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The Complete Technology Book on Industrial Polymers, Additives, Colourants and Fillers

Code: NI180	Format: paperback
Indian Price: ₹1100	US Price: \$125
Pages: 512	ISBN: 8178330091
Publisher: Asia Pacific Business Press Inc.	

Description

The Indian plastic and polymer industry has taken great strides. In the last few decades, the industry has grown to the status of a leading sector in the country with a sizable base. The material is gaining notable importance in different spheres of activity and the per capita consumption is increasing at a fast pace. Numerous plastics and fibers are produced from synthetic polymers; containers from propylene, coating materials from PVC, packaging film from polyethylene, experimental apparatus from Teflon, stockings from nylon fiber, there are too many to mention them all. The reason why plastics are popular is that they may offer such advantages as transparency, self lubrication, light weight, flexibility, economy in fabricating and decorating. Properties of plastics can be modified through the use of fillers, reinforcing agents and chemical additives. Silicones are by far the most important industrial polymers and are based on silicon, an element abundantly available on our planet. Polymers are classified in three broad groups; addition polymers, condensation polymers and special polymers. It is well known that the major consumption of additives is in PVC compounds. Approximately 80% of additives are being used in PVC; however the left over 20% is consumed in compounding of other thermoplastics. Plastic master batches and fillers have their own importance in plastic processing industries. Colorants are the materials that give colour and opacity to plastics are chemically characterized as either pigments or dyes. Pigments are finely pulverized natural or synthetic particles which may be of inorganic or organic origin and insoluble in the matrix in which they are dispersed. Permanent red 2B is a mono azo pigment that is widely used in thermoplastics because it is inexpensive and has high tinting strength and good bleed resistance. Fillers are commonly employed in opaque PVC compounds to reduce cost

and to improve electrical insulation properties, to improve deformation resistance of cables, to increase the hardness of a flooring compound and to reduce tackiness of highly plasticized compounds. Various calcium carbonate are used for general purpose work, china clay is commonly employed for electrical insulation, and asbestos for flooring applications. Also employed occasionally are the silicas and silicates, talc, light magnesium carbonate and barites (barium sulfate). Polymer Energy system is an award winning, innovative, proprietary process to convert waste plastics into renewable energy. Polymers are the most rapidly growing sector of the materials industry. No wonder polymers are found in everything from compact discs to high tech aerospace applications. On the basis of value added, Indian share of plastic products industry is about 0.5% of national GDP.

Some of the astonishing fundamentals of the book are industrial polymers, addition polymers

polyolefins, polyethylene, chlorinated polyethylene, cross linked polyethylene, linear low density polyethylene (LLDPE), high molecular weight polyethylene, high density polyethylene, ultrahigh molecular weight polyethylene, polypropylene, poly(vinyl chloride), stabilizers, plasticizers, extenders, mineral filled or glass bead/milled glass grades, antistatic/electro conductive grades, electroplatable grades, etc.

The present book enlightens the processing of industrial polymers, additives, colourant and fillers. This book is an invaluable resource to new entrepreneurs, technocrats, researchers, professionals etc.

Content

1. INDUSTRIAL POLYMERS

INTRODUCTION

PART I: ADDITION POLYMERS

POLYOLEFINS

Polyethylene

Chlorinated Polyethylene

Cross-Linked Polyethylene

Linear Low-Density Polyethylene (LLDPE)

High-Molecular-Weight High-Density Polyethylene

Ultrahigh-Molecular-Weight Polyethylene

Polypropylene

Poly(Vinyl Chloride)

Stabilizers

Plasticizers

Extenders

Lubricants **Fillers Pigments** Impact Modifiers and Processing Aids **Properties and Applications Pastes** Poly(Vinylidene Chloride) Polytetrafluoroethylene **Processing Applications** Polyisobutylene Polystyrene Polybutadiene (Butadiene Rubber) Polyisoprene Polychloroprene **OLEFIN COPOLYMERS** Styrene-Butadiene Rubber Nitrile Rubber Ethylene-Propylene Elastomer **Butyl Rubber** Thermoplastic Elastomers Styrene-Diene-Styrene Triblock Elastomers Thermoplastic Polyester Elastomers Thermoplastic Polyurethane Elastomers Thermoplastic Polyolefin Elastomers Ionic Elastomers Fluoroelastomers Styrene-Acrylonitrile Copolymer Acrylonitrile-Butadiene-Styrene Terpolymer Ethylene-Methacrylic Acid Copolymers (Ionomers) lonomers **ACRYLICS** Polyacrylonitrile

