

CONTENTS

	Page
Chapter V – Epoxy Resins	
Introduction	3-4
The Manufacture of Epoxy Resins	4-5
Commercial Epoxy Resins	4-6
Curing of Epoxy Resins	6-14
Applications for Two-Pack Epoxy Coatings	14-15
Powder Coatings	16
Water Dispersible Epoxy Coatings	16
Epoxy Ester Resins	16-20
Epoxy Ester Manufacture	20
Typical Epoxy Ester Formulations	20-23
Applications of Epoxy Ester Coatings	23-24
Typical Coating Formulations	24-26
Chapter VI – Phenol –Formaldehyde and Amino Resins	
Phenol-Formaldehyde Resins	29-31
Phenol-Formaldehyde Resoles	31-34
The Curing Reactions of Phenolic Resoles	34-37
Phenol-Formaldehyde Novolacs	37
General Comments on the Curing of Phenolic Resins	38
Raw Materials used in Commercial manufacture of Phenolic Resins	38-40
The manufacture of Phenolic Resins	40-41
Formulations	41-42
Properties and Applications of Phenolic Resins in surface Coatings	43
Formulations	43-44
Butylated Phenolic Resin	44-45
Formulation	45-46
Amino resins	46
Amino Resin-Formaldehyde Reactions	46-55
The Curing of Amino Resins	55-56
General Comments on Co-Cure of Amino Resins	56-57
The Properties of Alkyd-Amino Resin Coating Systems	57-58
The Properties of Amino-Epoxy Resin Co-Cure Systems	58-59
The Properties of Amino-Acrylic Resin Co-Cure Systems	60-61
Formulations	61-65
Coating Formulations	65-71
Chapter VII – Polyamides	
Introduction	75
Dimer Acid	76-77
Monofunctional Acids	77
Amines	77-78
Methods of Preparation of Polyamides	78
Non-Reactive Polyamides	79
Polyamides for Inks	79-86
Polyamides for Thixotropic Alkyds	86-87
Reactive Polyamides – Epoxy Resin Curing Agent	87-89
The Epoxy Amine Reaction	89-91
The Use of Polyamides in Curing Epoxy Resins	91-92
How Much Polyamide Resin to Use?	92-93
Pot Life	93-94

Degree and Rate of Cure and Final Film Properties	95-97
Pigment Selection	97-98
Selection of Epoxy Resin and Curing Agent	98
Choice of Solvent	98-100
Reactive Diluents	100
Applications	100-101
Formulations for Epoxy/Polyamide Coatings	101-117
 Chapter VIII – Vinyl and Acrylic Resins	
Vinyl and Acrylic Monomers	121-126
Monomer Selection	126-128
Polymerisation Methods	129-130
Theoretical Considerations	133-156
Half Lives of Initiators	139-144
Copolymerisation	145-148
Conversion of Monomer to Polymer	156-160
Polymer Properties	160-168
Techniques for Polymerisation	168-174
Solution Polymerisation – Plant and Process	174-175
Types of Solution Vinyl Resins	175-189
Solvent Selection	189-197
Dispersion Acrylics (non-Aqueous Dispersion)	197-199
Solution Polymers in Paints and Inks	199-200
Formulations and Methods for the Preparation of Solution and vinyl Acrylic Resins	200-210
Formulations for Coatings and Inks based on Solution Polymers	210-217
Printing Ink Applications	217-219
Vinyl and Acrylic Aqueous Polymerisation	219-229
Suspension Polymerisation	229-234
Mechanism of Emulsion Polymerisation	234-240
Components used in Emulsion Polymerisation	240-249
Formulations and Methods for the Preparation of Emulsion Polymers	249-271
Properties and Test Methods Peculiar to Emulsion Polymers	272-275
Film formation	275-278
Application of Emulsion Polymer in Paints	278-297
Printing Inks	297-303
Floor Polish Applications	303-306
Paper Coating	306-308
Index to Trade names	309
Index	311