

Free epub **Plastics failure analysis and prevention plastics design library (2023)**

Permeability and Other Film Properties of
Plastics and Elastomers Designing Successful
Products with Plastics Thermoplastic Material
Selection Plastics Additives Database
Introduction to Plastics Engineering Designing
Successful Products with Plastics Plastics
Design Handbook The Effect of UV Light and
Weather on Plastics and Elastomers
Polypropylene Design and Manufacturing of
Plastics Products Selection of Polymeric
Materials The Effect of UV Light and Weather
on Plastics and Elastomers Applications of
Polymers and Plastics in Medical Devices The
Effect of UV Light and Weather on Plastics and
Elastomers Plastic Component Design The Effect
of Creep and Other Time Related Factors on
Plastics The Effect of Creep and Other Time
Related Factors on Plastics Plastics Additives
The Effect of Creep and Other Time Related
Factors on Plastics Automotive Plastics and
Composites Coloring Technology for Plastics
Fatigue and Tribological Properties of

Plastics and Elastomers Applied Plastics
Engineering Handbook Handbook of Plastics
Joining Weathering of Plastics Recycling of
Flexible Plastic Packaging Permeability
Properties of Plastics and Elastomers Plastics
Design Handbook Plastic Design of Frames
Fatigue and Tribological Properties of
Plastics and Elastomers Handbook of Thermoset
Plastics Plastic Films in Food Packaging New
horizons in plastics Rotational Molding
Technology Handbook of Molded Part Shrinkage
and Warpage Imaging and Image Analysis
Applications for Plastics Conductive Polymers
and Plastics Handbook of Biopolymers and
Biodegradable Plastics Handbook of
Thermoplastic Elastomers Plastic Design

Permeability and Other Film Properties of Plastics and Elastomers

1995

this handbook is a database reference ranging in coverage from the barrier and film properties of plastics and elastomers to detailed discussions and test results data presented details the differences in permeation between generic families of plastic and rubber materials also covered are differences within the same generic family due to environmental factors like temperature and humidity or material characteristics such as sample preparation and material composition this data serves as an indication of how one material is likely to behave relative to another material or relative to the same material exposed under different conditions this includes details of test methods test conditions penetrant sample size material composition and other factors

Designing Successful Products with Plastics

2017-08-28

2023-01-16

3/44

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guide

designing successful products with plastics fundamentals of plastic part design provides expert insight into design considerations required to bring a concept product or part through design and ready for production the book shows how integrating four key choices materials processes tooling and design in every design decision allows the designer to fully vet and optimize the design rather than focusing on design rules and engineering equations used during product development the emphasis of the book is on what the designer needs to consider during the early conceptual visualization stages and in the detailed stages of the design process this approach will bridge the gap between the industrial designer tasked with the big picture product design and use and the part designer tasked with the detailed plastic part design for manufacture useful to both experienced and novice designers this book brings valuable design process information through specific examples enabling designers and engineers in the plastics industry to effectively use the available technical information to successfully design and manufacture new products bridges the gap between the industrial designer working on product design and use and the part designer working on detailed part design for manufacture enables designers to establish a solid foundation for

new product development on the four pillars of the process materials processes tooling and design provides a hierarchy and roadmap through creative product design and implementation so engineers can translate a product from creative concept through to realization and commercialization

Thermoplastic Material Selection

2015-04-30

thermoplastic material selection a practical guide presents current information on how proper material selection is a critical component of any manufactured product the text is a practical guide to a difficult process giving the reader a fundamental grounding in thermoplastic materials and providing the tools they need to save time money and frustration the book provides an overview of the most commonly used thermoplastic materials including discussions of the different chemical families plastics categories and material grades and the implications of these differences on the material selection process it provides fresh insights on the traditional methods of material selection based on performance and cost and also discusses the use of non traditional methods based on

subjective evaluation subsequent sections include references on tools that can be used to conduct further exploration how to accurately select the most suitable material writing an effective material specification and working with material suppliers and distributors presents current information on how proper thermoplastics material selection is a critical component of any manufactured product a practical guide to a difficult process giving the reader a fundamental grounding in thermoplastics material selection and providing the tools they need to save time money and frustration delivers insights on the traditional methods of material selection based on performance and cost and introduces nontraditional methods based on size form appearance and feel

