

# **Paints, Varnishes, Lacquers, Spirit Varnishes, Solvents, Thinners and Surface Coatings**

**Manufacture of Paint, Varnish & Allied Products (3rd Revised  
Edition)**

**Author:** P. K. Chattopadhyay

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Manufacture of Paint Varnish & Allied Products (Industrial Paint, N.C. Thinner, Paint Industry, Infrared Reflected (IR) Paint, High Temperature Aluminium Based Paint, Paint Drier, Powder Coating Paint, Latex Paints for Roof) Varnishes are organic solvent-based solutions of natural or manmade resins that dry when applied thinly to a surface. The dried films are firm and translucent in appearance. The films have varied degrees of gloss, protective ability, flexibility, and durability depending on the solution's composition. Varnishing materials are as varied as the many paint media and techniques used throughout the history of painting. The advantages of applying a transparent resin as a final surface coating were discovered in Antiquity; waxes, for example, have been discovered on the surfaces of ancient wall murals. By the early Renaissance, a number of materials, ranging from egg white to resin, had been produced for use as painting varnishes. Tree resins (mastic and dammar), fossil resins (copal), and insect excretions (shellac) became the most common materials used as varnishes over time. Artists and restorers still use many of these natural materials today. There have also been numerous synthetic varnishes made that provide a wide range of surface properties. Synthetic varnishes have gained popularity, however they differ from natural varnishes in terms of qualities. Varnishes should be removable so that the underlying surface can be cleaned without being damaged. By allowing the painting to be solubilized and removed, along with any surface pollution, the use of a removable varnish provides a vital tool to anyone wanting to restore or clean the painting. The varnish must be flexible enough to flow with the painting surface while still being firm enough to prevent grime and dust from adhering to the surface by giving a non-tacky surface. It must be made with the appropriate porosity to either allow moisture to pass through or provide a moisture barrier, depending on the substrate and weather circumstances. It should be resistant to chemicals and water. Over time it should resist discoloration caused by factors like humidity, heat and visible and ultra violet (UV) light sources. Finally, the varnish must possess excellent clarity, without discoloration or fogging. The global paints and coatings market is expected growth rate (CAGR) of 8.5%. There is a rapid growth in consumption of paints and coatings in many industries. Paints and coatings are widely used in the automotive, construction and manufacturing industries. Biocides

are being used in paints to enhance their longevity and to maintain their quality. Biocide additives have been designed to protect paints from getting damaged during storage or to keep fungi and algae from growing on the applied paints. The market for biocides in paints will continue to grow due to the switch from solvent based to water based paints as they are not hazardous for human health and environment, and minimize fungal and algae growth. However, replacement of traditional biocides based on chlorine and formaldehyde with environmentally friendly biocides add to the costs of paint production. Construction, automotive and transportation, and the wood sectors all employ paints and coatings. They have a significant application in the building and construction business, where they are used to protect structures from harm from the outside. In addition, the product is used to decorate residential and non-residential infrastructures and buildings, industrial equipment, vehicle and marine, industrial wood, and other applications. The materials are widely used in diverse applications, owing to their properties such as protection from environmental factors, corrosion protection, reflection-absorption, anti-friction, and hardness. High-tech coatings that comprise cationic electrocoating ingredients are becoming more popular, as they protect multifarious metal objects against corrosion by covering all the corners and crevices. High-performance ceramic extends the life of aircraft turbine engines and automobile engines. It primarily serves to safeguard components against high temperatures, wear, and corrosion. This industry's growth has led to huge product demand in other applications such as residential and commercial construction. Furthermore, these products also gain momentum due to applications such as automotive & transportation, wood, coils, and industrial metals that will lead to an upsurge in the global market. Based on application, the market is categorized into architectural, automotive OEM, marine, coil, general industries, protective coatings, automotive refinish, industrial wood, and others. Amongst these applications, the architectural segment is expected to remain dominant in terms of revenue and volume during the forecast period. In architectural applications, coatings and paints are mainly used for decorative purposes for residential and non-residential structures to protect them from environmental harm, UV radiation, and others. Increasing use of these materials in diverse industries such as construction and automotive is expected to fuel this market's growth. High demand for paints and coatings in the automotive industry, owing to its color stability, continuous protective film formation, corrosion resistance, abrasion and scratch resistance, flexibility, and durability, will boost the market prospects. The growth in

