, updated specifically for this Handbook, and new material on the regulatory framework and safety aspects Coverage of materials and applications together in one handbook enables engineers and scientists to make informed design and manufacturing decisions

This book showcases the state of the art in the field of sensors and microsystems, revealing the impressive potential of novel methodologies and technologies. It covers a broad range of aspects, including: bio-, physical and chemical sensors; actuators; micro- and nano-structured materials; mechanisms of interaction and signal transduction; polymers and biomaterials; sensor electronics and instrumentation; analytical microsystems, recognition systems and signal analysis; and sensor networks, as well as manufacturing technologies, environmental, food and biomedical applications. The book gathers a selection of papers presented at the 20th AISEM National Conference on Sensors and Microsystems, held in Naples, Italy in February 2019, the event brought together researchers, end users, technology teams and policy makers.

Large volume food processing and preparation operations have increased the need for improved sanitary practices from processing to consumption. This trend presents a challenge to every employee in the food processing and food preparation industry. Sanitation is an applied science for the attainment of hygienic conditions. Because of increased emphasis on food safety, sanitation is receiving increased attention from those in the food industry. Traditionally, inexperienced employees with few skills who have received little or no training have been delegated sanitation duties. Yet sanitation employees require intensive training. In the past, these employees, including sanitation program managers, have had only limited access to material on this subject. Technical information has been confined primarily to a limited number of training manuals provided by regulatory agencies, industry and association manuals, and recommendations from equipment and cleaning compound firms. Most of this material lacks specific information related to the selection of appropriate cleaning methods, equipment, compounds, and sanitizers for maintaining hygienic conditions in food processing and preparation facilities. The purpose of this text is to provide sanitation information needed to ensure hygienic practices. Sanitation is a broad subject; thus, principles related to contamination, cleaning compounds, sanitizers, and cleaning equipment, and specific directions for applying these principles to attain hygienic conditions in food processing and food preparation are discussed. The discussion starts with the importance of sanitation and also includes regulatory requirements and voluntary sanitation programs including additional and updated information on Hazard Analysis Critical Control Points (HACCP).

La microbiologia predittiva si occupa dello sviluppo di modelli matematici per la crescita, la sopravvivenza e l'inattivazione dei microrganismi negli alimenti. La sua importanza per la valutazione del rischio microbiologico e l'ottimizzazione dei processi dell'industria alimentare è ormai indiscussa e riconosciuta anche dalla normativa comunitaria. Questo manuale – opera di autorevoli specialisti italiani e stranieri – fornisce le basi teoriche e pratiche per la progettazione degli esperimenti, l'analisi dei dati, la formulazione dei modelli e l'interpretazione dei risultati. Dopo aver introdotto i concetti base della modellazione dei fenomeni biologici, il testo presenta le diverse tipologie di modelli. L'ampia trattazione dei modelli primari non si limita ai modelli classici, ma è estesa anche agli approcci più recenti, basati su cinetiche non lineari o probabilistiche. Sono quindi approfonditi i modelli secondari, che descrivono i parametri della crescita al variare di condizioni chimico-fisiche e ambientali. Vengono inoltre descritti i principali modelli terziari, cioè i software e i database disponibili per la microbiologia predittiva. Capitoli specifici sono dedicati all'integrazione dei modelli con i principali fenomeni chimico-fisici rilevanti nelle tecnologie alimentari e all'utilizzo dei modelli nella valutazione quantitativa del rischio, fondamentale per la sicurezza degli alimenti. Conclude il volume una rassegna degli strumenti statistici utilizzati in microbiologia predittiva, integrata da esempi con l'impiego dell'ambiente R per l'analisi statistica. L'opera – diretta a studenti, ricercatori e professionisti – è arricchita da illustrazioni, grafici e tabelle. Il testo è collegato a esercizi e approfondimenti, disponibili on line.

