

# Inks Formulation and Manufacturing Technology

## Modern Printing Technology

**Author:** NIIR Board

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Printing is one of those inventions that have revolutionized our world and is the most important fundamental practices in our society. Nothing is more essential to civilization intellectually or commercially, than printing. Printing is widely used in our society to pass on information and to decorate objects.

Printing is a process for reproducing text and images, typically with ink on paper using a printing press. It is often carried out as a large scale industrial process, and is an essential part of publishing and transaction printing. There are various types of printing methods such as screen printing, offset printing, rotogravure printing etc. Offset printing is a widely used printing technique where the inked image is transferred (or offset) from a plate to a rubber blanket, then to the printing surface. There is an enormous growth being witnessed in the printing industry. The emergence of the retail revolution and growing education across the country is acting as a fuel to the growth of the printing industry. The Indian Printing Industry is well established and presently growing at 12% per annum.

This book provides you details about the various methods and techniques involves in modern printing technology. Some of the fundamentals of the book are multi colours, paper publishing unit, screen printing, offset printing press, rotogravure printing, desk top publishing, computer forms and security printing press, printing inks, ink for hot stamping foil, aluminium printing plate for offset printing machine, screen printing on cotton, polyester and acrylics. The book also covers process, project profiles of different types of printings and printing inks manufacturing along with sources of machinery and raw materials. The book provides you with comprehensive information on modern printing technology. Basic information in entering a market and the opportunities and requirements of the potential sector has been the best way to penetrate in a market. How and what if properly answered can take you to a long way. The first hand information on different types of modern printing technology has been properly dealt in the book and can be very resourceful for those looking for entrepreneurship opportunity in this sector.

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**[Handbook on Printing Technology \(Offset, Flexo, Gravure, Screen,](#)**



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

**Format:** Paperback

**Book Code:** NI73

**Pages:** 568

**ISBN:** 9788178331768

**Price:** Rs. 1,495.00 **US\$** 150.00

Printing is a process of producing copies of text and pictures. Modern technology is radically changing the way publications are printed, inventoried and distributed. There are a wide variety of technologies that are used to print stuff. The main industrial printing processes are: Offset Lithography, Flexography, Digital Printing (Inkjet & Xerography), Gravure, Screen Printing. 3D printing which is also referred as additive printing technology that enables manufacturers to develop objects using a digital file and variety of printing materials. Global market for 3D printing material include polymers, metals and ceramics. In addition, 3D printing offers a wide array of applications in various industries, namely consumer products, industrial products, defense & aerospace, automotive, healthcare, education & research and others. In India, the market for printing technology is at its nascent stage; however offers huge growth opportunities in the coming years. Digital printing is now taking much more share, particularly in graphics (i.e. non-packaging applications). Digital's share of the whole market doubles in constant value terms from 9.5% to 19.7% and 3D printing market is estimated to garner \$8.6 billion in coming years. This handbook is designed for use by everyone engaged in the printing section and students who are pursuing their career in printing technology. It provide all information on modern printing methods, techniques, testing's for printing, application of different printing and machinery used for printing. The major content of the book are Principles of Contact (Impression), Principles of Noncontact Printing, Coated Grades and Commercial Printing, Tests for Gravure Printing, Tests for Letterpress Printing, Tests for Offset Printing, Screen Printing, Application of Screen Printing, Offset Lithography, Planography, Materials, Tools and Equipments, Sheetfed Offset Machines, Web Offset Machines, Colour and its Reproduction, Quality Control in Printing, Flexography, Rotogravure, Creative Frees Printer, Shaftless Spearheads Expansion, Digital Printing, 3D Printing, 3D Printing Machinery and Photographs of Machinery with Suppliers Contact Details. This book will be a mile stone for its readers who are new to this sector, will also find useful for professionals, entrepreneurs, those studying and researching in this important area.