Dolyacrylatas

Polyacrylates

Polymethacrylates

Polyacrylamide

Poly(acrylic acid) and Poly(methacrylic acid)

Acrylic Adhesives VINYL POLYMERS

Poly (Vinyl Acetate)

Poly(Vinyl Alcohol)

Poly(Vinyl Acetals)

Poly(Vinyl Cinnamate)

Poly(Vinyl Ethers)

Poly(Vinyl Pyrrolidone)

Poly(Vinyl Carbazole)

PART II: CONDENSATION POLYMERS

POLYESTERS

Poly(Ethylene Terephthalate)

Poly(Butylene Terephthalate)

Poly(Dihydroxymethylcyclohexyl Terephthalate)

Unsaturated Polyesters

Polyester-Glass-Fiber Laminates (GRP, FRP)

Polyester Molding Compositions

Aromatic Polyesters

Wholly Aromatic Copolyester

Polycarbonates

POLYAMIDES

Aliphatic Polyamides

Properties

Applications

Aromatic Polyamides

Polyimides

Modified Polyimides

FORMALDEHYDE RESINS

Phenol-Formaldehyde Resins

Resols

Novolac

Urea-Formaldehyde Resins

Molding Powder

Processing

Properties and Applications

Melamine-Formaldehyde Resins

POLYURETHANES

Polyesters

Polyethers

Polycaprolactone

Polyurethane Rubbers and Spandex Fibers

Cross-Linked Polyurethane Rubbers

(a) Prepolymer formation

- (b) Chain extension of prepolymer
- (c) Cross linking of chain-extended polyurethane

Thermoplastic Polyurethane Rubbers

Spandex Fibers

Flexible Polyurethane Foam

Applications

Rigid and Semirigid Polyurethane Foams

Polyisocyanurates

Polyurethane Coatings

ETHER POLYMERS

Polyacetal

Poly(Ethylene Oxide)

Applications

Polyethylene Glycol

Poly(ethylene Oxide)

Poly [Propylene Oxide]

Epoxy Resins

Resin Preparation

Curing

Other Epoxies

Applications

POLY(PHENYLENE OXIDE)

CELLULOSIC POLYMERS

REGENERATED CELLULOSE

Cellulose Nitrate

Cellulose Acetate

Other Cellulose Esters

Cellulose Ethers

PART III: SPECIAL POLYMERS

Heat-Resistant Polymers

POLY(PHENYLENE SULFIDE)

