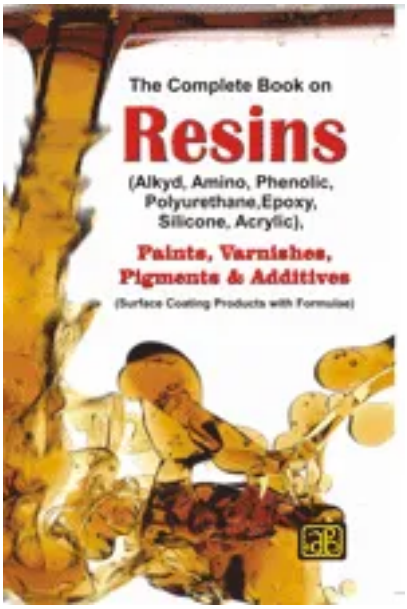
Entrepreneur India

106-E, Kamla Nagar, New Delhi-110007, India.
Tel: 91-11-23843955, +91 9097075054
Mobile: +91-9097075054
Email: npcs.ei@gmail.com, info@entrepreneurindia.co
Website: www.entrepreneurIndia.co



The Complete Book on Resins (Alkyd, Amino, Phenolic, Polyurethane, Epoxy, Silicone, Acrylic), Paints, Varnishes, Pigments & Additives (Surface Coating Products with Formulae)(3rd Revised Edition)

Code	NI64
Format	paperback
Indian Price	₹0

US Price	$0
Pages	632
ISBN	9788178331652
Publisher	Asia Pacific Business Press Inc.

Description

Surface coating is the application of decorative or protective materials in liquid or powder form to substrates. These coatings normally include general solvent type paints, varnishes, lacquers, and water thinned paints. Surface coating involves different types of products for example paints, varnishes, resins, polyesters, pigments etc. Alkyd resin is complex oil modified polyester that serves as the film coating agent in some paints and clear coatings. Varnish is one of the important parts of surface coating industry. They are used as clear, transparent coatings or as vehicles for a wide variety of pigmented, opaque coatings for architectural and industrial purposes.

India’s strong economic growth has propelled the paint industry to double digit growth over the past few years and has made it Asia Pacific fastest growing paint market. The spurt in the economic growth over the past few years has caused a tremendous increase in the size of the industry. The field of surface coatings is now so extensive, and is developing rapidly.

This handbook covers all aspects of coating technology including composition, preparation, application, manufacturing process and photographs of plant & machinery with supplier’s contact details. The major contents of the book are oleoresinous media, varnishes: composition, manufacture & use, alkyd resin technology, manufacture of alkyd resins, polyesters, amino resins, phenolic resins, polyurethane resins, epoxy resins, silicone resins, acrylic solution resins, emulsion polymerization theory, emulsion polymers, water reducible resins, water soluble polymers, solvents, inorganic pigments, titanium dioxide pigments, organic pigments, paint driers and architectural paints etc.

It will be a standard reference book for professionals, entrepreneurs, food technologists, those studying and researching in this important area and others interested in the field of resins, paints, varnishes, pigments & additive industry.

Content

Contents

1. THE PAST, PRESENT AND FUTURE OF THE SURFACE
COATINGS INDUSTRY
2. OLEORESINOUS MEDIA
Industry Terminology
Ram Materials Used in Leoresinous Production
Finished Products Based on Oleoresinous Media
Manufacturing Equipment
Process Control Testing
3. VARNISHES: COMPOSITION, MANUFACTURE AND USE
Composition
Oils Used in varnishes
Gasproofing
Water and Alkali Resistance
Manufacture of Oleoresinous Varnishes
Varnishes Vs. Alkyds
4. ALKYD RESIN TECHNOLOGY
Raw Materials
Formulation of Alkyd Resins
Calculation of Alkyd Formulations
Calculation of Raw Materials for an Alkyd Prepared by the Monoglyceride Process
Typical Formulations (all quantities by mass)
5. MANUFACTURE OF ALKYD RESINS
Alcoholysis
Catalysts
Control of Alcoholysis
Fatty and Process
Comparison of Fusion and Azeotrope Processes
Raw Materials Handling
Alkyd Manufacturing Plant
6. POLYESTERS
Main Components of Unsaturated Polyesters
Functions of Initiators, Accelerators, Inhibitors
Effect of Structure on Properties of Cured Products
Polyester Coating Compositions
7. APPLICATIONS OF ALKYD RESINS
Very Long Oil Alkyds: 75 per cent and above
Long Oil Alkyds: 60 to 75 per cent
8 AMINO RESINS
Formation of Amino Resins
Urea Formaldehyde Resins

Melamine Formaldehyde Resins
Uses of Amino Resins
Water Based Coatings
9. PHENOLIC RESINS
Phenol-Formaldehyde Reactions
Oil Soluble 100 per cent Phenolic Resins
Baking Phenolics
10. POLYURETHANE RESINS
Tolylene Diisocyanate (TDI)
4, 4 Diphenylmethane Diisocyanate (MDI)
Other Diisocyanates Used in Coating Systems
Hydroxy Component
Hazards of Isocyanates
Classification of Polyurethanes
Moisture-cured Urethanes
Blocked Isocyanate Systems
Two-component Catalyst-cure Polyurethanes
11. EPOXY RESINS
Epoxide Group Content (ECG)
Curing Agents for Epoxy Resins
Principles in Formulating with Epoxy Resins
Solvent-based Coatings
Single-pack Thermoplastic Epoxy Systems