coil segments can be linked to the high production of sheets of various materials such as polymers, steel, and copper. Coils are used in semiconductors, household wires, cables, automotive, building & construction, etc. The book covers a wide range of topics connected to Industrial Paint, N.C. Thinner, Paint Industry, Infrared Reflected (IR) Paint, High Temperature Aluminium Based Paint, Paint Drier, Powder Coating Paint, Latex Paints for Roof, BIS Specifications, as well as their manufacturing processes and plant economics. A thorough guide on Paint Varnish & Allied Products manufacture and entrepreneurship. This book is a one-stop shop for everything you need to know about the Paint Varnish & Allied Products, which is ripe with opportunity for producers, merchants, and entrepreneurs. This is the only book that covers the process of making commercial Paint Varnish & Allied Products. From concept through equipment procurement, it is a veritable feast of how-to information.

# Modern Technology of Paints, Varnishes & Lacquers (2nd Edition)

**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI66

**Pages:** 682

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**Price:** Rs. 1,075.00 **US\$** 28.95

Surface coating industry is one of the most popular industries. Paints, varnishes and lacquers industry is gaining ground at a rapid pace in modern time accompanied with closed advance in surface coating technology. They are formulated for specific purposes: outside house paints and exterior varnishes are intended to give good service when exposed to weathering; interior wall paints are formulated to give excellent coverage and good wash ability; and lacquers are formulated for rapid drying. Varnish is one of the important parts of surface coating industry. Varnish is a transparent, hard, protective finish or film primarily used in wood finishing but also for other materials. They are used to change the surface gloss, making the surface more matte or higher gloss, or to provide the various areas of a painting with a more unified finish. Varnishes are also applied over wood stains as a final step to achieve a film for gloss and protection. Some products are marketed as a combined stain and varnish. Paint is any liquid, liquefiable, or mastic composition which after application to a substrate in a thin layer is converted to an opaque solid film. It is most commonly used to protect, colour or provide texture to objects. The paint industry volume in India has been growing at 15% per annum for quite some years now. As far as the future growth prospects are concerned, the industry is expected to grow at 12 to 13% annually over the next five years. The technology is required to produce different type of new paints and varnishes based on different type of uses. The paint and coatings industry plays an integral role in sustainability; coatings protect the objects we depend on every day, preserve our possessions, so they last longer and provide for a sustainable future. They are indispensable products that extend the useful life of everyday objects by acting as a protective barrier. These newer products have enabled paint manufacturers to improve the performance properties of their paints and coatings and so satisfy the more stringent requirements of our modern industrial society. The future for industrial paints, varnishes and lacquers is bright. In the next few years its value will go up gradually in line with the global trend. The major contents of the book are application of paints, fundamentals of paint, varnishes and lacquers, manufacturing of different type of paints, paint formulation, pigment dispersion, emulsion paints, and so on.

The book deals with fundamentals of paints, Varnishes and lacquers, pigments, Oils used in paints and varnishes, solvents, dryers, plasticizers, additives for surface coating, various types of paint manufacturing etc. The book is very useful for new entrepreneurs, existing units, technocrats, technical institutions and for those who wants to diversify in the field of paints manufacturing.