# Modern Technology of Printing & Writing Inks (with Formulae & Processes) 2nd Revised Edition

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

**Format:** Paperback

**Book Code:** NI75

**Pages:** 480

**ISBN:** 9788178330822

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

Ink is a liquid or paste that contains pigments or dyes and is used to colour a surface to produce an image, text, or design. Ink is used for drawing or writing with a pen, brush, or quill. Thicker inks, in paste form, are used extensively in letterpress and lithographic printing. Ink can be a complex medium, composed of solvents, pigments, dyes, resins, lubricants, solubilizers, surfactants, particulate matter, fluorescents, and other materials. The components of inks serve many purposes; the ink's carrier, colorants, and other additives affect the flow and thickness of the ink and its appearance when dry. India is among the fast growing printing & writing ink markets globally spurred by the rapid expansion of the domestic print markets. Backed by a strong demand from key end user segments such as package printing, newsprint, publishing and other commercial printing, the printing ink market in India has registered strong growth over the years. The printing ink industry is fragmented with hundreds of manufacturers and a large number of players in the unorganised sector. Printing ink sector in India witnessed a growth of around 7.5% per annum during the Past years. Printed packaging accounts for around 27% of the demand for printing inks in India followed by newspapers at 20%. Commercial printing/promotional and printed advertising together account for around 19% of the demand. Other key end user segments for printing inks include books and stationery. With the print sector forecast to grow at around 8% per annum, in coming years, printing ink segment is expected to grow strongly. This handbook is designed for use by everyone engaged in the printing & writing ink industry and the associated industries. It provides all the information required by the ink technical for the day-to-day formulation of inks. It supplies the details of the manufacturing methods, including large-scale production, and gives guidance on achieving quality assessment and total quality management specifications. The book also describes properties and uses of the raw materials used in the formulation of printing & writing inks. The major content of the book are the colour and colour matching, raw materials, printing inks, ink formulations, applications problems, writing inks, project profile, how to estimate, order & handle ink, testing of writing & miscellaneous inks, testing of printing inks, rollers, waterborne inkjet inks. The book contains addresses of raw material suppliers, plant & machinery suppliers with their Photographs. This book will be a

mile stone for the entrepreneurs, existing units, libraries etc.

# The Complete Technology Book on Printing Inks



**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI109

**Pages:** 640

**ISBN:** 8178330482

**Price:** Rs. 1,000.00 **US\$** 100.00

The beginning of ink making is something of a mystery. It is certain however, that the development of the art of writing preceded the invention of ink by almost a thousand years. Today inks are divided into two classes: printing inks and writing inks. Printing is a process for reproducing text and images, typically with ink on paper using a printing press. It is often carried out as a large scale industrial process, and is an essential part of publishing and transaction printing. Different techniques and printing equipments are employed for each printing practices. The demand for innovative printing practices has been on a high in recent times. There are various kinds of printing processes; lithographic process, the gravure process, offset printing process etc. different types of inks derived from different processes are ball pen inks, bleachable inks, fluorescent inks, fast drying ink, automatic press inks, rotary press inks, coated paper inks, planographic inks, lithographic inks, offset tin printing inks etc. The Printing Ink industries have grown significantly during the last decade and this industry is characterized by exceeding high margin profit. As we read newspapers, magazines, and books on a daily basis therefore inks are found in almost every aspect of human activity. The worldwide printing inks market is projected to register a CAGR of about 2.8%. Printing inks market embodies the strength of the global as well as regional economies. With its high correlation to a national GDP, the printing inks market is cyclical in nature, with economic ups and downs amplifying the demand patterns. The world printing inks market is projected to grow moderately over the next couple of years. The major contents of the book are pigment in the printing inks, manufacturing of printing inks, storage and testing of raw materials, planographic inks, lithographic inks, factors effecting visual appearance of ink film, factors effecting visual appearance of ink film, method of mixing metallic powder and varnish, the principle of reproducing photographs by printing methods, etc. In this book an attempt has been made to bring together the useful manner as possible the fundamental Principles of ink making. The book contains formulae processes and other relevant information of the manufacturing of different types of printing inks.