Le attuali dinamiche dei consumi, in generale, e la diffusione dello stile "bio", in particolare, dimostrano che il mercato complessivo alimentare stia evolvendo, caratterizzandosi sempre più di connotazioni legate agli stili di vita ed al benessere. Ciò, negli ultimi anni, ha generato profondi cambiamenti nelle abitudini e negli orientamenti alimentari in ragione proprio dell'affermazione di stili di consumo a forte connotazione emozionale e salutistica. Tale scenario ha stimolato, dunque, un interesse ad indagare gli aspetti differenziali delle abitudini di consumo alimentare, focalizzando l'attenzione sulle determinati e sulle dimensioni dei diversi segmenti del mercato biologico, con particolare riferimento al contesto italiano. Inoltre, a margine dell'analisi condotta, è stata sviluppata una sezione dedicata alle implicazioni di marketing, ovvero a rilevare alcune implicazioni di carattere di strategico-operative, in particolare sugli aspetti identitari, culturali e di comunicazione. Su tale impostazione di fondo, si focalizza il presente lavoro, la

cui finalità riguarda l'analisi delle nuove dimensioni e stili alimentari che caratterizzano i consumatori di cibo biologico. Il lavoro muove, dunque, dalla necessità di interpretare cluster di consumatori differenziali attraverso un'indagine campionaria. La ricerca, pur non ambendo a rappresentatività statistica, rappresenta, comunque, un approfondimento sulla tipologia e sul comportamento dei consumatori di alimenti biologici.

The Interaction of Food Industry and Environment addresses all levels of interaction, paying particular attention to avenues for responsible operational excellence in food production and processing. Written at a scientific level, this book explores many topics relating to the food industry and environment, including environmental management systems, environmental performance evaluation, the correlation between food industry, sustainable diets and environment, environmental regulation on the profitability of sustainable water use in the food industry, lifecycle assessment, green supply chain network design and sustainability, the valorization of food processing waste via biorefineries, food-energy-environment trilemma, wastewater treatment, and much more. Readers will also find valuable information on energy production from food processing waste, packaging and food sustainability, the concept of virtual water in the food industry, water reconditioning and reuse in the food industry, and control of odors in the food industry. This book is a welcomed resource for food scientists and technologists, environmentalists, food and environmental engineers and academics. Addresses the interaction between the food industry and environment at all levels Focuses on the past decade's advances in the field Provides a guide to optimize the current food industry's performance Serves as a resource for anyone dealing with food and environmental science and technology Includes coverage of a variety of topics, including performance indicators, the correlation between the food industry, sustainable diets and the environment, environmental regulations, lifecycle assessments, green supply chain networks, and more

This book is open access under a CC BY 4.0 license. This book presents results relevant in the manufacturing research field, that are mainly aimed at closing the gap between the academic investigation and the industrial application, in collaboration with manufacturing companies. Several hardware and software prototypes represent the key outcome of the scientific contributions that can be grouped into five main areas, representing different perspectives of the factory domain: 1) Evolutionary and reconfigurable factories to cope with dynamic production contexts characterized by evolving demand and technologies, products and processes. 2) Factories for sustainable production, asking for energy efficiency, low environmental impact products and processes, new de-production logics, sustainable logistics. 3) Factories for the People who need new kinds of interactions between production processes, machines, and human beings to offer a more comfortable and stimulating working environment. 4) Factories for customized products that will be more and more tailored to the final user's needs and sold at cost-effective prices. 5) High performance factories to yield the due production while minimizing the inefficiencies caused by failures, management problems, maintenance. This book is primarily targeted to academic researchers and industrial practitioners in the manufacturing domain.

Gas separation membranes offer a number of benefits over other separation technologies, and they play an increasingly important role in reducing the environmental impacts and costs of many industrial processes. This book describes recent and emerging results in membrane gas separation, including highlights of nanoscience and technology, novel polymeric and inorganic membrane materials, new membrane approaches to solve environmental problems e.g. greenhouse gases, aspects of membrane engineering, and recent achievements in industrial gas separation. It includes: Hyperbranched polyimides, amorphous glassy polymers and perfluorinated copolymers Nanocomposite (mixed matrix) membranes Polymeric magnetic membranes Sequestration of CO₂ to reduce global warming Industrial applications of gas separation Developed from sessions of the most recent International Congress on Membranes and Membrane Processes, Membrane Gas Separation gives a snapshot of the current situation, and presents both fundamental results and applied achievements.