**Paints, Pigments, Varnishes & Enamels Technology Handbook  
(with Process & Formulations) 2nd Revised Edition**



**Author:** NIIR Board of Consultants and Engineers

**Format:** Paperback

**Book Code:** NI168

**Pages:** 624

**ISBN:** 9788178330372

**Price:** Rs. 1,675.00 **US\$** 44.95

The use of paints, varnishes and enamels for decoration is nearly as old as human culture itself. These are widely used in homes as well as in industry because painted surfaces are attractive and easy to keep clean. Paint is generally made up of a pigment. It is a chemical material, which alters the color of reflected or transmitted light due to wavelength-selective absorption. Varnish is a transparent, hard, protective finish or film primarily used in wood finishing but also for other materials. Varnish is traditionally a combination of a drying oil, a resin, and a thinner or solvent. The technology of paints, varnishes and enamels is changing rapidly and becoming more complex each day. The paint industry is an important segment of the chemical industry. Enamel paint is paint that air dries to a hard, usually glossy, finish, used for coating surfaces that are outdoors or otherwise subject to wear or variations in temperature. The Indian paint industry has seen a gradual shift in the preferences of people from the traditional whitewash to higher quality paints like emulsions and enamel paints with improvement in lifestyle. India is the second largest consumer of paint in Asia. Over the past few years, the Indian paint market has substantially grown and caught the attention of many major players. The market for paints in India is expected to grow at 1.5 times to 2 times GDP growth rate in the coming years. In terms of volumes, pigments demand is expected to reach 4.4 million tonnes. Due to increased Government funding for infrastructure, demand for paints both in industrial and decorative segment is set to rise, thereby rendering Indian paint industry to be poised for further growth. This handbook is designed for use by everyone engaged in the paints, pigments, varnishes and enamels industry. It provides all the information of the various formulae and processes of paints, pigments, varnishes and enamels. The major content of the book are paint testing, color in paint, maintenance paints, emulsion paints, exterior or interior paints, exterior or interior multicolor paints, exterior swimming pool paints and enamels, interior ceiling paints, metal paints, marine paints, enamel paints, interior fire- retardant paints, interior gloss paints, paint formulation, manufacture of natural copal varnishes, floor paints and enamels, varnishes, lacquers and floor finishes, white pigments, colored pigments, pigment dispersion etc. The book contains addresses of plant & machinery suppliers with their Photographs. It will be a standard reference book for professionals, entrepreneurs, those studying

and researching in this important area and others interested in the field of paints, pigments, varnishes and enamels technology.

# [Selected Formulary Book on Inks, Paints, Lacquers, Varnishes and Enamels](#)

**Author:** NPCS Board of Consultants & Engineers

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**Book Code:** NI192

**Pages:** 568

**ISBN:** 9788190439855

**Price:** Rs. 1,475.00 US\$ 150.00

A formula is an entity constructed using the symbols and formation rules of a given logical language. In science, a specific formula is a concise way of expressing information symbolically as in a mathematical or chemical formula. Formulation is a key process in the overall life cycle so that products are delivered that is of the right quality, at a competitive cost, and is made available within the specified time scale. The chemical formula identifies each constituent element by its chemical symbol and indicates the number of atoms of each element found in each discrete molecule of that compound. If a molecule contains more than one atom of a particular element, this quantity is indicated using a subscript after the chemical symbol and also can be combined by more chemical elements. It is all in the formula, whose implications also remain undiscovered by modern economists. It plays a major role in every process whether it is manufacturing process or preservation. There is a big importance of formula in our life because formulas and equations deal with everyday things like shapes, investments, mixing things, movement, lighting, travel and a host of other things they provide information you can use in planning activities. This book basically deals with inks and marking inks, inks for stamp pads, inks for hand stamps, color stamps for rough paper, indelible hand stamp ink, white stamping ink for embroidery, stencil inks, blue stencil inks, indelible stencil inks, sympathetic inks, typewriter ribbon inks, coloring agents, writing inks, how to decorate furniture, novelties, furniture lacquer enamels, white lacquer enamel, egg shell white enamel, high gloss white enamel, colors for furniture spraying, furniture lacquer formulas., enamels and industrial varnishes, general purposes varnish, spar and boat varnish, exterior varnish, varnish for outside work, spar and yacht varnish, quick drying interior varnish, crystal varnish (indoor), hard varnish for floors, colored linseed oil floor dressing, wrinkle finish varnish, brewers pitch and keg varnishes, undercoat varnish, quick drying varnish mastic varnish etc. This book present several hundred advanced product formulations for household, industrial and other applications. This book will be of help to development chemists looking for leads in the formulation of a wide range of products.