Plastics Additives Database

2004

a unique cd rom compilation of critical plastics additives provides information from manufacturers and distributors of these important products with almost 7 000 additives in the database users can be sure to find several answers to queries as well as the best possible fit for the situation

Introduction to Plastics Engineering

2018-05-15

introduction to plastics engineering provides a single reference covering the basics of polymer and plastics materials and their properties design processing and applications in a practical way the book discusses materials engineering through properties formulation combining part design and processing to produce final products this book will be a beneficial guide to materials engineers developing new formulations processing engineers producing those formulations and design and product engineers seeking to understand the materials and methods for developing new applications the book incorporates material properties engineering processing design applications and sustainable and bio based solutions ideal for those just entering the industry or transitioning between sectors this is a quick relevant and informative reference guide to plastics engineering and processing for engineers and plastics practitioners provides a single unified reference covering plastics materials properties design processing and applications offers end to end coverage of the

industry from formulation to part design processing and the final product serves as an ideal introductory book for new plastics engineers and students of plastics engineering provides a convenient reference for more experienced practitioners

Designing Successful Products with Plastics

2024-05-15

designing successful products with plastics fundamentals of plastic part design 2e provides expert insight into design considerations required to bring a concept product or part through design and ready for production rather than focusing on design rules and engineering equations used during product development the emphasis of the book is on what the designer needs to consider during the early conceptual visualization stages and in the detailed stages of the design process this fully updated edition features new practical advice on how to design sustainably throughout the book this approach will bridge the gap between the industrial designer tasked with the big picture product design and use and the part designer tasked with the detailed plastic part design for manufacture useful to both experienced and

novice designers this book brings valuable design process information through specific examples enabling designers and engineers in the plastics industry to effectively use the available technical information to successfully design and manufacture new products brings together the worlds of the plastic part designer and the industrial designer and shows how each impacts the success of a development project teaches the four pillars considerations materials processes tooling and design required for every design decision to be made during a plastic part design project the interrelationship of these considerations with the sustainability intent for the product being developed is taught and illustrated within this new edition illustrates the product design process roadmap from creation of the concept through implementation into manufacturing highlighting steps and methods used throughout the process to limit risk and ensure success includes methods and design project management techniques used to ensure an efficient design process and successful manufacturing of the product or part

Plastics Design Handbook

2013-11-27

this book provides a simplified and practical approach to designing with plastics that fundamentally relates to the load temperature time and environment subjected to a product it will provide the basic behaviors in what to consider when designing plastic products to meet performance and cost requirements important aspects are presented such as understanding the advantages of different shapes and how they influence designs information is concise comprehensive and practical review includes designing with plastics based on material and process behaviors as designing with any materials plastic steel aluminum wood etc it is important to know their behaviors in order to maximize product performance to cost efficiency examples of many different designed products are reviewed they range from toys to medical devices to cars to boats to underwater devices to containers to springs to pipes to buildings to aircraft to space craft the reader's product to be designed can directly or indirectly be related to product design reviews in the book important are behaviors associated and interrelated with plastic materials thermoplastics thermosets elastomers reinforced plastics etc and fabricating processes extrusion injection molding blow molding forming foaming rotational molding etc they are presented so that the technical or

non technical reader can readily understand the interrelationships

The Effect of UV Light and Weather on Plastics and Elastomers

2013-06-21

this reference guide brings together a wide range of essential data on the effects of weather and uv light exposure on plastics and elastomers enabling engineers to make optimal material choices and design decisions in both normal and extreme environments outdoor use has a variety of effects on different plastics and elastomers including discoloring and brittleness the data is supported by explanations of real world engineering applications the data tables in this book are supported by examples of real world applications enabling engineers and scientists to select the right materials for a given situation across a wide range of sectors including construction packaging signage consumer e g toys outdoor furniture automotive and aerospace defense etc the third edition includes new text chapters that provide the fundamental knowledge required to make best use of the data author larry mckeen has also

added detailed descriptions of the effect of weathering on the most common polymer classes such as polyolefins polyamides polyesters elastomers fluoropolymers biodegradable plastics etc making this book an invaluable design guide as well as an industry standard data source essential data and practical guidance for engineers and scientists working with plastics in outdoor applications and products new introductory chapters on weathering processes and the effect of light and heat on plastics 25 new data