POLYSULFONE

Properties

Polyether Ether Ketone

Polybenzimidazole

SILICONES AND OTHER INORGANIC POLYMERS

Silicones

Silicone Fluids

Silicone Resins

Silicone Rubbers

Polyphosphazenes

Polythiazyl

FUNCTIONAL POLYMERS

Ion-Exchange Resins

Applications

Polymeric Reagents

Photoconductive Polymers

Electroconductive Polymers

Light-Sensitive Polymers

Piezoelectric Polymers

2. POLYETHYLENE, HIGH DENSITY (HDPE)

INTRODUCTION

CATEGORY

HISTORY

POLYMERIZATION

DESCRIPTION OF PROPERTIES

APPLICATIONS

ADVANTAGES/DISADVANTAGES

Advantages

Disadvantages

PROCESSING TECHNIQUES

Processability of HDPE

RESIN FORMS

SPECIFICATION OF PROPERTIES

Master Outline of Materials Properties

PROCESSING REQUIREMENTS

PROCESSING-SENSITIVE END PROPERTIES

SHRINKAGE

Mold Shrinkage Characteristics

3. ACETALS

ACETAL

CATEGORY

HISTORY

POLYMERIZATION

DESCRIPTION OF PROPERTIES

Specialty Grades

Reinforced Grades

Mineral-filled or Glass Bead/Milled Glass Grades

Antistatic/Electroconductive Grades

Electroplatable Grades

APPLICATIONS

ADVANTAGES/DISADVANTAGES

PROCESSING TECHNIQUES

Standard design chart for Acetal

Master Material Outline

RESIN FORMS

SPECIFICATION OF PROPERTIES

Master Outline of Materials Properteis

PROCESSING REQUIREMENTS

PROCESSING-SENSITIVE END PROPERTIES

SHRINKAGE

Standard Tolerance Chart

4. ALLYL RESINS (DAP/DAIP)

INTRODUCTION

CATEGORY

HISTORY

POLYMERIZATION

DESCRIPTION OF PROPERTIES

Mechanical Properties

Thermal Properties

Reinforcements

APPLICATIONS

Reinforced Laminates

Decorative Laminates

ADVANTAGES/DISADVANTAGES

PROCESSING TECHNIQUES

RESIN FORMS

SPECIFICATION OF PROPERTIES

PROCESSING REQUIREMENTS

PROCESSING-SENSITIVE END PROPERTIES

SHRINKAGE

5. FLUOROPOLYMERS, POLY(VINYLIDENE

FLUORIDE) (PVDF)

POLY(VINYLIDENE FLUORIDE)

CATEGORY

HISTORY

POLYMERIZATION

DESCRIPTION OF PROPERTIES

Thermal Properties

Mechanical Properties

Optical Properties

Environmental Properties

APPLICATIONS

ADVANTAGES/DISADVANTAGES

PROCESSING TECHNIQUES

RESIN FORMS

SPECIFICATION OF PROPERTIES

PROCESSING REQUIREMENTS

PROCESSING-SENSITIVE END PROPERTIES

SHRINKAGE

6. IONOMERS

IONOMER

CATEGORY

HISTORY

POLYMERIZATION

DESCRIPTION OF PROPERTIES

APPLICATIONS

ADVANTAGES/DISADVANTAGES

PROCESSING TECHNIQUES

RESIN FORMS

SPECIFICATION OF PROPERTIES

PROCESSING REQUIREMENTS

Film Extrusion

Injection Molding

PROCESSING-SENSITIVE END PROPERTIES

Moisture Absorption

Effect of Temperature on the Melt Flow

SHRINKAGE

7. POLYAMIDE-IMIDE (PAI)

STRUCTURE

CATEGORY

HISTORY

POLYMERIZATION

DESCRIPTION OF PROPERTIES

APPLICATIONS

ADVANTAGES/DISADVANTAGES

PROCESSING TECHNIQUES

RESIN FORMS

SPECIFICATION OF PROPERTIES

PROCESSING REQUIREMENTS

PROCESSING-SENSITIVE END PROPERTIES **SHRINKAGE** 8. POLYBUTYLENE (PB) **STRUCTURE CATEGORY** HISTORY **POLYMERIZATION PROPERTIES APPLICATIONS** ADVANTAGES AND DISADVANTAGES PROCESSING TECHNIQUES **RESIN FORMS** SPECIFICATION OF PROPERTIES PROCESSING REQUIREMENTS PROCESSING-SENSITIVE END PROPERTIES **SHRINKAGE** 9. POLYCARBONATE (PC) **POLYCARONATE CATEGORY HISTORY POLYMERIZATION DESCRIPTION OF PROPERTIES** APPLICATIONS ADVANTAGES/DISADVANTAGES PROCESSING TECHNIQUES **RESIN FORMS** SPECIFICATION OF PROPERTIES PROCESSING REQUIREMENTS PROCESSING-SENSITIVE END PROPERTIES **SHRINKAGE** 10. POLYETHYLENE LINEAR LOW DENSITY (LLDPE) INTRODUCTION LLDP **CATEGORY** HISTORY **POLYMERIZATION**