# Handbook on Paints and Enamels

**Author:** NPCS Board of Consultants & Engineers

**Format:** Paperback

**Book Code:** NI214

**Pages:** 592

**ISBN:** 9788178331164

**Price:** Rs. 1,275.00 US\$ 33.95

Paints and enamel industry is gaining ground at a rapid pace in modern time accompanied with closed advance in surface coating technology. They are formulated for specific purposes: outside house paints and exterior varnishes are intended to give good service when exposed to weathering; interior wall paints are formulated to give excellent coverage. Enamel paint is paint that air dries to a hard, usually glossy, finish, used for coating surfaces that are outdoors or otherwise subject to wear or variations in temperature; it should not be confused with decorated objects in painted enamel, where vitreous enamel is applied with brushes and fired in a kiln. Indian paint industry has a bright future. The Indian paints market has the potential to grow over the next decade at 15 to 20 per cent per annum owing to more investments in the housing segment and improving infrastructure, high growth in the Indian automobile industry, etc. which in turn would mean greater demand for paints, as most people aspire for better lifestyle. Moreover the per capita consumption is also low. The demand for premium category paints is likely to increase with rise in construction of commercial infrastructure. The players with aggressive marketing strategies and comprehensive product portfolios will grow at a faster rate. The emerging trends in technology and marketing indicate that the industry is likely to consolidate in the coming years with industry leaders improving their market share. Some of the fundamentals of the book are exterior paints, rapid drying stain and blister resistant house paint, exterior white paint, flat exterior paint, exterior alkyd paint, green trim paint, outside white house paint, hi hiding gloss white house paint, white primer, exterior white house paint, speciality paints, book cloth coating, upholstery fabric coating, green epoxy polyamide flexible fire retardant coating, fire retardant clear topcoats, ignition waterproofing seal coating, polyurethane paper coating, fluorescent gravure ink, industrial paints, aluminum baking enamel, gloss black enamel, corrosion resistant baking primer, heat resistant primer, orange baking enamel, purple baking enamel, black baking enamel, red baking enamel, blue baking enamel etc. This book is the outgrowth offered in the chemistry and chemical engineering of organic polymeric and resinous substances. Needless to say such a book is not available because of the rapidity of growth in the polymer

field; it has been difficult to resist the temptation to all with new discoveries and products. The book is emphasized on manufacturing of different types of paints, enamels and allied products. It was purposely made wide, so that the book could be used as a text regardless to particular field of interest. All the chapters are introduced separately with simpler language. The book will be very resourceful for technocrats, new entrepreneurs, industrialists and for those who wants to diversify into this field.

# Surface Coating Technology Handbook



**Author:** NPCS Board of Consultants & Engineers

**Format:** Paperback

**Book Code:** NI216

**Pages:** 680

**ISBN:** 9788178331188

**Price:** Rs. 1,475.00 US\$ 39.86

Surface Coating is in use since long back is rapidly increasing with the development of civilization. There has been considerable impact in this field. Surface coating technology specializes in finding out engineering solutions to all the critical production problems related to coating the products on a continuous and consistent basis in your production plant. Surface coating can be defined as a process in which a substance is applied to other materials to change the surface properties, such as colour, gloss, resistance to wear or chemical attack, or permeability, without changing the bulk properties. Production of surface coating by any method depends primarily on two factors: the cohesion between the film forming substances and the adhesion between the film and the substrate. The development of science and technology revolutionized the surface coating industry in the progressive countries of the world. Surface coating technology involves the use of various types of products such as resins, oils, pigments, polymers, varnishes, plasticizers, emulsions, etc. We have completely replaced costly petroleum solvents with water and we get cheaper finished products with no evaporation loss and fire hazards. Paint is any liquid, liquefiable, or mastic composition which after application to a substrate in a thin layer is converted to an opaque solid film. It is most commonly used to protect, colour or provide texture to objects. The paint industry volume in India has been growing at 15% per annum for quite some years now. Varnish is one of the important parts of surface coating industry. They are used to change the surface gloss, making the surface more matte or higher gloss, or to provide the various areas of a painting with a more unified finish. Plasticizer plays an important role in the formation of polyvinylchloride (PVC). It is also used to plasticize the polymers. Polymers are divided into three different types; linear polymers, branched polymers and cross linked polymers. Polymer Energy system is an award winning, innovative, proprietary process to convert waste plastics into renewable energy. On the basis of value added, Indian share of plastic products industry is about 0.5% of national GDP. This book basically deals with principles of film formation, evaporation of solvent from a solution, chemistry and properties of drying and other oils, glyceride structure and film formation, the size of polymer molecules, processing of oil

