Modern Technology of Synthetic Resins & Their Applications (2nd Revised Edition)

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Modern Technology of Synthetic Resins & Their Applications
(Acetal, Acrylonitrile, Alkyd, Amino, Casein, Cashewnut Shell Liquid, Epoxy, Phenolic, Polyamide, Polyurethane, Rubber, Silicon, Polyvinyl Acetate, Shellac, Sucrose, Terpene Resins)
(2nd Revised Edition)

Synthetic resin is typically manufactured using a chemical polymerization process. This process then results in the creation of polymers that are more stable and homogeneous than naturally occurring resin. Since they are more stable and are cheaper, various forms of synthetic resin are used in a variety of products such as plastics, paints, varnishes, and textiles. There are various kinds of synthetic resins; acetal resins, amino resins, casein resins, epoxy resins, hydrocarbon resins, polyamide resins, etc. The classic variety is epoxy resin, manufactured through polymerization, used as a thermoset polymer for adhesives and composites. Epoxy resin is two times stronger than concrete, seamless and waterproof. Polyamide resin is another example of synthetic resins. Polyamide resins are products of polymerization of an amino acid or the condensation of a diamine with a dicarboxylic acid. They are used for fibers, bristles, bearings, gears, molded objects, coatings, and adhesives. The term nylon formerly referred specifically to synthetic polyamides as a class. Because of many applications in mechanical engineering, nylons are considered engineering plastics. Resins are valued for their chemical properties and associated uses, such as the production of varnishes, adhesives, lacquers, paints, rubber and pharmaceutical uses. The applications of synthetic resins are seen in some important industries like paint industry, adhesive industry, the printing ink industry, the textile industry, the leather industry, the floor polish, paper, agricultural industry etc. As it can be seen that there is an enormous scope of application of resins hence it is one of the major field to venture.

Synthetic Resins are materials with properties similar to natural plant resins. They are viscous liquids capable of hardening permanently. Chemically they are very different from resinous compounds secreted by plants. Synthetic resins are of several classes.

The growth of the synthetic resins market can be attributed to the high demand from the packaging sector due to favorable properties, including lightweight and ability to act as an excellent barrier, which allows for their usage in applications such as barrier packaging, shrink wraps, and pharmaceutical packaging.

The major contents of the book are properties, manufacturing process, formulae of synthetic resins and applications of synthetic resins, derivatives of resins, use of resins in polymer field, alkyd resin technology, epoxy resins, manufacture of polystyrene based ion-exchange, phenol formaldehyde reactions, polycarbonates resins, polyester coating compositions, synthetic rubbers, modification with synthetic resins,

water-soluble polymers, cross-linking of water-soluble coatings etc. This book also contains the list of manufacturers and dealers of raw materials, list of Chemical Plant, Photographs of Machinery with Suppliers Contact Details, Sample Plant Layout and Process Flow Chart.

The book will be very useful for new entrepreneurs, manufacturers of synthetic resins who can easily extract the relevant formulation and manufacturing process from the book.

Contents

Raw Materials Handling
Alkyd Manufacturing Plant
Corrective Measures During Processing
Applications of Alkyd Resins

5. AMINO RESINS
Formation of Amino Resins
Urea Formaldehyde Resins
Melamine Formaldehyde Resins
Other Amino Resins
Production of Amino Resins
Uses of Amino Resins
Machinery And Equipments
Economics of the Melamine-Formaldehyde
Resin/Urea-formaldehyde resin

6. BHILAWAN NUT SHELL LIQUID RESINS

7. CASEIN RESINS
Manufacture
Properties
Casein Adhesves for Bonding Paper
Casein Adhesive for a Binding Dissimilar Materials
Lime-Free Glue Formulations
Methods of Application

8. CASHEWNUT SHELL LIQUID RESINS
Chemistry of Cashew nut shell Liquid
Utilisation of Cashewnut Shell Liquid
Chemically Modified Cardanol Polymer

9. EPOXY RESINS
Introduction
Epoxy Resin Manufacture and Characterization
Curing Agents For Epoxy Resins
Principles in Formulating with Epoxy Resins
Solventless coating for application by heated two
componentair less spray equipment
Water Dispersible Epoxy Coatings
Epoxy Baking Enamels
Water-Dispersible Epoxy Resin Coatings
for Electrodeposition
Epoxy Aqueuos powder Suspensions (APS)

10. FURAN RESINS

11. HYDROCARBON RESINS
Petroleum Resins
Terpene Resins
Resins from Pure Monomers

12. ION-EXCHANGE RESINS
Theory and Mechanism

Types of Ion-Exchange Resins
Types of Ion-Exchange Resins
Properties
Applications
Manufacture
Manufacture of Polystyrene Based Ion-Exchange
Resins Polymerisation
Alternative Method of Synthesis of anIon-Exchange Resin
Process of Manufacture
Methods of Analysis
Determination of Physcial Properties:
Chemical Properties