Polypropylene

1998-04-15

polypropylene the definitive user s guide and databook presents in a single volume a panoramic and up to the minute user s guide for today s most important thermoplastic the book examines every aspectùscience technology engineering properties design processing applicationsùof the continuing development and use of polypropylene the unique treatment means that specialists can not only find what they want but for the first time can relate to and understand the needs and requirements of others in the product development chain the entire work is underpinned by very extensive collections of property data that allow the

reader to put the information to real industrial and commercial use despite the preeminence and unrivaled versatility of polypropylene as a thermoplastic material to manufacture relatively few books have been devoted to its study polypropylene the definitive user s guide and databook not only fills the gap but breaks new ground in doing so polypropylene is the most popular thermoplastic in use today and still one of the fastest growing polypropylene the definitive user s guide and databook is the complete workbook and reference resource for all those who work with the material its comprehensive scope uniquely caters to polymer scientists plastics engineers processing technologists product designers machinery and mold makers product managers end users researchers and students alike

Design and Manufacturing of Plastics Products

2021-08-17

design and manufacturing of plastics products integrating conventional methods and innovative technologies brings together detailed information on design materials selection properties manufacturing and the performance of plastic products incorporating

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the utilization of the latest novel techniques and additive manufacturing technologies the book integrates the design of molded products and conventional manufacturing and molding techniques with recent additive manufacturing techniques to produce performant products and cost effective tools key areas of innovation are explained in detail including hybrid molds the integration of processing options with product properties and performance and sustainability factors such as eco design strategies recycling and lifecycle assessment other sections cover the development of plastics products including design methodologies design solutions specific to plastics and design for re use as well as manufacturing and performance with an emphasis on thermoplastic molding techniques recent advances on plastics tooling and the appraisal of the influence of processing options on product performance this is a valuable resource to plastics engineers design engineers mold makers and product or part designers across industries it will also be of interest to researchers and advanced students in plastics engineering polymer science additive manufacturing and mechanical engineering offers a thorough grounding in plastics part design thermoplastic material selection properties manufacture and performance of plastic parts presents the

latest advances including the integration of additive manufacturing in the plastics product development cycle hybrid molds and lifecycle and recycling considerations enables the reader to utilize traditional methods alongside cutting edge technologies in the production of performant plastic products and parts

Selection of Polymeric Materials

2008-03-06

today engineers designers buyers and all those who have to work with plastics face a dilemma there has been a proliferation of test methods by which plastic properties are measured the property data measured by these test methods are not identical and sometimes have large differences how are engineers designers buyers going to decide the type and resin grade and their property data which are the valid test methods the right plastic property data are the difference between success and failure of a design thus making the property selection process critical for the first time this book provides a simple and efficient approach to a highly complex and time consuming task there are over 26 000 different grades of polymers and millions of parts and applications further

adding to the difficulty of the selection process selection of polymeric materials steers engineers and designers onto the right path to selecting the appropriate values for each plastic property a large amount of property information has been provided to teach and assist the plastic part designer and others in selecting the right resin and properties for an application various standards including astm iso ul and british specifications have been discussed to help the readers in making sound decisions a simple and efficient approach to a highly complex and time consuming task allows engineers to select from various standards including astm iso ul and british specification presents information on properties such as tensile strength melt temperature continuous service temperature moisture exposure specific gravity and flammability ratings tried and true values narrow myriad choices down quickly for readers

The Effect of UV Light and Weather on Plastics and Elastomers

1994

this handbook is an compilation that illustrates how the elements of weathering

affect the properties and characteristics of 89 plastics and elastomers it is comprised of diverse references including conference proceedings test laboratories materials suppliers monographs and trade and technical journals the information provided ranges from a general overview of the resistance of various plastics and elastomers to weathering ultraviolet light moisture heat to detailed discussions and test results at the same time an effort is made to provide information for many weathering tests and conditions i e outdoor outdoor accelerated artificial accelerated indoor microbiologic attack etc and material combinations results of weathering exposure for more than 80 families of plastics and elastomers are presented in textual graphical and tabular formats

Applications of Polymers and Plastics in Medical Devices

2022-03-09

applications of polymers and plastics in medical devices design manufacture and performance is a comprehensive guide to plastic materials for medical devices covering fundamentals materials applications and regulatory requirements sections cover the role of plastics in medical devices