and resin, inorganic pigments, classification by chemical constitution, azo pigments, organic pigments in architectural (decorative), organic pigments in industrial finishes, solvent requirements of specific resins convertible systems, molecular structure of polymer plasticiser systems, properties of plasticised polymers, surface active agents, optical properties, rheological characteristics, emulsions and other aqueous media, formation of polymer emulsions, modern methods of analysis etc. The book presents a concise, but through an overview of state of technology for surface coating. This is organized into different chapters like principal of film formation, chemistry and properties of drying and other oils, processing of oil and resin, organic pigment, solvents, plasticizer, surface active agent, surface preparations etc. This book is an invaluable resource to technocrats; new entrepreneurs, research scholars and others concerned to this field.

# Spirit Varnishes Technology Handbook (with Testing and Analysis)

**Author:** H Panda

**Format:** Paperback

**Book Code:** NI234

**Pages:** 560

**ISBN:** 9788178331393

**Price:** Rs. 1,275.00 **US\$** 33.95

Varnish is a clear finish best suited for accenting wood grain. Technically, all resin and solvent mixes are varnishes. Most resin or gum varnishes consist of a natural, plant or insect derived substance dissolved in a solvent. The two main types of natural varnishes are spirit varnish (alcohol-based) and turpentine or petroleum based varnish. Spirit varnishes made with alcohol are conveniently prepared and on account of their rapid drying and leaving no disagreeable smell are in frequent use in the household for covering various articles of art. Resin is a class of non volatile (non-evaporating), solid or semisolid organic substances obtained directly from certain plants as exudations or prepared by polymerization of simple molecules. Some hard and soft resins used in varnishes are amber, copal, shellac, sandarac, mastic, resin of turpentine, dammar etc. Rosins are classified as pale yellow, yellow, reddish to yellow, brown or black rosin. If the injection water be not completely expelled the rosin is opaque. If the essential oils have not been completely eliminated the rosin is viscous and tacky. Spirit varnishes are more or less thin, more or less viscous, colourless or more or less coloured, opaque or transparent solutions, of one or more natural resins, e.g. shellac and shandarac etc., in one more appropriate volatile solvents which leave on evaporation a thin, more or less resistant film which both adorns and protects the object on which it is applied. Some of the fundamentals of the book are characteristics of spirit varnishes solvents, chemistry and distillation of rosin, sources and methods of obtaining turpentine, distillation of turpentine, turpentine testing and turpentine substitutes, chemistry and distillation of rosin, rosin spirit rosin oil, chemistry of terpenes and camphors, amber, asphaltum collodion and celluloid varnishes, India rubber, insulating, mastic and matte spirit varnishes, rosin spirit, sandarach, shellac spirit varnishes and enamels, testing and analysis of spirit varnishes, the determination of resins and solvents in spirit varnishes. This book gives detailed information on spirit varnishes, types and characteristics of spirit varnishes, sources of origin, principles of manufacturing processes, testing and analysis of spirit varnishes and many more. We hope this book will be very resourceful to all its readers, new entrepreneur, libraries, paint and varnish technologists existing industries etc.

# The Testing Manual of Paints, Varnishes and Resins

**Author:** H. Panda

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**Price:** Rs. 1,875.00 US\$ 50.67

Paint can be applied to almost any kind of object. It is used in the production of art, in industrial coating, as a driving aid (road surface marking), or as a barrier to prevent corrosion or water damage. Quality control for paint product can be achieved through conducting a number of physical and chemical tests to paint samples. In the paint and coating industries, paint testing is often used to determine if the paint or coating will adhere properly to the substrates to which they are applied. Testing of paint, varnishes and resins can be done in a number of different ways. The fact of the matter is that many industries use several different paint testing methods in order to ensure accurate results. Products of the surface coating are essential for the preservation of all types of architectural structures, including factories, from ordinary attacks of weather, micro and macro organisms, atmospheric pollutant, etc. Architectural coatings are usually applied to wood, gypsum wall board, or plaster surfaces. Bituminous coatings are used on surfaces to reduce or eliminate the destructive effects of weather, chemicals and water vapour. They are also used as sound deadeners, to provide resistance to heat transfer and to provide abrasive coatings to minimize slip hazards. Traffic paint is an important factor in the control of traffic, not only of motor vehicles but also of aircraft at airports and of pedestrian traffic. Proper paint formulations depend upon raw materials selection and accurate calculation of the amounts of its constituents. Therefore it becomes necessary to adopt various test methods for testing the quality of product. The final product shall have no adverse effect on the health of personnel when used for its intended purpose and applied in approved facilities with the use of approved safety equipment. This testing manual elaborates the methods used to determine the physical and chemical properties of paint, varnish, resins, and related materials. Some of the fundamentals of the book are biological deterioration of paints and paint films, weathering tests natural weathering, artificial weathering machines, new jersey zinc company machine, gardener parks wheel, atlas weather Ometer, sunshine carbon arc weather Ometer, British railways machine, British paint research station machine, waxes and polishes, putty, glazing compounds, caulking, compound and sealants, tile like coatings, applicable specifications, adhesion tests, Evans adhesion