# The Complete Book on Printing Technology

**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI111

**Pages:** 742

**ISBN:** 8178330520

**Price:** Rs. 1,100.00 **US\$** 125.00

Printing Industry generates a wide range of products which require in every step of our everyday life. Starting from newspapers, magazines, books, post cards to memo pads and business order forms each are the products of printing industry. Printing is a process for reproducing text and image, typically with ink on paper using a printing press. There are various types of printing process for example offset printing, modern printing, gravure printing, flexographic printing etc. Offset printing is a widely used printing technique where the inked image is transferred from a plate to a rubber blanket, then to the printing surface. When used in combination with the lithographic process, the offset technique employs a flat image carrier on which the image to be printed obtains ink from ink rollers, while the non printing area attracts a film of water, keeping the non printing areas ink free. Gravure printing is a printing technique, where the image to be printed is made up of small depressions in the surface of the printing plate. It is divided into three broad product areas; packaging printing, publication printing and speciality printing. Printing technology is often carried out as a large scale industrial process, and is an essential part of publishing and transaction printing. This is the age of hi fi, jets and computers. Rapid advancements in science and technology have made their impact on the printing industry of the world too. The old techniques of printing have become obsolete and made way for the new technology. The printing industry is just one example of an entire industry movement that is changing while keeping up with the development of new technologies. The proliferation of emerging technologies has dictated a rebirth of the printing industry. The Indian Printing Industry is well established and presently growing at 12% per annum. This book majorly deals with typographic technology, photo scanning systems, sequence of steps in the printing processes, size and scope of the printing industry, high volume printing technologies for the production of polymer electronic structures, inking system, film high contrast printing, principle of planographic printing, modern printing process, ink jet etc. The book contains the latest printing processes like web, gravure, flexo, security and offset printing. This book is an invaluable resource for new entrants, technicians, craftsmen and executives working with printing industries.

# Screen Printing Technology Hand Book

**Author:** NIIR Board

**Format:** Paperback

**Book Code:** NI112

**Pages:** 672

**ISBN:** 8178330539

**Price:** Rs. 1,000.00 **US\$** 100.00

Screen printing is a printing technique that uses a woven mesh to support an ink blocking stencil. The attached stencil forms open areas of mesh that transfer ink or other printable materials which can be pressed through the mesh as a sharp edged image onto a substrate. A roller or squeegee is moved across the screen stencil, forcing or pumping ink past the threads of the woven mesh in the open areas. Screen printing proves to be a good printing process for multi colour printing. Half tone printing is related to screen printing of photographs. Printings of photographs was at one time considered to be very difficult in screen printing, but now screen printed halftone photographs are also effective and economical in certain types of reproduction. Over the time stickers (transfer) have become an important medium of advertising. Now millions of stickers are printed every year through this method. Transfer stickers are of three types; instant transfer, heat transfer and water lade transfer. Gumming is an integral part of sticker production. Screen printing technique make use of and is compatible with a variety of materials, including textiles, ceramics, metal, wood, paper, glass, and plastic. It is this quality that allows this printing technique to be used in different industries, from clothing to product labels, fabric labels to circuit board printing etc. Screen printing industry experiences growth in the 10 to 15% per year rate. Some fundamentals of this book are basic concept and classification of stencils, basic screen printing process, basic registration techniques, screen printing frames, pre treatment of screen printing fabrics, screen printing press, principal of screen process printing, printing on paper and card, printing on vertical surfaces, printing on shaped objects, cylindrical object printing, printing on uneven surfaces, ceramic and glass printing, printing on plastics etc. This method of Printing has achieved wide spread popularity since the Second World War, although the basic ideas in this process were used by the Chinese centuries ago. The present book contains latest technologies of screen printing along with machinery photographs, addresses of suppliers of machinery and raw materials. This book will be very helpful to new entrepreneurs, existing units and for those who want to diversify in to this field.

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

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

**Format:** Paperback

**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.

# 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.

Our various services are: Detailed Project Report, Business Plan for Manufacturing Plant, Start-up Ideas, Business Ideas for Entrepreneurs, Start up Business Opportunities, entrepreneurship projects, Successful Business Plan, Industry Trends, Market Research, Manufacturing Process, Machinery, Raw Materials, project report, Cost and Revenue, Pre-feasibility study for Profitable Manufacturing Business, Project Identification, Project Feasibility and Market Study, Identification of Profitable Industrial Project Opportunities, Business Opportunities, Investment Opportunities for Most Profitable Business in India, Manufacturing Business Ideas, Preparation of Project Profile, Pre-Investment and Pre-Feasibility Study, Market Research Study, Preparation of Techno-Economic Feasibility Report, Identification and Section of Plant, Process, Equipment, General Guidance, Startup Help, Technical and Commercial Counseling for setting up new industrial project and Most Profitable Small Scale Business.

NPCS also publishes various process technology, technical, reference, self employment and startup books, directory, business and industry database, bankable detailed project report, market research report on various industries, small scale industry and profit making business. Besides being used by manufacturers, industrialists and entrepreneurs, our publications are also used by professionals including project engineers, information services bureau, consultants and project consultancy firms as one of the input in their research.

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**NIIR PROJECT CONSULTANCY SERVICES** , 106-E, Kamla Nagar, New Delhi-110007, India. **Email:** [npcs.india@gmail.com](mailto:npcs.india@gmail.com) **Website:** [NIIR.org](http://NIIR.org)

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