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socioeconomic factors the classification of medical devices the performance of medical grades and suppliers of polymer materials which are categorized by performance level are also explored along with manufacturing processes for device components including extrusion casting injection molding and assembly processes the book then covers applications in detail examining each device and the role that polymers and plastics play in its construction and function this is an essential resource for engineers r d and other professionals working on plastics for medical devices and those in the plastics industry medical device manufacturing pharmaceuticals packaging and biotechnology in an academic setting this book is of interest to researchers and advanced students in medical plastics plastics engineering polymer science mechanical engineering chemical engineering biomedical engineering and materials science offers systematic coverage of the major classes of polymers used in medical devices including properties characteristics performance medical grades and suppliers reviews regulatory requirements of the fda and other global agencies as well as considering quality control and socioeconomic factors includes the latest advances in plastics for medical devices such as novel applications use of bio based polymers and processing of

reusable medical devices

The Effect of UV Light and Weather on Plastics and Elastomers

1994-12-31

this handbook is an compilation that illustrates how the elements of weathering affect the properties and characteristics of 89 plastics and elastomers it is comprised of diverse references including conference proceedings test laboratories materials suppliers monographs and trade and technical journals the information provided ranges from a general overview of the resistance of various plastics and elastomers to weathering ultraviolet light moisture heat to detailed discussions and test results at the same time an effort is made to provide information for many weathering tests and conditions i e outdoor outdoor accelerated artificial accelerated indoor microbiologic attack etc and material combinations results of weathering exposure for more than 80 families of plastics and elastomers are presented in textual graphical and tabular formats

Plastic Component Design

1996

this book is for the industrial designer interested in the applications of plastics in products and industry it explains how different plastics are processed and it contains extensive examples of common and unusual plastic components and products with an explanation of how they are manufactured every year more products are being replaced or augmented by the same product made from plastic and this trend has resulted in much debate about the effectiveness of plastic replacements today s plastics can be designed to operate in all weather conditions and chemical surroundings they can be economically produced for short run part production or readily adapted to high quantity production and they can be cut glued tapped or machined by traditional methods to suit design needs explains how to choose the best processing method what fastening or joining methods can be used and how to use the characteristics of a plastic to judge its suitability for an application covers all major contemporary molding processes discusses in detail important topics such as surface finish and special effects

The Effect of Creep and Other Time Related Factors on Plastics

1991

this handbook presents curve types for generic families of plastics it provides test conditions including temperature and applied stress and contains creep property data for the following stress types tension flexure impact torsion and compression data are compiled from various published and limited distribution sources including commercial catalogs journal articles technical reports materials information sheets etc most of the test data is produced by the material manufacturers

The Effect of Creep and Other Time Related Factors on Plastics

1991

this book and its companion volumes contain plastics additives formulations based on information received from numerous industrial companies and other organizations each

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formulation is identified by a description of its end use

Plastics Additives

2013-10-22

automotive plastics and composites materials and processing is an essential guide to the use of plastic and polymer composites in automotive applications whether in the exterior interior under the hood or powertrain with a focus on materials properties and processing the book begins by introducing plastics and polymers for the automotive industry discussing polymer materials and structures mechanical chemical and physical properties rheology and flow analysis in the second part of the book each chapter is dedicated to a category of material and considers the manufacture processing properties shrinkage and possible applications in each case two chapters on polymer processing provide detailed information on both closed mold and open mold processing the final chapters explain other key aspects such as recycling and sustainability design principles tooling and future trends this book is an ideal reference for plastics engineers product designers technicians scientists and r d professionals who are looking to develop

materials components or products for automotive applications the book also intends to guide researchers scientists and advanced students in plastics engineering polymer processing and materials science and engineering analyzes mechanical chemical physical and thermal properties enabling the reader to select the appropriate material for specific applications explains polymer processing with thorough coverage of operations across both closed mold and open mold processing provides systematic coverage of materials including commodity and engineering thermoplastics bio based plastics thermosets composites elastomeric polymers and 3d printed plastics

The Effect of Creep and Other Time Related Factors on Plastics

1991

the papers in this anthology were presented during seven antec and retect symposia between 1995 and 1998 and chronicle many of the advances in the plastics coloring technology field during that time span the unifying theme of the papers is creating more value the interactivity of the package design process

has continued to demand advances in coloring technology and the value of being able to exploit product appearance is glaringly apparent another way to create value is by being responsive through speed to market manufacturers and suppliers have to respond to the demand of their consumers yet fabricators cannot be ignored in their desire for first run acceptance of color all these issues and many others are discussed within this authoritative overview of coloring technology