test, resistance to alkaline peeling (Evans method), paint for electrocoating, synthetic resins, driers and metallic soaps, natural resins The purpose of this book is to help its readers to establish standardized testing methodologies and to eliminate unnecessary or undesirable variations in test results when evaluating a products adherence to specification requirements. It is hoped that this book will help its readers who are new to this sector and will also find resourceful for new entrepreneurs, existing industries, technical institution etc.

# Handbook on Paint Testing Methods



**Author:** H. Panda

**Format:** Paperback

**Book Code:** NI237

**Pages:** 568

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**Price:** Rs. 1,575.00 **US\$** 42.56

Paints and their allied products like varnishes, enamels, pigments, printing inks and synthetic resins protect assets from corrosion. These are increasingly being used in automotive, engineering and consumer durable sectors. Paint testing can be done in a number of different ways. The fact of the matter is that many industries use several different paint testing methods in order to ensure accurate results. Paint should be tested in a wet form for particular properties but also in the dry form. Testing of paints generally falls into three categories: testing of the raw materials, testing of the finished product and performance testing using accelerated weathering and other simulation type methods of evaluation. Coatings technologists deal with interfaces of all classes gas liquid as in an aerosol spray liquid liquid, as in an emulsion gas solid, as in a dry pigment before its immersion in a vehicle liquid solid, as in a pigment dispersion and solid solid, as when the crystal faces of two different pigment particles are in tight contact. Paint scientists are particularly interested in the formation of liquid solid interfaces that are stable in the package, that is, in the permanent replacement of the air at the air solid interface of the pigment by the vehicle to give the liquid solid interface of the dispersion. In coatings and similar products, the criteria for best performance particulate ingredients; inorganic, organic, extender and metallic flake pigments and dispersed phase of latexes depends on the size and shape of particles composing the particulate materials. The purpose of paint testing is to help and ensure that the minimum requirements for ingredients and material characterization are met by the manufacturer on a batch basis, and to help ensure that the formulated product will provide satisfactory performance in the environment. Handbook on Paint Testing Methods explains about aspect of gloss, specular gloss, sheen, contrast gloss, absence of bloom gloss, distinctness of image gloss, specular gloss evaluation, specular reflectance, geometric considerations, instrumentation, goniophotometers, specular glossmeters, basic factors producing hiding power, refractive indexes of white pigments, refractive indexes of organic pigments, films for testing preparation of films for test, pigments and extenders, metallic flake pigments, latexes, methods for determining particle, treatment of data, particle size with light microscope etc. This handbook elaborates the different testing methods of paints with an understanding of the various tests

that can be performed on product performance. This handbook will be very helpful to its readers who are related to this field and will also find useful for upcoming entrepreneurs, existing industries, technical institution, etc.