This book focuses on the use of food gases in the food industry, their different applications and their role in food processing, packaging and transportation. Since these gases come into contact with food, they must comply with strict labeling, purity and hygiene standards in order to ensure food safety. The book discusses various implications of food gases in the food chain, providing examples of how they can be used to limit food waste and losses. The first two chapters examine the classification and role of food gases in Europe, and the third chapter then explores the chemical and physical features of commonly used food gases in the food and food packing industries. The fourth chapter highlights the impact of food gases on human health due to their possible abuse and misuse. This book appeals to researchers and professionals working in food production and quality control.

L'ebook è rivolto ai lettori interessati per indirizzarli verso un approccio mirato ad aumentare la consapevolezza di ciò che mangiamo e delle calorie assunte, dagli ingredienti all'etichetta nutrizionale. La Normativa Europea 1169/2011 che riguarda le disposizioni sull'etichettatura nutrizionale in vigore dal 13/12/2016 rende obbligatorie per il produttore alimentare alcune importanti informazioni riguardo i prodotti ad uso alimentare. Le informazioni nutrizionali comprendono i valori nutrizionali obbligatori (Kjoule, Kcal, Grassi, Acidi Grassi Saturi, Carboidrati, Zuccheri, Proteine, Sale), su base volontaria si potranno esprimere altri valori (acidi grassi monoinsaturi, acidi grassi polinsaturi, polioli, amido, fibre). L'indicazione del valore energetico è riferita a 100 g/ 100 ml dell'alimento ed anche della singola porzione. Il valore energetico è espresso come percentuale delle assunzioni di riferimento per un adulto medio ossia circa 2000 kcal al giorno. Per quanto riguarda gli allergeni, solitamente espressi in neretto nell'etichetta nutrizionale, ne sono stati individuati 14 (Cereali contenenti glutine: grano, segale, orzo, avena, farro; Crostacei e prodotti a base di crostacei; Uova e prodotti a base di uova; Pesce e prodotti a base di pesce; Arachidi e prodotti a base di arachidi; Soia e prodotti a base di soia; Latte e prodotti a base di latte; Frutta a guscio: mandorle, nocciole, noci, noci di acagiù, noci di pecan, noci del Brasile, pistacchi, noci macadamia e i loro prodotti; Sedano e prodotti a base di sedano; Senape e prodotti a base di senape; Semi di sesamo e prodotti a base di semi di

sesamo; Anidride solforosa e solfiti; Lupini e prodotti a base di lupini; Molluschi e prodotti a base di molluschi). Il produttore alimentare deve quindi dare tutte le informazioni richieste dalla normativa in modo chiaro e semplice da permettere al consumatore di leggere ed informarsi sul prodotto che intende comprare e avere anche un'idea su come impostare un'etichetta che soddisfi tutti i requisiti necessari per rendere un'informazione il più chiara possibile al consumatore finale.

This open access book focuses on the development of methods, interoperable and integrated ICT tools, and survey techniques for optimal management of the building process. The construction sector is facing an increasing demand for major innovations in terms of digital dematerialization and technologies such as the Internet of Things, big data, advanced manufacturing, robotics, 3D printing, blockchain technologies and artificial intelligence. The demand for simplification and transparency in information management and for the rationalization and optimization of very fragmented and splintered processes is a key driver for digitization. The book describes the contribution of the ABC Department of the Polytechnic University of Milan (Politecnico di Milano) to R&D activities regarding methods and ICT tools for the interoperable management of the different phases of the building process, including design, construction, and management. Informative case studies complement the theoretical discussion. The book will be of interest to all stakeholders in the building process - owners, designers, constructors, and faculty managers - as well as the research sector.

The increasing importance of plastic materials in packaging makes it mandatory for everyone in this industry to command a basic understanding of the properties of the common packaging plastics.