Automotive Plastics and Composites

2021-06-23

part of a series of core databooks within the william andrew plastics design library fatigue and tribological properties of plastics and elastomers provides a comprehensive collection of graphical multipoint data and tabular data covering fatigue and tribology the concept of fatigue is very straightforward if an object is subjected to a stress or deformation and it is repeated the object becomes weaker this weakening of plastic material is called fatigue tribology is the science and technology of surfaces in contact with each other and therefore covers friction lubrication and wear the reduction of wear and

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fatigue and the improvement of lubrication are key bottom line issues for engineers and scientists involved in the plastics industry and product design with plastics fatigue and tribological properties of plastics and elastomers 2e is an update of all that has changed in the world of plastics since the 1st edition appeared nearly 15 years ago and has been reorganized from a polymer chemistry point of view a hard working reference tool part of the daily workflow of engineers and scientists involved in the plastics industry and product design with plastics the reduction of wear and fatigue and the improvement of lubrication are key bottom line issues the data in this book provide engineers with the tools they need to design for low failure rates

Coloring Technology for Plastics

1999-12-31

a practical reference for all plastics engineers who are seeking to answer a question solve a problem reduce a cost improve a design or fabrication process or even venture into a new market applied plastics engineering handbook covers both polymer basics helpful to bring readers quickly up to speed if they are

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not familiar with a particular area of plastics processing and recent developments enabling practitioners to discover which options best fit their requirements each chapter is an authoritative source of practical advice for engineers providing authoritative guidance from experts that will lead to cost savings and process improvements throughout the book the focus is on the engineering aspects of producing and using plastics the properties of plastics are explained along with techniques for testing measuring enhancing and analyzing them practical introductions to both core topics and new developments make this work equally valuable for newly qualified plastics engineers seeking the practical rules of thumb they don't teach you in school and experienced practitioners evaluating new technologies or getting up to speed on a new field the depth and detail of the coverage of new developments enables engineers and managers to gain knowledge of and evaluate new technologies and materials in key growth areas such as biomaterials and nanotechnology this highly practical handbook is set apart from other references in the field being written by engineers for an audience of engineers and providing a wealth of real world examples best practice guidance and rules of thumb

Fatigue and Tribological Properties of Plastics and Elastomers

2009-11-17

a hands on guide to choosing and using old and new technologies for joining plastics and elastomers includes detailed discussions of over 25 techniques used to join plastics to themselves and to other materials advantages and disadvantages of each technique along with detailed discussions of applications are presented a second section is organized by material and provides details of using different processes with over 50 generic families of plastics and how different techniques and operating parameters affect weld strength and other criteria this book is an excellent reference and an invaluable resource for novice and expert alike in determining the best joining technique for their application and providing guidance in how to design and prepare for production

Applied Plastics Engineering Handbook

2011-07-26

2023-01-16

27/44

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in spite of extensive efforts material weathering testing still requires improvement this book presents findings and opinions of experts in material degradation testing the aim is to improve testing methods and procedures materials are presented to show that photochemical degradation rate depends on a combination of environmental factors such as uv radiation temperature humidity rain stress and concentration of reactive pollutants the potential effect of each parameter of degradation on data gathered is discussed based on known results from a long experience in testing this book contains data obtained in laboratories of the largest manufacturers of uv stabilizers and chemical companies that manufacture durable materials the book gives details of testing procedures and choice of parameters of exposure which are crucial for obtaining laboratory results correlating with environmental performance of materials in addition to exposure conditions the book contains many suggestions on sample preparation and post exposure testing the effective use of these methods shortens testing time of materials and determines acceleration rate of testing the book also gives examples of complete well designed weathering experiments which may be used as patterns for selection of parameters and techniques for new studies the areas of

research that still require more attention in future studies are clearly indicated