13. INDENE-COUMARONE RESINS
Raw Material and Source
Method of Preparation
Mechanism of Polymerization
Physical Chemical Properties and Type
Hydrogenated Resins
Applications
Application in Adhesives
Coumarone-indene Resin Adhesives
Health and Hygiene Factors
Test Methods
Economics for Coumarone-indene Resin Plant

14. PHENOLIC RESINS
Raw Materials
Phenol Formaldehyde Reactions
Catalysts
Modified Phenolic Resins
Baking Phenolics
Dispersion Resins
Novolak Resins
Resols
Fillers for Phenolic Moulding Powders
Thermal degradation
Modified and Thermal - Resistance Resins
Oil Soluble Phenolic Resin
Heat and Sound Insulation Materials
Foundry Resins

15. BISPHENOL-FURFURAL RESIN

16. PARA-TOLUENE SULFONAMIDE RESINS

17. POLYCARBONATES RESINS
Properties
Methods of Manufacture

18. POLYAMIDE RESINS
Properties
Methods of Manufacture

19. POLYMIDE RESINS
Polymide Adhesives
Adhesive and Bonding Technology

20. POLYURETHANE RESINS
Raw Materials
Hazards of Isocyanates
Classification of Polyurethanes

21. POLYVINYL ALCOHOL RESINS
Introduction
Chemical Nature
Physical Properties
Modifiers
Commercial uses : Compounding and Formulating
Commercial uses : Processing Aids
Formulations
Preparation Process
Adhesives
Economics for Polyvinyl alcohol

22. POLYVINYL ACETATE SOLID RESINS
Manufacture
Vinyl Acetate Copolymers
Polyvinyl Acetate Emulsions
Manufacture
Laboratory Preparation of Polyvinyl Acetate
Commercial Preparation
Special Formulation Acetate Adhesive
As Adhesives In the Building Industry
Economics for Polyvinyl acetate

23. RUBBER RESINS
Introduction
Natural Rubber
Synthetic Rubbers
Chlorinated Rubber Resins
Cyclized Rubber Resins
Application And Formulations
High Styrene-Butadiene Rubber Resins
Styrene-Butadiene Rubber Adhesives
Chlorinated Biphenyls
Chlorinated Paraffins
Synthetic Rubber Resin Latexes
Nitrile rubber Adhesives
Butyl Rubber And Polysobutylene Adhesives
Processing for Butyl Polymers
Carboxylic Resin Polymers in Adhesives
Carboxylic elastoners in PSA
Carboxylic Functional Neoprenes as Contace Adhesives

24. SILICONE RESINS

Preparation of Silocones
Silicone Resins
Preparation and Formulation of Silicone-Resin based Coatings
Application Guides
Other Silicone Resin Application
Other Silicones for Surface Coatings

25. SHELLAC RESINS
Commercial Forms of Lac
Chemical Composition
Modification with Synthetic Resins

26. SUCROSE RESINS
Transesterification
Sucrose modified resins
Sucrose acetate isobutyrate (SAIB)

27. ROSIN & ROSIN DERIVATIVES
Composition, Reaction and Derivatives, Isomerization
Maleation
Oxidation, Photosensitized Oxidation
Hydrogenation
Hydrogenless Hydrogenation
Hydrocaraking of Rosin
Phenolic Modification
Salt Formation
Hydrogenolysis
Polyesterification
Preparations, Typical Uses
Chemical and Physical Properties of Amine D Acetate
Decarboxylation
Hydroxymethylation and Hydroxylation
Poly-Oxyalkylation
Oxonation

28. TERPENE RESINS
Hot Melt Adhesives (HMA) and coatings
Terpene-phenolic Resin (TPR)

29. WATER-SOLUBLE POLYMERS
Classification
Applications of Starches
The textile industry
Adhesive Applications
Liquid Adhesives
Miscellaneous Uses
Properties of Cellulose Ethers
Emulsion Polymerization

30. ALKYL AND HYDROXYALKYL CELLULOSE
Cellulosic Ethers, General Information
Manufacture

Powder and Film properties
Physical and chemiclal properties
Commercial Uses : Compounding and Formulating
Commercial Uses

31. WATER-REDUCIBLE RESINS
Water Soluble Polymers
Cross-Linking of Water-Soluble Coatings
Additives For Coatings, Pigments
Formulation of water-soluble coatings
Trouble Shooting with water-soluble polymers

32. PHOTOGRAPHS OF MACHINERY WITH SUPPLIERS CONTACT DETAILS
Reactor
Condenser
Thermic Fluid Heating System
Octagonal Blender
Industrial Storage Vessels
Ribbon Blender
Filter Press
Filter Tank
Moulding Machine
Ball Mill
Blender
Dryer
Roller Mill
Conveyor Dryer
Resin Plant
Blender Machine
Air Compressor
Heat Exchanger
Storage Tank

33. SAMPLE PLANT LAYOUT AND PROCESS FLOW CHART
Alkyd Resin Manufacturing
Resin Production Equipment
Process Flow Chart for Toner Resins
Polyester Resin Production
Factory Layout for production of Alkyd Resin Production Plant

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