This book provides detailed and comprehensible information about Quality Control (QC) in the industry. Different viewpoints are explained in relation to food companies, packaging producers and technical experts, including regulatory aspects. One of the most important steps is the comprehension of QC failures in relation to the 'food product' (food/packaging). The book also presents a detailed selection of proposals about new testing methods. On the basis of regulatory obligations in the EU about the technological suitability of food packaging materials, a list of 'performance-oriented' guidelines is proposed. Food sectors are mentioned in relation to products, related packaging materials, known failures and existing quality control procedures. This volume serves as a practical guide on food packaging and QC methods and a quick reference to food operators, official safety inspectors, public health institutions, Certification bodies, students and researchers from the academia and the industry.

The Extra-Virgin Olive Oil Handbook According to European legislation, extra-virgin is the top grade of olive oils. It has superior health properties and flavour compared to virgin and refined olive oils. Mediterranean countries still produce more than 85% of the world's olive oil, but the constant increase of demand for extra-virgin olive oil has led to new cultivation and production in other areas of the world, including California, Australia, China, South Africa and South America. At the same time, olive oil's sensory properties and health benefits are increasingly attracting the attention and interest of nutritionists, food processors, manufacturers and food services. Progress and innovation in olive cultivation, harvesting and milling technologies as well as in oil handling, storage and selling conditions make it possible to achieve even higher quality levels than those stipulated for extra-virgin oils. As a consequence, a new segment ??? excellent extra-virgin olive oils ??? is increasingly attracting the attention of the market and earning consumers' preference. The Extra-Virgin Olive Oil Handbook provides a complete account of olive oil's composition, health properties, quality, and the legal standards surrounding its production. The book is divided into convenient sections focusing on extra-virgin olive oil as a product, the process by which it is made and the process control system through which its quality is assured. An appendix presents a series of tables and graphs with useful data, including conversion factors, and the chemical and physical characteristics of olive oil. This book is aimed at people involved in the industrial production as well as in the marketing and use of extra-virgin olive oil who are looking for practical information that avoids overly academic language but which is still scientifically and technically sound. The main purpose of the handbook is to guide operators involved in the extra-virgin olive oil chain in making the most appropriate decisions about product quality and operating conditions in the production and distribution processes. To these groups, the most important questions are practical ones of why, how, how often, how much will it cost, and so on. The Extra-Virgin Olive Oil Handbook will provide the right answers to these key practical considerations in a simple, clear yet precise and up-to-date way.

Questo volume illustra le principali tecniche di preparazione del campione con particolare enfasi sulle tecniche innovative e sui sistemi on-line che mirano a ridurre il tempo di analisi, la manipolazione del campione e il consumo di solventi. L'analisi chimica prevede infatti generalmente una fase di preparazione del campione, che ha lo scopo di isolare gli analiti di interesse dalla matrice ed eliminare i potenziali interferenti prima della determinazione analitica finale. Il testo è arricchito da numerosi esempi applicativi nel settore dell'analisi chimica degli alimenti e in particolare dei contaminanti. Il volume è rivolto, oltre che a studenti universitari, dottorandi e ricercatori, anche ai tecnici di laboratorio che devono acquisire conoscenze e competenze per la preparazione del campione per l'analisi chimica nel settore alimentare, ambientale e farmaceutico.

This Brief is concerned with the material chemistry of food packaging materials. It introduces the properties and peculiarities of typical packaging materials, such as plastics, cellulose components, ceramics and metals. Their overall performance as food packaging material is determined by the chemical and physical properties. The Brief describes how the final properties of a food packaging material can be influenced through chemical modifications in the structure and composition of the used components. The authors also cover potential chemical reactions of food packaging materials that may affect their performance. Potential hazards that may arise, such as influences on the product quality, or effects on their recycling or disposal, are discussed. Different influences, like metal corrosion, chemical resistance and degradability of the main packaging materials, or properties like hydrophobicity, surface energy and migration have to be taken into account. This Brief gives an introduction to all these different aspects of food packaging.