# Manufacture of Thinners & Solvents (Properties, Uses, Production, Formulation with Machinery Details) 2nd Edition

**Author:** NPCS Board of Consultants & Engineers

**Format:** Paperback

**Book Code:** NI306

**Pages:** 296

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Solvents are defined as chemicals compound that are introduced during manufacture of the paint itself and before packaging, in order to maintain all components of the paint in a liquid / viscous state such as we know it. A solvent is usually a liquid but can also be a solid or a gas. Solvents find various applications in chemical, pharmaceutical, oil, and gas industries, including in chemical syntheses and purification processes. Thinners are defined as chemical compounds that are introduced into the paint prior to application, in order to modify the viscosity and other properties related to the rate of curing that may affect the functionality and aesthetics of the final layer painting. Paint thinner, a solvent used in painting and decorating, for thinning oil-based paint and cleaning brushes. A Thinner may be a single solvent or a combination of solvent types. Often, specific thinners are required by the manufacturer of a coating to prevent damage to coating properties that may occur when an inappropriate thinner is used. Solvents (for cleaning up or softening) and Thinners (for diluting or extending) are useful not only in painting but in other areas such as Wooden Furniture industry, Automobile industry, Ink industry, Rubber industry. As the paint industry is a major consumer of Thinners & Solvents, and is expanding at a tremendous speed, it is very obvious that the demand of thinners, too, will increase tremendously. The paints & coatings accounts for the largest share in the aliphatic hydrocarbon Thinners & Solvents market. It is also projected to be the fastest-growing application of the aliphatic hydrocarbon Thinners and Solvents market. The book contains Properties, Uses, manufacturing of Thinners & Solvents and providing information regarding thinner formulation. It also covers raw material suppliers, photographs of plant & Machinery with supplier's contact details. Some of the fundamentals of the book are thinner in Paint Industry, Health and Safety Measures of Chemicals, Pollution Control, Waste Disposal of Hazardous Chemicals and Storage, Labelling and Packaging of Chemicals etc. It will be a standard reference book for professionals and entrepreneurs. Those who are interested in this field can find the complete information from manufacture to final uses of Solvents and Thinners. It will be very helpful to consultants, new entrepreneurs, technocrats, research scholars, libraries and existing units.

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

**Author:** Dr. Himadri Panda

**Format:** Paperback

**Book Code:** NI343

**Pages:** 632

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**Price: Rs. 2,275.00 US\$ 61.00**

Resins are synthetic or natural substances that act as binders in paints and varnishes. They provide adhesion, durability, and flexibility to the finish. Common types of resins Alkyd, Amino, Phenolic, Polyurethane, Epoxy, Silicone and Acrylic. Each resin has its unique characteristics, such as fast drying time, high gloss, or resistance to chemicals. Paints consist of pigments suspended in a binder, which can be a resin or oil. Pigments are finely ground particles that give paint its color. They can be organic or inorganic and come in a vast array of shades. The type and quality of pigments used can greatly affect the appearance and longevity of the finish. Different types of paints include acrylic, oil-based, water-based, and specialty paints like metallic or chalk paint. Varnishes are transparent or translucent finishes applied over painted surfaces to protect and enhance the underlying colors. They provide a glossy, satin, or matte sheen and offer protection against UV rays, moisture, and abrasion. Varnishes can be solvent-based or water-based and are available in various formulations for different purposes. Additives are substances added to paints, varnishes, or pigments to alter their properties. They can improve flow and leveling, prevent sagging or foaming, or enhance drying time and durability. Additives are often used in specific applications such as automotive coatings, industrial finishes, or decorative paints. Surface coating products encompass a wide range of materials that are used to protect and enhance surfaces. These products go beyond just paints and varnishes and include coatings specifically designed for different applications and industries. The global resin market is expected to grow at a CAGR of 6.4%. The growing demand for epoxy resin in the paints and coatings industry is driving the market. In addition, demand is likely to be driven by the growing use of epoxy in the electronics and electrical industries as an insulator and to protect components from dust, short-circuiting, and moisture. Resins offer excellent adhesion, durability, and flexibility, making them an essential component in creating beautiful and long-lasting finishes for a wide range of surfaces. The market for resins is driven by various factors, including the growing construction industry, the increasing use of coatings in automotive and aerospace sectors, and the rising demand for eco-friendly and sustainable products. Manufacturers are constantly developing new resin formulations to meet these

