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.

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