This book, based on authoritative sources and reports, links environmental communication to different fields of competence: environment, sustainability, journalism, mass media, architecture, design, art, green and circular economy, public administration, big event management and legal language. The manual offers a new, scientifically based perspective, and adopts a theoretical-practical approach, providing readers with qualified best practices, case studies and 22 exclusive interviews with professionals. A fluent style of writing leads the readers through specific details, enriching their knowledge without being boring. As such it is an excellent preparatory and interdisciplinary academic tool intended for university students, scholars, professionals, and

anyone who would like to know more on the matter.

Completely re-written with two new co-authors who provide expertise in physical chemistry and engineering, the Sixth Edition of this textbook/reference explores the entire scope of the ice cream industry, from the chemical, physical, engineering and biological principles of the production process, to the marketing and distribution of the finished product. This Sixth Edition builds on the strengths of previous editions with its coverage of the history, production and consumption, composition, ingredients, calculation and preparation of mixes, equipment, processing, freezing, hardening, storage, distribution, regulations, cleaning and sanitizing, safety, and quality of ice cream and related frozen desserts.

Food packagingMateriali, tecnologie e soluzioniSpringer Science & Business Media

The olive (*Olea europaea*) is increasingly recognized as a crop of great economic and health importance world-wide. Olive growing in Italy is very important, but there is still a high degree of confusion regarding the genetic identity of cultivars. This book is a source of recently accumulated information on olive trees and on olive oil industry. The objective of this book is to provide knowledge which is appropriate for students, scientists, both experienced and inexperienced horticulturists and, in general, for anyone wishing to acquire knowledge and experience of olive cultivation to increase productivity and improve product quality. The book is divided into two parts: I) the olive cultivation, table olive and olive oil industry in Italy and II) Italian catalogue of olive varieties. All chapters have been written by renowned professionals working on olive cultivation, table olives and olive oil production and related disciplines. Part I covers all aspects of olive fruit production, from site selection, recommended varieties, pest and disease control, to primary and secondary processing. Part II contains the chapter on the description of Italian olive varieties. It is well illustrated and includes 200 elaiographic cards with colour photos, graphs and tables.

Il volume è rivolto agli studenti universitari dei corsi di Laurea in Scienze e Tecnologie Alimentari, Scienze e Tecnologie Agrarie e Scienze e Tecnologie della Ristorazione che devono acquisire nei loro studi conoscenze, competenze e abilità relative all'ambito multidisciplinare del confezionamento di alimenti e bevande. Lo scopo dell'opera è però anche quello di rendere disponibile un testo di utilità più ampia e generale, indirizzato ai tecnici e agli operatori che nelle aziende di produzione di alimenti, o di imballaggi per alimenti, sono interessati ad un approfondimento e ad un aggiornamento scientifico-tecnologico nell'area. Frutto dell'esperienza degli Autori che insegnano questa materia da molti anni nella Facoltà di Agraria dell'Università degli Studi di Milano, l'opera offre la combinazione di esperienze didattiche e scientifiche in questo specialistico campo permettendo di affrontare il complesso ed articolato tema delle Tecnologie di Food Packaging in modo esauriente, aggiornato ed approfondito per garantire agli studenti ed ai docenti di Tecnologie Alimentari, così come a chiunque interessato alla materia, un efficace strumento di studio e di consultazione.

With a wealth of illustrations, examples, discussion questions, and case studies, the Food Packaging Science and Technology covers basic principles and technologies as well as advanced topics such as active, intelligent, and sustainable packaging with unparalleled depth and breadth of scope. Emphasizing the application of relevant scientific principles to create effective designs and quality products, an international team of contributors draws on their collective experience to equip you with the necessary knowledge and tools to tackle modern food packaging problems. Divided into four parts, this book begins with an extensive discussion of packaging materials science. Contributions review the basic concepts of chemical and physical properties as they relate to food packaging. They cover gas permeation and migration and give detailed information on the four basic types of packaging materials: plastics, glass, metal, and cellulosic. The second part applies the previous information to the field of packaging technologies. Traditional methods and concepts such as end-of-line operations, permeation and migration, canning and aseptic packaging, and vacuum/modified atmosphere packaging are juxtaposed with the more advanced technologies of microwavable packaging, active packaging, and intelligent packaging. Part 3 discusses shelf life determination and elements of storage stability and packaging requirements of various food categories. The final part presents issues related to packaging sociology, addressing sustainable packaging, as well as sociological and legislative considerations.