DESCRIPTION OF PROPERTIES

ADVANTAGES/DISADVANTAGES

PROCESSING TECHNIQUES

APPLICATIONS

RESIN FORMS

SPECIFICATION OF PROPERTIES

PROCESSING REQUIREMENTS

PROCESSING-SENSITIVE END PROPERTIES

11. FLEXIBLE POLY (VINYL CHLORIDE) (FPVC)

INTRODUCTION

CATEGORY

Vinyl Additives

HISTORY

POLYMERIZATION

DESCRIPTION OF PROPERTIES

Physical Properties

Thermal Properties

Mechanical Properties

Optical Properties

Environmental Properties

APPLICATIONS

ADVANTAGES/DISADVANTAGES

PROCESSING TECHNIQUES

RESIN FORMS

Additives

Polyblends

SPECIFICATION OF PROPERTIES

PROCESSING REQUIREMENTS

PROCESSING-SENSITIVE END PROPERTIES

SHRINKAGE

12. FILLERS, CALCIUM CARBONATE

CATEGORY

SOURCE

KEY PROPERTIES

PROCESSING CHARACTERISTICS

APPLICATIONS

COMMERCIAL GRADES

COMPOSITES CHARACTERISTICS

13. FILLERS, KAOLIN

AIR-FLOATED KAOLIN

WATER-WASHED KAOLIN

CALCINED KAOLIN

SURFACE-MODIFIED KAOLINS

14. FILLERS, MICA

CATEGORY SOURCE **KEY PROPERTIES** PROCESSING CHARACTERISTICS **APPLICATIONS COMMERCIAL GRADES** COMPOSITE CHARACTERISTICS 15. COLORANTS INTRODUCTION Color and its Measurements Light Colorants PIGMENTS AND DYES Major Organic Pigments **Inorganic Pigments** Characteristics of Dyes Colorant Forms and Functions The Importance of Dispersion Coloring Do's and Dont's Color Measurement and Matching 16. FILLERS, ALUMINA TRIHYDRATE (ATH) **CATEGORY** SOURCE **KEY PROPERTIES** PROCESSING CHARACTERISTICS **APPLICATIONS POLYMERS FILLED** Unsuaturated polyester **Epoxy** Cross-Linked Ethylene-Vinyl Acetate Urethane **EPDM PVC** Polyethylene **COMMERCIAL GRADES** COMPOSITE CHARACTERISTICS 17. ACRYLONITRILE-BUTADIENE-

STYRENE (ABS)
INTRODUCTION

CATEGORY

POLYMERIZATION Chemistry Other Monomers Compounding **Pricing PROPERTIES** Impact Resistance Strength Creep and Stress Relaxation **Fatigue Heat Deflection** Flammability **Optical Properties** Ultraviolet Resistance Chemical Resistance Reinforcement **APPLICATIONS Appliances** Automotive **Building and Construction Business Machines/Consumer Electronics** Other Applications ADVANTAGES/DISADVANTAGES PROCESSING TECHNIQUES Injection Molding Extrusion **Thermoforming Cold Forming RESIN FORMS** MATERIAL PROPERTIES PROCESSING REQUIREMENTS Drying Degradation Regrind PROCESSING-SENSITIVE END PROPERTIES Molding Conditions to Maximize Specific Properties

Thermoforming

18. FILLERS, FIBER GLASS

SHRINKAGE

CATEGORY

SOURCE

KEY PROPERTIES

PROCESSING CHARACTERISTICS

APPLICATIONS

POLYMERS FILLED

COMMERCIAL GRADES

COMPOSITE CHARACTERISTICS

19. POLYETHYLENE, LOW DENSITY (LDPE)

INTRODUCTION

CATEGORY

POLYMERIZATION

DESCRIPTION OF PROPERTIES

APPLICATIONS

ADVANTAGES/DISADVANTAGES

RESIN FORMS

SPECIFICATION OF PROPERTIES

PROCESSING REQUIREMENTS

PROCESSING-SENSITIVE END PROPERTIES

SHRINKAGE

20. FILLERS, CALCIUM SULFATE

CATEGORY

Source

KEY PROPERTIES

PROCESSING CHARACTERISTICS

APPLICATIONS

Polyester Resin Systems

Laminate Sheet

Bulk Molding Compound

PVC Molding Compounds

PVC Plastisols

POLYMERS FILLED

Thermoplastics

Thermosets

COMMERCIAL GRADES

COMPOSITE CHARACTERISTICS

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