Handbook of Plastics Joining

2008-10-23

recycling of flexible plastic packaging presents thorough and detailed information on the management and recycling of flexible plastic packaging focusing on the latest actual potential methods and techniques and offering actionable solutions that minimize waste and increase product efficiency and sustainability sections cover flexible plastic packaging and its benefits applications and challenges this is followed by in depth coverage of the materials types and forms of flexible packaging other key discussions cover collection and pre treatment volume reduction separation from other materials chemical recycling post processing and reuse current regulations and policies economic aspects and immediate trends this information will be highly valuable to engineers scientists and r d professionals across industry in addition it will also be of great interest to researchers in academia those in government or anyone with an interest in recycling who is looking to further advance and implement recycling methods for flexible plastic packaging

presents state of the art methods and technologies regarding the processing of flexible plastic packaging waste addresses the challenges currently associated with both waste management and available recycling methods opens the door to innovation supporting improved recycling methods manufacturing efficiency and industrial sustainability

Weathering of Plastics

1999-12-31

permeability properties are essential data for the selection of materials and design of products across a broad range of market sectors from food packaging to automotive applications to medical devices this unique handbook brings together a wealth of permeability data in a form that enables quick like for like comparisons between materials the data is supported by a full explanation of its interpretation and an introduction to the engineering aspects of permeability in polymers the third edition includes expanded explanatory text which makes the book accessible to novices as well as experienced engineers written by industry insider and author larry mckeen dupont and 20 new data and major new explanatory text sections to aid in

the interpretation and application of the data
a unique collection of permeability data
designed to enable quick like for like
comparisons between different materials third
edition includes 20 new data and expanded
explanatory text which makes the book
accessible to novices as well as experienced
engineers essential reference for materials
engineers design engineers and applications
engineers across sectors including packaging
automotive and medical devices

Recycling of Flexible Plastic Packaging

2019-12-04

this handbook is a database reference covering
fatigue behavior and friction and wear
characteristics of 106 plastics and elastomers
data presented details the differences in
behavior between generic families of plastic
and rubber materials also covered are
differences within the same generic family due
to factors such as temperature test frequency
and mating surface details in the case of
tribological properties or material
characteristics such as sample preparation and
material composition also covered are the
tribological friction and wear properties of
plastics and elastomers tribological

information is presented as combinations of text graphs and tables textual data are presented as concise discussions of topics relating to the friction and wear behavior of the material of interest graphs show how variables affect the friction and wear properties tables cover coefficient of friction data wear factor k wear rate pv limits and abrasion resistance data

Permeability Properties of Plastics and Elastomers

2011-09-08

thermosetting plastics are a distinct category of plastics whose high performance durability and reliability at high temperatures makes them suitable for specialty applications ranging from automotive and aerospace through to electronic packaging and consumer products your melamine kitchen worktop is a thermoset resin recent developments in thermoset plastics technology and processes has broadened their use exponentially over recent years and these developments continue in november 2011 french scientists created a new lightweight thermoset that is as strong and stable as previous materials yet can be easily reworked and reshaped when heated which makes it unique amongst thermosets and allows for

repair and recycling the handbook of thermoset plastics now in its 3rd edition provides a comprehensive survey of the chemical processes manufacturing techniques and design properties of each polymer along with their applications written by a team of highly experienced practitioners the practical implications of using thermoset plastics are presented both their strengths and weaknesses the data and descriptions presented here enable engineers scientists and technicians to form judgments and take action on the basis of informed analysis the aim of the book is to help the reader to make the right decision and take the correct action avoiding the pitfalls the authors experience has uncovered the new edition has been updated throughout to reflect current practice in manufacturing and processing featuring case studies to demonstrate how particular properties make different polymers suitable for different applications as well as covering end use and safety considerations a new chapter on using nanoparticles to enhance thermal and mechanical properties a new chapter describing new materials based on renewable resources such as soy based thermoset plastics a new chapter covering recent developments and potential future technologies such as new catalysts for controlled radical polymerization

provide a comprehensive reference guide to the chemistry manufacturing and applications of thermosets updated to include recent developments in manufacturing from biopolymers to nanocomposites case studies illustrate applications of key thermoset plastics

Plastics Design Handbook

2005-01-01

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

Plastic Design of Frames

1971

this book clarifies and quantifies many of the technical interactions in the process it distinguishes itself from other books on the

subject by being a seamless story of the advanced aspects of the rotational molding process there are seven chapters within the book the us market for rotational molding products was one billion pounds in the year 2000 the growth of the rotational molding industry has grown at 10 to 15 per year with this growth has come an increasing need for details on the complex technical aspects of the process