Many areas of knowledge converge in the building industry and therefore research in this field necessarily involves an interdisciplinary approach. Effective research requires strong relation between a broad variety of scientific and technological domains and more conventional construction or craft processes, while also considering advanced management processes, where all the main actors permanently interact. This publication takes an interdisciplinary approach grouping various studies on the building industry chosen from among the works presented for the 2nd International Conference on Construction and Building Research. The papers examine aspects of materials and building systems; construction technology; energy and sustainability; construction management; heritage, refurbishment and conservation. The information contained within these pages may be of interest to researchers and practitioners in construction and building activities from the academic sphere, as well as public and private sectors.

Confectionery and chocolate manufacture has been dominated by large-scale industrial processing for several decades. It is often the case though, that a trial and error approach is applied to the development of new products and processes, rather than verified scientific principles. Confectionery and Chocolate Engineering: Principles and Applications, Second edition, adds to information presented in the first edition on essential topics such as food safety, quality assurance, sweets for special nutritional purposes, artisan chocolate, and confectioneries. In addition, information is provided on the fading memory of viscoelastic fluids, which are briefly discussed in terms of fractional calculus, and gelation as a second order phase transition. Chemical operations such as inversion, caramelization, and the Maillard reaction, as well as the complex operations including conching, drying, frying, baking, and roasting used in confectionery manufacture are also described. This book provides food engineers, scientists, technologists and students in research, industry, and food and chemical engineering-related courses with a scientific, theoretical description and analysis of confectionery manufacturing, opening up new possibilities for process and product improvement, relating to increased efficiency of operations, the use of new materials, and new applications for traditional raw materials.

The 2013 annual conference of the Italian Society of Agricultural Economics (SIDEA) has been held in the attractive scenario of the city of Lecce under the organization of three different Universities of the Apulia Region (Università degli Studi di Bari, Università degli Studi di Foggia and Università del Salento). The scientific theme of the 50th SIDEA Conference has been "Sustainability of the agri-food system: Strategies and Performances" (Sostenibilità del Sistema Agroalimentare: strategie e performance). With such a topic, the SIDEA intended to cope with the challenges coming from a growing demand of food in a world where critical natural resources such as water, energy and land are becoming increasingly scarce and climate change is posing credible threats. The agri-food system and the broader bio-based economy are, in fact, human activities where the classic dimensions of sustainability (ecological, economic and social) are gaining a striking weight often showing evidence of frictions. Despite a significant growth in food production over the past century, today one of the most important challenges facing agro-food system is how to feed a growing population.

This Brief is concerned with the connection between food packaging and the chemical composition of packaging materials. In terms of the food packaging hygiene, the influence of the containers on the contained foods is discussed. The book explores new and emerging risks related to food packaging materials in connection with the contained commodities. It also discusses the technology of production with relation to the chemical risk in a "Hazard Analysis and Critical Control Point" (HACCP) investigation.

This Brief defines reliable correlations between the food packaging design and its chemical features in terms of an 'integrated food product' (the synergistic union composed of the edible content and its container). A good design, as described in this Brief, implies the best choices from a series of possibilities, taking into account economical and commercial influences or limitations in the production and processing chain and the chemical interactions that can arise between the food containers and the contained edible material. This Brief highlights how the different requirements can be combined, while avoiding dangerous food risks originating from the chemical interaction between the container and the product. Different designs are critically analysed with relation to the effect on contained foods. The influences and resulting consequences of different possible food packaging designs are highlighted and discussed in selected case studies for some every-day products (like potato chips).

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