12. WATER DISPERSIBLE EPOXY COATINGS
Epoxy/Polyamide Emulsions
Water-dispersible Epoxy Resin Coatings for Electrodeposition
13. SILICONE RESINS
Preparation of Silicones
Polymerization
Methyl-and Phenyl-content
Blending Resins178
Preparation and Formulation of Silicone-Resin based Coatings
Application Guides
Applying the Coating
14. ACRYLIC SOLUTION RESINS
Backbone Monomers
Addition Polymerization
Copolymerization
Thermoplastic Acrylics
Thermosetting Acrylics

Acid Copolymers
15. EMULSION POLYMERIZATION THEORY
Polymerization in Emulsion Systems
16. EMULSION POLYMERS: MANUFACTURE AND TESTING
Process Variables
Delayed Addition Process
Alternative Processes
Surfactant Addition Techniques
Agitation
Surfactant Addition Techniques
Emulsion Testing
Ultracentrifugation
17. APPLICATIONS OF EMULSION POLYMERS
Architectural Applications
Examples of Decorative Paints
Industrial Applications
Adhesives Industry
Pressure Sensitive Uses

18. WATER-REDUCIBLE RESINS
Water-soluble Polymers
Acrylic-modified Water-soluble Alkyds
Silicone-modified Alkyds and Polyesters
Keeping the Epoxide Ring Available for Subsequent Cross-linking
Thermoplastic Polymers
Thermosetting Polymers
Melamine Formaldehydes
Other Water-soluble Polymers
Variation of Amine Levels
Drying Properties
Coupling Efficiency
Driers for Air Dry and Force Dry Systems
Cross-linking of Water-soluble Coatings
Trouble Shooting with Water-Soluble Polymers
19. WATER-SOLUBLE POLYMERS
Cellulose and its Derivatives
Flow Characteristics of Water Soluble Polymer Solutions
Thixotropy
Rheology
20. SOLVENTS
Evaporation Rate

Liquid/Liquid Boiling Equilibrium
Applications Technology
Evaporation from Polymer Film
Chemical Solvents
Nitrocellulose and Other Lacquers
Latex Paints
Solvent Control
Gas Chromatography
21. INORGANIC PIGMENTS
The Functions of a Pigment
Properties of Pigments
The Classification of Pigments
Properties of Inorganic Pigments
Lead Chromate
Chrome Oxide Pigments
Zinc Oxide
Zinc Sulfide Lithopone
Calcium Plumbate
Mixed Phase Pigments
22. TITANIUM DIOXIDE PIGMENTS
The Chloride Process
Applications of Titanium Pigments
Dispersion of Titanium Pigments
Gloss Development
23. ORGANIC PIGMENTS
Colour and Chemical Constitution
Azo-Condensation Pigments
Pigment Conditioning
Dyestuffs
Colour Index Classification
24. EXTENDER PIGMENTS
Particle Size and Shape
Particle Size Distribution
Types of Extender Pigment
China Clay (Kaolin)
25. PAINT DRIERS
Drier Recommendations
Stability of Drying Performance on Storage
Driers for Use in Water based Systems
26. PAINT ADDITIVES
Wetting and Dispersing Agents

Aluminium Soaps
Hydrogenated Castor Oil (Triglyceride of 12-hydroxy Stearic Acid)
Anti-skinning Agents
Anti-flood and Anti-float Additives
Recognizing Flooding and Floating
Identification of Mildew
Latex Paint Additives
Stabilizing Surfactants (Non-ionics)
Latex Thickening Agents
Coalescing Aids
27. MANUFACTURE OF PAINTS
28. ARCHITECTURAL PAINTS
Formulating Exterior Paints for Wood
Interior Paints for Plaster and Wallboard
Exterior Emulsion Paints for Masonry
Exterior Solution Type Paints for Masonry
Interior and Exterior Enamels
Enamels for Wood and Concrete Floors
29. INSIDE IMAGES OF A PAINT FACTORY
30. PHOTOGRAPHS OF PLANT & MACHINERY WITH SUPPLIER'S CONTACT DETAILS

About Niir

NIIR Project Consultancy Services (NPCS) is a reliable name in the industrial world for offering integrated technical consultancy services. Its various services are: Pre-feasibility study, New Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Preparation of Project Profiles and Pre-Investment and Pre-Feasibility Studies, Market Surveys and Studies, Preparation of Techno-Economic Feasibility Reports, Identification and Selection of Plant and Machinery, Manufacturing Process and/or Equipment required, General Guidance, Technical and Commercial Counseling for setting up new industrial projects and industry. NPCS also publishes various technology books, directories, databases, detailed project reports, market survey reports on various industries and profit making business. Besides being used by manufacturers, industrialists, and entrepreneurs, our publications are also used by Indian and overseas professionals including project engineers, information services bureaus, consultants and consultancy firms as one of the inputs in their research.