evolving needs and regulations. In addition to traditional applications, such as architectural coatings and industrial finishes, resins are finding new markets in the growing sectors of 3D printing and advanced materials. These emerging applications present exciting opportunities for resin manufacturers to expand their product offerings and cater to evolving customer needs. The book covers a variety of topics related to Oleoresinous Media, Varnishes, Alkyd Resin, Polyesters, Amino Resins, Phenolic Resins, Polyurethane Resins, Epoxy Resins, Water Dispersible Epoxy Coatings, Silicone Resins, Acrylic Solution Resins, Emulsion Polymerization, Emulsion Polymers, Water-Reducible Resins, Water-Soluble Polymers, Solvents, Inorganic Pigments, Titanium Dioxide Pigments, Organic Pigments, Extender Pigments, Paint Driers, Paint Additives, Architectural Paints. This book is primarily intended for entrepreneurs and startups, but it is also a priceless tool for academics, consultants, financiers, and the Resins industry. Because of its all-encompassing perspective, it may serve a wide range of readers, all of whom have an interest in the Resin industry's continued success.

# Modern Technology of Paints, Varnishes & Lacquers (3rd edition)



**Author:** P.K. Tripathi

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Modern Technology of Paints, Varnishes & Lacquers 3rd edition (Solvents, Plasticizers, Distempers, Whitewash, Putties & Emulsion, Lacquers, Primers, Powder Coatings, Pigments, Alkyd Resin, Solvent-type Resins, Hydrocarbon Thinners, Epoxy Resins with Formulations, Machinery Equipment Details and Factory Layout) Paints, varnishes, and lacquers are chemicals or substances that you can use to change the color, texture or shine of a surface. These materials can be applied to a wide range of surfaces, including those made of metal, wood, paper, and plastic. They can be used to paint canvas works of art, to coat beautiful things with a layer of protection, or for practical uses like polishing furniture. The most popular kind of paints are oil-based paints, which are created using pigments that, when dried, leave an oily layer on the surface. Due to their lower levels of toxicity as compared to paintings made with an oil base, acrylics have grown in popularity in recent years. Paints, varnishes, and lacquers are essential supplies for any job involving home décor. Numerous colours are available for these products to match any style. Additionally, you can choose the finish that best meets your needs because they come in a variety of finishes. These products come in a variety that makes it simple to obtain just what you need without having to purchase numerous different things. These paints, varnishes, and lacquers are not only long-lasting but also simple to use thanks to current technology. The size of the global market for paints, varnishes, and lacquers is anticipated to increase at a CAGR of 7.8%. The demand is on the rise, and technological developments in the paint business are the main drivers of this expansion. Global population growth is also driving up demand for residential and commercial real estate, which will drive up demand for paints, varnishes, and lacquers globally. This sector's growth can be attributed to a variety of factors. More paints, varnishes, and lacquers will be required when there is a rise in the demand for new housing due to population growth. As homeowners attempt to make their homes appear newer with fresh coats of paint, industry analysts predict that sales will increase even further. In order to meet the expectations of the market, manufacturers must also adapt. While they look for new markets to supply, they have been investing in machinery and extending their manufacturing lines. In fact, it's one of the fastest-growing manufacturing industries. This industry not only has a high growth rate but

also offers tremendous opportunities for entrepreneurs to enter this booming business. Modern paint, varnish, and lacquer technologies have made it simpler for people to design unique paint jobs for use on furniture. Due to the low entrance requirements, this industry benefits entrepreneurs, to launch your business. The Major Contents of the books are Solvents, Plasticizers, Distempers, Whitewash, Putties & Emulsion, Lacquers, Primers, Powder Coatings, Pigments, Alkyd Resin, Solvent-type Resins, Hydrocarbon Thinners, Epoxy Resins with Formulations, Factory Layout, and Photographs of Machinery with Supplier Contact Information. A comprehensive reference to manufacturing and entrepreneurship in the Paints, Varnishes & Lacquers products business. This book is a one-stop shop for everything you need to know about the Paints, Varnishes & Lacquers products manufacturing industry, which is ripe with potential for manufacturers, merchants, and entrepreneurs. This is the only comprehensive guide to commercial Paints, Varnishes & Lacquers products manufacture. It provides a feast of how-to knowledge, from concept through equipment purchase.

# About NIIR

**NIIR PROJECT CONSULTANCY SERVICES (NPCS)** is a reliable name in the industrial world for offering integrated technical consultancy services. NPCS is manned by engineers, planners, specialists, financial experts, economic analysts and design specialists with extensive experience in the related industries.

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