Fatigue and Tribological Properties of Plastics and Elastomers

1994-10-01

the handbook explains in plain terms why moldings shrink and warp shows how additives and reinforcements change the picture sets out the effect of molding process conditions and tells why you never can have a single correct shrinkage value but that s not all the handbook shows how to alleviate the problem by careful design of the molded part and the mold and by proper material selection it also examines computer aided methods of forecasting shrinkage and warpage and most important of all the handbook gives you the data you need to work with this is the most complete

collection of shrinkage data ever made and includes an extensive compilation of hard to find multi point information on how processing part design mold design material and post mold treatment affect the part s final dimensions manufacturers figures for thousands of grades along with an exhaustive search of magazines journals conference papers books web sites and brochures combine to make this a powerful resource a lot depends on a dimensionally correct molding quality speed to market profit margins for the molder and toolmaker the efficiency of secondary and assembly operations reputation all these are on the line the mold shrinkage and warpage handbook is the book for people who have to live with shrinkage and warpage it is the only book for people who have to commit themselves

Handbook of Thermoset Plastics

2013-11-28

the broad collection of techniques gathered in this book help illustrate material process property relationships for a wide selection of materials and processes in the plastics industry with the recent increases in computing power and scope as well as advances in software engineering imaging has already become a universal tool image processing and

image analysis have become common expressions are widely recognized within the scientific community the imaging techniques employed range from visible optical methods to scanning and transmission electron microscopy x ray thermal wave infrared and atomic force microscopy image analysis is used to monitor characterize a variety of processes processes included within this book are extrusion injection molding foam production film manufacture compression molding blow molding vulcanization melt spinning reactive blending welding conveying composite manufacture compounding and thermosetting imaging techniques are also employed to characterize quantify a number of important material properties these include fiber orientation distribution homogeneity of mixing the rate of spherulites growth polymer crystallization rate melt flow index pore size and shape in foam cell density in foam void content particle analysis in polymer blends morphology interparticle distance fiber diameter fatigue crack crazing scratching surface roughness fiber length distribution nucleation oil penetration peel adhesion chemical resistance droplet fiber transition electrical conductivity dispersion and impurity content

Plastic Films in Food Packaging

2012-12-31

this book is a collection of papers by individuals in industry and academia on research and application development of conductive polymers and plastics conductive plastics are positioned to play an increasingly important role in affairs of mankind specifically in the area of electrical and electronic conductivity while general knowledge about conductive polymers and plastics has been available for many years a true understanding of their application has only taken place in the last 3 to 4 years this is attributed to advances in materials and processing techniques engineers have only begun to explore the design freedom and economic benefits of specifying conductive polymers and plastics in industrial and business applications this book is a key reference and guide to the use of conductive polymers and plastics it is a summary of existing technologies but also a look at future possibilities

New horizons in plastics

1991

this new handbook provides engineers and scientists with the information and practical guidance needed to successfully design and manufacture products using biopolymers and biodegradable plastics biopolymers and biodegradable plastics are a hot issue across the plastics industry and for many of the industry sectors that use plastic from packaging to medical devices and from the construction industry to the automotive sector this book brings together in one place a number of key biopolymer and biodegradable plastics topics in chapters previously published as well as updated and new chapters for a broad audience of engineers of and scientists especially those designing with biopolymers and biodegradable plastics or evaluating the options for switching from traditional plastics to biopolymers topics covered include preparation fabrication applications and recycling including biodegradability and compostability applications in key areas such as films coatings controlled release and tissue engineering are discussed

Rotational Molding Technology

2001-12-01

there are few if any adequate guides to the properties processing and applications of thermoplastic elastomers in spite the skyrocketing rise in the use of these materials until now this new book sets the standard for a reference on these materials by compiling in one comprehensive volume an applicable knowledge of the chemistry processing and all properties and uses of thermoplastic elastomers copiously illustrated and full of applicable processing and engineering data this is the very definition of a definitive user s guide

Handbook of Molded Part Shrinkage and Warpage

2003-12-31

Imaging and Image Analysis Applications for Plastics

1999-12-31

Conductive Polymers and Plastics

1999-12-31

Handbook of Biopolymers and Biodegradable Plastics

2012-09-19

Handbook of Thermoplastic Elastomers

2007-08-11

Plastic Design

1975

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